

**INTERNATIONAL ASSOCIATION
OF SHEET METAL, AIR, RAIL
AND TRANSPORTATION WORKERS**

TRANSPORTATION DIVISION



**What Every Railroad Worker
Should Know About
the Federal Railroad Safety Laws
and Regulations**

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In General

The railroad safety laws are contained in a number of statutes and regulations. This booklet is intended to provide every railroad worker with a general summary. It should be used as a guide only, and if a specific problem arises, the applicable law or regulation should be reviewed. For copies of specific provisions of any law or regulation, contact SMART's Transportation Division's Washington office.(202)543-7714.

Whenever you discover a safety violation which the railroad does not immediately correct, you should promptly contact the employee's union representative, and/or the Federal Railroad Administration and, in as much detail as possible, set forth the facts. If you have a legal question concerning the safety laws or regulations, you may contact SMART's Transportation Division General Counsel, or Lawrence M. Mann, who prepared this reference book, 9205 Redwood Avenue, Bethesda, Maryland, (202)298-9191.

The major railroad safety laws are as follows:¹

- Federal Railroad Safety Act of 1970, as amended (49 U.S.C. §§ 20101-20144; 21301-21304)
- Safety Appliance Acts (49 U.S.C. §§ 20102; 20301-20306)
- Hazardous Materials Transportation (49 U.S.C. §§ 5101-5127)
- Signal Inspection Act (49 U.S.C. §§ 20501-20505)
- Occupational Safety and Health Act of 1970 (29 U.S.C. §§ 653-659)
- Locomotive Inspection Act (49 U.S.C. § 20702)
- Accident Reports Acts (49 U.S.C. §§ 20901; 21311)
- Noise Control Act of 1972 (42 U.S.C. § 4916)
- Hours of Service Act (49 U.S.C. §§ 21101-21107)
- Federal Employers' Liability Act (45 U.S.C. §§ 51-60)
- Whistleblower law (49 U.S.C. §20109)

Because of their complexity, the summaries of some of the regulations are exactly as published in the Code of Federal Regulations (cited as "C.F.R." and/or "Fed. Reg."). In some other cases, portions of a summary prepared by the Federal Railroad Administration have been copied. Where it is not obvious, the applicable statute ("U.S.C.") and/or regulations are cited at the end of each subject that has been summarized. Additionally, in a few instances, the Rail Safety Advisory Committee has approved and recommended to FRA to adopt a regulation, but no final rule has been adopted. The summaries of some these are included also.

Unless otherwise noted, all of the sections listed in the summaries of the regulations refer to Title 49 of the C.F.R.

¹ The general civil penalty provisions for violations of the safety laws under Title 49 are contained in Sections 21301-21304.

ABOUT THE AUTHOR

Lawrence M. Mann is the senior partner in the law firm of Alper & Mann, P.C., with offices at 9205 Redwood Avenue, Bethesda, Maryland, telephone (202) 298-9191. He is a graduate of Georgetown University Law School and the University of North Carolina. Mr. Mann is a principal draftsman of the Federal Railroad Safety Act of 1970. Since that time, he has represented the nation's railroad workers in connection with the major safety amendments considered by Congress. He has presented testimony on pending legislative amendments and assisted in the technical drafting of such legislation. Mr. Mann regularly consults with congressional members and staff on these issues.

He has represented the railroad workers in most of the major safety rulemakings before the Federal Railroad Administration. He has been an alternate member of the FRA's Railroad Safety Advisory Committee, and participates in many of the RSAC's working groups. Currently, he is a member of the working group for the Department of Labor's Whistleblower Protection Advisory Committee. In addition, Mr. Mann consults with and assists state regulatory authorities in their administration of the railroad safety laws.

He has handled some of the most significant lawsuits nationwide in connection with the interpretation of both the federal laws and regulations, as well as the rights of the states to adopt and enforce rail safety laws. In the monthly nationwide publication entitled *FELA Reporter* dated September, 1994 it stated as follows:

"Larry Mann, the nation's foremost authority on railroad safety legislation and regulation..."

A similar recognition was stated in the November, 2008 edition of *UTU News*.

In the *Washingtonian Magazine*, he was listed as one of the best lawyers in Washington, D.C., and has been selected in the latest editions of *Who's Who in American Law*, *The Best Lawyers in America*, *Best Lawyers in the District of Columbia and Maryland*. For more than 25 years, he has achieved the highest rating by the Martindale-Hubbell Law Directory, and is presently Counsel to the Academy of Rail Labor Attorneys, and Rail Safety Coordinator to the Designated Legal Counsel of the Sheet Metal, Airline, Railroad Transportation Union—Transportation Division.

For many years, he has handled numerous railroad safety cases.

He is a member in good standing of the following courts:

	<u>Date Admitted</u>
U.S. Supreme Court	03/27/72
U.S. District Court for the District of Columbia	01/20/67
U.S. Court of Appeals for the District of Columbia Circuit	02/16/67
U.S. Court of Appeals for the 11th Circuit	10/01/81
U.S. Court of Appeals for the 10th Circuit	11/06/78
U.S. Court of Appeals for the 9th Circuit	07/08/75
U.S. Court of Appeals for the 8th Circuit	02/13/75
U.S. Court of Appeals for the 7th Circuit	02/13/67
U.S. Court of Appeals for the 6th Circuit	03/27/90
U.S. Court of Appeals for the 5th Circuit	12/21/81
U.S. Court of Appeals for the 4th Circuit	03/14/75
U.S. Court of Appeals for the 3rd Circuit	06/05/87
U.S. Court of Appeals for the 2nd Circuit	10/25/88
U.S. Court of Federal Claims	02/11/70

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SAFETY LEGISLATION:

A. FEDERAL RAILROAD SAFETY ACT OF 1970²

GENERAL:

This comprehensive law authorizes the Secretary of Transportation to prescribe regulations for all areas of railroad safety (supplementing existing rail safety statutes and regulations) and to conduct necessary research, development, testing, evaluation, and training.³ The Secretary's authority over safety is not to be construed to prevent management and labor from bargaining collectively under the Railway Labor Act, including agreements relating to qualifications of employees. The Secretary's authority with respect to establishing qualifications of employees is limited to those physical or medical disabilities which specifically relate to safety.

The provision for supplementing existing law was inserted in the legislation to make it clear that the grant of jurisdiction under the Act does not replace the existing rail safety statutes and regulations. It was the concern of the railroad unions that if the existing statutes were repealed and incorporated by regulations, the statutory standards might be relaxed by the Secretary.

The term "railroad" as used in this Act means all forms of non-highway ground transportation that run on rails or electromagnetic guideways, including (1) commuter or other short-haul rail passenger service in a metropolitan or suburban area, as well as any commuter rail service which was operated by the Consolidated Rail Corporation as of January 1, 1979, and (2) high speed ground transportation systems that connect metropolitan areas, without regard to whether they use new technologies not associated with traditional railroads. Such term does not include rapid transit operations within an urban area that are not connected to the general railroad system of transportation.⁴

HEARINGS AND ADMINISTRATIVE PROCEDURES:

² Some of the amendments to the FRSA are discussed in separate headings in this notebook. Also, separately discussed amendments are contained in the Rail Safety Improvement Act of 2008, which is summarized in this booklet.

³ A major rulemaking will not become effective until 40 days after the rule is issued. This gives Congress an opportunity to prevent the regulation from going into effect. Also, all agencies are required to determine the impact of its rule on small business and consider alternatives.

⁴ The same definition of "railroad" applies to all of the other federal railroad safety laws. Some of the regulations contain different definitions.

On all rulemaking by the Secretary, an opportunity shall be provided for a hearing and the right to present oral testimony. Hearings shall be conducted in accordance with the Administrative Procedure Act. Any action taken by the Secretary is subject to judicial review.⁵

WAIVERS:⁶

This section authorizes the Secretary to grant waivers from compliance with a particular rule, regulation or standard if he finds that the said waiver would be in the public interest and consistent with railroad safety. The Secretary is required to publicize his reasons for granting each waiver.

EMERGENCY POWERS:

This section authorizes the Secretary to issue an order against a railroad requiring it to eliminate any unsafe condition or practice which creates an emergency involving a hazard of death or injury. Such emergency orders are not subject to the rulemaking provisions requiring a hearing prior to the issuance of the order. However, subsequent to the issuance of an order an opportunity for review must be provided in accordance with 5 U.S.C. §554.

NATIONAL UNIFORMITY AND STATE REGULATION:

It is the policy of Congress that rail safety regulations be nationally uniform to whatever extent practicable. However, a state is permitted to continue to regulate with respect to any rail safety matter until such time as the Secretary issues a rule covering the same subject matter. Also, a state is permitted to adopt additional or more stringent standards than the federal standards if the state rule does not create an undue burden on interstate commerce, is not incompatible with federal standards, and is necessary to eliminate or reduce local safety hazards.

STATE PARTICIPATION:

A state is permitted to carry out investigative and surveillance activities under this Act certifying to the FRA that the said state agency (1) has regulatory jurisdiction over the safety practices in the state; (2) has been furnished a copy of each federal safety rule, regulation, order and standard; and (3) is conducting the investigative and surveillance activities prescribed by the Secretary. Also, the Secretary may enter into an agreement with a state agency where it is unable or unwilling to submit a certificate for all safety laws under the jurisdiction of the Secretary. The agreement would authorize the state to provide all or any part of the inspection service necessary to obtain compliance with the federal rules.

⁵ In 1990, Congress adopted the Negotiated Rulemaking Act of 1990. It allows an agency to establish a negotiated rulemaking committee to negotiate and develop a proposed rule. If created the FRA is required to use the consensus of the committee as the basis for the rule proposed by the agency for notice and comment. (Pub. L. 101-648, 5 U.S.C. §§ 581-590). As a result, FRA created the RSAC.

⁶ The FRA has issued procedures for emergency waivers in order for FRA to expeditiously handle waiver requests. 74 Fed. Reg. 23335 (May 19, 2009); 49 C.F.R. § 211.45

FUNDING FOR STATE INSPECTORS:

This authorizes the Secretary to pay up to 50% of the costs of a state program. The state is required to assure the Secretary that it will provide the remaining funds for the program and that the level of expenditures by the state for rail safety will not be reduced below the level of such expenditures for the two years preceding the date of enactment of this law.

STATE ENFORCEMENT:

The Secretary is given the primary authority to enforce all provisions under the Act. However, if the Secretary has not acted to assess a civil penalty within 60 days of a violation or seek injunctive relief within 15 days, a state agency participating in investigative and surveillance activities may apply to the U.S. district court where the violation occurred for enforcement.

GENERAL POWERS:

The Secretary is given the necessary administrative powers to carry out his duties under the Act, including, but not limited to, conducting investigations, making reports, issuing subpoenas, requiring production of documents, taking depositions, prescribing record keeping and reporting requirements, conducting research, development, testing, evaluation and training.

The National Transportation Safety Board is authorized to determine the cause or probable cause of accidents and to develop reports concerning such accidents.

EFFECT ON FELA:

This section provides that the regulations of the Secretary under the Act, and regulations of state agencies which have been certified by FRA to assist in investigatory activities to enforce safety regulations, shall have the force and effect of law for purposes of the Federal Employers' Liability Act.

ENFORCEMENT:

The Secretary is authorized to issue orders directing compliance with all safety statutes or with any railroad safety rule, regulation, order, or standard. The district courts of the United States have jurisdiction, upon petition by the Attorney General, to enforce such orders by appropriate means. The Attorney General is authorized to require immediate compliance with any order or subpoena of the Secretary issued pursuant to the Act.

PENALTIES:

This directs the Secretary to assess civil penalties. The fines range between a minimum of \$250 up to \$25,000. However, where there is a grossly negligent violation or a pattern of repeated violations which have created imminent hazard of, or caused death and injury, a fine up to

\$100,000 may be imposed for each offense.⁷ Each day a violation exists constitutes a separate offense.

There is personal liability for any individual who willfully violates any of the laws or regulations. It shall not be considered a willful violation if the individual acted pursuant to a direct order of a railroad official or supervisor, and he or she protested such violation to the supervisor.

INJUNCTIVE RELIEF:

This gives the U.S. district courts jurisdiction to issue an injunction or a restraining order upon request of the Secretary and a petition filed by the Attorney General. The Secretary has authority to restrain violations or enforce rules, regulations, order, or standards under all safety statutes.

EMPLOYEE UNFIT FOR SAFETY SENSITIVE WORK:

If the Secretary determines that an employee is "unfit for safety sensitive functions," the Secretary may after notice and hearing issue a notice prohibiting the employee from working in a safety sensitive function for a specific period of time or until the employee is fit to resume his or her normal duties. (The hearing will not necessarily be an oral hearing). The Secretary, under the emergency order provisions of the Act, could use those powers, as well, to prevent an employee from working.

ANNUAL REPORT:

This section directs the Secretary to submit a comprehensive annual report to Congress. The report shall include a thorough statistical compilation of accidents and casualties by cause during the preceding year, a list of federal railroad safety regulations issued during the year, a summary of the reasons for each waiver which has been granted under the Act, an evaluation of the degree of observance of applicable railroad safety regulations, a summary of outstanding problems involved in the administration of the Act, an analysis and evaluation of research and related activity during the year, a list of judicial actions completed during the year, a list of technical information disseminated to the public, compilation of certifications filed by the states during the year, a list of certifications rejected during the year with a summary of the reasons for their rejection, and a list of agreements entered into with the states along with a list of any agreement terminated with a summary of the reasons for such termination.

49 U.S.C. §§ 20101-20144; 21301-21304

⁷ Penalties are similarly increased for the other railroad safety statutes, such as the Safety Appliance Acts, the Locomotive Inspection Act, the Accident Reports Act, and the Signal Inspection Act. Currently, the penalties under the Hours of Service law is not less than \$500 but not more than \$25,000 per violation. However, when a grossly negligent violation or a pattern of repeated violations has caused an imminent hazard of death or injury, or has caused death or injury, the amount may not be more than \$100,000. The FRA has issued penalty schedules for all types of violations.

B. RAIL SAFETY IMPROVEMENT ACT OF 2008

Sec. 1. Short title; table of contents; amendment of title 49

The law is entitled "Rail Safety Improvement Act of 2008".

Sec. 2. Definitions.

This section defines the following: crossing, Department, Railroad, Railroad carriers, Secretary, State, Class I, II, and III railroads, and safety related railroad employee.

Sec. 3. Authorization of appropriations.

There are authorized appropriations for FY 2009 through 2013. With these authorizations, some of the funds shall be used for the purchase of Gage Restraint Measurement System vehicles development and construction of the Facility for Underground Rail Station and Tunnel at the Transportation Technology Center in Pueblo, CO.

TITLE I—RAILROAD SAFETY IMPROVEMENTS

Sec. 101. Federal Railroad Administration officers and duties.

This makes it clear that safety shall be the highest priority of the Administrator in carrying out the safety laws. In addition, the Administrator shall be required to have professional experience in railroad safety or other transportation safety. This section also creates a new position at the FRA, entitled Associate Administrator for Rail Safety and will be the chief safety officer who is appointed in the competitive service by the Secretary.

Sec. 102. Railroad safety strategy.

This section requires the Secretary to develop a long-term strategy of not less than 5 years for improving railroad safety, which must include an annual plan and schedule for reducing the number and rates of accidents, injuries, and fatalities involving railroads; improving the consistency and effectiveness of enforcement and compliance programs; identifying and targeting enforcement at, and safety improvements to, high-risk grade crossings; and improving research efforts to enhance and promote railroad safety and performance. Annually, the Secretary and the Administrator shall assess the progress toward achieving the goals, and submit its report to the Congress.

Sec. 103. Railroad safety risk reduction program.

Within 4 years the Secretary shall require each Class 1 railroad, a railroad that has an inadequate safety performance(as determined by the Secretary) ,and an intercity passenger or commuter service railroad, to develop a railroad safety risk reduction program to reduce accidents, injuries and fatalities.⁸ It shall include a technology analysis and a fatigue management plan. The Sec. may conduct behavior-based safety and other research, including pilot programs, before promulgating regulations. The Secretary is required to approve or disapprove all plans, which plans must be certified by the railroad's chief official responsible for safety. As part of such plan, a railroad shall develop and periodically update a technology implementation plan covering

⁸ To date, FRA has issued a regulation covering only passenger trains. Also, it has not issued a regulation covering fatigue.

a 10 year period. Each such plan shall also include a schedule for implementation of a positive train control system required by 49 U.S.C. 20157(i). In addition, as part of the plan, the railroads shall develop and update at least every 2 years a fatigue management plan. Each railroad shall use its best efforts to reach an agreement with all of its directly affected employees on the contents of the program. The Secretary may impose penalties for violations of the plan.

Sec. 104. Implementation of positive train control.⁹

This section requires Class I railroads and intercity and commuter railroads within 18 months to submit to the Secretary a plan to install a positive train control system by December 31, 2015 governing operations on main line over which intercity and commuter traffic are regularly provided, and over main line in which poison or toxic by inhalation hazardous materials are transported. The plan first shall address areas which have a greater risk. The Secretary shall approve the plan within 90 days after receiving it. If the plan is not approved, the railroad shall correct all deficiencies within 30 days. The Secretary shall not permit installation of PTC unless he certifies that each PTC system has been approved. Not later than Dec. 31, 2012, the Secretary shall transmit a report to Congress of the progress in the implementation of PTC. The Secretary is authorized to prescribe regulations to implement this section.

Sec. 105. Railroad safety technology grants.

The Secretary shall establish a grant program for the deployment of all train control technologies. \$50 million is authorized for each fiscal year 2009 through 2013.

Sec. 106. Reports on statutory mandates and recommendations.

Not later than Dec. 31, 2008, and annually thereafter, the Secretary shall transmit a report to Congress on specific actions taken to implement unmet statutory mandates and each open safety recommendation by the NTSB.

Sec. 107. Rulemaking process

No rule or order of the Secretary shall be effective if it incorporates by reference a code, rule, standard, requirement, or practice issued by an entity other than an agency of the U.S. government, unless the date such code, etc. was adopted is specifically cited in the FRA rule or order and has been subject to notice and comment.

Sec. 108. Hours-of-service reform.

Hours of Service (Train service employees).

Time on duty---A railroad may not require or allow a train employee to (1) remain or go on duty in any month where the employee had spent a total of 276 hours on duty, or waiting for transportation, in deadhead transportation to a place of final release, or in any other mandatory service for the carrier; (2) remain or go on duty for a period in excess of 12 consecutive hours; (3) remain or go on duty unless the employee has had at least 10 consecutive hours off duty during the prior 24 hours; and (4) remain or go on duty after that employee has initiated an on-duty period each day for (a) 6 consecutive days, unless that employee has had at least 48 consecutive hours off duty at the employee's home terminal during which time the employee is unavailable for

⁹ FRA has extended implementation of PTC until 2020, and, under certain circumstances, until 2022.

any service; Provided, however, an employee may work a 7th consecutive day if that employee completed his final on-duty time on his 6th consecutive day at the away from home terminal, and such employees who works a 7th consecutive day back from his home terminal shall have at least 72 consecutive hours off duty at his home terminal.; In addition, (b) for a period of 18 months after enactment, if an existing collective bargaining agreement expressly provides for such a schedule (and after 18 months a new collective bargaining agreement so provides), such schedule is provided by a pilot program authorized by a collective bargaining agreement, or such schedule is provided by a pilot program under 49 U.S.C 21108 related to employees' work and rest schedules, in situations where an employee works 7 consecutive days, the employee may be given at least 72 consecutive hours off duty at the employee's home terminal during which time the employee is unavailable for service.

The Secretary may waive (4) if a collective bargaining agreement provides a different arrangement and such is in the public interest and consistent with railroad safety.

Limbo Time---

A railroad carrier may not require or allow an employee to exceed a total of 40 hours per calendar month spent in waiting for deadhead transportation or in deadhead transportation from duty assignment to place of final release, following 12 consecutive hours on duty that is neither time on duty nor time off duty, not including interim periods of rest. Beginning 1 year after enactment, the railroad may not allow or require an employee to exceed 30 hours per calendar month in limbo time. Such limitations shall not apply where the train carrying the employee is delayed by a casualty, an accident, track obstruction, act of God, derailment, major equipment failure that prevents the train from advancing, or a delay resulting from a cause unknown and unforeseeable to the railroad when the employee left the terminal. If time spent in deadhead transportation, waiting for deadhead transportation, plus time on duty, exceeds 12 hours, the railroad shall provide the employee an additional time off duty equal to the number of hours exceeding 12 hours.

Each railroad shall report to the Secretary each instance where an employee spends time waiting for deadhead transportation or in deadhead transportation in excess of the requirements above.

Communicating during time off duty---A railroad shall not communicate with an employee by telephone, by pager, or in any other manner that could reasonably be expected to disrupt the employee's rest, during the employee's minimum off-duty period of 10 consecutive hours, during an interim rest period of at least 4 consecutive hours, or during additional off duty hours to be taken by the employee as discussed above. This section is not applicable where communication is necessary to notify an employee during an emergency. In addition, the Secretary may waive this section for commuter or intercity passenger railroads if the Secretary determines that such waiver will not reduce safety and is necessary to maintain efficient operations.

Regulatory authority of the Secretary---The Secretary may issue regulations (1) to reduce the maximum hours an employee may be required or allowed to go or remain on duty; (2) increase the minimum hours an employee may be required or allowed to rest; (3) to limit or eliminate the amount of time an employee spends waiting for or in deadhead transportation. In issuing regulations under this section, the Secretary shall consider scientific and medical research related to fatigue, railroad scheduling and operating practices, a railroad's use of new or novel

technology intended to reduce or eliminate human error, variations in scheduling practices and operating conditions, and a railroad's use of fatigue management plans.

If the Secretary determines that regulations are necessary under subsection (a), the Secretary shall first request that RSAC develop proposed regulations, and to give RSAC a reasonable period of time to complete the task.

If the Secretary requests RSAC to develop proposed regulations for commuter or intercity railroads, such consensus shall be reached within 18 months after accepting the task. If consensus is not reached within 18 months, the Secretary shall issue regulations within 18 months. If the Secretary does not request RSAC to accept the task, the Secretary shall prescribe regulations within 3 years from enactment.

Pilot Projects---Not later than 2 years, the Secretary shall conduct 2 pilot projects to analyze fatigue issues as follows: (a) to evaluate the efficacy of communicating to employees notice of their assigned shift time 10 hours prior to the beginning of an assigned shift; and (b) to evaluate the efficacy of requiring railroads who use employee scheduling practices that subject employees to unscheduled duty calls to assign employees to defined or specific unscheduled call shifts that are followed by shifts not subject to call. The Secretary may temporarily waive the hours of service provisions if necessary to complete one of the 2 pilot projects listed above.

Duty call defined--- The term "duty call" means a telephone call that a railroad places to an employee to notify the employee of his/her assigned shift time.

Hours of Service(Signal Employees)---A railroad, contractor, or subcontractor may not require or allow a signal employee to remain or go on duty for a period in excess of 12 consecutive hours; or unless that employee has had 10 consecutive hours off duty during the prior 24 hours.

The one hour limbo time in existing law for time spent returning from a final trouble call is deleted.

A signal employee may not conduct routine repairs, maintenance, or inspections under the emergency provisions.

As with operating employees, a railroad, a contractor or subcontractor may not communicate with the signal employee during his/her off duty time of 10 consecutive hours.

The hours of service provisions under this law are the exclusive law applicable to signal employees operating motor vehicles.

The Secretary may reduce the maximum hours a signal employee may be required or allowed to remain on duty; increase the minimum hours an employee may be required to rest; Also, the Secretary may limit or eliminate the time that is considered neither on duty nor off duty that an employee spends returning from an outlying worksite after scheduled duty hours or returning from a trouble call to headquarters or home. He may increase the amount of time that constitutes a release period, that does not break the continuity of service and is considered time on duty, and to require other changes to railroad operating and scheduling practices that could affect employee fatigue and rail safety.

As with operating crews, the Secretary, in issuing regulations, shall consider scientific and medical research. The RSAC provisions are also applicable to signalmen, as are the pilot projects.

Application of Hours of Service to Commuter and Intercity Passenger Train Employees.

Existing hours of service law shall apply to commuter, short haul passenger carriers, or intercity carriers until regulations are issued by the Secretary within 3 years after the law is enacted.

The regulations and orders may address operating and scheduling practices, including unscheduled duty calls, communications during time off duty, and time spent in or waiting for deadhead transportation to the place of final release.

Sec. 109. Protection of railroad safety risk analyses information.

Except as necessary for the Secretary or another Federal agency to enforce or carry out any provision of law, any part of any record(including a railroad's analysis of its safety risks and statement of mitigation measures it has identified) that the Secretary has obtained which is related to a railroad safety risk program or pilot program is not subject to public disclosure under 5 U.S.C. 552. Provided, however, the Secretary may disclose any part of any record comprised of facts otherwise available to the public, if the Secretary determines the disclosure would be consistent with confidentiality needed for that safety risk reduction program or pilot program. The Secretary may prohibit such disclosures if he determines that the prohibition of public disclosure is necessary to promote railroad safety.

The FRA shall complete a study to evaluate whether it is in the public interest, including public safety and legal rights of persons injured in railroad accidents, to withhold from discovery or admission into evidence in a Federal or State court proceeding for damages involving personal injury or wrongful death against a carrier any report, survey, schedule, list, or data compiled or collected for the purpose of evaluating, planning, or implementing a railroad safety risk reduction program. The Secretary may prescribe a rule to address the results of the study, and such rule shall become effective 1 year after its adoption.

Sec. 110. Pilot projects.¹⁰

A railroad or railroads and labor organizations may jointly petition the Secretary for a waiver of compliance with the provisions of the railroad safety law in chapter 211 to establish pilot projects which demonstrate possible benefits of implementing alternatives to the strict application of the law's requirements, including maximum on-duty and minimum off-duty periods. Such waivers cannot exceed 2 years., but may be extended for up to 2 more years. The Secretary is required to submit to Congress a report of the effectiveness of any pilot project

TITLE II—HIGHWAY-RAIL GRADE CROSSING AND PEDESTRIAN SAFETY AND TRESPASSER PREVENTION

Sec. 201. Pedestrian crossing safety.

Within 1 year, the Secretary shall provide guidance to railroads on strategies and methods to prevent pedestrian and trespasser accidents.¹¹

Sec. 202. State action plans.

Within 1 year, the Secretary shall identify the 10 states that have the most highway-rail grade crossing collisions, on average over the past 3 years and require those states to develop a

¹⁰ May 1, 2012 . Promoting International Regulatory Cooperation

¹¹ On April 2012, FRA issued a "Guidance on Pedestrian Crossing Safety at or Near Passenger Stations".

grade crossing action plan. The plan shall identify specific solutions for improving the safety at crossings. The Secretary shall provide assistance to the States in developing and carrying out the plan, and may condition awarding federal funds on the development of the plans.

Sec. 203. Improvements to sight distance at highway-rail grade crossings.

Not later than 18 months the Secretary shall develop and make available to the States model legislation by addressing sight obstructions, including vegetation growth, topographic features, structures, and standing railroad equipment, at highway-rail grade crossings that are equipped with passive warnings, as recommended by the Inspector General of the DOT in Report No. MH-2007-044.

Sec. 204. National crossing inventory.

Not later than 1 year, or within 6 months after a new crossing becomes operational, each railroad and each state shall report information about warnings and signage, concerning a previously unreported grade crossing to the Secretary to enable the Secretary to update the DOT's grade crossing inventory. Not later than 2 years after enactment, and on or before September 30 of each year thereafter, each carrier shall report to the Secretary current information about such warning devices. The Secretary shall prescribe regulations to implement this section.¹²

Sec. 205. Telephone number to report grade crossing problems.

Within 18 months, the Secretary shall require each railroad to establish, maintain, and post a toll-free number at all grade crossings to receive calls reporting malfunctions of signals, crossing gates, and other devices, disabled vehicles blocking such crossings, and obstructions to the view of a pedestrian for a reasonable distance. Upon receiving a call, the railroad is required to immediately contact trains operating near the grade crossing to warn them of the malfunction or disabled vehicle, and contact the appropriate public safety officials having jurisdiction over the grade crossing to provide them with the information necessary for them to direct traffic, assist in the removal of a disabled vehicle, or carry out other activities appropriate to responding to the hazardous condition.

Sec. 206. Operation Lifesaver.

The FRA shall make grants to Operation Lifesaver for pilot projects. The authorization is \$2 million for each FY 2010-2011, and \$1.5 for each FY 2012-2013. A pilot program for community outreach is authorized.

Sec. 207. Federal grants to States for highway-rail grade crossing safety.

The Secretary shall make grants to a maximum of 3 States per year for development or continuance of enhanced public education to help reduce violations of traffic laws at crossings and to help prevent and reduce injuries and fatalities at crossings. The grants shall be given where it will provide the greatest safety benefits. The Secretary may not make a grant to establish or continue a quiet zone. A total of \$1,500,000. is authorized for each fiscal years 2010-2013. The maximum grant to a State shall be \$250,000.

¹² FRA implemented this requirement on Jan. 6, 2015 (80 Fed. Reg. 746), which was amended on 6/10/16 (Fed. Reg. 37521).

Sec. 208. Trespasser prevention and highway-rail grade crossing safety.

Within 1 year, the Secretary shall consult with affected parties and evaluate and review current local, State and Federal laws regarding trespassing, vandalism, violations of grade crossing warning signs, and to develop model legislation to be used by the States. Not later than 18 months, the Secretary shall develop model legislation providing for civil and/or criminal penalties for violations of grade crossing signs, signals or other markings.

Sec. 209. Accident and incident reporting.

This section requires the FRA to conduct an audit of each Class I railroad at least once every two years and conduct an audit of each non-Class I railroad at least once every five years to ensure that all grade crossing collisions and fatalities are reported to the national accident database.

Sec. 210. Fostering introduction of new technology to improve safety at highway-rail grade crossings.

This section encourages the installment of new safety technologies at grade crossings. If the Secretary approves by order new technology to provide warning at a crossing, a State is preempted re: adequacy of the technology.

TITLE III—FEDERAL RAILROAD ADMINISTRATION

Sec. 301. Human capital increases.

The Secretary shall increase the number of FRA employees by 200 employees by FY 2013(50 each FY 2009-2011, and 25 each FY 2012-2013).

Sec. 302. Civil penalty increases.

This increases the current \$10,000 penalties to up to \$25,000, and the current \$20,000 penalties to up to \$100,000.

Sec. 303. Enforcement report.

This section requires increased transparency of all enforcement actions taken by the FRA. Not later than December 31, 2009, the FRA must release to the public and publish on its website an annual report summarizing all inspections and enforcement actions taken by the FRA.

Sec. 304. Expansion of emergency order authority.

This section allows the Secretary to issue emergency rules or restrictions in the event of significant harm to the environment. (Current law allows the Secretary to issue emergency rules or restrictions in the event of death or personal injury.)

Sec. 305. Prohibition of individuals from performing safety-sensitive functions for a violation of hazardous materials transportation law.

After opportunity for hearing, the Secretary may issue an order prohibiting an employee from performing safety-sensitive functions if the employee violates a hazardous materials requirement and is shown to make the individual unfit for such service.¹³

¹³ On May 19, 2009, FRA issued a final rule prohibiting an employee from performing a safety-sensitive function if he/she violates a hazardous materials law or regulation. Such prohibition remains in effect for a specific period of time., or until specified conditions are met.

Sec. 306. Railroad radio monitoring authority.

This section allows the Secretary to monitor and record railroad radio communications and, with certain exceptions, to use those communications and the information they contain, for the purpose of accident prevention, including, but not limited to, accident investigation. This applies only to communications authorized for railroad use by the FCC and primarily used by the railroads for railroad operations. Information obtained through such monitoring and recording would not be admissible into evidence in any administrative or judicial proceeding, with two exceptions. First, the provision would not bar admission in evidence of the intercepted communication in a judicial proceeding for the prosecution of a felony under Federal or State law. Second, the provision would not bar admission of the intercepted communication for impeachment purposes in seven enumerated types of railroad safety proceedings. In addition, the information is not subject to publication or disclosure, or search or review in connection therewith, under section 552 of title 5.

Sec. 307. Update of Federal Railroad Administration’s website.

The FRA shall update its public website to better facilitate the public’s ability to find current information. The website shall provide a mechanism for the public to submit written reports of potential violations of the rail safety laws and regs.

Sec. 308. Emergency waivers.

The Secretary may waive a regulation in emergency situations without first providing an opportunity for public comment. The opportunity shall be subsequently provided. Any such order shall not exceed 60 days.

Sec. 309. Enforcement by the Attorney General.

This section clarifies that the Attorney General may bring a civil action in a district court of the United States to: (1) enjoin a violation of, or to enforce, this part or a railroad safety regulation prescribed or order issued by the Secretary; (2) collect a civil penalty imposed or an amount agreed on in compromise under section 21301 (general railroad safety violations), 21302 (accidents and incident violations), or 21303 (hours-of-service violations) of this title; and (3) to enforce a subpoena, request for admissions, request for production of documents or other tangible things, or request for testimony by deposition.

Sec. 310. Criminal penalties.

This section increases the maximum penalty for failing to file an accident or incident report on time from the current \$500 to \$2,500, and the maximum penalty for each day after the due date from \$500 to \$2,500.

TITLE IV—RAILROAD SAFETY ENHANCEMENTS

Sec. 401. Minimum training standards and plans.¹⁴

Not later than 1 year, the Secretary shall establish minimum training standards for each class and craft of safety-related rail employees(as defined in 49 U.S.C. 20102) and equivalent rail

¹⁴ FRA has issued a training rule, but it will not go into effect until 2020 (2021 for small railroads).

contractor and subcontractor employees in order to qualify or otherwise document the proficiency of each such employee in each craft or class regarding their ability and knowledge to comply with the safety laws and regulations and railroad carrier rules and procedures. The carriers, contractors and subcontractors are required to develop and submit for approval training and qualification plans to the Secretary in order to ensure proper training in a timely manner; and there shall be a minimum training curriculum, and ongoing training criteria, testing, and skills evaluation. The Secretary shall review and approve the plans under the approval process required for engineer certification.

Sec. 402. Certification of certain crafts or classes of employees.¹⁵

This section requires the Secretary, within 18 months, to prescribe regulations to establish a program requiring the certification of train conductors. The section ensures that conductors on passenger trains are trained in security, first aid, and emergency preparedness.

This section also requires the Secretary within 6 months to issue a report about whether there should be certification of various classes and crafts of other employees, or contractor or subcontractor employees, including car repair and maintenance employees, on-board service workers, rail welders, dispatchers, signal repair and maintenance employees, or any other craft or class of employees the Secretary determines appropriate to improve safety. The Secretary is authorized to issue regs. requiring certification of any craft of employees.

Sec. 403. Track inspection time study.

Within 2 years the Secretary shall complete a study to determine whether(a) intervals of track inspections for each class of track should be amended;(b) track remedial action requirements should be amended; (c)different track inspection and repair priorities or methods should be required;(d) the speed at which track inspection vehicles operate and the scope of the territory they generally cover for proper inspection, and whether this should be regulated. Based on the results of the study, the Secretary shall issue regulations for changes in the regs.¹⁶

Sec. 404. Study of methods to improve or correct station platform gaps.

Within 2 years, the Secretary shall complete a study to determine the most safe, efficient and cost-effective way to improve the safety of rail passenger station platforms gaps in order to comply with the Americans With Disabilities Act, and to improve safety.¹⁷

Sec. 405. Locomotive cab studies.

The Secretary, within 1 year, shall complete a study on the prevalence of personal electronic devices(such as cell phones, etc.). Based on the conclusions reached, the Secretary may prohibit the use of such personal electronic devices. This section also authorizes the Secretary to study the locomotive cab environment.

Within 6 months after the above studies, the Secretary shall submit a report to Congress. Based on the conclusions of the study, the Secretary may prohibit the use of personal electronic devices, such as cell phones, etc.

¹⁵ FRA issued a final rule on Nov. 9, 2011; 76 Fed. Reg. 69841.

¹⁶ FRA issued a final rule covering concrete ties on Apr.1, 2011, and amended on Sept. 9, 2011. 63 Fed. Reg. 18073.

¹⁷ FRA issued its report on Jan. 10, 2011.

Sec. 406. Development and use of rail safety technology.

Not later than 1 year, the Secretary shall prescribe regulations governing rail safety technology in dark territory.¹⁸

Sec. 407. Unified treatment of families of railroad carriers.

Upon petition by a group of commonly controlled railroads that the Secretary determines is operating as a single, integrated rail system, the Secretary may by order treat the group of carriers as a single railroad carrier under the rail safety provisions.

Sec. 408. Study of repeal of Conrail provision.¹⁹

This section requires the Secretary, within one year, to study the impacts of repealing 45 U.S.C. §797j, which prohibits a State from adopting or continuing in effect any law, rule, regulation, order, or standard with respect to any railroad in the region where Conrail operates. Within 6 months thereafter, the Secretary shall report on the findings and make recommendations.

Sec. 409. Limitations on non-Federal alcohol and drug testing by railroad carriers.

Any non-federal alcohol and drug testing by a railroad shall be conducted using a scientifically recognized method of testing capable of determining the presence of the specific analyte at a level above the cut-off level established by the railroad. The railroad must provide a redress process for an employee to petition for, and receive, a hearing to review the specimen results, and a dispute or grievance shall be resolved under the provisions of the Railway Labor Act.

Sec. 410. Critical incident stress plan.

Each Class I railroad, each intercity passenger railroad, and each commuter railroad, shall develop and submit for approval to the Secretary a critical incident stress plan that provides for debriefing, counseling, guidance and other support services to an employee affected by critical incident. Additionally, the plan shall allow for the immediate relief of service for the balance of the duty tour of an employee involved in a critical incident, following any actions necessary for the safety of persons and contemporaneous documentation of the incident; and, upon an employee's request, relieving an employee who witnessed a critical incident following any actions necessary for the safety of persons and contemporaneous documentation of the incident; and providing such leave from duties as may be necessary and reasonable to receive preventive services, treatment, or both, related to the incident.

The Secretary shall initiate a rulemaking within 30 days to define the term "critical incident".

Sec. 411. Railroad carrier employee exposure to radiation study.

The Secretary, in consultation with the Secretary of Energy, the Secretary of Labor, the Administrator of the EPA and the Chairman of the Nuclear Regulatory Commission, as appropriate, shall conduct a study of employee exposure to radiation and issue a report to Congress, within 18 months after the study is completed. The study may include an analysis of the potential application of "as low as reasonably achievable" principles from exposure to employees with an emphasis on the need for special protection during the first trimester of

¹⁸ FRA has not issued a regulation covering dark territory.

¹⁹ FRA issued its report in 2011.

pregnancy or who are undergoing or have undergone radiation therapy; the feasibility of requiring real time dosimetry monitoring; the feasibility of requiring radiation exposure monitoring in fixed locations; and a review of the effectiveness of DOT's packaging program.²⁰

Sec. 412. Alcohol and controlled substance testing for maintenance-of-way employees.

This section places the maintenance-of-way employees under the federal alcohol and drug testing program within 2 years.

Sec. 413. Emergency escape breathing apparatus.²¹

Not later than 18 months, the Secretary shall prescribe regs. that require railroads to provide emergency escape breathing apparatus with respiratory protection for all crewmembers in locomotive cabs carrying materials that would pose an inhalation hazard, and to provide crewmembers with proper training for using the apparatus.

Sec. 414. Tunnel information.

Not later than 120 days, each railroad shall, with respect to each of its tunnels which are longer than 1000 feet and located under a city with a population of more than 400,000, or carry 5 or more scheduled passenger trains per day, or 500 or more carloads of poison or toxic by inhalation haz. mat., maintain for at least 2 years documentation of structural inspection and maintenance activities for such tunnels. Upon request, the railroad shall provide periodic briefings to local jurisdictions, including updates whenever a repair or rehab. project substantially alters egress and ingress.

Sec. 415. Museum locomotive study.

This section requires the Secretary to conduct a study of its regulations relating to safety inspections of diesel-electric locomotives and equipment operated by museums, historical societies, and tourist or scenic railroads, and the safety consequences of less frequent inspections of such diesel-electric locomotives and equipment.

Sec. 416. Safety inspections in Mexico.

Mechanical and brake inspections of rail cars performed in Mexico shall not be treated as satisfying U.S. requirements unless the Secretary certifies that (1) such inspections are being performed under requirements equivalent to those applicable in the U.S; (2) the inspections are being performed by employees receiving comparable classroom and on the job training as in the U.S.;(3) inspection records are required to be available to crewmembers on board the train, and are kept in both English and Spanish, and such records are available to the FRA for review; and (4) the FRA is permitted to perform onsite inspections for the purpose of assuring compliance.

No hazardous material inspections performed in Mexico shall be treated as having satisfied the U.S. rail safety requirements.

²⁰ FRA issued its report on Jan. 27, 2011.

²¹ FRA did not issue a regulation as mandated by Congress. Instead, it issued a Guidance Document.

Sec. 417. Railroad bridge safety assurance.

Not later than 12 months, the FRA shall implement regulations requiring owners of track carried on one or more railroad bridges to adopt safety practices to prevent the deterioration of railroad bridges and reduce the risk of human casualties, environmental damage, and disruption the Nation's transportation system that would result from a catastrophic bridge failure. The provision sets forth a number of criteria that the regulations shall contain to assure the track owner meets the requirements of the law.²²

Sec. 418. Railroad safety infrastructure improvement grants.

The Secretary shall establish a grant program for safety improvements to railroad infrastructure. The grants shall not exceed 50% of the total cost of each project. \$5 million is authorized for each fiscal year for 2010-2013.

Sec. 419. Prompt medical attention.

A railroad or person shall not deny, delay, or interfere with the medical or first aid treatment of an injured employee. If transportation to a hospital is requested by an injured employee, the railroad shall promptly arrange to have the injured employee transported to the nearest medically appropriate hospital. A railroad shall not discipline, or threaten discipline to an employee seeking medical treatment, or for following orders or a treatment plan of a treating physician. Provided, however, it will not be a violation if the refusal by the railroad is pursuant to the FRA's medical standards regs. or a carrier's medical standards for fitness for duty.

Note: This section is enforceable under the whistleblower provisions. Therefore, the employee, in addition recovering back pay and reinstatement, can recover compensatory damages, including attorney's fees, plus punitive damages up to \$250,000.

Sec. 420. Employee sleeping quarters.

. Railroads shall provide sleeping quarters that have indoor toilet facilities, potable water and other features to protect the health of employees. The railroads shall retrofit all camp cars to comply with this section by December 31, 2009. Within 1 year the Secretary, in consultation with the Secretary of Labor, shall be required to issue regs. governing the use of camp cars. The Secretary would have the authority to prohibit the use of camp cars if necessary to protect the health and safety of the employees.

TITLE V—RAIL PASSENGER DISASTER FAMILY ASSISTANCE

Sec. 501. Assistance by National Transportation Safety Board to families of passengers involved in rail passenger accidents.

This requires the Chairman of the NTSB, as soon as practicable after being notified of a rail passenger accident involving a major loss of life, to: (1) designate and publicize the name and phone number of an NTSB employee who shall be a director of family support services responsible for acting as a point of contact within the Federal Government for the families of passengers involved in a rail passenger accident, and a liaison between the rail passenger carrier and the families; and (2) designate an independent nonprofit organization (with experience in

²² FRA issued a final rule on July 15, 2010 to require owners of railroad bridges to implement programs for inspection, maintenance, and management of the structures. 75 Fed. Reg. 41282.

disasters and post-trauma communication with families) which shall have primary responsibility for coordinating the emotional care and support of the families of passengers involved in such accidents.

There shall be no unsolicited communication concerning a potential lawsuit for damages by any attorney (including any associate, agent, employee, or other representative of an attorney) or any potential party to the litigation to an individual (other than an employee of the railroad) injured in the accident, or to a relative of an individual involved in an accident, before the 45th day following the date of the accident.

Sec. 502. Rail passenger carrier plan to assist families of passengers involved in rail passenger accidents.

Not later than 6 months after enactment, each rail passenger carrier shall submit to the Secretary of Transportation and the Chairman of the NTSB a plan for addressing the needs of families of passengers involved in a rail passenger accident and resulting in a major loss of life.

Sec. 503. Establishment of task force.

The Secretary shall establish a Task Force to develop a model plan to assist railroads in responding to accidents, timeliness on methods to improve timeliness of notification to families of passengers involved in accidents, and methods to assist emergency service personnel to have accurate accounts of those involved in accidents.

TITLE VI—CLARIFICATION OF FEDERAL JURISDICTION OVER SOLID WASTE FACILITIES

Sec. 601. Short title.

This title shall be cited as the "Clean Railroads Act of 2008".

Sec. 602. Clarification of general jurisdiction over solid waste transfer facilities.

Regarding solid waste transfer facilities, this section restricts the STB's jurisdiction over mass transportation provided by a local government authority, or a solid waste transfer facility.

Sec. 603. Regulation of solid waste rail transfer facilities.

This section spells out in detail the regulation of solid waste transfer facilities, requiring compliance with all State and Federal requirements to the same extent as any similar solid waste management facility. This section also sets out permit requirements. A railroad customer cannot demand solid waste rail transfer service from a railroad at such a facility if the facility does not possess the necessary Federal land-use exemption and State permits at the location.

Sec. 604. Solid waste rail transfer facility land-use exemption authority.

This section gives the STB authority to issue land-use exemptions and sets forth procedures and considerations the STB shall follow.

Sec. 605. Effect on other statutes and authorities.

Nothing in this title is intended to affect the traditional police powers of a State to require a rail carrier to comply with State and local environmental, public health, and public safety standards that are not unreasonably burdensome to interstate commerce and do not discriminate against rail carriers.

C. Fixing America’s Surface Transportation Act(FAST Act)

(Only the rail safety provisions of the FAST Act are set forth below.)

Subtitle C—Safe Transportation of Flammable Liquids by Rail

Sec. 7301. Community safety grants.

Sec. 7302. Real-time emergency response information.

Sec. 7303. Emergency response.

Sec. 7304. Phase-out of all tank cars used to transport Class 3 flammable liquids.

Sec. 7305. Thermal blankets.

Sec. 7306. Minimum requirements for top fittings protection for class DOT–117R tank cars.

Sec. 7307. Rulemaking on oil spill response plans.

Sec. 7308. Modification reporting.

Sec. 7309. Report on crude oil characteristics research study.

Sec. 7310. Hazardous materials by rail liability study.

Sec. 7311. Study and testing of electronically controlled pneumatic brakes.

Subtitle D—Safety

Sec. 11401. Highway-rail grade crossing safety.

Sec. 11402. Private highway-rail grade crossings.

Sec. 11403. Study on use of locomotive horns at highway-rail grade crossings.

Sec. 11404. Positive train control at grade crossings effectiveness study.

Sec. 11405. Bridge inspection reports.

Sec. 11406. Speed limit action plans.

Sec. 11407. Alerters.

Sec. 11408. Signal protection.

Sec. 11409. Commuter rail track inspections.

Sec. 11410. Post-accident assessment.

Sec. 11411. Recording devices.

Sec. 11412. Railroad police officers.

Sec. 11413. Repair and replacement of damaged track inspection equipment.

Sec. 11414. Report on vertical track deflection.

Sec. 11415. Rail passenger liability

Subtitle C—Safe Transportation of Flammable Liquids by Rail

SEC. 7301. COMMUNITY SAFETY GRANTS.

Section 5107 of title 49, United States Code, is amended by adding at the end the following:

“(i) COMMUNITY SAFETY GRANTS

.—The Secretary shall establish a competitive program for making grants to nonprofit organizations for—

“(1) conducting national outreach and training programs to assist communities in preparing for and responding to accidents and incidents involving the transportation of hazardous materials, including Class 3 flammable liquids by rail; and

“(2) training State and local personnel responsible for enforcing the safe transportation of hazardous materials, including Class 3 flammable liquids.”.

SEC. 7302. REAL-TIME EMERGENCY RESPONSE INFORMATION.

(a) IN GENERAL

Not later than 1 year after the date of enactment of this Act, the Secretary, in consultation with appropriate Federal agencies, shall issue regulations that—

(1) require a Class I railroad transporting hazardous materials—

(A) to generate accurate, real-time, and electronic train consist information, including—

(i) the identity, quantity, and location of hazardous materials on a train;

(ii) the point of origin and destination of the train;

(iii) any emergency response information or resources required by the Secretary;

and

(iv) an emergency response point of contact designated by the Class I railroad; and

(B) to enter into a memorandum of understanding with each applicable fusion center to provide the fusion center with secure and confidential access to the electronic train consist information described in subparagraph (A) for each train transporting hazardous materials in the jurisdiction of the fusion center;

(2) require each applicable fusion center to provide the electronic train consist information described in paragraph (1)(A) to State and local first responders, emergency response officials, and law enforcement personnel that are involved in the response to or investigation of an accident, incident, or public health or safety emergency involving the rail transportation of hazardous materials and that request such electronic train consist information;

(3) require each Class I railroad to provide advanced notification and information on high-hazard flammable trains to each State emergency response commission, consistent with the notification content requirements in Emergency Order Docket No. DOT–OST–2014–0067, including—

(A) a reasonable estimate of the number of implicated trains that are expected to travel, per week, through each county within the applicable State;

(B) updates to such estimate prior to making any material changes to any volumes or frequencies of trains traveling through a county;

(C) identification and a description of the Class 3 flammable liquid being transported on such trains;

(D) applicable emergency response information, as required by regulation;

(E) identification of the routes over which such liquid will be transported; and

(F) a point of contact at the Class I railroad responsible for serving as the point of contact for State emergency response centers and local emergency responders related to the Class I railroad’s transportation of such liquid.

(4) require each applicable State emergency response commission to provide to a political subdivision of a State, or public agency responsible for emergency response or law enforcement, upon request of the political subdivision or public agency, the information the commission receives from a Class I railroad pursuant to paragraph (3), including, for any such political subdivision or public agency responsible for emergency response or law enforcement that makes an initial request for such information, any updates received by the State emergency response commission.

(5) prohibit any Class I railroad, employee, or agent from withholding, or causing to be withheld, the train consist information from first responders, emergency response officials, and law enforcement personnel described in paragraph (2) in the event of an incident, accident, or public health or safety emergency involving the rail transportation of hazardous materials;

(6) establish security and confidentiality protections, including protections from the public release of proprietary information or security-sensitive information, to prevent the release to unauthorized persons any electronic train consist information or advanced notification or information provided by Class I railroads under this section; and

(7) allow each Class I railroad to enter into a memorandum of understanding with any Class II railroad or Class III railroad that operates trains over the Class I railroad's line to incorporate the Class II railroad or Class III railroad's train consist information within the existing framework described in paragraph (1).

(b) DEFINITIONS

In this section:

(1) APPLICABLE FUSION CENTER

The term "applicable fusion center" means a fusion center with responsibility for a geographic area in which a Class I railroad operates.

(2) CLASS I RAILROAD; CLASS II RAILROAD;

CLASS III RAILROAD

The terms "Class I railroad", "Class II railroad", and "Class III railroad" have the meaning given those terms in section 20102 of title 49, United States Code.

(3) CLASS 3 FLAMMABLE LIQUID

The term "Class 3 flammable liquid" has the meaning given the term flammable liquid in section 173.120(a) of title 49, Code of Federal Regulations.

(4) FUSION CENTER

The term "fusion center" has the meaning given the term in section 210A(j) of the Homeland Security Act of 2002 (6 U.S.C. 124h(j)).

(5) HAZARDOUS MATERIAL

The term "hazardous material" means a substance or material the Secretary designates as hazardous under section 5103 of title 49, United States Code.

(6) HIGH-HAZARD FLAMMABLE TRAIN

The term "high-hazard flammable train" means a single train transporting 20 or more tank cars loaded with a Class 3 flammable liquid in a continuous block or a single train transporting 35 or more tank cars loaded with a Class 3 flammable liquid throughout the train consist.

(7) TRAIN CONSIST

The term "train consist" includes, with regard to a specific train, the number of rail cars and the commodity transported by each rail car.

(c) SAVINGS CLAUSE

Nothing in this section may be construed to prohibit a Class I railroad from voluntarily entering into a memorandum of understanding, as described in subsection (a)(1)(B), with a State emergency response commission or an entity representing or including first responders, emergency response officials, and law enforcement personnel.

SEC. 7303. EMERGENCY RESPONSE.

(a) IN GENERAL

The Comptroller General of the United States shall conduct a study to determine whether limitations or weaknesses exist in the emergency response information carried by train crews transporting hazardous materials.

(b) CONTENTS

In conducting the study under subsection (a), the Comptroller General shall evaluate the differences between the emergency response information carried by train crews transporting hazardous materials and the emergency response guidance provided in the Emergency Response Guidebook issued by the Department of Transportation.

(c) REPORT

Not later than 1 year after the date of enactment of this Act, the Comptroller General shall transmit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report of the findings of the study under sub-section (a) and any recommendations for legislative action.

SEC. 7304. PHASE-OUT OF ALL TANK CARS USED TO TRANSPORT CLASS 3 FLAMMABLE LIQUIDS.

(a) IN GENERAL

Except as provided for in subsection (b), beginning on the date of enactment of this Act, all DOT-111 specification railroad tank cars used to transport Class 3 flammable liquids shall meet the DOT-117, DOT-117P, or DOT-117R specifications in part 179 of title 49, Code of Federal Regulations, regardless of train composition.

(b) PHASE-OUT SCHEDULE

Certain tank cars not meeting DOT-117, DOT-117P, or DOT-117R specifications on the date of enactment of this Act may be used, regardless of train composition, until the following end-dates:

(1) For transport of unrefined petroleum products in Class 3 flammable service, including crude oil—

(A) January 1, 2018, for non-jacketed DOT-111 tank cars;

(B) March 1, 2018, for jacketed DOT-111 tank cars;

(C) April 1, 2020, for non-jacketed CPC-1232 tank cars; and

(D) May 1, 2025, for jacketed CPC-1232 tank cars.

(2) For transport of ethanol—

(A) May 1, 2023, for non-jacketed and jacketed DOT-111 tank cars;

(B) July 1, 2023, for non-jacketed CPC–1232 tank cars;
and

(C) May 1, 2025, for jacketed CPC–1232 tank cars.

(3) For transport of Class 3 flammable liquids in Packing Group I, other than Class 3 flammable liquids specified in paragraphs (1) and (2), May 1, 2025.

(4) For transport of Class 3 flammable liquids in Packing Groups II and III, other than Class 3 flammable liquids specified in paragraphs (1) and (2), May 1, 2029.

(c) RETROFITTING SHOP CAPACITY

The Secretary may extend the deadlines established under paragraphs (3) and (4) of subsection (b) for a period not to exceed 2 years if the Secretary determines that insufficient retrofitting shop capacity will prevent the phase-out of tank cars not meeting the DOT–117, DOT–117P, or DOT–117R specifications by the deadlines set forth in such paragraphs.

(d) CONFORMING REGULATORY AMENDMENTS

(1) IN GENERAL

Immediately after the date of enactment of this section, the Secretary—

(A) shall remove or revise the date-specific deadlines in any applicable regulations or orders to the extent necessary to conform with the requirements of this section;
and

(B) may not enforce any such date-specific deadlines or requirements that are inconsistent with the requirements of this section.

(2) IMPLEMENTATION

Nothing in this section shall be construed to require the Secretary to issue regulations, except as required under paragraph (1), to implement this section.

(e) SAVINGS CLAUSE

Nothing in this section shall be construed to prohibit the Secretary from implementing the final rule issued on May 08, 2015, entitled “Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains” (80 Fed. Reg. 26643), other than the provisions of the final rule that are inconsistent with this section.

(f) CLASS 3 FLAMMABLE LIQUID DEFINED

In this section, the term “Class 3 flammable liquid” has the meaning given the term flammable liquid in section 173.120(a) of title 49, Code of Federal Regulations.

SEC. 7305. THERMAL BLANKETS.

(a) REQUIREMENTS

Not later than 180 days after the date of enactment of this Act, the Secretary shall issue such regulations as are necessary to require that each tank car built to meet the DOT–117 specification and each non-jacketed tank car modified to meet the DOT–117R specification be equipped with an insulating blanket with at least 1/2-inch-thick material that has been approved by the Secretary pursuant to section 179.18(c) of title 49, Code of Federal Regulations.

(b) SAVINGS CLAUSE

Nothing in this section shall prohibit the Secretary from approving new or alternative technologies or materials as they become available that provide a level of safety at least equivalent to the level of safety provided for under subsection (a).

SEC. 7306. MINIMUM REQUIREMENTS FOR TOP FITTINGS PROTECTION FOR CLASS DOT-117R TANK CARS.

(a) PROTECTIVE HOUSING

Except as provided in subsections

(b) and (c), top fittings on DOT specification 117R tank cars shall be located inside a protective housing not less than 1/2-inch in thickness and constructed of a material having a tensile strength not less than 65 kilopound per square inch and conform to the following specifications:

(1) The protective housing shall be as tall as the tallest valve or fitting involved and the height of a valve or fitting within the protective housing must be kept to the minimum compatible with their proper operation.

(2) The protective housing or cover may not reduce the flow capacity of the pressure relief device below the minimum required.

(3) The protective housing shall provide a means of drainage with a minimum flow area equivalent to six 1-inch diameter holes.

(4) When connected to the nozzle or fittings cover plate and subject to a horizontal force applied perpendicular to and uniformly over the projected plane of the protective housing, the tensile connection strength of the protective housing shall be designed to be—

(A) no greater than 70 percent of the nozzle to tank tensile connection strength;

(B) no greater than 70 percent of the cover plate to nozzle connection strength; and

(C) no less than either 40 percent of the nozzle to tank tensile connection strength or the shear strength of twenty 1/2-inch bolts.

(b) PRESSURE RELIEF DEVICES

(1) The pressure relief device shall be located inside the protective housing, unless space does not permit. If multiple pressure relief devices are equipped, no more than 1 may be located outside of a protective housing.

(2) The highest point on any pressure relief device located outside of a protective housing may not be more than 12 inches above the tank jacket.

(3) The highest point on the closure of any unused pressure relief device nozzle may not be more than 6 inches above the tank jacket.

(c) ALTERNATIVE PROTECTION

As an alternative to the protective housing requirements in subsection (a) of this section, the tank car may be equipped with a system that prevents the release of product from any top fitting in the case of an incident where any top fitting would be sheared off.

(d) IMPLEMENTATION

Nothing in this section shall be construed to require the Secretary to issue regulations to implement this section.

(e) SAVINGS CLAUSE

Nothing in this section shall prohibit the Secretary from approving new technologies, methods or requirements that provide a level of safety equivalent to or greater than the level of safety provided for in this section.

SEC. 7307. RULEMAKING ON OIL SPILL RESPONSE PLANS.

The Secretary shall, not later than 30 days after the date of enactment of this Act and every 90 days thereafter until a final rule based on the advanced notice of proposed rulemaking issued on August 1, 2014, entitled ‘‘Hazardous Materials: Oil Spill Response Plans for High-Hazard Flammable Trains’’ (79 Fed. Reg. 45079) is promulgated, notify the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate in writing of—

- (1) the status of such rulemaking;
- (2) any reasons why such final rule has not been implemented;
- (3) a plan for completing such final rule as soon as practicable; and
- (4) the estimated date of completion of such final rule.

SEC. 7308. MODIFICATION REPORTING.

(a) IN GENERAL

Not later than 1 year after the date of enactment of this Act, the Secretary shall implement a reporting requirement to monitor industry-wide progress toward modifying rail tank cars used to transport Class 3 flammable liquids by the applicable deadlines established in section 7304.

(b) TANK CAR DATA

The Secretary shall collect data from shippers and rail tank car owners on—

- (1) the total number of tank cars modified to meet the DOT–117R specification, or equivalent, specifying—
 - (A) the type or specification of each tank car before it was modified, including non-jacketed DOT–111, jacketed DOT–111, non-jacketed DOT–111 meeting the CPC–1232 standard, or jacketed DOT–111 meeting the CPC–1232 standard; and
 - (B) the identification number of each Class 3 flammable liquid carried by each tank car in the past year;
- (2) the total number of tank cars built to meet the DOT– 117 specification, or equivalent; and
- (3) the total number of tank cars used or likely to be used to transport Class 3 flammable liquids that have not been modified, specifying—
 - (A) the type or specification of each tank car not modified, including the non-jacketed DOT–111, jacketed DOT– 111, non-jacketed DOT–111 meeting the CPC–1232 standard, or jacketed DOT–111 meeting the CPC–1232 standard; and
 - (B) the identification number of each Class 3 flammable liquid carried by each tank car in the past year.

(c) TANK CAR SHOP DATA

The Secretary shall conduct a survey of tank car facilities modifying tank cars to the DOT– 117R specification, or equivalent, or building new tank cars to the DOT–117 specification, or equivalent, to generate statistically- valid estimates of the anticipated number of tank cars those facilities expect to modify to DOT–117R specification, or equivalent, or build to the DOT–117 specification, or equivalent.

(d) FREQUENCY

The Secretary shall collect the data under subsection (b) and conduct the survey under subsection (c) annually until May 1, 2029.

(e) INFORMATION PROTECTIONS

(1) IN GENERAL

The Secretary shall only report data in industry-wide totals and shall treat company-specific information as confidential business information.

(2) LEVEL OF CONFIDENTIALITY

The Secretary shall ensure the data collected under subsection (b) and the survey data under subsection (c) have the same level of confidentiality as required by the Confidential Information Protection and Statistical Efficiency Act of 2002 (44 U.S.C. 3501 note), as administered by the Bureau of Transportation Statistics.

(3) DESIGNEE

The Secretary may—

(A) designate the Director of the Bureau of Transportation Statistics to collect data under subsection (b) and the survey data under subsection (c); and

(B) direct the Director to ensure the confidentiality of company-specific information to the maximum extent permitted by law.

(f) REPORT

Each year, not later than 60 days after the date that both the collection of the data under subsection (b) and the survey under subsection (c) are complete, the Secretary shall submit a written report on the aggregate results, without company-specific information, to—

(1) the Committee on Commerce, Science, and Transportation of the Senate; and

(2) the Committee on Transportation and Infrastructure

of the House of Representatives.

(g) DEFINITION OF CLASS 3 FLAMMABLE LIQUID

In this section, the term “Class 3 flammable liquid” has the meaning given the term flammable liquid in section 173.120 of title 49, Code of Federal Regulations.

SEC. 7309. REPORT ON CRUDE OIL CHARACTERISTICS RESEARCH STUDY.

Not later than 180 days after the research completion of the comprehensive Crude Oil Characteristics Research Sampling, Analysis, and Experiment Plan study at Sandia National Laboratories, the Secretary of Energy, in cooperation with the Secretary of Transportation, shall submit a report to the Committee on Commerce, Science, and Transportation of the Senate, the Committee on Energy and Natural Resources of the Senate, the Committee on Transportation and

Infrastructure of the House of Representatives, and the Committee on Energy and Commerce of the House of Representatives that contains—

(1) the results of the comprehensive Crude Oil Characteristics Research Sampling, Analysis, and Experiment Plan study; and

(2) recommendations, based on the findings of the study, for—

(A) regulations by the Secretary of Transportation or the Secretary of Energy to improve the safe transport of crude oil; and

(B) legislation to improve the safe transport of crude oil.

SEC. 7310. HAZARDOUS MATERIALS BY RAIL LIABILITY STUDY.

(a) IN GENERAL

Not later than 120 days after the date of enactment of this Act, the Secretary shall initiate a study on the levels and structure of insurance for railroad carriers transporting hazardous materials.

(b) CONTENTS

In conducting the study under subsection (a), the Secretary shall evaluate—

(1) the level and structure of insurance, including self- insurance, available in the private market against the full liability potential for damages arising from an accident or incident involving a train transporting hazardous materials;

(2) the level and structure of insurance that would be necessary and appropriate—

(A) to efficiently allocate risk and financial responsibility for claims; and

(B) to ensure that a railroad carrier transporting hazardous materials can continue to operate despite the risk of an accident or incident; and

(3) the potential applicability, for a train transporting hazardous materials, of an alternative insurance model, including—

(A) a secondary liability coverage pool or pools to supplement commercial insurance; and

(B) other models administered by the Federal Government.

(c) REPORT

Not later than 1 year after the date the study under subsection (a) is initiated, the Secretary shall submit a report containing the results of the study and recommendations for addressing liability issues with rail transportation of hazardous materials to—

(1) the Committee on Commerce, Science, and Transportation of the Senate; and

(2) the Committee on Transportation and Infrastructure of the House of Representatives.

(d) DEFINITIONS

In this section:

(1) HAZARDOUS MATERIAL

The term “hazardous material” means a substance or material the Secretary designates as hazardous under section 5103 of title 49, United States Code.

(2) RAILROAD CARRIER

The term “railroad carrier” has the meaning given the term in section 20102 of title 49, United States Code.

SEC. 7311. STUDY AND TESTING OF ELECTRONICALLY CONTROLLED PNEUMATIC BRAKES.

(a) GOVERNMENT ACCOUNTABILITY OFFICE STUDY

(1) IN GENERAL

The Comptroller General of the United States shall conduct an independent evaluation of ECP brake systems, pilot program data, and the Department’s research and analysis on the costs, benefits, and effects of ECP brake systems.

(2) STUDY ELEMENTS

In completing the independent evaluation under paragraph (1), the Comptroller General shall examine the following issues related to ECP brake systems:

(A) Data and modeling results on safety benefits relative to conventional brakes and to other braking technologies or systems, such as distributed power and 2-way end-of-train devices.

(B) Data and modeling results on business benefits, including the effects of dynamic braking.

(C) Data on costs, including up-front capital costs and on-going maintenance costs.

(D) Analysis of potential operational benefits and challenges, including the effects of potential locomotive and car segregation, technical reliability issues, and network disruptions.

(E) Analysis of potential implementation challenges, including installation time, positive train control integration complexities, component availability issues, and tank car shop capabilities.

(F) Analysis of international experiences with the use of advanced braking technologies.

(3) REPORT

Not later than 18 months after the date of enactment of this Act, the Comptroller General shall transmit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the results of the independent evaluation under paragraph (1).

(b) EMERGENCY BRAKING APPLICATION TESTING

(1) IN GENERAL

The Secretary shall enter into an agree-ment with the National Academy of Sciences to—

(A) complete testing of ECP brake systems during emergency braking application, including more than 1 scenario involving the uncoupling of a train with 70 or more DOT–117 specification or DOT–117R specification tank cars; and

(B) transmit, not later than 18 months after the date of enactment of this Act, to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the results of the testing.

(2) INDEPENDENT EXPERTS

In completing the testing under paragraph (1)(A), the National Academy of Sciences may contract with 1 or more engineering or rail experts, as appropriate, that—

(A) are not railroad carriers, entities funded by such carriers, or entities directly impacted by the final rule issued on May 8, 2015, entitled “Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains” (80 Fed. Reg. 26643); and

(B) have relevant experience in conducting railroad safety technology tests or similar crash tests.

(3) TESTING FRAMEWORK

In completing the testing under paragraph (1), the National Academy of Sciences and each contractor described in paragraph (2) shall ensure that the testing objectively, accurately, and reliably measures the performance of ECP brake systems relative to other braking technologies or systems, such as distributed power and 2-way end-of-train devices, including differences in—

(A) the number of cars derailed;

(B) the number of cars punctured;

(C) the measures of in-train forces; and

(D) the stopping distance.

(4) FUNDING

The Secretary shall provide funding, as part of the agreement under paragraph (1), to the National Academy of Sciences for the testing required under this section—

(A) using sums made available to carry out sections 20108 and 5118 of title 49, United States Code; and

(B) to the extent funding under subparagraph (A) is insufficient or unavailable to fund the testing required under this section, using such sums as are necessary from the amounts appropriated to the Secretary, the Federal Railroad Administration, or the Pipeline and Hazardous Materials Safety Administration, or a combination thereof.

(5) EQUIPMENT

(A) RECEIPT

The National Academy of Sciences and each contractor described in paragraph (2) may receive or use rolling stock, track, and other equipment or infra-structure from a railroad carrier or other private entity for the purposes of conducting the testing required under this section.

(B) CONTRACTED USE

Notwithstanding paragraph (2)(A), to facilitate testing, the National Academy of Sciences and each contractor may contract with a railroad carrier or any other private entity for the use of such carrier or entity’s rolling stock, track, or other equipment and receive technical assistance on their use.

(c) EVIDENCE-BASED APPROACH

(1) ANALYSIS

The Secretary shall—

(A) not later than 90 days after the report date, fully incorporate the results of the evaluation under subsection (a) and the testing under subsection (b) and update the regulatory impact analysis of the final rule described in subsection (b)(2)(A) of the costs, benefits, and effects of the applicable ECP brake system requirements;

(B) as soon as practicable after completion of the updated analysis under subparagraph (A), solicit public comment in the Federal Register on the analysis for a period of not more than 30 days; and

(C) not later than 60 days after the end of the public comment period under subparagraph (B), post the final updated regulatory impact analysis on the Department of Transportation’s Internet Web site.

(2) DETERMINATION

Not later than 2 years after the date of enactment of this Act, the Secretary shall—

(A) determine, based on whether the final regulatory impact analysis described in paragraph (1)(C) demonstrates that the benefits, including safety benefits, of the applicable ECP brake system requirements exceed the costs of such requirements, whether the applicable ECP brake system requirements are justified;

(B) if the applicable ECP brake system requirements are justified, publish in the Federal Register the determination and reasons for such determination; and

(C) if the Secretary does not publish the determination under subparagraph (B), repeal the applicable ECP brake system requirements.

(3) SAVINGS CLAUSE

Nothing in this section shall be construed to prohibit the Secretary from implementing the final rule described under subsection (b)(2)(A) prior to the determination required under subsection (c)(2) of this section, or require the Secretary to promulgate a new rule on the provisions of such final rule, other than on the applicable ECP brake system requirements, if the Secretary does not determine that the applicable ECP brake system requirements are justified pursuant to this subsection.

(d) DEFINITIONS

In this section, the following definitions apply:

(1) APPLICABLE ECP BRAKE SYSTEM REQUIREMENTS

The term “applicable ECP brake system requirements” means sections 174.310(a)(3)(ii), 174.310(a)(3)(iii), 174.310(a)(5)(v), 179.202–10, 179.202–12(g), and 179.202–13(i) of title 49, Code of Federal Regulations, and any other regulation in effect on the date of enactment of this Act requiring the installation of ECP brakes or operation in ECP brake mode.

(2) CLASS 3 FLAMMABLE LIQUID

The term “Class 3 flammable liquid” has the meaning given the term flammable liquid in section 173.120(a) of title 49, Code of Federal Regulations.

(3) ECP

The term “ECP” means electronically controlled pneumatic when applied to a brake or brakes.

(4) ECP BRAKE MODE

The term “ECP brake mode” includes any operation of a rail car or an entire train using an ECP brake system.

(5) ECP BRAKE SYSTEM

(A) IN GENERAL

The term “ECP brake system” means a train power braking system actuated by compressed air and controlled by electronic signals from the locomotive or an ECP–EOT to the cars in the consist for service and emergency applications in which the brake pipe is used to provide a constant supply of compressed air to the reservoirs on each car but does not convey braking signals to the car.

(B) INCLUSIONS

The term “ECP brake system” includes dual mode and stand-alone ECP brake systems.

(6) RAILROAD CARRIER

The term “railroad carrier” has the meaning given the term in section 20102 of title 49, United States Code.

(7) REPORT DATE

The term “report date” means the date that the reports under subsections (a)(3) and (b)(1)(B) are required to be transmitted pursuant to those subsections.

Subtitle D—Safety

SEC. 11401. HIGHWAY-RAIL GRADE CROSSING SAFETY.

(a) MODEL STATE HIGHWAY-RAIL GRADE CROSSING ACTION PLAN

(1) IN GENERAL

Not later than 1 year after the date of enactment of this Act, the Administrator of the Federal Railroad Administration shall develop a model of a State-specific highway-rail grade crossing action plan and distribute the plan to each State.

(2) CONTENTS

The plan developed under paragraph (1) shall include—

(A) methodologies, tools, and data sources for identifying and evaluating highway-rail grade crossing safety risks, including the public safety risks posed by blocked highway-rail grade crossings due to idling trains;

(B) best practices to reduce the risk of highway-rail grade crossing accidents or incidents and to alleviate the blockage of highway-rail grade crossings due to idling trains, including strategies for—

(i) education, including model stakeholder engagement plans or tools;

(ii) engineering, including the benefits and costs of different designs and technologies used to mitigate highway-rail grade crossing safety risks; and

(iii) enforcement, including the strengths and weaknesses associated with different enforcement methods;

(C) for each State, a customized list and data set of the highway-rail grade crossing accidents or incidents in that State over the past 3 years, including the location, number of deaths, and number of injuries for each accident or incident, and a list of highway-rail grade crossings in that State that have experienced multiple accidents or incidents over the past 3 years; and

(D) contact information of a Department of Transportation safety official available to assist the State in adapting the model plan to satisfy the requirements under subsection (b).

(b) STATE HIGHWAY-RAIL GRADE CROSSING ACTION PLANS

(1) REQUIREMENTS

Not later than 18 months after the Administrator develops and distributes the model plan under subsection (a), the Administrator shall promulgate a rule that requires—

(A) each State, except the 10 States identified under section 202 of the Rail Safety Improvement Act of 2008 (49 U.S.C. 22501 note), to develop and implement a State highway-rail grade crossing action plan; and

(B) each State identified under section 202 of the Rail Safety Improvement Act of 2008 (49 U.S.C. 22501 note) to—

(i) update the State action plan under such section;

and

(ii) submit to the Administrator—

(I) the updated State action plan; and

(II) a report describing what the State did to implement its previous State action plan under such section and how the State will continue to reduce highway-rail grade crossing safety risks.

(2) CONTENTS

Each State plan required under this sub-section shall—

(A) identify highway-rail grade crossings that have experienced recent highway-rail grade crossing accidents or incidents or multiple highway-rail grade crossing accidents or incidents, or are at high-risk for accidents or incidents;

(B) identify specific strategies for improving safety at highway-rail grade crossings, including highway-rail grade crossing closures or grade separations; and

(C) designate a State official responsible for managing implementation of the State action plan under subparagraph (A) or (B) of paragraph (1), as applicable.

(3) ASSISTANCE

The Administrator shall provide assistance to each State in developing and carrying out, as appropriate, the State action plan under this subsection.

(4) PUBLIC AVAILABILITY

Each State shall submit a final State plan under this subsection to the Administrator for publication. The Administrator shall make each approved State plan publicly available on an official Internet Web site.

(5) CONDITIONS

The Secretary may condition the awarding of a grant to a State under chapter 244 of title 49, United States Code, on that State submitting an acceptable State action plan under this subsection.

(6) REVIEW OF ACTION PLANS

Not later than 60 days after the date of receipt of a State action plan under this subsection, the Administrator shall—

(A) if the State action plan is approved, notify the State and publish the State action plan under paragraph (4); and

(B) if the State action plan is incomplete or deficient, notify the State of the specific areas in which the plan is deficient and allow the State to complete the plan or correct the deficiencies and resubmit the plan under paragraph (1).

(7) DEADLINE

Not later than 60 days after the date of a notice under paragraph (6)(B), a State shall complete the plan or correct the deficiencies and resubmit the plan.

(8) FAILURE TO COMPLETE OR CORRECT PLAN

If a State fails to meet the deadline under paragraph (7), the Administrator shall post on the Web site under paragraph (4) a notice that the State has an incomplete or deficient highway-rail grade crossing action plan.

(c) REPORT

Not later than the date that is 3 years after the Administrator publishes the final rule under subsection (b)(1), the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on—

(1) the specific strategies identified by States to improve safety at highway-rail grade crossings, including crossings with multiple accidents or incidents; and

(2) the progress each State described under subsection (b)(1)(B) has made in implementing its action plan.

(d) RAILWAY-HIGHWAY CROSSINGS FUNDS

The Secretary may use funds made available to carry out section 130 of title 23, United States Code, to provide States with funds to develop a State highway-rail grade crossing action plan under subsection (b)(1)(A) or to update a State action plan under subsection (b)(1)(B).

(e) DEFINITIONS

In this section:

(1) HIGHWAY-RAIL GRADE CROSSING

The term “highway- rail grade crossing” means a location within a State, other than a location where 1 or more railroad tracks cross 1 or more railroad tracks at grade, where—

(A) a public highway, road, or street, or a private roadway, including associated sidewalks and pathways, crosses 1 or more railroad tracks either at grade or grade-separated; or

(B) a pathway explicitly authorized by a public authority or a railroad carrier that is dedicated for the use of non-vehicular traffic, including pedestrians, bicyclists, and others, that is not associated with a public highway, road, or street, or a private roadway, crosses 1 or more railroad tracks either at grade or grade-separated.

(2) STATE

The term “State” means a State of the United States or the District of Columbia.

SEC. 11402. PRIVATE HIGHWAY-RAIL GRADE CROSSINGS.

(a) IN GENERAL

The Secretary, in consultation with railroad carriers, shall conduct a study to—

(1) determine whether limitations or weaknesses exist regarding the availability and usefulness for safety purposes of data on private highway-rail grade crossings; and

(2) evaluate existing engineering practices on private high-way-rail grade crossings.

(b) CONTENTS

In conducting the study under subsection (a), the Secretary shall make recommendations as necessary to improve—

(1) the utility of the data on private highway-rail grade crossings; and

(2) the implementation of private highway-rail crossing safety measures, including signage and warning systems.

(c) REPORT

Not later than 3 years after the date of enactment of this Act, the Secretary shall transmit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report of the findings of the study and any recommendations for further action.

SEC. 11403. STUDY ON USE OF LOCOMOTIVE HORNS AT HIGHWAY-RAIL GRADE CROSSINGS.

(a) STUDY

The Comptroller General of the United States shall submit a report to Congress containing the results of a study evaluating the final rule issued on August 17, 2006, entitled “Use of Locomotive Horns at Highway-Rail Grade Crossings” (71 Fed. Reg. 47614), including—

- (1) the effectiveness of such final rule;
- (2) the benefits and costs of establishing quiet zones; and
- (3) any barriers to establishing quiet zones.

(b) SAVINGS CLAUSE

Nothing in this section shall be construed to limit or preclude any planned retrospective review by the Secretary of the final rule described in subsection (a).

SEC. 11404. POSITIVE TRAIN CONTROL AT GRADE CROSSINGS EFFECTIVENESS STUDY.

After the Secretary certifies that each Class I railroad carrier and each entity providing regularly scheduled intercity or commuter rail passenger transportation is in compliance with the positive train control requirements under section 20157(a) of title 49, United States Code, the Secretary shall—

- (1) conduct a study of the possible effectiveness of positive train control and related technologies on reducing collisions at highway-rail grade crossings; and
- (2) submit a report containing the results of the study conducted under paragraph (1) to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives.

SEC. 11405. BRIDGE INSPECTION REPORTS.

Section 417(d) of the Rail Safety Improvement Act of 2008 (49 U.S.C. 20103 note) is amended—

- (1) by striking “The Secretary” and inserting the following:

“(1) IN GENERAL

The Secretary”; and

- (2) by adding at the end the following:

“(2) AVAILABILITY OF BRIDGE CONDITION

“(A) IN GENERAL

A State or political subdivision of a State may file a request with the Secretary for a public version of a bridge inspection report generated under sub-section (b)(5) for a bridge located in such State or political subdivision's jurisdiction.

“(B) PUBLIC VERSION OF REPORT

If the Secretary determines that the request is reasonable, the Secretary shall require a railroad to submit a public version of the most recent bridge inspection report, such as a summary form, for a bridge subject to a request under subparagraph (A). The public version of a bridge inspection report shall include the date of last inspection, length of bridge, location of bridge, type of bridge, type of structure, feature crossed by bridge, and railroad contact information, along with a general statement on the condition of the bridge.

“(C) PROVISION OF REPORT

The Secretary shall provide to a State or political subdivision of a State a public version of a bridge inspection report submitted under subparagraph (B).

“(D) TECHNICAL ASSISTANCE

The Secretary, upon the reasonable request of State or political subdivision of a State, shall provide technical assistance to such State or political subdivision of a State to facilitate the understanding of a bridge inspection report.”.

SEC. 11406. SPEED LIMIT ACTION PLANS.

(a) IN GENERAL

Not later than 90 days after the date of enactment of this Act, each railroad carrier providing intercity rail passenger transportation or commuter rail passenger transportation, in consultation with any applicable host railroad carrier, shall survey its entire system and identify each main track location where there is a reduction of more than 20 miles per hour from the approach speed to a curve, bridge, or tunnel and the maximum authorized operating speed for passenger trains at that curve, bridge, or tunnel.

(b) ACTION PLANS

Not later than 120 days after the date that the survey under subsection (a) is complete, a railroad carrier described in subsection (a) shall submit to the Secretary an action plan that—

(1) identifies each main track location where there is a reduction of more than 20 miles per hour from the approach speed to a curve, bridge, or tunnel and the maximum authorized operating speed for passenger trains at that curve, bridge, or tunnel;

(2) describes appropriate actions to enable warning and enforcement of the maximum authorized speed for passenger trains at each location identified under paragraph (1), including—

(A) modification to automatic train control systems, if applicable, or other signal systems;

(B) increased crew size;

(C) installation of signage alerting train crews of the maximum authorized speed for passenger trains in each location identified under paragraph (1);

(D) installation of alerters;

(E) increased crew communication; and

- (F) other practices;
- (3) contains milestones and target dates for implementing each appropriate action described under paragraph (2); and
- (4) ensures compliance with the maximum authorized speed at each location identified under paragraph (1).

(c) APPROVAL

Not later than 90 days after the date on which an action plan is submitted under subsection (b), the Secretary shall approve, approve with conditions, or disapprove the action plan.

(d) ALTERNATIVE SAFETY MEASURES

The Secretary may exempt from the requirements of this section each segment of track for which operations are governed by a positive train control system certified under section 20157 of title 49, United States Code, or any other safety technology or practice that would achieve an equivalent or greater level of safety in reducing derailment risk.

(e) REPORT

Not later than 6 months after the date of enactment of this Act, the Secretary shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report that describes—

- (1) the actions railroad carriers have taken in response to Safety Advisory 2013–08, entitled “Operational Tests and Inspections for Compliance With Maximum Authorized Train Speeds and Other Speed Restrictions”;

- (2) the actions railroad carriers have taken in response to Safety Advisory 2015–03, entitled “Operational and Signal Modifications for Compliance with Maximum Authorized Passenger Train Speeds and Other Speed Restrictions”; and

- (3) the actions the Federal Railroad Administration has taken to evaluate or incorporate the information and findings arising from the safety advisories referred to in paragraphs (1) and (2) into the development of regulatory action and oversight activities.

(f) SAVINGS CLAUSE

Nothing in this section shall prohibit the Secretary from applying the requirements of this section to other segments of track at high risk of overspeed derailment.

SEC. 11407. ALERTERS. ²³

(a) IN GENERAL

The Secretary shall promulgate a rule to require a working alerter in the controlling locomotive of each passenger train in intercity rail passenger transportation (as defined in section 24102 of title 49, United States Code) or commuter rail passenger transportation (as defined in section 24102 of title 49, United States Code).

²³ FRA issued this rule on Apr. 9, 2012

(b) RULEMAKING

(1) IN GENERAL

The Secretary may promulgate a rule to specify the essential functionalities of a working alerter, including the manner in which the alerter can be reset.

(2) ALTERNATE PRACTICE OR TECHNOLOGY

The Secretary may require or allow a technology or practice in lieu of a working alerter if the Secretary determines that the technology or practice would achieve an equivalent or greater level of safety in enhancing or ensuring appropriate locomotive control.

SEC. 11408. SIGNAL PROTECTION.

(a) IN GENERAL

Not later than 18 months after the date of enactment of this Act, the Secretary shall initiate a rulemaking to require that on-track safety regulations, whenever practicable and consistent with other safety requirements and operational considerations, include requiring implementation of redundant signal protection for maintenance-of-way work crews who depend on a train dispatcher to provide signal protection.

(b) ALTERNATIVE SAFETY MEASURES

The Secretary shall consider exempting from any final requirements of this section each segment of track for which operations are governed by a positive train control system certified under section 20157 of title 49, United States Code, or any other safety technology or practice that would achieve an equivalent or greater level of safety in providing additional signal protection.

SEC. 11409. COMMUTER RAIL TRACK INSPECTIONS.

(a) IN GENERAL

The Secretary shall evaluate track inspection regulations to determine if a railroad carrier providing commuter rail passenger transportation on high density commuter railroad lines should be required to inspect the lines in the same manner as is required for other commuter railroad lines.

(b) RULEMAKING

Considering safety, including railroad carrier employee and contractor safety, system capacity, and other relevant factors, the Secretary may promulgate a rule for high density commuter railroad lines. If, after the evaluation under subsection (a), the Secretary determines that it is necessary to promulgate a rule, the Secretary shall specifically consider the following regulatory requirements for high density commuter railroad lines:

(1) At least once every 2 weeks—

(A) traverse each main line by vehicle; or

(B) inspect each main line on foot.

(2) At least once each month, traverse and inspect each siding by vehicle or by foot.

(c) REPORT

If, after the evaluation under subsection (a), the Secretary determines it is not necessary to revise the regulations under this section, the Secretary, not later than 18 months after the date of enactment of this Act, shall transmit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report explaining the reasons for not revising the regulations.

(d) CONSTRUCTION

Nothing in this section may be construed to limit the authority of the Secretary to promulgate regulations or issue orders under any other law.

SEC. 11410. POST-ACCIDENT ASSESSMENT.

(a) IN GENERAL

The Secretary, in cooperation with the National Transportation Safety Board and Amtrak, shall conduct a post-accident assessment of the Amtrak Northeast Regional Train #188 crash on May 12, 2015.

(b) ELEMENTS

The assessment conducted pursuant to sub-section (a) shall include—

(1) a review of Amtrak’s compliance with the plan for addressing the needs of the families of passengers involved in any rail passenger accident, which was submitted pursuant to section 24316 of title 49, United States Code;

(2) a review of Amtrak’s compliance with the emergency preparedness plan required under section 239.101(a) of title 49, Code of Federal Regulations;

(3) a determination of any additional action items that should be included in the plans referred to in paragraphs (1) and (2) to meet the needs of the passengers involved in the crash and their families, including—

(A) notification of emergency contacts;

(B) dedicated and trained staff to manage family assistance;

(C) the establishment of a family assistance center at the accident locale or other appropriate location;

(D) a system for identifying and recovering items belonging to passengers that were lost in the crash; and

(E) the establishment of a single customer service entity within Amtrak to coordinate the response to the needs of the passengers involved in the crash and their families; and

(4) recommendations for any additional training needed by Amtrak staff to better implement the plans referred to in paragraphs (1) and (2), including the establishment of a regular schedule for training drills and exercises.

(c) REPORT TO CONGRESS

Not later than 1 year after the date of enactment of this Act, Amtrak shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report that describes—

- (1) Amtrak’s plan to achieve the recommendations referred to in subsection (b)(4); and
- (2) any steps that have been taken to address any deficiencies identified through the assessment.

SEC. 11411. RECORDING DEVICES. ²⁴

(a) IN GENERAL

Subchapter II of chapter 201 of title 49, United States Code, is amended by adding at the end the following:

“§ 20168. Installation of audio and image recording devices

“(a) IN GENERAL

Not later than 2 years after the date of enactment of the Passenger Rail Reform and Investment Act of 2015, the Secretary of Transportation shall promulgate regulations to require each railroad carrier that provides regularly scheduled intercity rail passenger or commuter rail passenger transportation to the public to install inward- and outward-facing image recording devices in all controlling locomotive cabs and cab car operating compartments in such passenger trains.

“(b) DEVICE STANDARDS

Each inward- and outward-facing image recording device shall—

- “(1) have a minimum 12-hour continuous recording capability;
- “(2) have crash and fire protections for any in-cab image recordings that are stored only within a controlling locomotive cab or cab car operating compartment; and
- “(3) have recordings accessible for review during an accident or incident investigation.

“(c) REVIEW

The Secretary shall establish a process to review and approve or disapprove an inward- or outward-facing image recording device for compliance with the standards described in subsection (b).

“(d) USES

A railroad carrier subject to the requirements of subsection (a) that has installed an inward- or outward-facing image recording device approved under subsection (c) may use recordings from that inward- or outward-facing image recording device for the following purposes:

- “(1) Verifying that train crew actions are in accordance with applicable safety laws and the railroad carrier’s operating rules and procedures, including a system-wide program for such verification.
- “(2) Assisting in an investigation into the causation of a reportable accident or incident.
- “(3) Documenting a criminal act or monitoring unauthorized occupancy of the controlling locomotive cab or car operating compartment.
- “(4) Other purposes that the Secretary considers appropriate.

“(e) DISCRETION

“(1) IN GENERAL

The Secretary may—

²⁴ FRA issued a Safety Advisory on Dec. 5, 2016.

“(A) require in-cab audio recording devices for the purposes described in subsection (d); and

“(B) define in appropriate technical detail the essential features of the devices required under subparagraph (A).

“(2) EXEMPTIONS

The Secretary may exempt any railroad carrier subject to the requirements of subsection (a) or any part of the carrier’s operations from the requirements under subsection (a) if the Secretary determines that the carrier has implemented an alternative technology or practice that provides an equivalent or greater safety benefit or that is better suited to the risks of the operation.

“(f) TAMPERING

A railroad carrier subject to the requirements of subsection (a) may take appropriate enforcement or administrative action against any employee that tampers with or disables an audio or inward- or outward-facing image recording device installed by the railroad carrier.

“(g) PRESERVATION OF DATA

Each railroad carrier subject to the requirements of subsection (a) shall preserve recording device data for 1 year after the date of a reportable accident or incident.

“(h) INFORMATION PROTECTIONS

The Secretary may not disclose publicly any part of an in-cab audio or image recording or transcript of oral communications by or among train employees or other operating employees responsible for the movement and direction of the train, or between such operating employees and company communication centers, related to an accident or incident investigated by the Secretary. The Secretary may make public any part of a transcript or any written depiction of visual information that the Secretary determines is relevant to the accident at the time a majority of the other factual reports on the accident or incident are released to the public.

“(i) PROHIBITED USE

An in-cab audio or image recording obtained by a railroad carrier under this section may not be used to retaliate against an employee.

“(j) SAVINGS CLAUSE

Nothing in this section may be construed as requiring a railroad carrier to cease or restrict operations upon a technical failure of an inward- or outward-facing image recording device or in-cab audio device. Such railroad carrier shall repair or replace the failed inward- or outward-facing image recording device as soon as practicable.”.

(b) CONFORMING AMENDMENT

The table of contents for sub-chapter II of chapter 201 of title 49, United States Code, is amended by adding at the end the following:

“20168. Installation of audio and image recording devices.”.

SEC. 11412. RAILROAD POLICE OFFICERS.

(a) IN GENERAL

Section 28101 of title 49, United States Code, is amended—

(1) by striking “employed by” each place it appears and inserting “directly employed by or contracted by”;

(2) in subsection (b), by inserting “or agent, as applicable,” after “an employee”; and

(3) by adding at the end the following:

“(c) TRANSFERS

“(1) IN GENERAL

If a railroad police officer directly employed by or contracted by a rail carrier and certified or commissioned as a police officer under the laws of a State transfers primary employment or residence from the certifying or commissioning State to another State or jurisdiction, the railroad police officer, not later than 1 year after the date of transfer, shall apply to be certified or commissioned as a police officer under the laws of the State of new primary employment or residence.

“(2) INTERIM PERIOD

During the period beginning on the date of transfer and ending 1 year after the date of transfer, a railroad police officer directly employed by or contracted by a rail carrier and certified or commissioned as a police officer under the laws of a State may enforce the laws of the new jurisdiction in which the railroad police officer resides, to the same extent as provided in subsection (a).

“(d) TRAINING

“(1) IN GENERAL

A State may recognize as meeting that State’s basic police officer certification or commissioning requirements for qualification as a rail police officer under this section any individual who successfully completes a program at a State-recognized police training academy in another State or at a Federal law enforcement training center and who is certified or commissioned as a police officer by that other State.

“(2) RULE OF CONSTRUCTION

Nothing in this subsection shall be construed as superseding or affecting any State training requirements related to criminal law, criminal procedure, motor vehicle code, any other State law, or State-mandated comparative or annual in-service training academy or Federal law enforcement training center.”

(b) REGULATIONS

Not later than 1 year after the date of enactment of this Act, the Secretary shall revise the regulations in part 207 of title 49, Code of Federal Regulations (relating to railroad police officers), to permit a railroad to designate an individual, who is commissioned in the individual’s State of legal residence or State of primary employment and directly employed by or contracted by a railroad to enforce State laws for the protection of railroad property, personnel, passengers, and cargo, to serve in the States in which the railroad owns property.

(c) CONFORMING AMENDMENTS

(1) AMTRAK RAIL POLICE

—Section 24305(e) of title 49, United States Code, is amended—

(A) by striking “may employ” and inserting “may directly employ or contract with”;

(B) by striking “employed by” and inserting “directly employed by or contracted by”; and

(C) by striking “employed without” and inserting “directly employed or contracted without”.

(2) EXCEPTIONS

Section 922(z)(2)(B) of title 18, United States Code, is amended by striking “employed by” and inserting “directly employed by or contracted by”.

SEC. 11413. REPAIR AND REPLACEMENT OF DAMAGED TRACK INSPECTION EQUIPMENT.

(a) IN GENERAL

Subchapter I of chapter 201 of title 49, United States Code, is amended by adding at the end the following:

“§ 20121. Repair and replacement of damaged track inspection equipment .

“The Secretary of Transportation may receive and expend cash, or receive and utilize spare parts and similar items, from non- United States Government sources to repair damages to or replace United States Government-owned automated track inspection cars and equipment as a result of third-party liability for such damages, and any amounts collected under this section shall be credited directly to the Railroad Safety and Operations account of the Federal Railroad Administration and shall remain available until expended for the repair, operation, and maintenance of automated track inspection cars and equipment in connection with the auto-mated track inspection program.”.

(b) CONFORMING AMENDMENT

The table of contents for subchapter I of chapter 201 of title 49, United States Code, is amended by adding at the end the following:

“20121. Repair and replacement of damaged track inspection equipment.”

SEC. 11414. REPORT ON VERTICAL TRACK DEFLECTION.

(a) REPORT

Not later than 9 months after the date of enactment of this Act, the Secretary shall transmit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report detailing research conducted or procured by the Federal Railroad Administration on developing a system that measures vertical track deflection (in this section referred to as “VTD”) from a moving rail car, including the ability of such system to identify poor track support from fouled ballast, deteriorated cross ties, or other conditions.

(b) CONTENTS

The report required under subsection (a) shall include—

(1) the findings and results of testing of VTD instrumentation during field trials on revenue service track;

(2) the findings and results of subsequent testing of VTD instrumentation on a Federal Railroad Administration automated track inspection program geometry car;

(3) if considered appropriate by the Secretary based on the report and related research, a plan for developing quantitative inspection criteria for poor track support using existing VTD instrumentation on Federal Railroad Administration automated track inspection program geometry cars; and

(4) if considered appropriate by the Secretary based on the report and related research, a plan for installing VTD instrumentation on all remaining Federal Railroad Administration automated track inspection program geometry cars not later than 3 years after the date of enactment of this Act.

SEC. 11415. RAIL PASSENGER LIABILITY.

(a) AMTRAK INCIDENT

Notwithstanding any other provision of law, the aggregate allowable awards to all rail passengers, against all defendants, for all claims, including claims for punitive damages, arising from a single accident or incident involving Amtrak occurring on May 12, 2015, shall not exceed \$295,000,000.

(b) ADJUSTMENT BASED ON CONSUMER PRICE INDEX

The liability cap under section 28103(a)(2) of title 49, United States Code, shall be adjusted on the date of enactment of this Act to reflect the change in the Consumer Price Index-All Urban Consumers between such date and December 2, 1997, and the Secretary shall provide appropriate public notice of such adjustment. The adjustment of the liability cap shall be effective 30 days after such notice. Every fifth year after the date of enactment of this Act, the Secretary shall adjust such liability cap to reflect the change in the Consumer Price Index-All Urban Consumers since the last adjustment. The Secretary shall provide appropriate public notice of each such adjustment, and the adjustment shall become effective 30 days after such notice.

ALCOHOL AND DRUG TESTING^{25/26/27/}

PART 219-CONTROL OF ALCOHOL AND DRUG USE

This part deals with the alcohol and drug testing regulations.²⁸ Because of the complexity, the specific sections of the federal regulations discussed are identified for easier reference. A few sections are not summarized because they relate primarily to technical matters.

Subpart A — General

49 C.F.R. § 219.1-- Purpose And Scope

²⁵ These sections cover all types of testing.

²⁶ Railroads with 15 or fewer employees are subject only to the post accident testing procedures.

²⁷ Beginning June 12, 2017, Maintenance of Way employers will be required to have a drug and alcohol testing program to be in compliance with FRA regulations.

²⁸ On March 14, 2019, AMTRAK issued a Special Advisory stating that it intends to institute a policy that all personnel will be immediately terminated for any positive test. The rail unions are meeting with AMTRAK in an attempt to change this policy by recognizing employee assistance programs , etc.

Railroads have authority to adopt more stringent standards under their own authority.²⁹

§ 219.3-- Application³⁰

The rule covers all hours of service employees who work for a railroad, and includes private contractors and their employees if such persons perform work which would be covered under the Hours of Service Act.³¹ Railroad is defined as all forms of non-highway ground transportation that run on rails or electromagnetic guideways, including (1) commuter or short-haul rail passenger service, and (2) high speed ground transportation systems. Excluded are rapid transit operations. Small railroads are excluded from most provisions of the rules if they employ 15 or fewer hours of service employees and do not operate on tracks of another railroad except as necessary for interchange. (If a small railroad operates over trackage of a covered railroad for several miles, that small railroad would be covered under the rules). Industrial plant railroads are also excluded. Foreign railroad operations within the U.S. are covered by the post accident and for cause testing, but not the random testing. Also excluded are railroads that have fewer than 400,000 total manhours.

In 2004, the FRA issued a rule regarding application of the alcohol and drug rules to foreign employees from Mexico and Canada. the final rule allows employees to enter into the United States for a distance of up to 10 route miles and remain excepted, as before, from FRA's requirements for employee assistance programs, pre-employment drug testing, and random alcohol and drug testing. Second, the final rule allows FRA's Associate Administrator for Safety to recognize a foreign railroad's substance abuse program promulgated under the laws of its home country as a compatible alternative to the return-to-service requirements if the program includes equivalents to these FRA provisions, and testing procedures, criteria, and assays reasonably comparable in effectiveness to all applicable provisions of DOT's procedures for workplace drug and alcohol testing programs.

§219.4 Recognition of a foreign railroad's workplace testing program.

(a) *General.* A foreign railroad may petition the FRA Associate Administrator for Safety for recognition of a workplace testing program promulgated under the laws of its home country as a compatible alternative to the return-to-service requirements in subpart B of this part and the requirements of subparts E, F, and G of this part with respect to its employees whose primary reporting point is outside the United States but who enter the United States to perform train or dispatching service and with respect to its final applicants for, or its employees seeking to transfer for the first time to, duties involving such service.

²⁹ Any such testing must be conducted by using a scientifically recognized method of testing capable of determining the presence of the specific analyte at the level above the cut-off established by the railroad.

³⁰ In June 2016, FRA published a rule adding maintenance of way employees.

³¹ FRA's rules do not apply to employees on commuter railroads who have commercial drivers licenses. Rather, these employees are subject to the Federal Highway Administration's rules.

(1) To be so considered, the petition must document that the foreign railroad's workplace testing program contains equivalents to subparts B, F, G, and K of this part:

(2) In approving a program under this section, the FRA Associate Administrator for Safety may impose conditions deemed necessary.

(b) *Alternative programs.* (1) Upon FRA's recognition of a foreign railroad's workplace alcohol and drug use program as compatible with the return-to-service requirements in subpart B of this part and the requirements of subparts F, G, and K of this part, the foreign railroad must comply with either the specified provisions of §219.4 or with the standards of its recognized program, and any imposed conditions, with respect to its employees whose primary reporting point is outside the United States and who perform train or dispatching service in the United States. The foreign railroad must also, with respect to its final applicants for, or its employees seeking to transfer for the first time to, duties involving such train or dispatching service in the United States, comply with either subpart F of this part or the standards of its recognized program.

(2) The foreign railroad must comply with subparts A (general), B (prohibitions, other than the return-to-service provisions in paragraph (d) of this section), C (post-accident toxicological testing), D (reasonable suspicion testing), I (annual report requirements), and J (recordkeeping requirements) of this part. Drug or alcohol testing required by these subparts (except for post-accident toxicological testing required by subpart C) must be conducted in compliance with all applicable provisions of the DOT Procedures for Workplace Drug and Alcohol Testing Programs (part 40 of this title).

(c) *Petitions for recognition of a foreign railroad's workplace testing programs.* Each petition for recognition of a foreign workplace testing program shall contain:

(1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition;

(2) The requirements of the foreign railroad workplace testing program to be considered for recognition;

(3) Appropriate data or records, or both, for FRA to consider in determining whether the foreign railroad workplace testing program is equivalent to the minimum standards contained in this part and provides at least an equivalent level of safety.

(d) *FEDERAL REGISTER notice.* FRA will publish a notice in the FEDERAL REGISTER concerning each petition under paragraph (c) of this section that it receives.

(e) *Comment.* Not later than 30 days from the date of publication of the notice in the FEDERAL REGISTER concerning a petition under paragraph (c) of this section, any person may comment on the petition.

(1) A comment shall set forth specifically the basis upon which it is made, and contain a concise statement of the interest of the commenter in the proceeding.

(2) Any comment on a petition should reference the FRA docket and notice numbers. A commenter may submit a comment and related material by only one of the following methods:

(i) *Federal Rulemaking Portal*: <http://www.regulations.gov>. Follow the instructions for submitting comments on the Federal Docket Management System electronic docket site.

(ii) *Fax*. 1-202-493-2251.

(iii) *Mail*. U.S. Department of Transportation, Docket Operations (M-30), West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.

(iv) *Hand delivery*. Room W12-140 on the ground floor of the West Building, 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays.

(3) The commenter shall certify that a copy of the comment was served on the petitioner. Note that all petitions received will be posted without change to <http://www.regulations.gov> including any personal information provided.

(f) *Disposition of petitions*. (1) If FRA finds that the petition complies with the requirements of this section and that the foreign railroad's workplace testing program is compatible with the minimum standards of this part, the petition will be granted, normally within 90 days of its receipt. If the petition is neither granted nor denied within 90 days, the petition remains pending for decision. FRA may attach special conditions to the approval of any petition. Following the approval of a petition, FRA may reopen consideration of the petition for cause.

(2) If FRA finds that the petition does not comply with the requirements of this section or that the foreign railroad's workplace testing program is not compatible with the minimum standards of this part, the petition will be denied, normally within 90 days of its receipt.

(3) When FRA grants or denies a petition, or reopens consideration of the petition, written notice is sent to the petitioner and other interested parties.

(g) *Program recognition*. If its program has been recognized, the foreign railroad shall maintain a letter on file indicating that it has elected to extend specified elements of the recognized program to its operations in the United States. Once granted, program recognition remains valid so long as the program retains these elements and the foreign railroad complies with the program requirements.

[69 FR 19286, Apr. 12, 2004, as amended at 74 FR 25172, 25173, May 27, 2009; 81 FR 37923, June 10, 2016]

§ 219.5—Definitions

Various words and terms referred to in the regulation are defined in this section.

§ 219.7—Waivers

The FRA may grant a waiver of compliance if it is in the public interest and consistent with railroad safety. (Regarding the issue of “stand down”, the FRA will treat any waiver request in accordance with § 40.21.)

§ 219.9-- Responsibility for Compliance

The responsibility of a railroad as it relates to violations is that the railroad is liable only if (a) it willfully requires or permits the employee to go or remain on duty while the employee was in violation of the regulations, or (b) the railroad fails to exercise due diligence (a high degree of care) to assure compliance. Any person (including but not limited to a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track or facilities; any independent contractor providing goods or services to a railroad; and any employee of such owner, manufacturer, lessor, lessee, or independent contractor) who violates any requirements shall be subject to a penalty. Penalties may be assessed against individuals only for willful violations. The civil penalty ranges from \$500 to not more than \$10,000, except if gross negligence or a pattern of repeated violations has created an imminent hazard of death or injury, the penalty may not exceed \$20,000 per violation.

This deals with the individual responsibility of a railroad when it operates common facilities or on the property of another railroad. The host railroad is primarily responsible for compliance with testing for post-accident or reasonable cause. The employing railroad would retain the primary responsibility concerning the other aspects of the rule, such as random testing and use prohibitions. Whenever a host railroad is involved in testing, it shall make necessary witnesses and records available to employees who are subject to an investigation. However, it is not necessary that witnesses travel where a telephone interview or other means would permit development of the facts.

Any independent contractor or other entity that performs covered service for a railroad is covered to the same extent as the railroad. The agreement between the railroad and the independent contractor must be clearly spelled out as to which has the responsibility for complying. In the absence of the clear agreement, all of the parties will be jointly and severally liable.

§ 219.11-- General Conditions for Chemical Tests

Any employee covered by the rules shall be deemed to have consented to the testing.

It is made clear that necessary medical treatment shall be given priority over testing where the employee has sustained a personal injury. The failure of an employee to remain available following an accident or a casualty as required by company rules shall be considered a refusal to participate in testing. This would subject the employee to a mandatory disqualification for a period of 9 months.

(The use of catheterization to obtain a urine sample is set out at §40.61(b)(3)).

(Tampering with a sample to prevent a valid test constitutes a refusal to participate in

testing and is set out in §40.191).

(Procedures to be followed where there is adulteration or substituted test is set out at §40.23).

The employee must give a written consent to the testing. Any clause in the consent form that would waive rights the employee would otherwise have is void. Employees would not be required to waive any recourse that they may have as a result of an improper collection.

The rule does not restrict the railroad from conducting other testing that the railroad may otherwise be free to do, but samples taken under the federal regulations may not be used for testing other than what is authorized or mandated under the regulations. Each supervisor responsible for covered employees shall be trained in the signs and symptoms of alcohol and drug use. The duration of such training shall not be less than 3 hours.

§ 219.13-- Preemptive Effect

States are preempted from issuing any drug testing regulations, except for a local safety hazard. This does not preempt state criminal laws.

§ 219.23-- Railroad Policies

Employees shall be given clear written notice whether or not the tests are conducted under the FRA rule, and the basis upon which the tests are required (e.g., reasonable suspicion, violation of a specified operating/safety rule, random selection, follow-up, etc.) This does not require written notices for individual non-FRA testing events (such as return from furlough testing or periodic testing). The custody and control form may be used as the form of notice that is required. As also stated in §40.47 a railroad cannot use the DOT custody and control form for non-DOT testing.

Each railroad is required to provide the employee with the railroad's policies and procedures required to meet the testing requirements.

Each covered employee shall be advised by the railroad of the resources available to the employee in evaluating and resolving problems associated with misuse of alcohol and controlled substances.

The materials provided to each employee shall be detailed and include matters such as: circumstances under which an employee will be tested, the procedures to be used in a test, consequences of positive tests results, etc. The materials supplied may also include information on additional railroad policies that are based on the railroads authority independent from the FRA rules.

Subpart B — Prohibitions

49 C.F.R. § 219.101-- Alcohol and Drug Use Prohibited

No employee may use or possess alcohol or a controlled substance; no employee may report for duty or remain on duty while (a) under the influence or impaired by alcohol, (b) having

.04 or more alcohol in the breath or blood, or (c) under the influence of or impaired by any controlled substance.

No employee may use alcohol: (1) within 4 hours of reporting for covered service, or (2) after receiving notice to report for covered service. (Employees who are typically subject to call, no more than two hours prior to reporting shall be considered to be in compliance if they abstain from using alcohol from the time they are called to the time they report, even if that period runs for less than 4 hours before reporting to perform covered service). Where the test result is between .02 and .04 the employee must not work until his/her next scheduled duty period, but not less than eight hours after the test.

If the test result indicates an alcohol concentration below .02, a railroad cannot use the Federal test to discipline an employee. However, if the test result is between .02 and .04, a railroad may impose more stringent discipline than the Federal minimum.

§ 219.102-- Prohibition on Abuse of Controlled Substances

No covered employee may use a controlled substance at any time, whether on or off duty, except as explained below.

§ 219.103-- Prescribed and Over-the-Counter Drugs³²

An employee may use a controlled substance only if a treating physician has determined that such use at the prescribed dosage is consistent with safe performance of the employee's duties. Employees must affirmatively advise the physician of their safety-sensitive duties and should, for self protection, request the physician to note on the medical file that the employee is authorized to use the medication and work.

Where an employee is being treated by more than one medical practitioner, and therefore at risk with respect to drug interactions, one of the prescribing physicians is required to evaluate the effect of all medications in combination.

§ 219.104-- Responsive Action

This section deals with action required by the railroad in the event an employee tests positive or refuses to undergo the test. The employee shall be removed from covered service and then would be entitled to a prompt hearing before a person other than the charging officer. The hearing may be consolidated with any disciplinary hearing, and it shall be convened within the time set forth in the collective bargaining agreement. In the absence of an agreement provision, the employee may demand that the hearing be convened within 10 calendar days after suspension.

A railroad must comply with the return-to-service and follow-up testing requirements, and the substance abuse professional conflict –of–interest provisions in §§40.305(tests required),

³² Regarding prescription and over the counter drug use, the FRA on December 16, 1998 issued Safety Advisory 98-3. It recommends, but does not order, that the guidelines in this section be followed for use of all drugs.

40.307(SAP's function in prescribing follow up tests), and 40.299(limits of discretion and conflict of interest requirements).

This section does not apply to a test under a railroad's own medical policy. A pre-employment alcohol test is no longer required by the regulations.

§ 219.105-- Railroad's Duty to Prevent Violations

This describes the limitations on a railroad's liability. The provisions require a railroad to exercise a high degree of care to prevent violations by an employee, but does not impose liability where, despite such efforts, the employee uses alcohol or drugs and the railroad is not aware of the conduct.

§ 219. 107-- Consequences of Unlawful Refusal

An employee who refuses to provide a breath or a body fluid sample shall be deemed disqualified for a period of nine months. This does not limit any discretion on a railroad to impose additional sanctions.

Subpart C — Post Accident Toxicological Testing³³

(The Part 40 procedures do not supersede, nor conflict with, FRA's post-accident testing requirements.)

49 C.F.R. § 219.201-- Events for Which Testing is Required

(a) Breath, Urine and blood testing is mandatory after:

(1) Each major train accident which results in (i) fatality; (ii) hazardous materials release involving freight car lading causing an injury from the product or an evacuation; (iii) damages to property exceeding \$1,500,000.(It should be emphasized that this section requires testing only after a "train accident." That is, there must be an event producing damage that reaches the reporting threshold currently of \$9,900).

(2) A collision which causes an injury or damage to property which exceeds \$150,000; raking collisions resulting from derailments are exempted.

(3) An employee fatality in a train incident.

(4) An accident involving a passenger train that results in one or more reportable injuries. "Property damages" is damage to railroad property computed in the same manner used for interline claims. However, passenger equipment is valued on a replacement basis without regard to depreciation.

³³ The FRA has issued an **Advisory** which requires post accident testing for Tramadol(an opioid such as methadone, oxycodone and hydromorphone) and sedating antihistamines(Ex. Benadryl, Chlortrimeton, Chlorphen, Tussinex, Brovex, Lodrane, Dimetapp Allergy, Unisom Sleep Tabs, Sleep Aid Tablets, Equate Sleep Aid, and Doxytoex). The FRA is just collecting data. The employee will not be disciplined for having any of these in the system, but it will be considered a positive test.

(b) **Exceptions:**

(1) There will be no mandatory testing after accidents occurring at rail/highway grade crossings. (However, the railroad could require alcohol or urine drug testing if it has reasonable cause to suspect impairment, or an employee contributes to the cause of the accident).

(2) No testing is required where there is a collision, passenger train accident, or employee fatality and the employee's involvement can be positively excluded at the scene of the accident.

(3) This would exempt any accident/incident which is wholly attributable to vandalism, trespassers, or to natural causes such as floods, tornadoes, or other natural disasters. However, if there is significant possibility that the response by a crew member affected the severity of the accident, the exemption would not apply.

For post-accident testing, the collection site must be pre-designated by the railroad and must be a medical facility. This does not prohibit the use of a non-designated facility as may be required to effect prompt sample collection.

§ 219.203-- Responsibilities of Railroads and Employees

Once a qualifying testing event occurs, the railroad may conduct the alcohol test if the EBT is available and it does not interfere with or delay collections for mandatory blood and urine testing.

After each covered accident and incident, the railroad shall take all practicable steps to assure that all covered employees directly involved in the accident or incident provide two blood samples consisting of a primary sample and a split sample, and two urine samples consisting of a primary sample and a split sample.

If an injured employee is unconscious or unable to provide a consent and the testing medical facility declines to obtain blood samples, the railroad shall immediately notify FRA's Alcohol and Drug Program Manager, and the duty officer at the National Response Center.

§ 219.205-- Sample Collection and Handling

This deals with post-accident sample collection. It is intended to assure that the toxicology kits be shipped as soon as possible. The means of transportation should be adequate to ensure delivery within 24 hours of shipment, and, wherever possible, transfer of the sealed kit should be directly from the collecting medical facility to the courier. However, if a courier pick-up is not available, the railroad shall transport the sealed shipping kit to the most expeditious point of shipment via air.

The FRA has awarded the contract for testing the post accident samples to Quest Diagnostics.

§ 219.206-- FRA Access to Breath Test Results

Documentation of breath test results shall be made available to FRA.

§ 219.207—Fatality

In case of an employee fatality, body fluid and/or tissue samples shall be obtained. The FRA and the National Response Center shall be notified immediately of the death.

§ 219.209-- Reports of Tests and Refusals

If a railroad is unable to obtain samples as required by the rules, the railroad shall make a narrative report of the reason for such failure, and actions taken by the railroad in response to the failure. If a test is not administered within four hours following the event, the railroad shall prepare a record stating the reasons why. The FRA and the National Response Center shall be immediately notified.

§ 219.211-- Analysis and Follow-Up

The test results are reported to both the employee and the railroad's medical review officer. The railroad has the duty of confidentiality with respect to the results under post-accident testing and with random testing. The only exception is where the FRA or the NTSB has publicly disclosed the results in the conduct of an accident investigation.

The test results for employees shall be reviewed by the railroad's MRO in the same manner as required for other testing under the regulations. The main purpose of the review is to reconcile test results with alleged medical use of the drugs by an employee. If the MRO verifies that the employee used the drug under medical authorization, that will be reported to the FRA. The MRO must conduct a review and make a report for each post-accident positive result. The FRA shall not be bound by the MRO's determination.

All medical information to the extent permitted by law shall be kept confidential. (The FRA believes that it is obligated by law to provide information pertinent to an accident investigation to the NTSB, but it urges the Board to maintain the medical information in confidence).

This clarifies the manner in which an employee shall contribute to an accident investigation by responding to the toxicology report. Also, the employee is allowed 45 days to respond to the results of a test prior to the preparation of any final investigation report. The response shall be mailed to the FRA.

The period for retaining the positive samples shall be 2 years, and the retention period for negative samples is 3 months.

At the employee's request a reanalysis of the specimen is authorized, which must be made in writing within 60 days of the date of the toxicology report. A re-analysis which is conducted at a laboratory other than the laboratory designated under the post-accident testing subpart shall be

at the expense of the employee. (*See*, 49 C.F.R. § 40.171 for time requirements for the other type tests).

Since some drugs may deteriorate during storage, any detected levels of the compound shall be considered as corroborating the original test result.

§ 219.213-- Unlawful Refusals; Consequences

An employee who refuses to cooperate in providing a blood or urine sample shall be withdrawn from covered service and shall be deemed disqualified from covered service for a period of 9 months. (A railroad can impose an additional sanction). On expiration of the 9-month disqualification period, an employee can return to work only under the same conditions as set forth in § 219.104 (SAP evaluation and necessary treatment). This could all occur within the same 9-month period. Prior to withdrawing an employee from covered service, the railroad shall provide an opportunity for a hearing before a presiding officer other than the charging official. Procedural protections are forwarded under § 219.104(d).

A refusal includes: failure to appear for a test, failure to remain at the testing site, failure to cooperate with the testing process, failure to provide a sufficient amount of breath or urine, and adulteration or substitution of the urine specimen.

The procedures which are to be followed for failure to provide a sufficient amount of urine is set forth at 49 C.F.R. § 40.193. In general, after an unsuccessful attempt, you have up to 3 hours to produce a sufficient amount. During the 3 hours, you are allowed to consume up to 40 ounces of fluid. If you do not provide the required amount within 3 hours, you must undergo a medical evaluation to determine if there was a medical reason for inability to do so.

(Hours of service limitations apply to random collections except when direct observation collection is required.)

Subpart D — Testing For Cause

49 C.F.R. § 219.300-- Mandatory Reasonable Suspicion Testing

Reasonable suspicion testing will no longer be discretionary. Suspicion of alcohol or drug use based on personal observations shall require testing. The accident/incident and rule violation provisions for testing would remain optional.

A railroad shall require a breath alcohol test where the railroad has reasonable suspicion to believe that the employee has used alcohol, or the railroad shall require a urine drug test where there is reasonable suspicion of the use of controlled substances. The reasonable suspicion must be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech or body odors of the employees.

If the EBT device is not available within 8 hours, a report is required to be filed with FRA explaining the reasons. With respect to the breath alcohol test, one trained supervisor may make the reasonable suspicion determination, but such person may not also serve as the technician for

purposes of conducting the test. As to a urine drug test, at least two supervisors shall be required to make the reasonable suspicion determination, but only one needs to be trained.

§ 219.301-- Testing for Cause

The testing for reasonable cause was expanded in 1990 to include prohibited "use" of controlled substances, not only while on duty, but at any time. The reasonable cause testing, as originally adopted, was designed to detect and deter on the job use or impairment. Since the revised procedure has been expanded to include prohibited use of drugs at any time, impairment is no longer an issue. A railroad may seek discipline based upon any positive urine test, irrespective of impairment. Also, the employee no longer has the option to obtain a blood test.

The use of alcohol, unlike drugs, is acceptable under certain limited conditions. Under §219.101, an employee is prohibited from using alcohol either 4 hours before reporting to perform covered service, or for the period of time running from the time the employee receives a call to report to service.

(a) A railroad may, under the conditions specified in this subpart, require a covered employee to cooperate in breath or urine testing. This authority for urine testing is limited to testing after observations or events that occur during duty hours (including any period of overtime or emergency service). For breath testing, such test may occur only during, or immediately before or after performing safety sensitive work.

(b) The following circumstances constitute cause for the administration of breath tests under this section:

(1) **For Cause Breath Testing.** In addition to reasonable suspicion as described in §219.300, testing after an accident/incident and a rule violation constitutes reasonable cause for both breath alcohol testing, as well as urine drug testing.

(2) **Accident/incident.** The employee has been involved in a reportable accident or incident, and a supervisory employee of the railroad has a reasonable belief based on specific, articulable facts that the employee's acts or omissions contributed to the occurrence or severity of the accident or incident (Some carriers have interpreted the current rule to mean that the mere happening of an accident constitutes grounds to test an employee. The changes in (3) underscore the fact that this is not an acceptable interpretation. The railroad must be able to articulate a factual basis for believing the employee deliberately or negligently contributed to the occurrence or severity of the accident/incident before electing to test that employee); or

(3) **Rule violation.** The employee has been directly involved in one of the following operating rule violations or errors:

(i) Noncompliance with a train order, track warrant, timetable, signal indication, special instruction or other direction with respect to movement of a train that involves—
(A) Occupancy of a block or other segment of track to which entry was not authorized;

- (B) Failure to clear a track to permit opposing or following movement to pass;
- (C) Moving across a railroad crossing at grade without authorization; or
- (D) Passing an absolute restrictive signal or passing a restrictive signal without stopping (if required);

(ii) Failure to protect a train as required by a rule consistent with § 218.37 of this title;

(iii) Operation of a train at a speed that exceeds the maximum authorized speed by at least ten (10) miles per hour or by fifty percent (50%) of such maximum authorized speed, whichever is less;

(iv) Alignment of a switch in violation of a railroad rule or operation of a switch under a train;

(v) Failure to apply or stop short of derail as required;

(vi) Failure to secure a hand brake or failure to secure sufficient hand brakes; or

(vii) In the case of a person performing a dispatching function or block operator function, issuance of a train order or establishment of a route that fails to provide proper protection for a train.

(viii) Entering a crossover before both switches have been properly lined for movement.

(ix) Running through a switch; and

(x) The failure to flag a train which is fouling an adjacent track, where required by the railroad's rules, is likewise a basis for testing.

(c) **For Cause Urine Testing.** In addition to reasonable suspicion testing in § 219.300, each of the conditions set forth in paragraphs (b)(2) ("accident/incident") and (b)(3) ("rule violation") of this section as constituting reasonable cause for breath testing also constitutes reasonable cause with respect to urine testing.

§ 219.302-- Prompt Sample Collection; Time Limitation

The breath alcohol or urine drug collection may only be conducted promptly following the observation or event upon which the testing decision is based. The reason for this is that there have been instances where the railroad has allowed the employee to complete his/her normal duties before commencing the testing procedures. In addition, there is an 8-hour limitation imposed after which the test cannot be performed. In the case of an accident or injury, the 8-hour period begins to run when a "responsible railroad supervisor" receives notice of the facts providing the basis for the test. The 8-hour period is satisfied if arrangements have been made as

promptly as feasible and the employee has been brought into the collection site (with the collector present) within that time. An employee may not be tested if that employee has been released from duty under the normal procedures of the railroad.

Once the employee is released from duty, he/she may not be recalled for reasonable cause testing. This is so even if the employee reported an on the job injury after work.

"Responsible Railroad Supervisor" is defined as any responsible line supervisor (e.g. a trainmaster or a road foreman of engines) or superior official in authority over the employee to be tested. If a test required by this section is not administered within two hours following the event, the railroad must prepare a record stating why.

Subpart E — Identification of Troubled Employees

49 C.F.R. § 219.401-- Requirement for Policies

....

(a)....

(b) Each railroad shall adopt, publish and implement—

(1) A policy designed to encourage and facilitate the identification of those covered employees who abuse alcohol or drugs and to ensure that such employees are provided the opportunity to obtain counseling or treatment.

...

(c) Nothing shall be construed to—

(1) Require payment of compensation for any period an employee is out of service under a voluntary referral or co-worker report policy;

(2) Require a railroad to adhere to a voluntary referral or co-worker report policy in a case where the referral or report is made for the purpose, or with the effect, of anticipating the imminent and probable detection of a rule violation by a supervisory employee; or

(3) Limit the discretion of a railroad to dismiss or otherwise discipline an employee for specific rule violations or criminal offenses, except as specifically provided by this subpart.

§ 219.403 -- Voluntary referral policy

(a) **Scope.** This section prescribes minimum standards for voluntary referral policies. Nothing in this section restricts a railroad from adopting, publishing and implementing a voluntary referral policy that affords more favorable conditions to employees troubled by alcohol or drug abuse problems.

(b) **Required provisions.** A voluntary referral policy shall include the following provisions:

(1) A covered employee who is affected by an alcohol or drug use problem may maintain

an employment relationship with the railroad if, before the employee is charged with conduct deemed by the railroad sufficient to warrant dismissal, the employee seeks assistance through the railroad for the employee's alcohol or drug use problem or is referred for such assistance by another employee or by a representative of the employee's collective bargaining unit. The railroad shall specify whether, and under what circumstances, its policy provides for the acceptance of referrals from other sources, including (at the option of the railroad) supervisory employees.

(2) Except as may be provided under paragraph (c) of this section, the railroad treats the referral and subsequent handling, including counseling and treatment, as confidential.

(3) The railroad will, to the extent necessary for treatment and rehabilitation, grant the employee a leave of absence from the railroad of not less than 45 days.

(4) Except as may be provided under paragraph (c)(2) of this section, the employee will be returned to service on the recommendation of the EAP counselor. Approval of return to service may not be unreasonably withheld.

(c) **Optional provisions.** A voluntary referral policy may include any of the following provisions, at the option of the railroad:

(1) Confidentiality is waived if:

(i) The employee at any time refuses to cooperate in a recommended course of counseling or treatment; and/or

(ii) The employee is later determined, after investigation, to have been involved in an alcohol or drug related disciplinary offense growing out of subsequent conduct.

(2) The policy may require successful completion of a return-to-service medical examination as a further condition on reinstatement in covered service.

(3) The policy may provide that it does not apply to an employee who has previously been assisted.

(4) With respect to a certified engineer or a candidate for certification, §240.119(e) governs.

§ 219.405-- Co-worker report policy

(a) **Scope.** This section prescribes minimum standards for co-worker report policies. Nothing in this section restricts a railroad from adopting, publishing and implementing a policy that affords more favorable conditions to employees troubled by alcohol or drug abuse problems.

(b) **Employment relationship.** A co-worker report policy shall provide that a covered employee may maintain an employment relationship with the railroad following an alleged first

offense under these rules or the railroad's alcohol and drug rules, subject to the conditions and procedures contained in this section.

(c) General conditions and procedures.

(1) The alleged violation must come to the attention of the railroad as a result of a report by a co-worker that the employee was apparently unsafe to work with or was, or appeared to be, in violation of this part or the railroad's alcohol and drug rules.

(2) If the railroad representative determines that the employee is in violation, the railroad may immediately remove the employee from service.

(3) The employee must elect to waive investigation on the rule charge and must contact the SAP counselor within a reasonable period specified by the policy.

(4) The SAP must schedule necessary interviews with the employee and complete an evaluation within 10 calendar days of the date on which the employee contacts the counselor, unless it becomes necessary to refer the employee for further evaluation. In each case, all necessary evaluations must be completed within 20 days of the date on which the employee contacts the counselor.

(d) When treatment is required. If the SAP determines that the employee needs treatment, the following conditions and procedures shall apply:

(1) The railroad must grant the employee a leave of absence from the railroad of not less than 45 days, if necessary for the purpose of meeting initial treatment needs.

(2) The employee must agree to undertake and successfully complete a course of treatment deemed acceptable by the SAP.

(3) The railroad must promptly return the employee to service, on recommendation of the SAP. Return to service may also be conditioned on successful completion of a return-to-service medical examination. Approval of return to service may not be unreasonably withheld.

(4) Following return to service, the employee, as a further condition on withholding of discipline, may, as necessary, be required to participate in a reasonable program of follow-up treatment for a period not to exceed 5 years from the date the employee was originally withdrawn from service.

(e) When treatment is not required. If the SAP determines that the employee is not affected by an identifiable and treatable mental or physical disorder—

(1) The railroad shall return the employee to service within 5 days after completion of the evaluation.

(2) During or following the out-of-service period, the railroad may require the employee

to participate in a program of education and training concerning the effects of alcohol and drugs on occupational or transportation safety.

§ 219.407-- Alternate policies

(a) In lieu of a policy under § 219.403 (voluntary referral) or § 219.405 (co-worker report), or both, a railroad may adopt, publish and implement, with respect to a particular class or craft of covered employees, an alternate policy or policies having as their purpose the prevention of alcohol or drug use in railroad operations, if such policy or policies has the written concurrence of the recognized representatives of such employees.

(b) The concurrence of recognized employee representatives in an alternative policy may be evidenced by a collective bargaining agreement or any other document describing the class or craft of employees to which the alternate policy applies. The agreement or other document must make express reference to this part and to the intention of the railroad and employee representatives that the alternate policy shall apply in lieu of the policy required by §§ 219.403, 219.405, or both.

Subpart F — Pre-employment Tests

49 C.F.R. § 219.501-- Pre-employment Tests

This section requires pre-employment urine testing. In addition to pre-employment drug screens, this section requires testing of any present employee who seeks to transfer from non-covered service to covered service.

However, there would only be one test if the employee moves back and forth among occupations. That is, the employee would have to take this type of test only once during his/her employment with the railroad.

§219.502-- Pre-employment Alcohol Testing

This section authorizes pre-employment alcohol testing, but does not require it. Part 40 procedures must be followed.

§ 219.503-- Notification; Records

The railroads shall provide for medical review of the urine drug test results as required by Subpart H, and shall notify the employee of the results of both the alcohol and/or drug tests and that records shall be maintained confidentially as required under Subpart J.

Subpart G — Random Alcohol and Drug Testing Programs

Coverage: Employees Performing Work Covered by the Hours of Service Act

§ 219.601-- Railroad Random Drug Testing Programs

(a) A railroad must submit its random program to FRA for approval. A new railroad has 60 days within which to submit a random testing program, and implement it 60 days after approval.

(b) Program must meet the following criteria:

(1) Each employee to be tested shall have substantially equal statistical chance of being selected. The idea of random selection is that those tested will be selected under neutral, objective criteria, i.e., no individual will be singled out for subjective reasons.

(2) Testing is to be conducted at a "25% rate." This means that the number of tests will equal 25% of the covered population. Under random selection, it is statistically likely that some employees will be tested more than once per year, while others will not be tested at all. If the railroad conducts the random testing through a consortium, the annual rate may be calculated for each individual employer, or for the total number of covered employees in the consortium.

(3) The program shall ensure that the possibility of a test exists on any day the employee works;

(4) Notice to employee of submitting test not given until time of duty tour;

(5) The program must be consistent with the regulations; and

(6) In general, an employee can be tested only while on duty. An employee who works in covered service only a portion of the time will be subject to random testing. To the extent practicable, such employee shall be subject to the possibility of random testing on any day that they actually performed covered service. However, the railroad may in its program specify circumstances under which that would be impossible, and therefore could require testing at times other than when actually performing covered service.

Also, if the employee's hours of service expires before completion of a random test, the railroad must discontinue the test. (This is not the rule for post accident and for cause testing, so long as the railroad uses due diligence to complete these tests. *See*, § 219.302).

§ 219.602 --Administrator's Determination Of Random Drug Testing Rate

Currently, railroad employees will be tested at the rate of 25%. If the data for any calendar year indicate that the positive rate is equal to or greater than 1%, the Administrator will increase the rate to 50%. When the rate is at 50%, the Administrator may lower the rate to 25%, if the data for 2 consecutive calendar years show that the positive rate is less than 1%.

If a given covered employee is subject to random testing under the rules of more than 1 DOT agency for the same railroad, the employee shall be subject to the testing at the rate established by the agency regulating more than 50% of the employee's function.

Where the railroad is required to conduct random testing under more than one DOT rule, the railroad may (1) establish separate pools for random selection with each pool containing the covered employees who are subject to the testing at the same required rates; or (2) randomly

select such employees for testing at the highest percentage rate established by any DOT agency to which the railroad is subject.

§ 219.603-- Participation in Drug Testing

A railroad shall require a covered employee to cooperate in the urine testing, and the employee shall provide the required sample. The employee shall be excused only in the case of a documented medical or family emergency.

§ 219.605-- Positive Test Results; Procedures

Employee shall be entitled to test results.

Hearing rights are set forth under § 219.104, and that section also contains the requirements for an employee to be returned to service.

The action by a railroad required under § 219.104 is not stayed pending the result of the test of the split sample.

§ 219.607-- Railroad Random Alcohol Testing Programs

Each railroad shall submit for FRA approval a random alcohol testing program. Currently, the annual testing rate of tests conducted will equal at least 10% of the number of covered employees, with testing to be spread reasonably through the 12 month period. If the railroad conducts random testing through a consortium, the annual rate may be calculated in one of two ways. It may calculate for each member employer or calculate for the total number of covered employees subject to random testing by the consortium.

The employees shall be subject to testing only at the time the employee reports for work and while on duty. Only employees who perform covered service for the railroad shall be subject to testing. In the case of employees who during some duty tours perform covered service and during others do not, the employee shall be tested only during the time covered service is performed.

The railroad shall inform the employee that the random testing was made on a random basis.

No later than 45 days prior to commencement of the random alcohol testing, the railroad shall publish to each of its covered employees, individually, a written notice that they will be subject to random alcohol testing.

§219.608-- Administrator's Determination of Random Alcohol Testing Rate

The minimum annual percentage rate of testing shall be 25% of covered employees.

The FRA may lower the testing rate to 10% if, for two consecutive years, the violation rate is less than .5%.

The FRA may increase the testing rate to 50% if, for any calendar year, the violation rate is 1% or higher.

Where a railroad is required to conduct testing under more than one DOT agency, the railroad may establish separate pools for random selection.

§ 219.609-- Participation in Alcohol Testing

A railroad shall require a covered employee to cooperate in the alcohol testing and the employee shall provide the required sample. The employee shall be excused only in the case of a documented medical or family emergency.

§ 219.611-- Test Result Indicating Prohibited Alcohol Concentration: Procedures

Procedures for the administrative handling of a positive alcohol test are set forth in §219.104.

Subpart H — Procedures and Safeguards For Urine Drug Testing and For Breath Alcohol Testing

In general, Subpart H has incorporated by reference 49 C.F.R. Part 40, which are the overall DOT regulations concerning the procedures that apply to all modes of transportation. The changes in this subpart specifically apply to the railroad industry.

§ 219.701-- Standards for Urine Drug and Alcohol Testing

All labs (including those performing reasonable cause testing) must be certified under DHHS guidelines. FRA and the railroad shall have the right to inspect labs.

All testing under Subparts B,D,F, and G shall comply with Part 40.

Each employee who is notified of selection for testing and who is not performing covered service at the time of notification must proceed to the testing site immediately. The railroad must assure that an employee who is performing covered service at the time of notification shall, as soon as possible without affecting safety, cease to perform covered service and proceed to the testing site.

§ 219.703-- Drug Testing Procedures

Only a licensed medical professional or medical technologist or technician, or a person specially trained in the function, may collect the urine sample. No management or supervisory employee may collect the sample.

§ 219.705-- Drugs Tested

Authorized to test for 5 drugs: marijuana, cocaine, PCP, opiates, amphetamines. In addition to the five drugs which shall be analyzed, as part of the reasonable cause testing program, a railroad may test for additional drugs only with the approval of FRA and only for substances which the DHHS has established and approved testing protocol and positive threshold. If reasonable cause testing, railroad may test for other drugs with FRA approval.

§ 219.707-- Review by MRO of Urine Drug Testing Results

Test results shown positive by lab shall not be deemed positive until reviewed by MRO as provided in Part 40.

The MRO shall complete the review of test results within not more than 10 regular working days from receipt of the lab report. In the case of a positive lab report, this review always involves an opportunity for a medical interview. After the MRO has reviewed the information, and the lab report is verified as indicating a positive, the MRO shall report the results to a designated railroad officer. The employee shall be provided a copy by delivering or mailing within 24 hours following any adverse action.

§ 219.711-- Confidentiality of Test Results

The laboratory reporting the results of tests shall report such results only to the designated MRO of the railroad, and the employee. In addition, the MRO may not disclose medically approved drug use to non-medical railroad personnel or any third party; however, the railroad's medical officer may use such information in the context of an established medical qualifications program. This section shall not be construed to permit medical disqualification of an employee prior to the completion of the MRO review. Finally, no record of the test conducted may be used or disseminated without the voluntary written consent of the employee. There is an exception— FRA or NTSB may disclose, where necessary, to consider information in accident investigation to determine probable cause.

§ 219.715-- Alcohol Testing Procedures

Each covered employee who is notified of selection for breath alcohol testing and who is not performing a safety-sensitive function at the time of notification shall proceed to the testing site immediately. If the employee is performing a safety-sensitive function at the time of notification, the employee shall cease to perform the safety-sensitive function as soon as possible without affecting safety and proceed to the testing site. All breath alcohol testing conducted under this part shall comply with the procedures of Part 40.

Subpart I — Annual Report

§ 219.801-- Reporting Alcohol Misuse Prevention Program Results in a Management Information System.

Each railroad that has 400,000 or more total man-hours shall submit an annual report to FRA which summarizes the results of its alcohol and drug misuse prevention program annually.

The reports shall be submitted no later than March 15 of each year. This section sets out the types of information which must be contained in the report, including the number of employees by employee category, the number of covered employees in each category subject to testing under the regulations of more than one DOT agency, the number of tests by type of test, the number of confirmatory tests by type of tests, the number of confirmatory tests indicating alcohol greater than .04, and indicating concentration between .02 and .04, the number of persons denied a position as a covered employee following a confirmed positive test, number of covered employees confirmed positive who was returned to duty in covered positions during the reporting period, the number of employees with tests verified positive for drug and alcohol, the number of covered employees who refused to submit to a test, the number of persons who received training.

§219.803-- Reporting Drug Misuse Prevention Program Results In A Management Information System

This section provides reporting requirements of FRA's Management Information System for drug testing.

Subpart J--Recordkeeping Requirements

§ 219.901 -- Retention of alcohol testing records.

- (a) General requirement. In addition to the records required to be kept by part 40 of this title, each railroad must maintain alcohol misuse prevention program records in a secure location with controlled access as set out in this section.
- (b) Each railroad must maintain the following records for a minimum of five years:
 - (1) A summary record of each covered employee's test results; and
 - (2) A copy of the annual report summarizing the results of its alcohol misuse prevention program (if required to submit the report under § 219.801(a)).
- (c) Each railroad must maintain the following records for a minimum of two years:
 - (1) Records related to the collection process:
 - (i) Collection logbooks, if used.
 - (ii) Documents relating to the random selection process.
 - (iii) Documents generated in connection with decisions to administer reasonable suspicion alcohol tests.
 - (iv) Documents generated in connection with decisions on post-accident testing.

(v) Documents verifying the existence of a medical explanation of the inability of a covered employee to provide an adequate specimen.

(2) Records related to test results:

(i) The railroad's copy of the alcohol test form, including the results of the test.

(ii) Documents related to the refusal of any covered employee to submit to an alcohol test required by this part.

(iii) Documents presented by a covered employee to dispute the result of an alcohol test administered under this part.

(3) Records related to other violations of this part.

(4) Records related to employee training:

(i) Materials on alcohol abuse awareness, including a copy of the railroad's policy on alcohol abuse.

(ii) Documentation of compliance with the requirements of § 219.23.

(iii) Documentation of training provided to supervisors for the purpose of qualifying the supervisors to make a determination concerning the need for alcohol testing based on reasonable suspicion.

(iv) Certification that any training conducted under this part complies with the requirements for such training.

§ 219.903 -- Retention of drug testing records.

(a) General requirement. In addition to the records required to be kept by Part 40 of this title, each railroad must maintain drug abuse prevention program records in a secure location with controlled access as set forth in this section.

(b) (1) Each railroad must maintain the following records for a minimum of five years:

(i) A summary record of each covered employee's test results; and

(ii) A copy of the annual report summarizing the results of its drug misuse prevention program (if required to submit under § 219.803(a)).

(2) Each railroad must maintain the following records for a minimum of two years.

(c) Types of records. The following specific records must be maintained:

(1) Records related to the collection process:

- (i) Documents relating to the random selection process.
 - (ii) Documents generated in connection with decisions to administer reasonable suspicion drug tests.
 - (iii) Documents generated in connection with decisions on post-accident testing.
 - (iv) Documents verifying the existence of a medical explanation of the inability of a covered employee to provide a specimen.
- (2) Records related to test results:
- (i) The railroad's copy of the drug test custody and control form, including the results of the test.
 - (ii) Documents presented by a covered employee to dispute the result of a drug test administered under this part.
- (3) Records related to other violations of this part.
- (4) Records related to employee training:
- (i) Materials on drug abuse awareness, including a copy of the railroad's policy on drug abuse.
 - (ii) Documentation of compliance with the requirements of § 219.23.
 - (iii) Documentation of training provided to supervisors for the purpose of qualifying the supervisors to make a determination concerning the need for alcohol testing based on reasonable suspicion.
 - (iv) Certification that any training conducted under this part complies with the requirements for such training.

§ 219.905 -- Access to facilities and records.

- (a) Release of covered employee information contained in records required to be maintained under §§ 219.901 and 219.903 must be in accordance with part 40 of this title and with this section. (For purposes of this section only, urine drug testing records are considered equivalent to breath alcohol testing records.)
- (b) Each railroad must permit access to all facilities utilized in complying with the requirements of this part to the Secretary of Transportation, United States Department of Transportation, or any DOT agency with regulatory authority over the railroad or any of its covered employees.

(c) Each railroad must make available copies of all results for railroad alcohol and drug testing programs conducted under this part and any other information pertaining to the railroad's alcohol and drug misuse prevention program, when requested by the Secretary of Transportation or any DOT agency with regulatory authority over the railroad or covered employee.

Appendix A—Schedule of Civil Penalties

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SAFETY ADVISORY 98-3 REGARDING THE USE OF PRESCRIPTION AND OVER-THE-COUNTER DRUGS

Although the federal regulations do not address prescription and over the counter drug use, FRA strongly recommends that railroads and employees follow 219.103 guidelines when considering use of prescription and over the counter(OTC) drugs. FRA recommends that either a treating medical professional or a railroad-designated physician make a fitness-for-work determination concerning all prescription and OTC drug use prior to permitting an employee to return to work in safety sensitive service, and including situations where an employee is concerned about the possible effects on his job performance such use.

Section 219.103(b) authorizes railroads to establish reporting and approval procedures for all prescription and OTC drugs which may have a detrimental effect on safety.

Additionally, FRA recommends that railroads educate their employees on these reporting and approval procedures.

PART 40--PROCEDURES FOR TRANSPORTATION WORKPLACE DRUG AND ALCOHOL TESTING PROGRAMS

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Subpart A--Administrative Provisions

§ 40.1 -- Who does this regulation cover?

(a) This part tells all parties who conduct drug and alcohol tests required by Department of Transportation (DOT) agency regulations how to conduct these tests and what procedures to use.

(b) This part concerns the activities of transportation employers, safety-sensitive transportation employees (including self-employed individuals, contractors and volunteers as covered by DOT agency regulations), and service agents.

(c) Nothing in this part is intended to supersede or conflict with the implementation of the Federal Railroad Administration's post-accident testing program (*See*, 49 C.F.R. 219.200).

§ 40.3 -- What do the terms used in this regulation mean?

In this part, the terms listed in this section have the following meanings:

Adulterated specimen. A specimen that contains a substance that is not expected to be present in human urine, or contains a substance expected to be present but is at a concentration so high that it is not consistent with human urine.

Affiliate. Persons are affiliates of one another if, directly or indirectly, one controls or has the power to control the other, or a third party controls or has the power to control both. Indicators of control include, but are not limited to: interlocking management or ownership; shared interest among family members; shared facilities or equipment; or common use of employees. Following the issuance of a public interest exclusion, an organization having the same or similar management, ownership, or principal employees as the service agent concerning whom a public interest exclusion is in effect is regarded as an affiliate. This definition is used in connection with the public interest exclusion procedures of Subpart R of this part.

Air blank. In evidential breath testing devices (EBTs) using gas chromatography technology, a reading of the device's internal standard. In all other EBTs, a reading of ambient air containing no alcohol.

Alcohol. The intoxicating agent in beverage alcohol, ethyl alcohol or other low molecular weight alcohols, including methyl or isopropyl alcohol.

Alcohol concentration. The alcohol in a volume of breath expressed in terms of grams of alcohol per 210 liters of breath as indicated by a breath test under this part.

Alcohol confirmation test. A subsequent test using an EBT, following a screening test with a result of 0.02 or greater, that provides quantitative data about the alcohol concentration.

Alcohol screening device (ASD). Alcohol screening device (ASD). A breath or saliva device, other than an EBT, that is approved by the National Highway Traffic Safety Administration (NHTSA) and appears on ODAPC's Web page for "Approved Screening Devices to Measure Alcohol in Bodily Fluids" because it conforms to the model specifications from NHTSA.

Alcohol screening test. An analytic procedure to determine whether an employee may have a prohibited concentration of alcohol in a breath or saliva specimen.

Alcohol testing site. A place selected by the employer where employees present themselves for the purpose of providing breath or saliva for an alcohol test.

Alcohol use. The drinking or swallowing of any beverage, liquid mixture or preparation (including any medication), containing alcohol.

Blind specimen or blind performance test specimen. A specimen submitted to a laboratory for quality control testing purposes, with a fictitious identifier, so that the laboratory cannot distinguish it from an employee specimen.

Breath Alcohol Technician (BAT). A person who instructs and assists employees in the alcohol testing process and operates an evidential breath testing device.

Cancelled test. A drug or alcohol test that has a problem identified that cannot be or has not been corrected, or which this part otherwise requires to be cancelled. A cancelled test is neither a positive nor a negative test.

Chain of custody. The procedure used to document the handling of the urine specimen from the time the employee gives the specimen to the collector until the specimen is destroyed. This procedure uses the Federal Drug Testing Custody and Control Form (CCF).

Collection container. A container into which the employee urinates to provide the specimen for a drug test.

Collection site. A place selected by the employer where employees present themselves for the purpose of providing a urine specimen for a drug test.

Collector. A person who instructs and assists employees at a collection site, who receives and makes an initial inspection of the specimen provided by those employees, and who initiates and completes the CCF.

Confirmation (or confirmatory) drug test. A second analytical procedure performed on a urine specimen to identify and quantify the presence of a specific drug or drug metabolite.

Confirmation (or confirmatory) validity test. A second test performed on a urine specimen to further support a validity test result.

Confirmed drug test. A confirmation test result received by an MRO from a laboratory.

Consortium/Third-party administrator (C/TPA). A service agent that provides or coordinates the provision of a variety of drug and alcohol testing services to employers. C/TPAs typically perform administrative tasks concerning the operation of the employers' drug and alcohol testing programs. This term includes, but is not limited to, groups of employers who join together to administer, as a single entity, the DOT drug and alcohol testing programs of its members. C/TPAs are not "employers" for purposes of this part.

Continuing education. Training for medical review officers (MROs) and substance abuse professionals (SAPs) who have completed qualification training and are performing MRO or SAP functions, designed to keep MROs and SAPs current on changes and developments in the DOT drug and alcohol testing program.

Designated employer representative (DER). An employee authorized by the employer to take immediate action(s) to remove employees from safety-sensitive duties and to make required decisions in the testing and evaluation processes. The DER also receives test results and other communications for the employer, consistent with the requirements of this part. Service agents cannot act as DERs.

Dilute specimen. A specimen with creatinine and specific gravity values that are lower than expected for human urine.

DOT, The Department, DOT agency. These terms encompass all DOT agencies, including, but not limited to, the United States Coast Guard (USCG), the Federal Aviation Administration (FAA), the Federal Railroad Administration (FRA), the Federal Motor Carrier Safety Administration (FMCSA), the Federal Transit Administration (FTA), the National Highway Traffic Safety Administration (NHTSA), the Pipeline and Hazardous Material Safety Administration (PHMSA), and the Office of the Secretary (OST). These terms include any designee of a DOT agency. For purposes of this part, the United States Coast Guard (USCG), in the Department of Homeland Security, is considered to be a DOT agency for drug testing purposes only since the USCG regulation does not incorporate Part 40 for its alcohol testing program. These terms include any designee of a DOT agency.

Drugs. The drugs for which tests are required under this part and DOT agency regulations are marijuana, cocaine, amphetamines, phencyclidine (PCP), and opioids.

Employee. Any person who is designated in a DOT agency regulation as subject to drug testing and/or alcohol testing. The term includes individuals currently performing safety-sensitive functions designated in DOT agency regulations and applicants for employment subject to pre-employment testing. For purposes of drug testing under this part, the term employee has the same meaning as the term "donor" as found on CCF and related guidance materials produced by the Department of Health and Human Services.

Employer. A person or entity employing one or more employees (including an individual who is self-employed) subject to DOT agency regulations requiring compliance with this part. The term includes an employer's officers, representatives, and management personnel. Service agents are not employers for the purposes of this part.

Error Correction Training. Training provided to BATs, collectors, and screening test technicians (STTs) following an error that resulted in the cancellation of a drug or alcohol test. Error correction training must be provided in person or by a means that provides real-time observation and interaction between the instructor and trainee.

Evidential Breath Testing Device (EBT). A device that is approved by the National Highway Traffic Safety Administration (NHTSA) for the evidential testing of breath at the .02 and .04 alcohol concentrations, and appears on ODAPC's Web page for "Approved Evidential Breath Measurement Devices" because it conforms with the model specifications available from NHTSA.

Initial drug test. The test used to differentiate a negative specimen from one that requires further testing for drugs or drug metabolites.

Initial validity test. The first test used to determine if a specimen is adulterated, diluted, or substituted.

Laboratory. Any U.S. laboratory certified by HHS under the National Laboratory Certification Program as meeting the minimum standards of Subpart C of the HHS Mandatory Guidelines for Federal Workplace Drug Testing Programs; or, in the case of foreign laboratories, a laboratory approved for participation by DOT under this part. (The HHS Mandatory Guidelines for Federal Workplace Drug Testing Programs are available on the internet at <http://www.health.org/workpl.htm> or from the Division of Workplace Programs, 5600 Fishers Lane, Rockwall II Building, Suite 815, Rockville, MD 20857.)

Medical Review Officer (MRO). A person who is a licensed physician and who is responsible for receiving and reviewing laboratory results generated by an employer's drug testing program and evaluating medical explanations for certain drug test results.

Office of Drug and Alcohol Policy and Compliance (ODAPC). The office in the Office of the Secretary, DOT, that is responsible for coordinating drug and alcohol testing program matters within the Department and providing information concerning the implementation of this part.

Primary specimen. In drug testing, the urine specimen bottle that is opened and tested by a first laboratory to determine whether the employee has a drug or drug metabolite in his or her system; and for the purpose of validity testing. The primary specimen is distinguished from the split specimen, defined in this section.

Qualification Training. The training required in order for a collector, BAT, MRO, SAP, or STT to be qualified to perform their functions in the DOT drug and alcohol testing program. Qualification training may be provided by any appropriate means (e.g., classroom instruction, internet application, CD-ROM, video).

Refresher Training. The training required periodically for qualified collectors, BATs, and STTs to review basic requirements and provide instruction concerning changes in technology (e.g., new testing methods that may be authorized) and amendments, interpretations, guidance, and issues concerning this part and DOT agency drug and alcohol testing regulations. Refresher training can be provided by any appropriate means (e.g., classroom instruction, internet application, CD-ROM, video).

Screening Test Technician (STT). A person who instructs and assists employees in the alcohol testing process and operates an ASD.

Secretary. The Secretary of Transportation or the Secretary's designee.

Service agent. Any person or entity, other than an employee of the employer, who provides services specified under this part to employers and/or employees in connection with DOT drug and alcohol testing requirements. This includes, but is not limited to, collectors, BATs and STTs, laboratories, MROs, substance abuse professionals, and C/TPAs. To act as service agents, persons and organizations must meet the qualifications set forth in applicable sections of this part. Service agents are not employers for purposes of this part.

Shipping container. A container that is used for transporting and protecting urine specimen bottles and associated documents from the collection site to the laboratory.

Specimen bottle. The bottle that, after being sealed and labeled according to the procedures in this part, is used to hold the urine specimen during transportation to the laboratory.

Split specimen. In drug testing, a part of the urine specimen that is sent to a first laboratory and retained unopened, and which is transported to a second laboratory in the event that the employee requests that it be tested following a verified positive test of the primary specimen or a verified adulterated or substituted test result.

Stand-down. The practice of temporarily removing an employee from the performance of safety-sensitive functions based only on a report from a laboratory to the MRO of a confirmed positive test for a drug or drug metabolite, an adulterated test, or a substituted test, before the MRO has completed verification of the test result.

Substance Abuse Professional (SAP). A person who evaluates employees who have violated a DOT drug and alcohol regulation and makes recommendations concerning education, treatment, follow-up testing, and aftercare.

Substituted specimen. A specimen with creatinine and specific gravity values that are so diminished that they are not consistent with human urine.

Verified test. A drug test result or validity testing result from an HHS-certified laboratory that has undergone review and final determination by the MRO.

§ 40.5 -- Who issues authoritative interpretations of this regulation?

ODAPC and the DOT Office of General Counsel (OGC) provide written interpretations of the provisions of this part. These written DOT interpretations are the only official and authoritative interpretations concerning the provisions of this part. DOT agencies may incorporate ODAPC/OGC interpretations in written guidance they issue concerning drug and alcohol testing matters. Only Part 40 interpretations issued after August 1, 2001, are considered valid.

§ 40.7 -- How can you get an exemption from a requirement in this regulation?

(a) If you want an exemption from any provision of this part, you must request it in writing from the Office of the Secretary of Transportation, under the provisions and standards of 49 C.F.R. Part 5. You must send requests for an exemption to the following address: Department of Transportation, Deputy Assistant General Counsel for Regulation and Enforcement, 1200 New Jersey Ave., S.E., Washington, DC 20590.

(b) Under the standards of 49 C.F.R. part 5, we will grant the request only if the request documents special or exceptional circumstances, not likely to be generally applicable and not contemplated in connection with the rulemaking that established this part, that make your compliance with a specific provision of this part impracticable.

(c) If we grant you an exemption, you must agree to take steps we specify to comply with the intent of the provision from which an exemption is granted.

(d) We will issue written responses to all exemption requests.

Subpart B--Employer Responsibilities

§ 40.11 -- What are the general responsibilities of employers under this regulation?

(a) As an employer, you are responsible for meeting all applicable requirements and procedures of this part.

(b) You are responsible for all actions of your officials, representatives, and agents (including service agents) in carrying out the requirements of the DOT agency regulations.

(c) All agreements and arrangements, written or unwritten, between and among employers and service agents concerning the implementation of DOT drug and alcohol testing requirements are deemed, as a matter of law, to require compliance with all applicable provisions of this part and DOT agency drug and alcohol testing regulations. Compliance with these provisions is a material term of all such agreements and arrangements.

§ 40.13 -- How do DOT drug and alcohol tests relate to non-DOT tests?

(a) DOT tests must be completely separate from non-DOT tests in all respects.

(b) DOT tests must take priority and must be conducted and completed before a non-DOT test is begun. For example, you must discard any excess urine left over from a DOT test and collect a separate void for the subsequent non-DOT test.

(c) Except as provided in paragraph (d) of this section, you must not perform any tests on DOT urine or breath specimens other than those specifically authorized by this part or DOT agency regulations. For example, you may not test a DOT urine specimen for additional drugs, and a laboratory is prohibited from making a DOT urine specimen available for a DNA test or other types of specimen identity testing.

(d) The single exception to paragraph (c) of this section is when a DOT drug test collection is conducted as part of a physical examination required by DOT agency regulations. It is permissible to conduct required medical tests related to this physical examination (*e.g.*, for glucose) on any urine remaining in the collection container after the drug test urine specimens have been sealed into the specimen bottles.

(e) No one is permitted to change or disregard the results of DOT tests based on the results of non-DOT tests. For example, as an employer you must not disregard a verified positive DOT drug test result because the employee presents a negative test result from a blood or urine specimen collected by the employee's physician or a DNA test result purporting to question the identity of the DOT specimen.

(f) As an employer, you must not use the CCF or the ATF in your non-DOT drug and alcohol testing programs. This prohibition includes the use of the DOT forms with references to DOT programs and agencies crossed out. You also must always use the CCF and ATF for all your DOT-mandated drug and alcohol tests.

§ 40.15 -- May an employer use a service agent to meet DOT drug and alcohol testing requirements?

(a) As an employer, you may use a service agent to perform the tasks needed to comply with this part and DOT agency drug and alcohol testing regulations, consistent with the requirements of Subpart Q and other applicable provisions of this part.

(b) As an employer, you are responsible for ensuring that the service agents you use meet the qualifications set forth in this part (*e.g.*, § 40.121 for MROs). You may require service agent to show you documentation that they meet the requirements of this part (*e.g.*, documentation of MRO qualifications required by § 40.121(e)).

(c) You remain responsible for compliance with all applicable requirements of this part and other DOT drug and alcohol testing regulations, even when you use a service agent. If you violate this part or other DOT drug and alcohol testing regulations because a service agent has not provided services as our rules require, a DOT agency can subject you to sanctions. Your good faith use of a service agent is not a defense in an enforcement action initiated by a DOT agency in which your alleged noncompliance with this part or a DOT agency drug and alcohol regulation may have resulted from the service agent's conduct.

- (d) As an employer, you must not permit a service agent to act as your DER.

§ 40.17 -- Is an employer responsible for obtaining information from its service agents?

Yes, as an employer, you are responsible for obtaining information required by this part from your service agents. This is true whether or not you choose to use a C/TPA as an intermediary in transmitting information to you. For example, suppose an applicant for a safety-sensitive job takes a pre-employment drug test, but there is a significant delay in your receipt of the test result from an MRO or C/TPA. You must not assume that "no news is good news" and permit the applicant to perform safety-sensitive duties before receiving the result. This is a violation of the Department's regulations.

§ 40.19 -- [Reserved]

§ 40.21 -- May an employer stand down an employee before the MRO has completed the verification process?

- (a) As an employer, you are prohibited from standing employees down, except consistent with a waiver a DOT agency grants under this section.
- (b) You may make a request to the concerned DOT agency for a waiver from the prohibition of paragraph (a) of this section. Such a waiver, if granted, permits you to stand an employee down following the MRO's receipt of a laboratory report of a confirmed positive test for a drug or drug metabolite, an adulterated test, or a substituted test pertaining to the employee.
- (1) For this purpose, the concerned DOT agency is the one whose drug and alcohol testing rules apply to the majority of the covered employees in your organization. The concerned DOT agency uses its applicable procedures for considering requests for waivers.
- (2) Before taking action on a waiver request, the concerned DOT agency coordinates with other DOT agencies that regulate the employer's other covered employees.
- (3) The concerned DOT agency provides a written response to each employer that petitions for a waiver, setting forth the reasons for the agency's decision on the waiver request.
- (c) Your request for a waiver must include, as a minimum, the following elements:
- (1) Information about your organization:
- (i) Your determination that standing employees down is necessary for safety in your organization and a statement of your basis for it, including any data on safety problems or incidents that could have been prevented if a stand-down procedure had been in place;
- (ii) Data showing the number of confirmed laboratory positive, adulterated, and substituted test results for your employees over the two calendar years preceding your waiver request, and the number and percentage of those test results that were verified positive, adulterated, or substituted by the MRO;
- (iii) Information about the work situation of the employees subject to stand-down, including a description of the size and organization of the unit(s) in which the employees work, the process through which employees will be informed of the stand-down, whether

there is an in-house MRO, and whether your organization has a medical disqualification or stand-down policy for employees in situations other than drug and alcohol testing; and

(iv) A statement of which DOT agencies regulate your employees.

(2) Your proposed written company policy concerning stand-down, which must include the following elements:

(i) Your assurance that you will distribute copies of your written policy to all employees that it covers;

(ii) Your means of ensuring that no information about the confirmed positive, adulterated, or substituted test result or the reason for the employee's temporary removal from performance of safety-sensitive functions becomes available, directly or indirectly, to anyone in your organization (or subsequently to another employer) other than the employee, the MRO and the DER;

(iii) Your means of ensuring that all covered employees in a particular job category in your organization are treated the same way with respect to stand-down;

(iv) Your means of ensuring that a covered employee will be subject to stand-down only with respect to the actual performance of safety-sensitive duties;

(v) Your means of ensuring that you will not take any action adversely affecting the employee's pay and benefits pending the completion of the MRO's verification process. This includes continuing to pay the employee during the period of the stand-down in the same way you would have paid him or her had he or she not been stood down;

(vi) Your means of ensuring that the verification process will commence no later than the time an employee is temporarily removed from the performance of safety-sensitive functions and that the period of stand-down for any employee will not exceed five days, unless you are informed in writing by the MRO that a longer period is needed to complete the verification process; and

(vii) Your means of ensuring that, in the event that the MRO verifies the test negative or cancels it-

(A) You return the employee immediately to the performance of safety-sensitive duties;

(B) The employee suffers no adverse personnel or financial consequences as a result; and

(C) You maintain no individually identifiable record that the employee had a confirmed laboratory positive, adulterated, or substituted test result (*i.e.*, you maintain a record of the test only as a negative or cancelled test).

(d) The Administrator of the concerned DOT agency, or his or her designee, may grant a waiver request only if he or she determines that, in the context of your organization, there is a high probability that the procedures you propose will effectively enhance safety and protect the interests of employees in fairness and confidentiality.

(1) The Administrator, or his or her designee, may impose any conditions he or she deems appropriate on the grant of a waiver.

(2) The Administrator, or his or her designee, may immediately suspend or revoke the waiver if he or she determines that you have failed to protect effectively the interests of employees in fairness and confidentiality, that you have failed to comply with the requirements of this section, or that you have failed to comply with any other conditions the DOT agency has attached to the waiver.

(e) You must not stand employees down in the absence of a waiver, or inconsistent with the terms of your waiver. If you do, you are in of this part and DOT agency drug testing regulations, and you are subject to enforcement action by the DOT agency just as you are for other violations of this part and DOT agency rules.

§ 40.23 -- What actions do employers take after receiving verified test results?

(a) As an employer who receives a verified positive drug test result, you must immediately remove the employee involved from performing safety-sensitive functions. You must take this action upon receiving the initial report of the verified positive test result. Do not wait to receive the written report or the result of a split specimen test.

(b) As an employer who receives a verified adulterated or substituted drug test result, you must consider this a refusal to test and immediately remove the employee involved from performing safety-sensitive functions. You must take this action on receiving the initial report of the verified adulterated or substituted test result. Do not wait to receive the written report or the result of a split specimen test.

(c) As an employer who receives an alcohol test result of 0.04 or higher, you must immediately remove the employee involved from performing safety-sensitive functions. If you receive an alcohol test result of 0.02-0.39, you must temporarily remove the employee involved from performing safety-sensitive functions, as provided in applicable DOT agency regulations. Do not wait to receive the written report of the result of the test.

(d) As an employer, when an employee has a verified positive, adulterated, or substituted test result, or has otherwise violated a DOT agency drug and alcohol regulation, you must not return the employee to the performance of safety-sensitive functions until or unless the employee successfully completes the return-to-duty process of Subpart O of this part.

(e) As an employer who receives a drug test result indicating that the employee's specimen was dilute, take action as provided in § 40.197.

(f) As an employer who receives a drug test result indicating that the employee's specimen was invalid and that a second collection must take place under direct observation-

(1) You must immediately direct the employee to provide a new specimen under direct observation.

(2) You must not attach consequences to the finding that the test was invalid other than collecting a new specimen under direct observation.

(3) You must not give any advance notice of this test requirement to the employee.

(4) You must instruct the collector to note on the CCF the same reason (*e.g.* random test, post-accident test) as for the original collection.

(g) As an employer who receives a cancelled test result when a negative result is required (*e.g.*, pre-employment, return-to-duty, or follow-up test), you must direct the employee to provide another specimen immediately.

(h) As an employer, you may also be required to take additional actions required by DOT agency regulations (*e.g.*, FAA rules require some positive drug tests to be reported to the Federal Air Surgeon).

(i) As an employer, you must not alter a drug or alcohol test result transmitted to you by an MRO, BAT, or C/TPA.

§ 40.25 -- Must an employer check on the drug and alcohol testing record of employees it is intending to use to perform safety-sensitive duties?

(a) Yes, as an employer, you must, after obtaining an employee's written consent, request the information about the employee listed in paragraph (b) of this section. This requirement applies only to employees seeking to begin performing safety-sensitive duties for you for the first time (*i.e.*, a new hire, an employee transfers into a safety-sensitive position). If the employee refuses to provide this written consent, you must not permit the employee to perform safety-sensitive functions.

(b) You must request the information listed in this paragraph (b) from DOT-regulated employers who have employed the employee during any period during the two years before the date of the employee's application or transfer:

- (1) Alcohol tests with a result of 0.04 or higher alcohol concentration;
- (2) Verified positive drug tests;
- (3) Refusals to be tested (including verified adulterated or substituted drug test results);
- (4) Other violations of DOT agency drug and alcohol testing regulations; and
- (5) With respect to any employee who violated a DOT drug and alcohol regulation, documentation of the employee's successful completion of DOT return-to-duty requirements (including follow-up tests). If the previous employer does not have information about the return-to-duty process (*e.g.*, an employer who did not hire an employee who tested positive on a pre-employment test), you must seek to obtain this information from the employee.

(c) The information obtained from a previous employer includes any drug or alcohol test information obtained from previous employers under this section or other applicable DOT agency regulations.

(d) If feasible, you must obtain and review this information before the employee first performs safety-sensitive functions. If this is not feasible, you must obtain and review the information as soon as possible. However, you must not permit the employee to perform safety-sensitive functions after 30 days from the date on which the employee first performed safety-sensitive functions, unless you have obtained or made and documented a good faith effort to obtain this information.

(e) If you obtain information that the employee has violated a DOT agency drug and alcohol regulation, you must not use the employee to perform safety-sensitive functions unless you also obtain information that the employee has subsequently complied with the return-to-duty requirements of Subpart O of this part and DOT agency drug and alcohol regulations.

(f) You must provide to each of the employers from whom you request information under paragraph (b) of this section written consent for the release of the information cited in paragraph (a) of this section.

(g) The release of information under this section must be in any written form (*e.g.*, fax, e-mail, letter) that ensures confidentiality. As the previous employer, you must maintain a written record of the information released, including the date, the party to whom it was released, and a summary of the information provided.

(h) If you are an employer from whom information is requested under paragraph (b) of this section, you must, after reviewing the employee's specific, written consent, immediately release the requested information to the employer making the inquiry.

(i) As the employer requesting the information required under this section, you must maintain a written, confidential record of the information you obtain or of the good faith efforts you made to obtain the information. You must retain this information for three years from the date of the employee's first performance of safety-sensitive duties for you.

(j) As the employer, you must also ask the employee whether he or she has tested positive, or refused to test, on any pre-employment drug or alcohol test administered by an employer to which the employee applied for, but did not obtain, safety-sensitive transportation work covered by DOT agency drug and alcohol testing rules during the past two years. If the employee admits that he or she had a positive test or a refusal to test, you must not use the employee to perform safety-sensitive functions for you, until and unless the employee documents successful completion of the return-to-duty process (*See*, paragraphs (b)(5) and (e) of this section).

§ 40.26 What form must an employer use to report Management Information System data to a DOT agency?

As an employer, when you are required to report MIS data to a DOT agency, you must use the U.S. Department of Transportation Drug and Alcohol Testing MIS Data Collection Form to report that data. You must use the form at appendix H to this part. You may view and download the instructions on the Department's Web site (<https://www.transportation.gov/odapc>). You must submit the MIS report in accordance with rule requirements (*e.g.*, dates for submission, selection of companies required to submit, and method of reporting) established by the DOT agency regulating your operation.

§ 40.27 -- Where is other information on employer responsibilities found in this regulation?

You can find other information on the responsibilities of employers in the following sections of this part:

§ 40.3-Definition; § 40.35-Information about DERs that employers must provide collectors; §

40.45-Modifying CCFs, Use of foreign-language CCFs; § 40.47-Use of non-Federal forms for DOT tests or Federal CCFs for non-DOT tests; § 40.67-Requirements for direct observation; §§ 40.103-40.105-Blind specimen requirements; § 40.173-Responsibility to ensure test of split specimen; § 40.193-Action in "shy bladder" situations; § 40.197-Actions following report of a dilute specimen; § 40.207-Actions following a report of a cancelled drug test; § 40.209-Actions following and consequences of non-fatal flaws in drug tests; § 40.215-Information about DERs that employers must provide BATs and STTs; § 40.225-Modifying ATFs; use of foreign-language ATFs; § 40.227-Use of non-DOT forms for DOT tests or DOT ATFs for non-DOT tests; § 40.235 (c) and (d)-responsibility to follow instructions for ASDs; § 40.255 (b)-receipt and storage of alcohol test information; § 40.265 (c)-(e)-actions in "shy lung" situations; § 40.267-Cancellation of alcohol tests; § 40.271-Actions in "correctable flaw" situations in alcohol tests; § 40.273-Actions following cancelled tests in alcohol tests; § 40.275-Actions in "non-fatal flaw" situations in alcohol tests; §§ 40.287-40.289-Responsibilities concerning SAP services; §§ 40.295-40.297-Prohibition on seeking second SAP evaluation or changing SAP recommendation; § 40.303-Responsibilities concerning aftercare recommendations; § 40.305-Responsibilities concerning return-to-duty decision; § 40.309-Responsibilities concerning follow-up tests; § 40.321-General confidentiality requirement; § 40.323-Release of confidential information in litigation; § 40.331-Other circumstances for the release of confidential information; § 40.333-Record retention requirements; § 40.345-Choice of who reports drug testing information to employers.

§40.29 Where is other information on employer responsibilities found in this regulation?

You can find other information on the responsibilities of employers in the following sections of this part:

§40.3—Definitions.

§40.35—Information about DERs that employers must provide collectors.

§40.45—Modifying CCFs, Use of foreign-language CCFs.

§40.47—Use of non-Federal forms for DOT tests or Federal CCFs for non-DOT tests.

§40.67—Requirements for direct observation.

§40.173—Responsibility to ensure test of split specimen.

§40.193—Action in “shy bladder” situations.

§40.197—Actions following report of a dilute specimen.

§40.207—Actions following a report of a cancelled drug test.

§40.209—Actions following and consequences of non-fatal flaws in drug tests.

§40.215—Information about DERs that employers must provide BATs and STTs.

§40.225—Modifying ATFs; use of foreign-language ATFs.

§40.227—Use of non-DOT forms for DOT tests or DOT ATFs for non-DOT tests.

§40.235 (c) and (d)—responsibility to follow instructions for ASDs.

§40.255 (b)—receipt and storage of alcohol test information.

§40.265 (c)-(e)—actions in “shy lung” situations.

§40.267—Cancellation of alcohol tests.

§40.271—Actions in “correctable flaw” situations in alcohol tests.

§40.273—Actions following cancelled tests in alcohol tests.

§40.275—Actions in “non-fatal flaw” situations in alcohol tests.

§§40.287-40.289—Responsibilities concerning SAP services.

§§40.295-40.297—Prohibition on seeking second SAP evaluation or changing SAP recommendation.

§40.303—Responsibilities concerning aftercare recommendations.

§40.305—Responsibilities concerning return-to-duty decision.

§40.309—Responsibilities concerning follow-up tests.

§40.321—General confidentiality requirement.

§40.323—Release of confidential information in litigation.

§40.331—Other circumstances for the release of confidential information.

§40.333—Record retention requirements.

§40.345—Choice of who reports drug testing information to employers.

Subpart C--Urine Collection Personnel

§ 40.31 -- Who may collect urine specimens for DOT drug testing?

- (a) Collectors meeting the requirements of this subpart are the only persons authorized to collect urine specimens for DOT drug testing.
- (b) A collector must meet training requirements of § 40.33.
- (c) As the immediate supervisor of an employee being tested, you may not act as the collector when that employee is tested, unless no other collector is available and you are permitted to do so under DOT agency drug and alcohol regulations.
- (d) You must not act as the collector for the employee being tested if you work for a HHS-certified laboratory (*e.g.*, as a technician or accessioner) and could link the employee with a urine specimen, drug testing result, or laboratory report.

§ 40.33 -- What training requirements must a collector meet?

To be permitted to act as a collector in the DOT drug testing program, you must meet each of the requirements of this section:

- (a) **Basic information.** (a) You must be knowledgeable about this part, the current “DOT Urine Specimen Collection Procedures Guidelines,” and DOT agency regulations applicable to the employers for whom you perform collections. DOT agency regulations, the DOT Urine Specimen Collection Procedures Guidelines, and other materials are available from ODAPC (Department of Transportation, 1200 New Jersey Avenue SE., Washington DC, 20590, 202-366-3784, or on the ODAPC Web site (<https://www.transportation.gov/odapc>)). You must keep current on any changes to these materials. You must subscribe to the ODAPC list-serve at: <https://www.transportation.gov/odapc/get-odapc-email-updates>.
- (b) **Qualification training.** You must receive qualification training meeting the requirements of this paragraph. Qualification training must provide instruction on the following subjects:
 - (1) All steps necessary to complete a collection correctly and the proper completion and transmission of the CCF;
 - (2) "Problem" collections (*e.g.*, situations like "shy bladder" and attempts to tamper with a specimen);
 - (3) Fatal flaws, correctable flaws, and how to correct problems in collections; and
 - (4) The collector's responsibility for maintaining the integrity of the collection process, ensuring the privacy of employees being tested, ensuring the security of the specimen, and avoiding conduct or statements that could be viewed as offensive or inappropriate;
- (c) **Initial Proficiency Demonstration.** Following your completion of qualification training under paragraph (b) of this section, you must demonstrate proficiency in collections under this part by completing five consecutive error-free mock collections.
 - (1) The five mock collections must include two uneventful collection scenarios, one insufficient quantity of urine scenario, one temperature out of range scenario, and one scenario in which the employee refuses to sign the CCF and initial the specimen bottle tamper-evident seal.
 - (2) Another person must monitor and evaluate your performance, in person or by a means that provides real-time observation and interaction between the instructor and trainee, and

attest in writing that the mock collections are "error-free." This person must be an individual who has demonstrated necessary knowledge, skills, and abilities by-

- (i) Regularly conducting DOT drug test collections for a period of at least a year;
- (ii) Conducting collector training under this part for a year; or
- (iii) Successfully completing a "train the trainer" course.

(d) You must meet the requirements of paragraphs (b) and (c) of this section before you begin to perform collector functions.

(3) If you become a collector on or after August 1, 2001, you must meet the requirements of paragraphs (b) and (c) of this section before you begin to perform collector functions.

(e) **Refresher training.** No less frequently than every five years from the date on which you satisfactorily complete the requirements of paragraphs (b) and (c) of this section, you must complete refresher training that meets all the requirements of paragraphs (b) and (c) of this section.

(f) **Error Correction Training.** If you make a mistake in the collection process that causes a test to be cancelled (*i.e.*, a fatal or uncorrected flaw), you must undergo error correction training. This training must occur within 30 days of the date you are notified of the error that led to the need for retraining.

(i) Error correction training must be provided and your proficiency documented in writing by a person who meets the requirements of paragraph (c)(2) of this section.

(ii) Error correction training is required to cover only the subject matter area(s) in which the error that caused the test to be cancelled occurred.

(iii) As part of the error correction training, you must demonstrate your proficiency in the collection procedures of this part by completing three consecutive error-free mock collections. The mock collections must include one uneventful scenario and two scenarios related to the area(s) in which your error(s) occurred. The person providing the training must monitor and evaluate your performance and attest in writing that the mock collections were "error-free."

(g) **Documentation.** You must maintain documentation showing that you currently meet all requirements of this section. You must provide this documentation on request to DOT agency representatives and to employers and C/TPAs who are using or negotiating to use your services.

§ 40.35 -- What information about the DER must employers provide to collectors?

As an employer, you must provide to collectors the name and telephone number of the appropriate DER (and C/TPA, where applicable) to contact about any problems or issues that may arise during the testing process.

§ 40.37 -- Where is other information on the role of collectors found in this regulation?

You can find other information on the role and functions of collectors in the following sections of this part:

§ 40.3-Definition; § 40.43-Steps to prepare and secure collection sites; §§ 40.45-40.47-Use of CCF; §§ 40.49-40.51-Use of collection kit and shipping materials; §§ 40.61-40.63-Preliminary steps in collections; § 40.65-Role in checking specimens; § 40.67-Role in directly observed collections; § 40.69-Role in monitored collections; § 40.71-Role in split specimen collections; § 40.73-Chain of custody completion and finishing the collection process; § 40.191-Action in case of refusals to take test; § 40.193-Action in "shy bladder" situations; §§ 40.199-40.205-Collector errors in tests, effects, and means of correction.

Subpart D--Collection Sites, Forms, Equipment and Supplies Used in DOT Urine Collections

§ 40.41 -- Where does a urine collection for a DOT drug test take place?

- (a) A urine collection for a DOT drug test must take place in a collection site meeting the requirements of this section.
- (b) If you are operating a collection site, you must ensure that it meets the security requirements of § 40.43.
- (c) If you are operating a collection site, you must have all necessary personnel, materials, equipment, facilities and supervision to provide for the collection, temporary storage, and shipping of urine specimens to a laboratory, and a suitable clean surface for writing.
- (d) Your collection site must include a facility for urination described in either paragraph (e) or paragraph (f) of this section.
- (e) The first, and preferred, type of facility for urination that a collection site may include is a single-toilet room, having a full-length privacy door, within which urination can occur.
 - (1) No one but the employee may be present in the room during the collection, except for the observer in the event of a directly observed collection.
 - (2) You must have a source of water for washing hands, that, if practicable, should be external to the closed room where urination occurs. If an external source is not available, you may meet this requirement by securing all sources of water and other substances that could be used for adulteration and substitution (*e.g.*, water faucets, soap dispensers) and providing moist towelettes outside the closed room.
- (f) The second type of facility for urination that a collection site may include is a multistall restroom.
 - (1) Such a site must provide substantial visual privacy (*e.g.*, a toilet stall with a partial-length door) and meet all other applicable requirements of this section.
 - (2) If you use a multi-stall restroom, you must either-

(i) Secure all sources of water and other substances that could be used for adulteration and substitution (*e.g.*, water faucets, soap dispensers) and place bluing agent in all toilets or secure the toilets to prevent access; or

(ii) Conduct all collections in the facility as monitored collections (*See*, § 40.69 for procedures). This is the only circumstance in which you may conduct a monitored collection.

(3) No one but the employee may be present in the multi-stall restroom during the collection, except for the monitor in the event of a monitored collection or the observer in the event of a directly observed collection.

(g) A collection site may be in a medical facility, a mobile facility (*e.g.*, a van), a dedicated collection facility, or any other location meeting the requirements of this section.

§ 40.43 -- What steps must operators of collection sites take to protect the security and integrity of urine collections?

(a) Collectors and operators of collection sites must take the steps listed in this section to prevent unauthorized access that could compromise the integrity of collections.

(b) As a collector, you must do the following before each collection to deter tampering with specimens:

(1) Secure any water sources or otherwise make them unavailable to employees (*e.g.*, turn off water inlet, tape handles to prevent opening faucets);

(2) Ensure that the water in the toilet is blue;

(3) Ensure that no soap, disinfectants, cleaning agents, or other possible adulterants are present;

(4) Inspect the site to ensure that no foreign or unauthorized substances are present;

(5) Tape or otherwise secure shut any movable toilet tank top, or put bluing in the tank;

(6) Ensure that undetected access (*e.g.*, through a door not in your view) is not possible;

(7) Secure areas and items (*e.g.*, ledges, trash receptacles, paper towel holders, under-sink areas) that appear suitable for concealing contaminants; and

(8) Recheck items in paragraphs (b)(1) through (7) of this section following each collection to ensure the site's continued integrity.

(c) If the collection site uses a facility normally used for other purposes, like a public rest room or hospital examining room, you must, as a collector, also ensure before the collection that:

(1) Access to collection materials and specimens is effectively restricted; and

(2) The facility is secured against access during the procedure to ensure privacy to the employee and prevent distraction of the collector. Limited-access signs must be posted.

(d) As a collector, you must take the following additional steps to ensure security during the collection process:

(1) To avoid distraction that could compromise security, you are limited to conducting a collection for only one employee at a time. However, during the time one employee is in the period for drinking fluids in a "shy bladder" situation (*See*, § 40.193(b)), you may conduct a collection for another employee.

(2) To the greatest extent you can, keep an employee's collection container within view of both you and the employee between the time the employee has urinated and the specimen is sealed.

(3) Ensure you are the only person in addition to the employee who handles the specimen before it is poured into the bottles and sealed with tamper-evident seals.

(4) In the time between when the employee gives you the specimen and when you seal the specimen, remain within the collection site.

(5) Maintain personal control over each specimen and CCF throughout the collection process.

(e) If you are operating a collection site, you must implement a policy and procedures to prevent unauthorized personnel from entering any part of the site in which urine specimens are collected or stored.

(1) Only employees being tested, collectors and other collection site workers, DERs, employee and employer representatives authorized by the employer (*e.g.*, employer policy, collective bargaining agreement), and DOT agency representatives are authorized persons for purposes of this paragraph (e).

(2) Except for the observer in a directly observed collection or the monitor in the case of a monitored collection, you must not permit anyone to enter the urination facility in which employees provide specimens.

(3) You must ensure that all authorized persons are under the supervision of a collector at all times when permitted into the site.

(4) You or the collector may remove any person who obstructs, interferes with, or causes a delay in the collection process.

(f) If you are operating a collection site, you must minimize the number of persons handling specimens.

§ 40.45 -- What form is used to document a DOT urine collection?

(a) The Federal Drug Testing Custody and Control Form (CCF) must be used to document every urine collection required by the DOT drug testing program. The CCF must be a five-part carbonless manifold form. You may view this form on the Department's web site (<http://www.dot.gov/odapc>) or the HHS web site (<http://www.health.org/workpl.htm>).

(b) As a participant in the DOT drug testing program, you are not permitted to modify or revise the CCF except as follows:

(1) You may include, in the area outside the border of the form, other information needed for billing or other purposes necessary to the collection process.

(2) The CCF must include the names, addresses, telephone numbers and fax numbers of the employer and the MRO, which may be preprinted, typed, or handwritten. The MRO information must include the specific physician's name and address, as opposed to only a generic clinic, health care organization, or company name. This information is required, and it is prohibited for an employer, collector, service agent or any other party to omit it. In addition, a C/TPA's name, address, fax number, and telephone number may be included, but is not required.

(3) As an employer, you may add the name of the DOT agency under whose authority the test occurred as part of the employer information.

(4) As a collector, you may use a CCF with your name, address, telephone number, and fax number preprinted, but under no circumstances may you sign the form before the collection event.

(c) Under no circumstances may the CCF transmit personal identifying information about an employee (other than a social security number (SSN) or other employee identification (ID) number) to a laboratory.

(d) As an employer, you may use an equivalent foreign-language version of the CCF approved by ODAPC. You may use such a non-English language form only in a situation where both the employee and collector understand and can use the form in that language.

§ 40.47 -- May employers use the CCF for non-DOT collections or non-Federal forms for DOT collections?

(a) No, as an employer, you are prohibited from using the CCF for non-DOT urine collections. You are also prohibited from using non-Federal forms for DOT urine collections. Doing either subjects you to enforcement action under DOT agency regulations.

(b) (1) In the rare case where the collector, either by mistake or as the only means to conduct a test under difficult circumstances (*e.g.*, post-accident or reasonable suspicion test with insufficient time to obtain the CCF), uses a non-Federal form for a DOT collection, the use of a non-Federal form does not present a reason for the laboratory to reject the specimen for testing or for an MRO to cancel the result.

(2) The use of the non-DOT form is a "correctable flaw." As an MRO, to correct the problem you must follow the procedures of § 40.205(b)(2).

§ 40.49 -- What materials are used to collect urine specimens?

For each DOT drug test, you must use a collection kit meeting the requirements of **Appendix A** of this part.

§ 40.51 -- What materials are used to send urine specimens to the laboratory?

(a) Except as provided in paragraph (b) of this section, you must use a shipping container that adequately protects the specimen bottles from shipment damage in the transport of specimens from the collection site to the laboratory.

(b) You are not required to use a shipping container if a laboratory courier hand-delivers the specimens from the collection site to the laboratory.

Subpart E--Urine Specimen Collections

§ 40.61 -- What are the preliminary steps in the collection process?

As the collector, you must take the following steps before actually beginning a collection:

(a) When a specific time for an employee's test has been scheduled, or the collection site is at the employee's work site, and the employee does not appear at the collection site at the scheduled time, contact the DER to determine the appropriate interval within which the DER has determined the employee is authorized to arrive. If the employee's arrival is delayed beyond that time, you must notify the DER that the employee has not reported for testing. In a situation where a C/TPA has notified an owner/operator or other individual employee to report for testing and the employee does not appear, the C/TPA must notify the employee that he or she has refused to test (*See*, § 40.191(a)(1)).

(b) Ensure that, when the employee enters the collection site, you begin the testing process without undue delay. For example, you must not wait because the employee says he or she is not ready or is unable to urinate or because an authorized employer or employee representative is delayed in arriving.

(1) If the employee is also going to take a DOT alcohol test, you must, to the greatest extent practicable, ensure that the alcohol test is completed before the urine collection process begins.

Example to Paragraph (b)(1): An employee enters the test site for both a drug and an alcohol test. Normally, the collector would wait until the BAT had completed the alcohol test process before beginning the drug test process. However, there are some situations in which an exception to this normal practice would be reasonable. One such situation might be if several people were waiting for the BAT to conduct alcohol tests, but a drug testing collector in the same facility were free. Someone waiting might be able to complete a drug test without unduly delaying his or her alcohol test. Collectors and BATs should work together, however, to ensure that post-accident and reasonable suspicion alcohol tests happen as soon as possible (*e.g.*, by moving the employee to the head of the line for alcohol tests).

(2) If the employee needs medical attention (*e.g.*, an injured employee in an emergency medical facility who is required to have a post-accident test), do not delay this treatment to collect a specimen.

(3) You must not collect, by catheterization or other means, urine from an unconscious employee to conduct a drug test under this part. Nor may you catheterize a conscious employee. However, you must inform an employee who normally voids through self-catheterization that the employee is required to provide a specimen in that manner.

(4) If, as an employee, you normally void through self-catheterization, and decline to do so, this constitutes a refusal to test.

(c) Require the employee to provide positive identification. You must see a photo ID issued by the employer (other than in the case of an owner-operator or other self-employed individual) or a Federal, state, or local government (*e.g.*, a driver's license). You may not accept faxes or photocopies of identification. Positive identification by an employer representative (not a co-

worker or another employee being tested) is also acceptable. If the employee cannot produce positive identification, you must contact a DER to verify the identity of the employee.

(d) If the employee asks, provide your identification to the employee. Your identification must include your name and your employer's name, but does not have to include your picture, address, or telephone number.

(e) Explain the basic collection procedure to the employee, including showing the employee the instructions on the back of the CCF.

(f) Direct the employee to remove outer clothing (*e.g.*, coveralls, jacket, coat, hat) that could be used to conceal items or substances that could be used to tamper with a specimen. You must also direct the employee to leave these garments and any briefcase, purse, or other personal belongings with you or in a mutually agreeable location. You must advise the employee that failure to comply with your directions constitutes a refusal to test.

(1) If the employee asks for a receipt for any belongings left with you, you must provide one.

(2) You must allow the employee to keep his or her wallet.

(3) You must not ask the employee to remove other clothing (*e.g.*, shirts, pants, dresses, underwear), to remove all clothing, or to change into a hospital or examination gown (unless the urine collection is being accomplished simultaneously with a DOT agency-authorized medical examination).

(4) You must direct the employee to empty his or her pockets and display the items in them to ensure that no items are present which could be used to adulterate the specimen. If nothing is there that can be used to adulterate a specimen, the employee can place the items back into his or her pockets. As the employee, you must allow the collector to make this observation.

(5) If, in your duties under paragraph (f)(4) of this section, you find any material that could be used to tamper with a specimen, you must:

(i) Determine if the material appears to be brought to the collection site with the intent to alter the specimen, and, if it is, conduct a directly observed collection using direct observation procedures (*See*, § 40.67); or

(ii) Determine if the material appears to be inadvertently brought to the collection site (*e.g.*, eye drops), secure and maintain it until the collection process is completed and conduct a normal (*i.e.*, unobserved) collection.

(g) You must instruct the employee not to list medications that he or she is currently taking on the CCF. (The employee may make notes of medications on the back of the employee copy of the form for his or her own convenience, but these notes must not be transmitted to anyone else.)

§ 40.63 -- What steps does the collector take in the collection process before the employee provides a urine specimen?

As the collector, you must take the following steps before the employee provides the urine specimen:

(a) Complete Step 1 of the CCF.

(b) Instruct the employee to wash and dry his or her hands at this time. You must tell the employee not to wash his or her hands again until after delivering the specimen to you. You must not give the employee any further access to water or other materials that could be used to adulterate or dilute a specimen.

(c) Select, or allow the employee to select, an individually wrapped or sealed collection container from collection kit materials. Either you or the employee, with both of you present, must unwrap or break the seal of the collection container. You must not unwrap or break the seal on any specimen bottle at this time. You must not allow the employee to take anything from the collection kit into the room used for urination except the collection container.

(d) Direct the employee to go into the room used for urination, provide a specimen of at least 45 mL, not flush the toilet, and return to you with the specimen as soon as the employee has completed the void.

(1) Except in the case of an observed or a monitored collection (*See*, §§ 40.67 and 40.69), neither you nor anyone else may go into the room with the employee.

(2) As the collector, you may set a reasonable time limit for voiding.

(e) You must pay careful attention to the employee during the entire collection process to note any conduct that clearly indicates an attempt to tamper with a specimen (*e.g.*, substitute urine in plain view or an attempt to bring into the collection site an adulterant or urine substitute). If you detect such conduct, you must require that a collection take place immediately under direct observation (*See*, § 40.67) and note the conduct and the fact that the collection was observed in the "Remarks" line of the CCF (Step 2). You must also, as soon as possible, inform the DER and collection site supervisor that a collection took place under direct observation and the reason for doing so.

§ 40.65 -- What does the collector check for when the employee presents a specimen?

As a collector, you must check the following when the employee gives the collection container to you:

(a) ***Sufficiency of specimen.*** You must check to ensure that the specimen contains at least 45 mL of urine.

(1) If it does not, you must follow "shy bladder" procedures (*See*, § 40.193(b)).

(2) When you follow "shy bladder" procedures, you must discard the original specimen, unless another problem (*i.e.*, temperature out of range, signs of tampering) also exists.

(3) You are never permitted to combine urine collected from separate voids to create a specimen.

(4) You must discard any excess urine.

(b) ***Temperature.*** You must check the temperature of the specimen no later than four minutes after the employee has given you the specimen.

(1) The acceptable temperature range is 32-38 [degrees] C/90-100 [degrees] F.

(2) You must determine the temperature of the specimen by reading the temperature strip attached to the collection container.

(3) If the specimen temperature is within the acceptable range, you must mark the "Yes" box on the CCF (Step 2).

(4) If the specimen temperature is outside the acceptable range, you must mark the "No" box and enter in the "Remarks" line (Step 2) your findings about the temperature.

(5) If the specimen temperature is outside the acceptable range, you must immediately conduct a new collection using direct observation procedures (*See*, § 40.67).

(6) In a case where a specimen is collected under direct observation because of the temperature being out of range, you must process both the original specimen and the specimen collected using direct observation and send the two sets of specimens to the laboratory. This is true even in a case in which the original specimen has insufficient volume but the temperature is out of range. You must also, as soon as possible, inform the DER and collection site supervisor that a collection took place under direct observation and the reason for doing so.

(7) In a case where the employee refuses to provide another specimen (*See*, § 40.191(a)(3)) or refuses to provide another specimen under direct observation (*See*, § 40.191(a)(4)), you must notify the DER. As soon as you have notified the DER, you must discard any specimen the employee has provided previously during the collection procedure.

(c) ***Signs of tampering.*** You must inspect the specimen for unusual color, presence of foreign objects or material, or other signs of tampering (*e.g.*, if you notice any unusual odor).

(1) If it is apparent from this inspection that the employee has tampered with the specimen (*e.g.*, blue dye in the specimen, excessive foaming when shaken, smell of bleach), you must immediately conduct a new collection using direct observation procedures *See*, § 40.67).

(2) In a case where a specimen is collected under direct observation because of showing signs of tampering, you must process both the original specimen and the specimen collected using direct observation and send the two sets of specimens to the laboratory. This is true even in a case in which the original specimen has insufficient volume but it shows signs of tampering. You must also, as soon as possible, inform the DER and collection site supervisor that a collection took place under direct observation and the reason for doing so.

(3) In a case where the employee refuses to provide another specimen (*See*, §40.191(a)(3)) or refuses to provide a specimen under direct observation (*See*, § 40.193(a)(4)), you must notify the DER. As soon as you have notified the DER, you must discard any specimen the employee has provided previously during the collection procedure.

§ 40.67 -- When and how is a directly observed collection conducted?

a) As an employer, you must direct an immediate collection under direct observation with no advance notice to the employee, if:

(1) The laboratory reported to the MRO that a specimen is invalid, and the MRO reported to you that there was not an adequate medical explanation for the result;

(2) The MRO reported to you that the original positive, adulterated, or substituted result had to be cancelled because the test of the split specimen could not be performed; or

(3) The laboratory reported to the MRO that the specimen was negative-dilute with a creatinine concentration greater than or equal to 2 mg/dL but less than or equal to 5 mg/dL, and the MRO

reported the specimen to you as negative-dilute and that a second collection must take place under direct observation (see §40.197(b)(1)).

(b) As an employer, you must direct a collection under direct observation of an employee if the drug test is a return-to-duty test or a follow-up test.

(c) As a collector, you must immediately conduct a collection under direct observation if:

(1) You are directed by the DER to do so (see paragraphs (a) and (b) of this section); or

(2) You observed materials brought to the collection site or the employee's conduct clearly indicates an attempt to tamper with a specimen (see §§40.61(f)(5)(i) and 40.63(e)); or

(3) The temperature on the original specimen was out of range (see §40.65(b)(5)); or (4) The original specimen appeared to have been tampered with (see §40.65(c)(1)).

(d) (1) As the employer, you must explain to the employee the reason for a directly observed collection under paragraph (a) or (b) of this section.

(2) As the collector, you must explain to the employee the reason, if known, under this part for a directly observed collection under paragraphs (c)(1) through (3) of this section.

(e) As the collector, you must complete a new CCF for the directly observed collection.

(1) You must mark the “reason for test” block (Step 1) the same as for the first collection.

(2) You must check the “Observed, (Enter Remark)” box and enter the reason (see §40.67(b)) in the “Remarks” line (Step 2).

(f) In a case where two sets of specimens are being sent to the laboratory because of suspected tampering with the specimen at the collection site, enter on the “Remarks” line of the CCF (Step 2) for each specimen a notation to this effect (*e.g.*, collection 1 of 2, or 2 of 2) and the specimen ID number of the other specimen.

(g) As the collector, you must ensure that the observer is the same gender as the employee. You must never permit an opposite gender person to act as the observer. The observer can be a different person from the collector and need not be a qualified collector.

(h) As the collector, if someone else is to observe the collection (*e.g.*, in order to ensure a same gender observer), you must verbally instruct that person to follow procedures at paragraphs (i) and (j) of this section. If you, the collector, are the observer, you too must follow these procedures.

(i) As the observer, you must request the employee to raise his or her shirt, blouse, or dress/skirt, as appropriate, above the waist; and lower clothing and underpants to show you, by turning around, that they do not have a prosthetic device. After you have determined that the

employee does not have such a device, you may permit the employee to return clothing to its proper position for observed urination.

(j) As the observer, you must watch the employee urinate into the collection container. Specifically, you are to watch the urine go from the employee's body into the collection container.

(k) As the observer but not the collector, you must not take the collection container from the employee, but you must observe the specimen as the employee takes it to the collector.

(l) As the collector, when someone else has acted as the observer, you must include the observer's name in the "Remarks" line of the CCF (Step 2).

(m) As the employee, if you decline to allow a directly observed collection required or permitted under this section to occur, this is a refusal to test.

(n) As a service agent, when you learn that a directly observed collection should have been collected but was not, you must inform the employer that it must direct the employee to have an immediate recollection under direct observation.

§ 40.69 -- How is a monitored collection conducted?

(a) As the collector, you must secure the room being used for the monitored collection so that no one except the employee and the monitor can enter it until after the collection has been completed.

(b) As the collector, you must ensure that the monitor is the same gender as the employee, unless the monitor is a medical professional (*e.g.*, nurse, doctor, physician's assistant). The monitor can be a different person from the collector and need not be a qualified collector.

(c) As the collector, if someone else is to monitor the collection (*e.g.*, in order to ensure a same gender monitor), you must verbally instruct that person to follow procedures at paragraphs (d) and (e) of this section. If you, the collector, are the observer, you too must follow these procedures.

(d) As the monitor, you must not watch the employee urinate into the collection container. If you hear sounds or make other observations indicating an attempt to tamper with a specimen, there must be an additional collection under direct observation (*See*, §§ 40.63(e), 40.65(c), and 40.67(b)).

(e) As the monitor, you must ensure that the employee takes the collection container directly to the collector as soon as the employee has exited the enclosure.

(f) As the collector, when someone else has acted as the monitor, you must note that person's name in the "Remarks" line of the CCF (Step 2).

(g) As the employee being tested, if you decline to permit a collection authorized under this section to be monitored, it is a refusal to test.

§ 40.71 -- How does the collector prepare the specimens?

(a) All collections under DOT agency drug testing regulations must be split specimen collections.

(b) As the collector, you must take the following steps, in order, after the employee brings the urine specimen to you. You must take these steps in the presence of the employee.

(1) Check the box on the CCF (Step 2) indicating that this was a split specimen collection.

(2) You, not the employee, must first pour at least 30 mL of urine from the collection container into one specimen bottle, to be used for the primary specimen.

(3) You, not the employee, must then pour at least 15 mL of urine from the collection container into the second specimen bottle to be used for the split specimen.

(4) You, not the employee, must place and secure (*i.e.*, tighten or snap) the lids/caps on the bottles.

(5) You, not the employee, must seal the bottles by placing the tamper-evident bottle seals over the bottle caps/lids and down the sides of the bottles.

(6) You, not the employee, must then write the date on the tamper-evident bottle seals.

(7) You must then ensure that the employee initials the tamper-evident bottle seals for the purpose of certifying that the bottles contain the specimens he or she provided. If the employee fails or refuses to do so, you must note this in the "Remarks" line of the CCF (Step 2) and complete the collection process.

§ 40.73 -- How is the collection process completed?

(a) As the collector, you must do the following things to complete the collection process. You must complete the steps called for in paragraphs (a)(1) through (a)(7) of this section in the employee's presence.

(1) Direct the employee to read and sign the certification statement on Copy 2 (Step 5) of the CCF and provide date of birth, printed name, and day and evening contact telephone numbers. If the employee refuses to sign the CCF or to provide date of birth, printed name, or telephone numbers, you must note this in the "Remarks" line (Step 2) of the CCF, and complete the collection. If the employee refuses to fill out any information, you must, as a minimum, print the employee's name in the appropriate place.

(2) Complete the chain of custody on the CCF (Step 5) by printing your name (note: you may pre-print your name), recording the time and date of the collection, signing the statement, and entering the name of the delivery service transferring the specimen to the laboratory,

(3) Ensure that all copies of the CCF are legible and complete.

(4) Remove Copy 5 of the CCF and give it to the employee.

(5) Place the specimen bottles and Copy 1 of the CCF in the appropriate pouches of the plastic bag.

(6) Secure both pouches of the plastic bag.

(7) Advise the employee that he or she may leave the collection site.

(8) To prepare the sealed plastic bag containing the specimens and CCF for shipment you must:

(i) Place the sealed plastic bag in a shipping container (*e.g.*, standard courier box) designed to minimize the possibility of damage during shipment. (More than one sealed plastic bag can be placed into a single shipping container if you are doing multiple collections.)

(ii) Seal the container as appropriate.

(iii) If a laboratory courier hand-delivers the specimens from the collection site to the laboratory, prepare the sealed plastic bag for shipment as directed by the courier service.

(9) Send Copy 2 of the CCF to the MRO and Copy 4 to the DER. You must fax or otherwise transmit these copies to the MRO and DER within 24 hours or during the next business day. Keep Copy 3 for at least 30 days, unless otherwise specified by applicable DOT agency regulations.

(b) As a collector or collection site, you must ensure that each specimen you collect is shipped to a laboratory as quickly as possible, but in any case within 24 hours or during the next business day.

Subpart F--Drug Testing Laboratories

§ 40.81 -- What laboratories may be used for DOT drug testing?

(a) As a drug testing laboratory located in the U.S., you are permitted to participate in DOT drug testing only if you are certified by HHS under the National Laboratory Certification Program (NLCP) for all testing required under this part.

(b) As a drug testing laboratory located in Canada or Mexico which is not certified by HHS under the NLCP, you are permitted to participate in DOT drug testing only if:

(1) The DOT, based on a written recommendation from HHS, has approved your laboratory as meeting HHS laboratory certification standards or deemed your laboratory fully equivalent to a laboratory meeting HHS laboratory certification standards for all testing required under this part; or

(2) The DOT, based on a written recommendation from HHS, has recognized a Canadian or Mexican certifying organization as having equivalent laboratory certification standards and procedures to those of HHS, and the Canadian or Mexican certifying organization has certified your laboratory under those equivalent standards and procedures.

(c) As a laboratory participating in the DOT drug testing program, you must comply with the requirements of this part. You must also comply with all applicable requirements of HHS in testing DOT specimens, whether or not the HHS requirements are explicitly stated in this part.

(d) If DOT determines that you are in noncompliance with this part, you could be subject to PIE proceedings under Subpart R of this part. If the Department issues a PIE with respect to you, you are ineligible to participate in the DOT drug testing program even if you continue to meet the requirements of paragraph (a) or (b) of this section.

§ 40.83 -- How do laboratories process incoming specimens?

As the laboratory, you must do the following when you receive a DOT specimen:

- (a) You are authorized to receive only the laboratory copy of the CCF. You are not authorized to receive other copies of the CCF nor any copies of the alcohol testing form.
- (b) You must comply with applicable provisions of the HHS Guidelines concerning accessioning and processing urine drug specimens.
- (c) You must inspect each specimen and CCF for the following "fatal flaws":
 - (1) Their id no CCF;
 - (2) In cases where a specimen has been collected, there is no specimen submitted with the CCF;
 - (3) There is no printed collector's name and no collector's signature;
 - (4) Two separate collections are performed using one CCF;
 - (5) The specimen ID numbers on the specimen bottle and the CCF do not match;
 - (6) The specimen bottle seal is broken or shows evidence of tampering, unless a split specimen can be re-designated (see paragraph (h) of this section); and
 - (7) There is an insufficient amount of urine in the primary bottle for analysis, unless the specimens can be re-designated (*See*, paragraph (h) of this section).
- (d) When you find a specimen meeting the criteria of paragraph (c) of this section, you must document your findings and stop the testing process. Report the result in accordance with § 40.97(a)(3).
- (e) You must inspect each specimen and CCF for the following "correctable flaws":
 - (1) The specimen temperature was not checked and the "Remarks" line did not contain an entry regarding the temperature being outside of range; and
 - (2) The collector's signature is omitted on the certification statement on the CCF.
- (f) Upon finding that a specimen meets the criteria of paragraph (e) of this section, document the flaw and continue the testing process.
 - (1) In such a case, you must retain the specimen for a minimum of 5 business days from the date on which you initiated action to correct the flaw.
 - (2) You must then attempt to correct the flaw by following the procedures of § 40.205(b).
 - (3) If the flaw is not corrected, report the result in accordance with § 40.97(a)(3).
- (g) If the CCF is marked indicating that a split specimen collection was collected and if the split specimen does not accompany the primary, has leaked, or is otherwise unavailable for testing, you must still test the primary specimen and follow appropriate procedures outlined in § 40.175(b) regarding the unavailability of the split specimen for testing.
 - (1) The primary specimen and the split specimen can be re-designated (*i.e.*, Bottle B is re-designated as Bottle A, and vice-versa) if:
 - (i) The primary specimen appears to have leaked out of its sealed bottle and the laboratory believes a sufficient amount of urine exists in the split specimen to conduct all appropriate primary laboratory testing; or

- (ii) The primary specimen is labeled as Bottle B, and the split specimen as Bottle A; or
- (iii) The laboratory opens the split specimen instead of the primary specimen, the primary specimen remains sealed, and the laboratory believes a sufficient amount of urine exists in the split specimen to conduct all appropriate primary laboratory testing; or
- (iv) The primary specimen seal is broken but the split specimen remains sealed and the laboratory believes a sufficient amount of urine exists in the split specimen to conduct all appropriate primary laboratory testing.

(2) In situations outlined in paragraph (g)(1) of this section, the laboratory shall mark through the "A" and write "B," then initial and date the change. A corresponding change shall be made to the other bottle by marking through the "B" and writing "A," and initialing and dating the change.

(h) A notation shall be made on Copy 1 of the CCF (Step 5a) and on any laboratory internal chain of custody documents, as appropriate, for any fatal or correctable flaw.

§ 40.85 -- What drugs do laboratories test for?

As a laboratory, you must test for the following five drugs or classes of drugs in a DOT drug test. You must not test "DOT specimens" for any other drugs.

- (a) Marijuana metabolites.
- (b) Cocaine metabolites.
- (c) Amphetamines.
- (d) Opioids.
- (e) Phencyclidine (PCP).

§ 40.87 -- What are the cutoff concentrations for initial and confirmation tests?

(a) As a laboratory, you must use the cutoff concentrations displayed in the following table for initial and confirmation drug tests. All cutoff concentrations are expressed in **nanograms per milliliter (ng/mL)**. The table follows:

Initial test analyte	Initial test cutoff	Confirmatory test analyte	Confirmatory test cutoff concentration
Marijuana metabolites (THCA) ²	50 L ₃	THCA	15
Cocaine metabolite (Benzoylecgonine) ...	150 ³	Benzoylecgonine	100
Codeine	2000	Codeine	2000
Morphine	2000	Morphine	2000
Hydrocodone/	300	Hydrocodone ..	100
Hydromorphone	300	Hydromorphone	100
Oxycodone/	100 ...	Oxycodone	100
Oxymorphone	100	Oxymorphone	100
Oxycodone	100	Oxycodone	100
Oxymorphone	100	Oxymorphone	100
6-Acetylmorphine	10	6-Acetylmorphine	10
Phencyclidine	25	Phencyclidine	25
Amphetamine/	500	Amphetamine	250
Methamphetamine	500	Methamphetamine	250.
MDMA ₄ /MDA ⁵	500	MDMA	250
MDA	500	MDA	250

¹ For grouped analytes (i.e., two or more analytes that are in the same drug class and have the same initial test cutoff):
Immunoassay: The test must be calibrated with one analyte from the group identified as the target analyte. The cross-reactivity of the immunoassay to the other analyte(s) within the group must be 80 percent or greater; if not, separate immunoassays must be used for the analytes within the group.
Alternate technology: Either one analyte or all analytes from the group must be used for calibration, depending on the technology. At least one analyte within the group must have a concentration equal to or greater than the initial test cutoff or, alternatively, the sum of the analytes present (i.e., equal to or greater than the laboratory's validated limit of quantification) must be equal to or greater than the initial test cutoff.
² An immunoassay must be calibrated with the target analyte, D-9-tetrahydrocannabinol-9-carboxylic acid (THCA).
³ *Alternate technology (THCA and Benzoylecgonine)*: When using an alternate technology initial test for the specific target analytes of THCA and Benzoylecgonine, the laboratory must use the same cutoff for the initial and confirmatory tests (i.e., 15 ng/mL for THCA and 100ng/mL for Benzoylecgonine).
⁴ Methylenedioxyamphetamine (MDMA).
⁵ Methylenedioxyamphetamine (MDA).

- (b) On an initial drug test, you must report a result below the cutoff concentration as negative. If the result is at or above the cutoff concentration, you must conduct a confirmation test.
- (c) On a confirmation drug test, you must report a result below the cutoff concentration as negative and a result at or above the cutoff concentration as confirmed positive.
- (d) You must report quantitative values for morphine or codeine at 15,000 ng/mL or above.

§ 40.89 -- What is validity testing, and are laboratories required to conduct it?

- (a) Specimen validity testing is the evaluation of the specimen to determine if it is consistent with normal human urine. The purpose of validity testing is to determine whether certain adulterants or foreign substances were added to the urine, if the urine was diluted, or if the specimen was substituted.
- (b) As a laboratory, you must conduct validity testing.

§ 40.91 -- What validity tests must laboratories conduct on primary specimens?

As a laboratory, when you conduct validity testing under § 40.89, you must conduct it in accordance with the requirements of this section.

- (a) You must test each primary specimen for creatinine. You must also determine its specific gravity if you find that the creatinine concentration is less than 20 mg/dL.
- (b) You must measure the pH of each primary specimen.
- (c) You must test each primary specimen to determine if it contains substances that may be used to adulterate the specimen. Your tests must have the capability of determining whether any substance identified in current HHS requirements or specimen validity guidance is present in the specimen.

(d) If you suspect the presence of an interfering substance/adulterant that could make a test result invalid, but you are unable to identify it (*e.g.*, a new adulterant), you must, as the first laboratory, send the specimen to another HHS certified laboratory that has the capability of doing so.

(e) If you identify a substance in a specimen that appears to be an adulterant, but which is not listed in current HHS requirements or guidance, you must report the finding in writing to ODAPC and the Division of Workplace Programs, HHS, within three business days. You must also complete testing of the specimen for drugs, to the extent technically feasible.

(f) You must conserve as much as possible of the specimen for possible future testing.

§ 40.93 -- What criteria do laboratories use to establish that a specimen is dilute or substituted?

(a) As a laboratory you must consider the primary specimen to be dilute if the creatinine concentration is less than 20 mg/dL and the specific gravity is less than 1.003, unless the criteria for a substituted specimen are met.

(b) As a laboratory you must consider the primary specimen to be substituted if the creatinine concentration is less than or equal to 5 mg/dL *and* the specific gravity is less than or equal to 1.001 or greater than or equal to 1.020.

§ 40.95 -- What criteria do laboratories use to establish that a specimen is adulterated?

(a) As a laboratory, you must consider the primary specimen to be adulterated if you determine that-

(1) A substance that is not expected to be present in human urine is identified in the specimen;

(2) A substance that is expected to be present in human urine is identified at a concentration so high that it is not consistent with human urine; or

(3) The physical characteristics of the specimen are outside the normal expected range for human urine.

(b) In making your determination under paragraph (a) of this section, you must apply the criteria in current HHS requirements or specimen validity guidance.

§ 40.97 -- What do laboratories report and how do they report it?

(a) As a laboratory, you must report the results for each primary specimen tested as one of the following:

(1) Negative;

(2) Negative-dilute;

(3) Rejected for testing, with remark(s);

(4) Positive, with drug(s)/metabolite(s) noted;

(5) Positive, with drug(s)/metabolite(s) noted-dilute;

- (6) Adulterated, with remark(s);
- (7) Substituted, with remark(s); or
- (8) Invalid result, with remark(s).

(b) As a laboratory, you must report laboratory results directly, and only, to the MRO at his or her place of business. You must not report results to or through the DER or a service agent (*e.g.*, C/TPA).

(1) Negative results: You must fax, courier, mail, or electronically transmit a legible image or copy of the fully-completed Copy 1 of the CCF which has been signed by the certifying scientist, or you may provide the laboratory results report electronically (*i.e.*, computer data file).

(i) If you elect to provide the laboratory results report, you must include the following elements, as a minimum, in the report format:

- (A) Laboratory name;
- (B) Employer's name (you may include I.D. or account number);
- (C) Specimen I.D. number;
- (D) Donor's SSN or employee I.D. number, if provided;
- (E) Reason for test, if provided;
- (F) Date of the collection;
- (G) Date received at the laboratory;
- (H) Date certifying scientist released the results;
- (I) Results (*e.g.*, positive, adulterated) as listed in paragraph (a) of this section; and
- (J) Remarks section, with an explanation of any situation in which a correctable flaw has been corrected.

(ii) The laboratory results report may be released only after review and approval by the certifying scientist and must reflect the same test result information as contained on the CCF signed by the certifying scientist.

(iii) The results report may be transmitted through any means that ensures accuracy and confidentiality. You, as the laboratory, together with the MRO, must ensure that the information is adequately protected from unauthorized access or release, both during transmission and in storage.

(2) Non-negative results: You must fax, courier, mail, or electronically transmit a legible image or copy of the fully-completed Copy 1 of the CCF that has been signed by the certifying scientist. In addition, you may provide the electronic laboratory results report following the format and procedures set forth in paragraphs (b)(1)(i) and (ii) of this section.

(c) In transmitting laboratory results to the MRO, you, as the laboratory, together with the MRO, must ensure that the information is adequately protected from unauthorized access or release, both during transmission and in storage. If the results are provided by fax, the fax connection must have a fixed telephone number accessible only to authorized individuals.

(d) You must transmit test results to the MRO in a timely manner, preferably the same day that review by the certifying scientist is completed.

(e) You must provide quantitative values for confirmed positive drug, adulterated, and substituted test results to the MRO when the MRO requests you to do so in writing. The MRO's

request may either be a general request covering all such results you send to the MRO or a specific case-by-case request.

(f) You must provide quantitative values for confirmed opiate results for morphine or codeine at 15,000 ng/mL or above, even if the MRO has not requested quantitative values for the test result.

§ 40.99 -- How long does the laboratory retain specimens after testing?

(a) As a laboratory testing the primary specimen, you must retain a specimen that was reported with positive, adulterated, substituted, or invalid results for a minimum of one year.

(b) You must keep such a specimen in secure, long-term, frozen storage in accordance with HHS requirements.

(c) Within the one-year period, the MRO, the employee, the employer, or a DOT agency may request in writing that you retain a specimen for an additional period of time (*e.g.*, for the purpose of preserving evidence for litigation or a safety investigation). If you receive such a request, you must comply with it. If you do not receive such a request, you may discard the specimen at the end of the year.

(d) If you have not sent the split specimen to another laboratory for testing, you must retain the split specimen for an employee's test for the same period of time that you retain the primary specimen and under the same storage conditions.

(e) As the laboratory testing the split specimen, you must meet the requirements of paragraphs (a) through (d) of this section with respect to the split specimen.

§ 40.101 -- What relationship may a laboratory have with an MRO?

(a) As a laboratory, you may not enter into any relationship with an MRO that creates a conflict of interest or the appearance of a conflict of interest with the MRO's responsibilities for the employer. You may not derive any financial benefit by having an employer use a specific MRO.

(b) The following are examples of relationships between laboratories and MROs that the Department regards as creating conflicts of interest, or the appearance of such conflicts. This following list of examples is not intended to be exclusive or exhaustive:

- (1) The laboratory employs an MRO who reviews test results produced by the laboratory;
- (2) The laboratory has a contract or retainer with the MRO for the review of test results produced by the laboratory;
- (3) The laboratory designates which MRO the employer is to use, gives the employer a slate of MROs from which to choose, or recommends certain MROs;
- (4) The laboratory gives the employer a discount or other incentive to use a particular MRO;

- (5) The laboratory has its place of business co-located with that of an MRO or MRO staff who review test results produced by the laboratory; or
- (6) The laboratory permits an MRO, or an MRO's organization, to have a financial interest in the laboratory.

§ 40.107 -- Who may inspect laboratories?

A laboratory must permit an inspection, with or without prior notice, by ODAPC, a DOT agency, or a DOT-regulated employer that contracts with the laboratory for drug testing under the DOT drug testing program, or the designee of such an employer.

§ 40.109 -- What documentation must the laboratory keep, and for how long?

- (a) A laboratory must retain all records pertaining to each employee urine specimen for a minimum of two years.
- (b) A laboratory must also keep for two years employer-specific data required in § 40.111
- (c) Within the two-year period, the MRO, the employee, the employer, or a DOT agency may request in writing that you retain the records for an additional period of time (*e.g.*, for the purpose of preserving evidence for litigation or a safety investigation). If you receive such a request, you must comply with it. If you do not receive such a request, you may discard the records at the end of the two-year period.

§ 40.111 -- When and how must a laboratory disclose statistical summaries and other information it maintains?

- (a) As a laboratory, you must transmit an aggregate statistical summary, by employer, of the data listed in **Appendix B** to this part to the employer on a semi-annual basis.
 - (1) The summary must not reveal the identity of any employee.
 - (2) In order to avoid sending data from which it is likely that information about an employee's test result can be readily inferred, you must not send a summary if the employer has fewer than five aggregate tests results.
 - (3) The summary must be sent by January 20 of each year for July 1 through December 31 of the prior year.
 - (4) The summary must also be sent by July 20 of each year for January 1 through June 30 of the current year.
- (b) When the employer requests a summary in response to an inspection, audit, or review by a DOT agency, you must provide it unless the employer had fewer than five aggregate test results. In that case, you must send the employer a report indicating that not enough testing was conducted to warrant a summary. You may transmit the summary or report by hard copy, fax, or other electronic means.

(c) You must also release information to appropriate parties as provided in §§ 40.329 and 40.331.

§ 40.113 -- Where is other information concerning laboratories found in this regulation?

You can find more information concerning laboratories in several sections of this part: § 40.3-Definition; § 40.13-Prohibition on making specimens available for other purposes; § 40.31-Conflicts of interest concerning collectors; § 40.47-Laboratory rejections of test for improper form; § 40.125-Conflicts of interest concerning MROs; § 40.175-Role of first laboratory in split specimen tests; § 40.177-Role of second laboratory in split specimen tests (drugs); § 40.179-Role of second laboratory in split specimen tests (adulterants); § 40.181-Role of second laboratory in split specimen tests (substitution); §§ 40.183-40.185-Transmission of split specimen test results to MRO; §§ 40.201-40.205-Role in correcting errors; § 40.329-Release of information to employees; § 40.331-Limits on release of information; § 40.355-Role with respect to other service agents.

Subpart G--Medical Review Officers and the Verification Process

§ 40.121 -- Who is qualified to act as an MRO?

To be qualified to act as an MRO in the DOT drug testing program, you must meet each of the requirements of this section:

(a) **Credentials.** You must be a licensed physician (Doctor of Medicine or Osteopathy). If you are a licensed physician in any U.S., Canadian, or Mexican jurisdiction and meet the other requirements of this section, you are authorized to perform MRO services with respect to all covered employees, wherever they are located. For example, if you are licensed as an M.D. in one state or province in the U.S., Canada, or Mexico, you are not limited to performing MRO functions in that state or province, and you may perform MRO functions for employees in other states or provinces without becoming licensed to practice medicine in the other jurisdictions.

(b) **Basic knowledge.** You must be knowledgeable in the following areas:

(1) You must be knowledgeable about and have clinical experience in controlled substances abuse disorders, including detailed knowledge of alternative medical explanations for laboratory confirmed drug test results.

(2) You must be knowledgeable about issues relating to adulterated and substituted specimens as well as the possible medical causes of specimens having an invalid result.

(3) You must be knowledgeable about this part, the DOT MRO Guidelines, and the DOT agency regulations applicable to the employers for whom you evaluate drug test results, and you must keep current on any changes to these materials. You must subscribe to the ODAPC list-serve at <https://www.transportation.gov/odapc/getodapc-email-updates>. DOT agency regulations, DOT MRO Guidelines, and other materials are available from

ODAPC (Department of Transportation, 1200 New Jersey Avenue SE, Washington, DC 20590, 202-366-3784), or on the ODAPC Web site (<http://www.transportation.gov/odapc>).

(c) **Qualification training.** You must receive qualification training meeting the requirements of this paragraph (c).

(1) Qualification training must provide instruction on the following subjects:

- (i) Collection procedures for urine specimens;
- (ii) Chain of custody, reporting, and recordkeeping;
- (iii) Interpretation of drug and validity tests results;
- (iv) The role and responsibilities of the MRO in the DOT drug testing program;
- (v) The interaction with other participants in the program (*e.g.*, DERs, SAPs); and
- (vi) Provisions of this part and DOT agency rules applying to employers for whom you review test results, including changes and updates to this part and DOT agency rules, guidance, interpretations, and policies affecting the performance of MRO functions, as well as issues that MROs confront in carrying out their duties under this part and DOT agency rules.

(2) Following your completion of qualification training under paragraph (c)(1) of this section, you must satisfactorily complete an examination administered by a nationally-recognized MRO certification board or subspecialty board for medical practitioners in the field of medical review of DOT-mandated drug tests. The examination must comprehensively cover all the elements of qualification training listed in paragraph (c)(1) of this section.

(3) You must meet the requirements of paragraphs (a), (b), and (c) of this section before you begin to perform MRO functions.

(d) **Requalification training.** During each five-year period from the date on which you satisfactorily completed the examination under paragraph (c)(2) of this section, you must complete requalification training.

(1) This requalification training must meet the requirements of the qualification training under paragraph (c)(1) of this section.

(2) Following your completion of requalification training, you must satisfactorily complete an examination administered by a nationally-recognized MRO certification board or subspecialty board for medical practitioners in the field of medical review of DOT-mandated drug tests. The examination must comprehensively cover all the elements of qualification training listed in paragraph (c)(1) of this section.

(e) **Documentation.** You must maintain documentation showing that you currently meet all requirements of this section. You must provide this documentation on request to DOT agency representatives and to employers and C/TPAs who are using or negotiating to use your services.

§ 40.123 -- What are the MRO's responsibilities in the DOT drug testing program?

As an MRO, you have the following basic responsibilities:

- (a) Acting as an independent and impartial "gatekeeper" and advocate for the accuracy and integrity of the drug testing process.
- (b) Providing a quality assurance review of the drug testing process for the specimens under your purview. This includes, but is not limited to:
 - (1) Ensuring the review of the CCF on all specimen collections for the purposes of determining whether there is a problem that may cause a test to be cancelled (*See*, §§ 40.199-40.203). As an MRO, you are not required to review laboratory internal chain of custody documentation. No one is permitted to cancel a test because you have not reviewed this documentation;
 - (2) Providing feedback to employers, collection sites and laboratories regarding performance issues where necessary; and
 - (3) Reporting to and consulting with the ODAPC or a relevant DOT agency when you wish DOT assistance in resolving any program issue. As an employer or service agent, you are prohibited from limiting or attempting to limit the MRO's access to DOT for this purpose and from retaliating in any way against an MRO for discussing drug testing issues with DOT.
- (c) You must determine whether there is a legitimate medical explanation for confirmed positive, adulterated, substituted, and invalid drug tests results from the laboratory.
- (d) While you provide medical review of employees' test results, this part does not deem that you have established a doctor-patient relationship with the employees whose tests you review.
- (e) You must act to investigate and correct problems where possible and notify appropriate parties (*e.g.*, HHS, DOT, employers, service agents) where assistance is needed, (*e.g.*, cancelled or problematic tests, incorrect results).
- (f) You must ensure the timely flow of test results and other information to employers.
- (g) You must protect the confidentiality of the drug testing information.
- (h) You must perform all your functions in compliance with this part and other DOT agency regulations.

§ 40.125 -- What relationship may an MRO have with a laboratory?

As an MRO, you may not enter into any relationship with an employer's laboratory that creates a conflict of interest or the appearance of a conflict of interest with your responsibilities to

that employer. You may not derive any financial benefit by having an employer use a specific laboratory. For examples of relationships between laboratories and MROs that the Department views as creating a conflict of interest or the appearance of such a conflict, *See*, § 40.101(b).

§ 40.127 -- What are the MRO's functions in reviewing negative test results?

As the MRO, you must do the following with respect to negative drug test results you receive from a laboratory, prior to verifying the result and releasing it to the DER:

- (a) Review Copy 2 of the CCF to determine if there are any fatal or correctable errors that may require you to initiate corrective action or to cancel the test (*See*, §§ 40.199 and 40.203).
- (b) Review the negative laboratory test result and ensure that it is consistent with the information contained on the CCF.
- (c) Before you report a negative test result, you must have in your possession the following documents:
 - (1) Copy 2 of the CCF, a legible copy of it, or any other CCF copy containing the employee's signature; and
 - (2) A legible copy (fax, photocopy, image) of Copy 1 of the CCF or the electronic laboratory results report that conveys the negative laboratory test result.
- (d) If the copy of the documentation provided to you by the collector or laboratory appears unclear, you must request that the collector or laboratory send you a legible copy.
- (e) On Copy 2 of the CCF, place a check mark in the "Negative" box (Step 6), provide your name, and sign, initial, or stamp and date the verification statement.
- (f) Report the result in a confidential manner (*See*, §§ 40.163-40.167).
- (g) Staff under your direct, personal supervision may the administrative functions of this section for you, but only you can cancel a test.
 - (1) On specimen results that are reviewed by your staff, you are responsible for assuring the quality of their work.
 - (2) You are required to personally review at least 5 percent of all CCFs reviewed by your staff on a quarterly basis, including all results that required a corrective action. However, you need not review more than 500 negative results in any quarter.
 - (3) Your review must, as a minimum, include the CCF, negative laboratory test result, any accompanying corrective documents, and the report sent to the employer. You must correct any errors that you discover. You must take action as necessary to ensure compliance by your staff with this part and document your corrective action. You must attest to the quality assurance review by initialing the CCFs that you review.
 - (4) You must make these CCFs easily identifiable and retrievable by you for review by DOT agencies.

§ 40.129 -- What are the MRO's functions in reviewing laboratory confirmed positive, adulterated, substituted, or invalid drug test results?

(a) As the MRO, you must do the following with respect to confirmed positive, adulterated, substituted, or invalid drug tests you receive from a laboratory, before you verify the result and release it to the DER:

(1) Review Copy 2 of the CCF to determine if there are any fatal or correctable errors that may require you to cancel the test (*See*, §§ 40.199 and 40.203). Staff under your direct, personal supervision may conduct this administrative review for you, but only you may verify or cancel a test.

(2) Review Copy 1 of the CCF and ensure that it is consistent with the information contained on Copy 2, that the test result is legible, and that the certifying scientist signed the form. You are not required to review any other documentation generated by the laboratory during their analysis or handling of the specimen (*e.g.*, the laboratory internal chain of custody).

(3) If the copy of the documentation provided to you by the collector or laboratory appears unclear, you must request that the collector or laboratory send you a legible copy.

(4) Except in the circumstances spelled out in § 40.133, conduct a verification interview. This interview must include direct contact in person or by telephone between you and the employee. You may initiate the verification process based on the laboratory results report.

(5) Verify the test result as either negative, positive, test cancelled, or refusal to test because of adulteration or substitution, consistent with the requirements of §§ 40.135-40.145 and 40.159.

(b) Before you report a verified negative, positive, test cancelled, refusal to test because of adulteration or substitution, you must have in your possession the following documents:

(1) Copy 2 of the CCF, a legible copy of it, or any other CCF copy containing the employee's signature; and

(2) A legible copy (fax, photocopy, image) of Copy 1 of the CCF, containing the certifying scientist's signature.

(c) With respect to verified positive test results, place a check mark in the "Positive" box (Step 6) on Copy 2 of the CCF, indicate the drug(s)/ metabolite(s) detected on the "Remarks" line, sign and date the verification statement.

(d) Report the result in a confidential manner (*See*, §§ 40.163-40.167).

(e) With respect to adulteration or substitution test results, check the "refusal to test because:" box (Step 6) on Copy 2 of the CCF, check the "Adulterated" or "Substituted" box, as appropriate, make appropriate annotation in the "Remarks" line, sign and date the verification statement.

(f) As the MRO, your actions concerning reporting confirmed positive, adulterated, or substituted results to the employer before you have completed the verification process are also governed by the stand-down provisions of § 40.21.

(1) If an employer has a stand-down policy that meets the requirements of § 40.21, you may report to the DER that you have received an employee's laboratory confirmed positive, adulterated, or substituted test result, consistent with the terms of the waiver the employer

received. You must not provide any further details about the test result (*e.g.*, the name of the drug involved).

(2) If the employer does not have a stand-down policy that meets the requirements of § 40.21, you must not inform the employer that you have received an employee's laboratory confirmed positive, adulterated, or substituted test result until you verify the test result. For example, as an MRO employed directly by a company, you must not tell anyone on the company's staff or management that you have received an employee's laboratory confirmed test result.

§ 40.131 -- How does the MRO or DER notify an employee of the verification process after a confirmed positive, adulterated, substituted, or invalid test result?

(a) When, as the MRO, you receive a confirmed positive, adulterated, substituted, or invalid test result from the laboratory, you must contact the employee directly (*i.e.*, actually talk to the employee), on a confidential basis, to determine whether the employee wants to discuss the test result. In making this contact, you must explain to the employee that, if he or she declines to discuss the result, you will verify the test as positive or as a refusal to test because of adulteration or substitution, as applicable.

(b) As the MRO, staff under your personal supervision may conduct this initial contact for you.

(1) This staff contact must be limited to scheduling the discussion between you and the employee and explaining the consequences of the employee's declining to speak with you (*i.e.*, that the MRO will verify the test without input from the employee). If the employee declines to speak with you, the staff person must document the employee's decision, including the date and time.

(2) A staff person must not gather any medical information or information concerning possible explanations for the test result.

(3) A staff person may advise an employee to have medical information (*e.g.*, prescriptions, information forming the basis of a legitimate medical explanation for a confirmed positive test result) ready to present at the interview with the MRO.

(4) Since you are required to speak personally with the employee, face-to-face or on the phone, your staff must not inquire if the employee wishes to speak with you.

(c) As the MRO, you or your staff must make reasonable efforts to reach the employee at the day and evening telephone numbers listed on the CCF. Reasonable efforts include, as a minimum, three attempts, spaced reasonably over a 24-hour period, to reach the employee at the day and evening telephone numbers listed on the CCF. If you or your staff cannot reach the employee directly after making these efforts, you or your staff must take the following steps:

(1) Document the efforts you made to contact the employee, including dates and times. If both phone numbers are incorrect (*e.g.*, disconnected, wrong number), you may take the actions listed in paragraph (c)(2) of this section without waiting the full 24-hour period.

(2) Contact the DER, instructing the DER to contact the employee.

(i) You must simply direct the DER to inform the employee to contact you.

(ii) You must not inform the DER that the employee has a confirmed positive, adulterated, substituted, or invalid test result.

(iii) You must document the dates and times of your attempts to contact the DER, and you must document the name of the DER you contacted and the date and time of the contact.

(d) As the DER, you must attempt to contact the employee immediately, using procedures that protect, as much as possible, the confidentiality of the MRO's request that the employee contact the MRO. If you successfully contact the employee (*i.e.*, actually talk to the employee), you must document the date and time of the contact, and inform the MRO. You must inform the employee that he or she must contact the MRO within the next 72 hours and tell the employee the consequences of failing to do so (*See*, § 40.133(a)(2)).

(1) As the DER, you must not inform anyone else working for the employer that you are seeking to contact the employee on behalf of the MRO.

(2) If, as the DER, you have made all reasonable efforts to contact the employee but failed to do so, you may place the employee on temporary medically unqualified status or medical leave. Reasonable efforts include, as a minimum, three attempts, spaced reasonably over a 24-hour period, to reach the employee at the day and evening telephone numbers listed on the CCF.

(i) As the DER, you must document the dates and times of these efforts.

(ii) If, as the DER, you are unable to contact the employee within this 24-hour period, you must leave a message for the employee by any practicable means (*e.g.*, voice mail, e-mail, letter) to contact the MRO and inform the MRO of the date and time of this attempted contact.

§ 40.133 -- Under what circumstances may the MRO verify a test as positive, or as a refusal to test because of adulteration or substitution, without interviewing the employee?

(a) As the MRO, you normally may verify a confirmed positive test (for any drug or drug metabolite, including opiates), or as a refusal to test because of adulteration or substitution, only after interviewing the employee as provided in §§ 40.135-40.145. However, there are three circumstances in which you may verify such a result without an interview:

(1) You may verify a test result as a positive or refusal to test, as applicable, if the employee expressly declines the opportunity to discuss the test with you. You must maintain complete documentation of this occurrence, including notation of informing, or attempting to inform, the employee of the consequences of not exercising the option to speak with the you.

(2) You may verify a test result as a positive or refusal to test, as applicable, if the DER has successfully made and documented a contact with the employee and instructed the employee to contact you and more than 72 hours have passed since the time the DER contacted the employee.

(3) You may verify a test result as a positive or refusal to test, as applicable, if neither you nor the DER, after making and documenting all reasonable efforts, has been able to contact the employee within ten days of the date on which the MRO receives the confirmed test result from the laboratory.

(b) As the MRO, when you verify a test result as a positive or refusal to test under this section, you must document the date, time and reason, following the instructions in § 40.163.

(c) As the MRO, after you have verified a test result as a positive or refusal to test under this section and reported the result to the DER, you must allow the employee to present information to you within 60 days of the verification documenting that serious illness, injury, or other circumstances unavoidably precluded contact with the MRO and/or DER in the times provided. On the basis of such information, you may reopen the verification, allowing the employee to present information concerning whether there is a legitimate medical explanation for the confirmed test result.

§ 40.135 -- What does the MRO tell the employee at the beginning of the verification interview?

- (a) As the MRO, you must tell the employee that the laboratory has determined that the employee's test result was positive, adulterated, substituted, or invalid, as applicable. You must also tell the employee of the drugs for which his or her specimen tested positive, or the basis for the finding of adulteration or substitution.
- (b) You must explain the verification interview process to the employee and inform the employee that your decision will be based on information the employee provides in the interview.
- (c) You must explain that, if further medical evaluation is needed for the verification process, the employee must comply with your request for this evaluation and that failure to do so is equivalent of expressly declining to discuss the test result.
- (d) As the MRO, you must warn an employee who has a confirmed positive, adulterated, substituted or invalid test that you are required to provide to third parties drug test result information and medical information affecting the performance of safety-sensitive duties that the employee gives you in the verification process without the employee's consent (*See*, § 40.327).
- (1) You must give this warning to the employee before obtaining any medical information as part of the verification process.
- (2) For purposes of this paragraph (d), medical information includes information on medications or other substances affecting the performance of safety-sensitive duties that the employee reports using or medical conditions the employee reports having.
- (3) For purposes of this paragraph (d), the persons to whom this information may be provided include the employer, a SAP evaluating the employee as part of the return to duty process (*See*, § 40.293(g)), DOT, another Federal safety agency (*e.g.*, the NTSB), or any state safety agency as required by state law.
- (e) You must also advise the employee that, before informing any third party about any medication the employee is using pursuant to a legally valid prescription consistent with the Controlled Substances Act, you will allow 5 business days from the date you report the verified negative result for the employee to have the prescribing physician contact you to determine if the medication can be changed to one that does not make the employee medically unqualified or does not pose a significant safety risk. If, in your

reasonable medical judgment, a medical qualification issue or a significant safety risk remains after you communicate with the employee's prescribing physician or after 5 business days, whichever is shorter, you must follow § 40.327. If, as the MRO, you receive information that eliminates the medical qualification issue or significant safety risk, you must transmit this information

to any third party to whom you previously provided information under § 40.327.

§ 40.137 -- On what basis does the MRO verify test results involving marijuana, cocaine, amphetamines, semi-synthetic opioids, or PCP?

(a) As the MRO, you must verify a confirmed positive test result for marijuana, cocaine, amphetamines, semi-synthetic opioids (*i.e.*, hydrocodone, hydromorphone, oxycodone, and oxymorphone), and/or PCP unless the employee presents a legitimate medical explanation for the presence of the drug(s)/metabolite(s) in his or her system. In determining whether an employee's legally valid prescription consistent with the Controlled Substances Act for a substance in these categories constitutes a legitimate medical explanation, you must not question whether the prescribing physician should have prescribed the substance.

(b) You must offer the employee an opportunity to present a legitimate medical explanation in all cases.

(c) The employee has the burden of proof that a legitimate medical explanation exists. The employee must present information meeting this burden at the time of the verification interview. As the MRO, you have discretion to extend the time available to the employee for this purpose for up to five days before verifying the test result, if you determine that there is a reasonable basis to believe that the employee will be able to produce relevant evidence concerning a legitimate medical explanation within that time.

(d) If you determine that there is a legitimate medical explanation, you must verify the test result as negative. Otherwise, you must verify the test result as positive.

(e) In determining whether a legitimate medical explanation exists, you may consider the employee's use of a medication from a foreign country. You must exercise your professional judgment consistently with the following principles:

(1) There can be a legitimate medical explanation only with respect to a substance that is obtained legally in a foreign country.

(2) There can be a legitimate medical explanation only with respect to a substance that has a legitimate medical use. Use of a drug of abuse (*e.g.*, heroin, PCP, marijuana) or any other substance (*See*, § 40.151(f) and (g)) that cannot be viewed as having a legitimate medical use can never be the basis for a legitimate medical explanation, even if the substance is obtained legally in a foreign country.

(3) Use of the substance can form the basis of a legitimate medical explanation only if it is used consistently with its proper and intended medical purpose.

(4) Even if you find that there is a legitimate medical explanation under this paragraph (e) and verify a test negative, you may have a responsibility to raise fitness-for-duty considerations with the employer (*See*, § 40.327).

§ 40.139 -- On what basis does the MRO verify test results involving opiates?

As the MRO, you must proceed as follows when you receive a laboratory confirmed positive opiate result:

(a) If the laboratory detects the presence of 6-acetylmorphine (6-AM) in the specimen, you must verify the test result positive.

(b) In the absence of 6-AM, if the laboratory detects the presence of either morphine or codeine at 15,000 ng/mL or above, you must verify the test result positive unless the employee presents a legitimate medical explanation for the presence of the drug or drug metabolite in his or her system, as in the case of other drugs (*See*, § 40.137). Consumption of food products (*e.g.*, poppy seeds) must not be considered a legitimate medical explanation for the employee having morphine or codeine at these concentrations.

(c) For all other codeine and morphine positive results, you must verify a confirmed positive test result only if you determine that there is clinical evidence, in addition to the urine test, of unauthorized use of any opium, opiate, or opium derivative (*i.e.*, morphine, codeine, or heroin).

(1) As an MRO, it is your responsibility to use your best professional and ethical judgement and discretion to determine whether there is clinical evidence of unauthorized use of opiates. Examples of information that you may consider in making this judgement include, but are not limited to, the following:

- (i) Recent needle tracks;
- (ii) Behavioral and psychological signs of acute opiate intoxication or withdrawal;
- (iii) Clinical history of unauthorized use recent enough to have produced the laboratory test result;
- (iv) Use of a medication from a foreign country. *See*, § 40.137(e) for guidance on how to make this determination.

(2) In order to establish the clinical evidence referenced in paragraphs (c)(1)(i) and (ii) of this section, personal observation of the employee is essential.

(i) Therefore, you, as the MRO, must conduct, or cause another physician to conduct, a face-to-face examination of the employee.

(ii) No face-to-face examination is needed in establishing the clinical evidence referenced in paragraph (c)(1)(iii) or (iv) of this section.

(3) To be the basis of a verified positive result for codeine or morphine, the clinical evidence you find must concern a drug that the laboratory found in the specimen. (For example, if the test confirmed the presence of codeine, and the employee admits to unauthorized use of hydrocodone, you do not have grounds for verifying the test positive. The admission must be for the substance that was found through the actual drug test.)

(4) As the MRO, you have the burden of establishing that there is clinical evidence of unauthorized use of opiates referenced in this paragraph (c). If you cannot make this determination (*e.g.*, there is not sufficient clinical evidence or history), you must verify the test as negative. The employee does not need to show you that a legitimate medical explanation exists if no clinical evidence is established.

§ 40.141 -- How does the MRO obtain information for the verification decision?

As the MRO, you must do the following as you make the determinations needed for a verification decision:

- (a) You must conduct a medical interview. You must review the employee's medical history and any other relevant biomedical factors presented to you by the employee. You may direct the employee to undergo further medical evaluation by you or another physician.
- (b) If the employee asserts that the presence of a drug or drug metabolite in his or her specimen results from taking prescription medication (*i.e.*, a legally valid prescription consistent with the Controlled Substances Act), you must review and take all reasonable and necessary steps to verify the authenticity of all medical records the employee provides. You may contact the employee's physician or other relevant medical personnel for further information. You may request an HHS certified laboratory with validated protocols (see § 40.81(c)) to conduct testing for D,L stereoisomers of amphetamine and methamphetamine or testing for tetrahydrocannabivarin (THC- V) when verifying lab results, as you determine necessary.

§ 40.143 -- [Reserved]

§ 40.145 -- On what basis does the MRO verify test results involving adulteration or substitution?

- (a) As an MRO, when you receive a laboratory report that a specimen is adulterated or substituted, you must treat that report in the same way you treat the laboratory's report of a confirmed positive test for a drug or drug metabolite.
- (b) You must follow the same procedures used for verification of a confirmed positive test for a drug or drug metabolite (*See*, §§ 40.129-40.135, 40.141, 40.151), except as otherwise provided in this section.
- (c) In the verification interview, you must explain the laboratory findings to the employee and address technical questions or issues the employee may raise.
- (d) You must offer the employee the opportunity to present a legitimate medical explanation for the laboratory findings with respect to presence of the adulterant in, or the creatinine and specific gravity findings for, the specimen.
- (e) The employee has the burden of proof that there is a legitimate medical explanation.

(1) To meet this burden in the case of an adulterated specimen, the employee must demonstrate that the adulterant found by the laboratory entered the specimen through physiological means.

(2) To meet this burden in the case of a substituted specimen, the employee must demonstrate that he or she did produce or could have produced urine, through physiological means, meeting the creatinine and specific gravity criteria of § 40.93(b).

(3) The employee must present information meeting this burden at the time of the verification interview. As the MRO, you have discretion to extend the time available to the employee for this purpose for up to five days before verifying the specimen, if you determine that there is a reasonable basis to believe that the employee will be able to produce relevant evidence supporting a legitimate medical explanation within that time.

(f) As the MRO or the employer, you are not responsible for arranging, conducting, or paying for any studies, examinations or analyses to determine whether a legitimate medical explanation exists.

(g) As the MRO, you must exercise your best professional judgment in deciding whether the employee has established a legitimate medical explanation.

(1) If you determine that the employee's explanation does not present a reasonable basis for concluding that there may be a legitimate medical explanation, you must report the test to the DER as a verified refusal to test because of adulteration or substitution, as applicable.

(2) If you believe that the employee's explanation may present a reasonable basis for concluding that there is a legitimate medical explanation, you must direct the employee to obtain, within the five-day period set forth in paragraph (e)(3) of this section, a further medical evaluation. This evaluation must be performed by a licensed physician (the "referral physician"), acceptable to you, with expertise in the medical issues raised by the employee's explanation. (The MRO may perform this evaluation if the MRO has appropriate expertise.)

(i) As the MRO or employer, you are not responsible for finding or paying a referral physician. However, on request of the employee, you must provide reasonable assistance to the employee's efforts to find such a physician. The final choice of the referral physician is the employee's, as long as the physician is acceptable to you.

(ii) As the MRO, you must consult with the referral physician, providing guidance to him or her concerning his or her responsibilities under this section. As part of this consultation, you must provide the following information to the referral physician:

(A) That the employee was required to take a DOT drug test, but the laboratory reported that the specimen was adulterated or substituted, which is treated as a refusal to test;

(B) The consequences of the appropriate DOT agency regulation for refusing to take the required drug test;

(C) That the referral physician must agree to follow the requirements of paragraphs (g)(3) through (g)(4) of this section; and

(D) That the referral physician must provide you with a signed statement of his or her recommendations.

(3) As the referral physician, you must evaluate the employee and consider any evidence the employee presents concerning the employee's medical explanation. You may conduct

additional tests to determine whether there is a legitimate medical explanation. Any additional urine tests must be performed in an HHS-certified laboratory.

(4) As the referral physician, you must then make a written recommendation to the MRO about whether the MRO should determine that there is a legitimate medical explanation. As the MRO, you must seriously consider and assess the referral physician's recommendation in deciding whether there is a legitimate medical explanation.

(5) As the MRO, if you determine that there is a legitimate medical explanation, you must cancel the test and inform ODAPC in writing of the determination and the basis for it (*e.g.*, referral physician's findings, evidence produced by the employee).

(6) As the MRO, if you determine that there is not a legitimate medical explanation, you must report the test to the DER as a verified refusal to test because of adulteration or substitution.

(h) The following are examples of types of evidence an employee could present to support an assertion of a legitimate medical explanation for a substituted result.

(1) Medically valid evidence demonstrating that the employee is capable of physiologically producing urine meeting the creatinine and specific gravity criteria of § 40.93(b).

(i) To be regarded as medically valid, the evidence must have been gathered using appropriate methodology and controls to ensure its accuracy and reliability.

(ii) Assertion by the employee that his or her personal characteristics (*e.g.*, with respect to race, gender, weight, diet, working conditions) are responsible for the substituted result does not, in itself, constitute a legitimate medical explanation. To make a case that there is a legitimate medical explanation, the employee must present evidence showing that the cited personal characteristics actually result in the physiological production of urine meeting the creatinine and specific gravity criteria of § 40.93(b).

(2) Information from a medical evaluation under paragraph (g) of this section that the individual has a medical condition that has been demonstrated to cause the employee to physiologically produce urine meeting the creatinine and specific gravity criteria of § 40.93(b).

(i) A finding or diagnosis by the physician that an employee has a medical condition, in itself, does not constitute a legitimate medical explanation.

(ii) To establish there is a legitimate medical explanation, the employee must demonstrate that the cited medical condition actually results in the physiological production of urine meeting the creatinine and specific gravity criteria of § 40.93(b).

§ 40.147 -- [Reserved]

§ 40.149 -- May the MRO change a verified positive drug test result or refusal to test?

(a) As the MRO, you may change a verified positive or refusal to test drug test result only in the following situations:

(1) When you have reopened a verification that was done without an interview with an employee (*See*, § 40.133(c)).

(2) If you receive information, not available to you at the time of the original verification, demonstrating that the laboratory made an error in identifying (*e.g.*, a paperwork mistake) or testing (*e.g.*, a false positive or negative) the employee's primary or split specimen. For example, suppose the laboratory originally reported a positive test result for Employee X and a negative

result for Employee Y. You verified the test results as reported to you. Then the laboratory notifies you that it mixed up the two test results, and X was really negative and Y was really positive. You would change X's test result from positive to negative and contact Y to conduct a verification interview.

(3) If, within 60 days of the original verification decision-

(i) You receive information that could not reasonably have been provided to you at the time of the decision demonstrating that there is a legitimate medical explanation for the presence of drug(s)/metabolite(s) in the employee's specimen; or

(ii) You receive credible new or additional evidence that a legitimate medical explanation for an adulterated or substituted result exists.

Example to Paragraph (a)(3): If the employee's physician provides you a valid prescription that he or she failed to find at the time of the original verification, you may change the test result from positive to negative if you conclude that the prescription provides a legitimate medical explanation for the drug(s)/metabolite(s) in the employee's specimen.

(4) If you receive the information in paragraph (a)(3) of this section after the 60-day period, you must consult with ODAPC prior to changing the result.

(5) When you have made an administrative error and reported an incorrect result.

(b) If you change the result, you must immediately notify the DER in writing, as provided in §§ 40.163-40.165.

(c) You are the only person permitted to change a verified test result.

§ 40.151 -- What are MROs prohibited from doing as part of the verification process?

A MRO is prohibited from doing the following as part of the verification process:

(a) You must not consider any evidence from tests of urine samples or other body fluids or tissues (e.g., blood or hair samples) that are not collected or tested in accordance with this part. For example, if an employee tells you he went to his own physician, provided a urine specimen, sent it to a laboratory, and received a negative test result or a DNA test result questioning the identity of his DOT specimen, you are required to ignore this test result.

(b) In reviewing the CCF, you must not consider evidence extrinsic to the CCF in determining whether the test is valid. For example, you must review only what is on the face of the CCF for this purpose, not assertions by the employee that the CCF does not accurately reflect what happened at the collection site.

(c) It is not your function to determine whether the employer should have directed that a test occur. For example, if an employee tells you that the employer misidentified her as the subject of a random test, or directed her to take a reasonable suspicion or post-accident test without proper grounds under a DOT agency drug or alcohol regulation, you must inform the employee that you cannot play a role in deciding these issues.

(d) It is not your function to consider explanations of confirmed positive, adulterated, or substituted test results that would not, even if true, constitute a legitimate medical explanation.

For example, an employee may tell you that someone slipped amphetamines into her drink at a party, that she unknowingly ingested a marijuana brownie, or that she traveled in a closed car with several people smoking crack. MROs are unlikely to be able to verify the facts of such passive or unknowing ingestion stories. Even if true, such stories do not present a legitimate medical explanation. Consequently, you must not declare a test as negative based on an explanation of this kind.

(e) You must not verify a test negative based on information that a physician recommended that the employee use a drug listed in Schedule I of the Controlled Substances Act. (*e.g.*, under a state law that purports to authorize such recommendations, such as the "medical marijuana" laws that some states have adopted).

(f) You must not accept an assertion of consumption or other use of a hemp or other non-prescription marijuana-related product as a basis for verifying a marijuana test negative. You also must not accept such an explanation related to consumption of coca teas as a basis for verifying a cocaine test result as negative. Consuming or using such a product is not a legitimate medical explanation.

(g) You must not accept an assertion that there is a legitimate medical explanation for the presence of PCP or 6-AM in a specimen. There are no legitimate medical explanations for the presence of these substances.

(h) You must not accept, as a legitimate medical explanation for an adulterated specimen, an assertion that soap, bleach, or glutaraldehyde entered a specimen through physiological means. There are no physiological means through which these substances can enter a specimen.

(i) You must not accept, as a legitimate medical explanation for a substituted specimen, an assertion that an employee can produce urine with no detectable creatinine. There are no physiological means through which a person can produce a urine specimen having this characteristic.

§ 40.153 -- How does the MRO notify employees of their right to a test of the split specimen?

(a) As the MRO, when you have verified a drug test as positive for a drug or drug metabolite, or as a refusal to test because of adulteration or substitution, you must notify the employee of his or her right to have the split specimen tested. You must also notify the employee of the procedures for requesting a test of the split specimen.

(b) You must inform the employee that he or she has 72 hours from the time you provide this notification to him or her to request a test of the split specimen.

(c) You must tell the employee how to contact you to make this request. You must provide telephone numbers or other information that will allow the employee to make this request. As the MRO, you must have the ability to receive the employee's calls at all times during the 72 hour period (*e.g.*, by use of an answering machine with a "time stamp" feature when there is no one in your office to answer the phone).

(d) You must tell the employee that if he or she makes this request within 72 hours, the employer must ensure that the test takes place, and that the employee is not required to pay for the test from his or her own funds before the test takes place. You must also tell the employee that the employer may seek reimbursement for the cost of the test (*See*, § 40.173).

(e) You must tell the employee that additional tests of the specimen *e.g.*, DNA tests) are not authorized.

§ 40.155 -- What does the MRO do when a negative or positive test result is also dilute?

(a) When the laboratory reports that a specimen is dilute, you must, as the MRO, report to the DER that the specimen, in addition to being negative or positive, is dilute.

(b) You must check the "dilute" box (Step 6) on Copy 2 of the CCF.

(c) When you report a dilute specimen to the DER, you must explain to the DER the employer's obligations and choices under § 40.197, to include the requirement for an immediate recollection under direct observation if the creatinine concentration of a negative-dilute specimen was greater than or equal to 2mg/dL but less than or equal to 5 mg/dL.

(d) When you report a dilute specimen to the DER, you must explain to the DER the employer's obligations and choices under § 40.197.

§ 40.157 -- [Reserved]

§ 40.159 -- What does the MRO do when a drug test result is invalid?

(a) As the MRO, when the laboratory reports that the test result is an invalid result, you must do the following:

(1) Discuss the laboratory results with a certifying scientist to obtain more specific information.

(2) Contact the employee and inform the employee that the specimen was invalid or contained an unexplained interfering substance. In contacting the employee, use the procedures set forth in § 40.131.

(3) After explaining the limits of disclosure (*See*, §§ 40.135(d) and 40.327), you should inquire as to medications the employee may have taken that may interfere with some immunoassay tests.

(4) If the employee gives an explanation that is acceptable, you must:

(i) Place a check mark in the "Test Cancelled" box (Step 6) on Copy 2 of the CCF and enter "Invalid Result" and "direct observation collection not required" on the "Remarks" line.

(ii) Report to the DER that the test is cancelled, the reason for cancellation, and that no further action is required unless a negative test result is required (*i.e.*, pre-employment, return-to-duty, or follow-up tests).

(5) If the employee is unable to provide an explanation and/or a valid prescription for a medication that interfered with the immunoassay test but denies having adulterated the specimen, you must:

(i) Place a check mark in the "Test Cancelled" box (Step 6) on Copy 2 of the CCF and enter "Invalid Result" and "direct observation collection required" on the "Remarks" line.

(ii) Report to the DER that the test is cancelled, the reason for cancellation, and that a second collection must take place immediately under direct observation.

(iii) Instruct the employer to ensure that the employee has the minimum possible advance notice that he or she must go to the collection site.

(b) You may only report an invalid test result when you are in possession of a legible copy of Copy 1 of the CCF. In addition, you must have Copy 2 of the CCF, a legible copy of it, or any other copy of the CCF containing the employee's signature.

(c) If the employee admits to having adulterated or substituted the specimen, you must, on the same day, write and sign your own statement of what the employee told you. You must then report a refusal to test in accordance with § 40.163.

§ 40.161 -- What does the MRO do when a drug test specimen is rejected for testing?

As the MRO, when the laboratory reports that the specimen is rejected for testing (*e.g.*, because of a fatal or uncorrected flaw), you must do the following:

(a) Place a check mark in the "Test Cancelled" box (Step 6) on Copy 2 of the CCF and enter the reason on the "Remarks" line.

(b) Report to the DER that the test is cancelled and the reason for cancellation, and that no further action is required unless a negative test is required (*e.g.*, in the case of a pre-employment, return-to-duty, or follow-up test).

(c) You may only report a test cancelled because of a rejected for testing test result when you are in possession of a legible copy of Copy 1 of the CCF. In addition, you must have Copy 2 of the CCF, a legible copy of it, or any other copy of the CCF containing the employee's signature.

§40.162 What must MROs do with multiple verified results for the same testing event?

(a) If the testing event is one in which there was one specimen collection with multiple verified non-negative results, as the MRO, you must report them all to the DER. For example, if you verified the specimen as being positive for marijuana and cocaine and as being a refusal to test because the specimen was also adulterated, as the MRO, you should report the positives and the refusal to the DER.

(b) If the testing event was one in which two separate specimen collections (e.g., a specimen out of temperature range and the subsequent observed collection) were sent to the laboratory, as the MRO, you must:

(1) If both specimens were verified negative, report the result as negative.

(2) If either of the specimens was verified negative and the other was verified as one or more non-negative(s), report the non-negative result(s) only. For example, if you verified one specimen as negative and the other as a refusal to test because the second specimen was substituted, as the MRO you should report only the refusal to the DER.

(i) If the first specimen is reported as negative, but the result of the second specimen has not been reported by the laboratory, as the MRO, you should hold—not report—the result of the first specimen until the result of the second specimen is received.

(ii) If the first specimen is reported as non-negative, as the MRO, you should report the result immediately and not wait to receive the result of the second specimen.

(3) If both specimens were verified non-negative, report all of the non-negative results. For example, if you verified one specimen as positive and the other as a refusal to test because the specimen was adulterated, as the MRO, you should report the positive and the refusal results to the DER.

(c) As an exception to paragraphs (a) and (b) of this section, as the MRO, you must follow procedures at §40.159(g) when any verified non-negative result is also invalid.

§ 40.163 -- How does the MRO report drug test results?

(a) As the MRO, it is your responsibility to report the drug test results to the employer in writing.

(1) You or a staff member may rubber stamp a report of negative results. If you use a rubber stamp, you or your staff must also initial the stamp to identify who affixed the stamp to the report.

(2) You, as the MRO, must sign reports of all other results.

(b) You may use a signed or stamped and dated legible photocopy of Copy 2 of the CCF to report test results.

(c) If you do not report test results using Copy 2 of the CCF for this purpose, you must provide a written report (e.g., a letter) for each test result. This report must, as a minimum, include the following information:

(1) Full name, as indicated on the CCF, of the employee tested;

(2) Specimen ID number from the CCF and the donor SSN or employee ID number;

- (3) Reason for the test as indicated on the CCF (*e.g.*, random, post-accident);
- (4) Date of the collection;
- (5) Result of the test (*i.e.*, positive, negative, dilute, refusal to test, test cancelled) and the date the result was verified by the MRO;
- (6) For verified positive tests, the drug(s)/metabolite(s) for which the test was positive;
- (7) For cancelled tests, the reason for cancellation; and
- (8) For refusals to test, the reason for the refusal determination (*e.g.*, in the case of an adulterated test result, the name of the adulterant).

- (d) You must retain a signed or stamped and dated copy of Copy 2 of the CCF in your records. If you do not use Copy 2 for reporting results, you must maintain a copy of the signed or stamped and dated letter in addition to the signed or stamped and dated Copy 2.
- (e) You must not use Copy 1 of the CCF to report drug test results.
- (f) You must not provide quantitative values to the DER or C/TPA for drug or validity test results. However, you must provide the test information in your possession to a SAP who consults with you (*See*, § 40.293(g)).

§ 40.165 -- To whom does the MRO transmit reports of drug test results?

- (a) As the MRO, you must report all drug test results to the DER, except in the circumstances provided for in § 40.345.
- (b) If the employer elects to receive reports of results through a C/TPA, acting as an intermediary as provided in § 40.345, you must report the results through the designated C/TPA.

§ 40.167 -- How are MRO reports of drug results transmitted to the employer?

As the MRO or C/TPA who transmits drug test results to the employer, you must comply with the following requirements:

- (a) You must report the results in a confidential manner.
- (b) You must transmit to the DER on the same day the MRO verifies the result or the next business day all verified positive test results, results requiring an immediate collection under direct observation, adulterated or substituted specimen results, and other refusals to test.
 - (1) Direct telephone contact with the DER is the preferred method of immediate reporting. Follow up your phone call with appropriate documentation (*See*, § 40.163).
 - (2) You are responsible for identifying yourself to the DER, and the DER must have a means to confirm your identification.
 - (3) The MRO's report that you transmit to the employer must contain all of the information required by § 40.163.

(c) You must transmit the MRO's written report of verified test to the DER so that the DER receives them within two days of verification by the MRO.

(d) In transmitting test results, you or the C/TPA and the employer must ensure the security of the transmission and limit access to any transmission, storage, or retrieval systems.

§ 40.169 -- Where is other information concerning the role of MROs and the verification process found in this regulation?

You can find more information concerning the role of MROs in several sections of this part:

§ 40.3-Definition; §§ 40.47-40.49-Correction of form and kit errors; § 40.67-Role in direct observation and other atypical test situations; § 40.83-Laboratory handling of fatal and correctable flaws; § 40.97-Laboratory handling of test results and quantitative values; § 40.99-Authorization of longer laboratory retention of specimens; § 40.101-Relationship with laboratories; avoidance of conflicts of interest; § 40.171-Request for test of split specimen; § 40.187-Action concerning split specimen test results; § 40.193-Role in "shy bladder" situations; § 40.195-Role in canceling tests; §§ 40.199-40.203-Documenting errors in tests; § 40.327-Confidentiality and release of information; § 40.347-Transfer of records; § 40.353-Relationships with service agents.

Subpart H--Split Specimen Tests

§ 40.171 -- How does an employee request a test of a split specimen?

(a) As an employee, when the MRO has notified you that you have a verified positive drug test or refusal to test because of adulteration or substitution, you have 72 hours from the time of notification to request a test of the split specimen. The request may be verbal or in writing. If you make this request to the MRO within 72 hours, you trigger the requirements of this section for a test of the split specimen.

(b) (1) If, as an employee, you have not requested a test of the split specimen within 72 hours, you may present to the MRO information documenting that serious injury, illness, lack of actual notice of the verified test result, inability to contact the MRO (*e.g.*, there was no one in the MRO's office and the answering machine was not working), or other circumstances unavoidably prevented you from making a timely request.

(2) As the MRO, if you conclude from the employee's information that there was a legitimate reason for the employee's failure to contact you within 72 hours, you must direct that the test of the split specimen take place, just as you would when there is a timely request.

(c) When the employee makes a timely request for a test of the split specimen under paragraphs (a) and (b) of this section, you must, as the MRO, immediately provide written notice to the laboratory that tested the primary specimen, directing the laboratory to forward the split specimen to a second HHS-certified laboratory. You must also document the date and time of the employee's request.

§ 40.173 -- Who is responsible for paying for the test of a split specimen?

(a) As the employer, you are responsible for making sure (*e.g.*, by establishing appropriate accounts with laboratories for testing split specimens) that the MRO, first laboratory, and second laboratory perform the functions noted in §§ 40.175-40.185 in a timely manner, once the employee has made a timely request for a test of the split specimen.

(b) As the employer, you must not condition your compliance with these requirements on the employee's direct payment to the MRO or laboratory or the employee's agreement to reimburse you for the costs of testing. For example, if you ask the employee to pay for some or all of the cost of testing the split specimen, and the employee is unwilling or unable to do so, you must ensure that the test takes place in a timely manner, even though this means that you pay for it.

(c) As the employer, you may seek payment or reimbursement of all or part of the cost of the split specimen from the employee (*e.g.*, through your written company policy or a collective bargaining agreement). This part takes no position on who ultimately pays the cost of the test, so long as the employer ensures that the testing is conducted as required and the results released appropriately.

§ 40.175 -- What steps does the first laboratory take with a split specimen?

(a) As the laboratory at which the primary and split specimen first arrive, you must check to see whether the split specimen is available for testing.

(b) If the split specimen is unavailable or appears insufficient, you must then do the following:

(1) Continue the testing process for the primary specimen as you would normally. Report the results for the primary specimen without providing the MRO information regarding the unavailable split specimen.

(2) Upon receiving a letter from the MRO instructing you to forward the split specimen to another laboratory for testing, report to the MRO that the split specimen is unavailable for testing. Provide as much information as you can about the cause of the unavailability.

(c) As the laboratory that tested the primary specimen, you are not authorized to open the split specimen under any circumstances (except when the split specimen is re-designated as provided in § 40.83).

(d) When you receive written notice from the MRO instructing you to send the split specimen to another HHS-certified laboratory, you must forward the following items to the second laboratory:

(1) The split specimen in its original specimen bottle, with the seal intact;

(2) A copy of the MRO's written request; and

(3) A copy of Copy 1 of the CCF, which identifies the drug(s)/metabolite(s) or the validity criteria to be tested for.

(e) You must not send to the second laboratory any information about the identity of the employee. Inadvertent disclosure does not, however, cause a fatal flaw.

(f) This subpart does not prescribe who gets to decide which HHS-certified laboratory is used to test the split specimen. That decision is left to the parties involved.

§ 40.177 -- What does the second laboratory do with the split specimen when it is tested to reconfirm the presence of a drug or drug metabolite?

(a) As the laboratory testing the split specimen, you must test the split specimen for the drug(s)/drug metabolite(s) detected in the primary specimen.

(b) You must conduct this test without regard to the cutoff concentrations of § 40.87.

(c) If the test fails to reconfirm the presence of the drug(s)/drug metabolite(s) that were reported positive in the primary specimen, you must conduct validity tests in an attempt to determine the reason for being unable to reconfirm the presence of the drug(s)/metabolite(s). You should conduct the same validity tests as you would conduct on a primary specimen set forth in § 40.91.

(d) In addition, if the test fails to reconfirm the presence of the drugs/drugs metabolites or validity criteria that were reported in the primary specimen, you may transmit the specimen or an aliquot of it to another HHS-certified laboratory that will conduct another reconfirmation test.

§ 40.179 -- What does the second laboratory do with the split specimen when it is tested to reconfirm an adulterated test result?

As the laboratory testing the split specimen, you must test the split specimen for the adulterant detected in the primary specimen, using the criteria of § 40.95 just as you would do for a primary specimen. The result of the primary specimen is reconfirmed if the split specimen meets these criteria.

§ 40.181 -- What does the second laboratory do with the split specimen when it is tested to reconfirm a substituted test result?

As the laboratory testing the split specimen, you must test the split specimen using the criteria of § 40.93(b), just as you would do for a primary specimen. The result of the primary specimen is reconfirmed if the split specimen meets these criteria.

§ 40.183 -- What information do laboratories report to MROs regarding split specimen results?

(a) As the laboratory responsible for testing the split specimen, you must report split specimen test results by checking the "Reconfirmed" box or the "Failed to Reconfirm" box (Step 5(b)) on Copy 1 of the CCF.

(b) If you check the "Failed to Reconfirm" box, one of the following statements must be included (as appropriate) on the "Reason" line (Step 5(b)):

- (1) "Drug(s)/Drug Metabolite(s) Not Detected."
 - (2) "Adulterant not found within criteria."
 - (3) "Specimen not consistent with substitution criteria [specify creatinine, specific gravity, or both]"
 - (4) "Specimen not available for testing."
- (c) As the laboratory certifying scientist, enter your name, sign, and date the CCF.

§ 40.185 -- Through what methods and to whom must a laboratory report split specimen results?

- (a) As the laboratory testing the split specimen, you must report laboratory results directly, and only, to the MRO at his or her place of business. You must not report results to or through the DER or another service agent (*e.g.*, a C/TPA).
- (b) You must fax, courier, mail, or electronically transmit a legible image or copy of the fully-completed Copy 1 of the CCF, which has been signed by the certifying scientist.
- (c) You must transmit the laboratory result to the MRO immediately, preferably on the same day or next business day as the result is signed and released.

§ 40.187 -- What does the MRO do with split specimen laboratory results?

As an MRO, you must take the following actions when a laboratory reports the following results of split specimen tests:

- (a) ***Reconfirmed.***
 - (1) In the case of a reconfirmed positive test for a drug or drug metabolite, report the reconfirmation to the DER and the employee.
 - (2) In the case of a reconfirmed adulterated or substituted result, report to the DER and the employee that the specimen was adulterated or substituted, either of which constitutes a refusal to test. Therefore, "refusal to test" is the final result.
- (b) ***Failed to Reconfirm: Drug(s)/Drug Metabolite(s) Not Detected.***
 - (1) Report to the DER and the employee that both tests must be cancelled.
 - (2) Using the format in Appendix D to this part, inform ODAPC of the failure to reconfirm.
- (c) ***Failed to Reconfirm: Adulteration or Substitution (as appropriate) Criteria Not Met.***
 - (1) Report to the DER and the employee that both tests must be cancelled.
 - (2) Using the format in Appendix D to this part, inform ODAPC of the failure to reconfirm.
- (d) ***Failed to Reconfirm: Specimen not Available for Testing.***
 - (1) Report to the DER and the employee that both tests must be cancelled and the reason for cancellation.

(2) Direct the DER to ensure the immediate collection of another specimen from the employee under direct observation, with no notice given to the employee of this collection requirement until immediately before the collection

(3) Using the format in Appendix D to this part, notify ODAPC of the failure to reconfirm.

(e) Enter your name, sign and date (Step 7) of Copy 2 of the CCF.

(f) Send a legible copy of Copy 2 of the CCF (or a signed and dated letter, *See*, § 40.163) to the employer and keep a copy for your records. Transmit the document as provided in § 40.167.

§ 40.189 -- Where is other information concerning split specimens found in this regulation?

You can find more information concerning split specimens in several sections of this part: § 40.3-Definition; § 40.65-Quantity of split specimen; § 40.67-Directly observed test when split specimen is unavailable; §§ 40.71-40.73-Collection process for split specimens; § 40.83-Laboratory accessioning of split specimens; § 40.99-Laboratory retention of split specimens; § 40.153-MRO notice to employees on tests of split specimen; §§ 40.193 and 40.201-MRO actions on insufficient or unavailable split specimens.

Appendix D to Part 40-Report format for split specimen failure to reconfirm.

Subpart I--Problems in Drug Tests

§ 40.191 -- What is a refusal to take a DOT drug test, and what are the consequences?

(a) As an employee, you have refused to take a drug test if you:

(1) Fail to appear for any test within a reasonable time, as determined by the employer, after being directed to do so by the employer. This includes the failure of an employee (including an owner-operator) to appear for a test when called by C/TPA (*See*, § 40.61(a));

(2) Fail to remain at the testing site until the testing process is complete;

(3) Fail to provide a urine specimen for any drug test required by this part or DOT agency regulations;

(4) In the case of a directly observed or monitored collection in a drug test, fail to permit the observation or monitoring of your provision of a specimen (*See*, §§ 40.67(l) and 40.69(g));

(5) Fail to provide a sufficient amount of urine when directed, and it has been determined, through a required medical evaluation, that there was no adequate medical explanation for the failure (*See*, § 40.193(d)(2));

(6) Fail or decline to take a second test the employer or collector has directed you to take;

(7) Fail to undergo a medical examination or evaluation, as directed by the MRO as part of the verification process, or as directed by the DER as part of the "shy bladder" procedures of this part (*See*, § 40.193(d)); or

(8) Fail to cooperate with any part of the testing process (*e.g.*, refuse to empty pockets when so directed by the collector, behave in a confrontational way that disrupts the collection process).

(b) As an employee, if the MRO reports that you have a verified adulterated or substituted test result, you have refused to take a drug test.

(c) As an employee, if you refuse to take a drug test, you incur the consequences specified under DOT agency regulations for a violation of those DOT agency regulations.

(d) As a collector or an MRO, when an employee refuses to participate in the part of the testing process in which you are involved, you must terminate the portion of the testing process in which you are involved, document the refusal on the CCF (or in a separate document which you cause to be attached to the form), immediately notify the DER by any means (*e.g.*, telephone or secure fax machine) that ensures that the refusal notification is immediately received. As a referral physician (*e.g.*, physician evaluating a "shy bladder" condition or a claim of a legitimate medical explanation in a validity testing situation), you must notify the MRO, who in turn will notify the DER.

(1) As the collector, you must note the refusal in the "Remarks" line (Step 2), and sign and date the CCF.

(2) As the MRO, you must note the refusal by checking the "refused to test because" box (Step 6) on Copy 2 of the CCF, and add the reason on the "Remarks" line. You must then sign and date the CCF.

(e) As an employee, when you refuse to take a non-DOT test or to sign a non-DOT form, you have not refused to take a DOT test. There are no consequences under DOT agency regulations for refusing to take a non-DOT test.

§ 40.193 -- What happens when an employee does not provide a sufficient amount of urine for a drug test?

(a) This section prescribes procedures for situations in which an employee does not provide a sufficient amount of urine to permit a drug test (*i.e.*, 45 mL of urine).

(b) As the collector, you must do the following:

(1) Discard the insufficient specimen, except where the insufficient specimen was out of temperature range or showed evidence of adulteration or tampering (*See*, § 40.65(b) and (c)).

(2) Urge the employee to drink up to 40 ounces of fluid, distributed reasonably through a period of up to three hours, or until the individual has provided a sufficient urine specimen, whichever occurs first. It is not a refusal to test if the employee declines to drink.

(3) If the employee refuses to make the attempt to provide a new urine specimen, you must discontinue the collection, note the fact on the "Remarks" line of the CCF (Step 2), and immediately notify the DER. This is a refusal to test.

(4) If the employee has not provided a sufficient specimen within three hours of the first unsuccessful attempt to provide the specimen, you must discontinue the collection, note the fact on the "Remarks" line of the CCF (Step 2), and immediately notify the DER. You must also discard any specimen the employee previously provided to include any specimen that is "out of temperature range" or shows signs of tampering. In the remarks section of the CCF that you will distribute to the MRO and DER, note the fact that the

employee provided an “out of temperature range specimen” or “specimen that shows signs of tampering” and that it was discarded because the employee did not provide a second sufficient specimen.

(5) Send Copy 2 of the CCF to the MRO and Copy 4 to the DER. You must send or fax these copies to the MRO and DER within 24 hours or the next business day.

(c) As the DER, when the collector informs you that the employee has not provided a sufficient amount of urine (*See*, paragraph (b)(4) of this section), you must, after consulting with the MRO, direct the employee to obtain, within five working days, an evaluation from a licensed physician, acceptable to the MRO, who has expertise in the medical issues raised by the employee's failure to provide a sufficient specimen. (The MRO may perform this evaluation if the MRO has appropriate expertise.)

(1) As the MRO, if another physician will perform the evaluation, you must provide the other physician with the following information and instructions:

(i) That the employee was required to take a DOT drug test, but was unable to provide a sufficient amount of urine to complete the test;

(ii) The consequences of the appropriate DOT agency regulation for refusing to take the required drug test;

(iii) That the referral physician must agree to follow the requirements of paragraphs (d) through (g) of this section.

(d) As the referral physician conducting this evaluation, you must recommend that the MRO make one of the following determinations:

(1) A medical condition has, or with a high degree of probability could have, precluded the employee from providing a sufficient amount of urine. As the MRO, if you accept this recommendation, you must:

(i) Check "Test Cancelled" (Step 6) on the CCF; and

(ii) Sign and date the CCF.

(2) There is not an adequate basis for determining that a medical condition has, or with a high degree of probability could have, precluded the employee from providing a sufficient amount of urine. As the MRO, if you accept this recommendation, you must:

(i) Check "Refusal to test because" (Step 6) on the CCF and enter reason in the remarks line; and

(ii) Sign and date the CCF.

(e) For purposes of this paragraph, a medical condition includes an ascertainable physiological condition (*e.g.*, a urinary system dysfunction) or a medically documented pre-existing psychological disorder, but does not include unsupported assertions of "situational anxiety" or dehydration.

(f) As the referral physician making the evaluation, after completing your evaluation, you must provide a written statement of your recommendations and the basis for them to the MRO. You must not include in this statement detailed information on the employee's medical condition beyond what is necessary to explain your conclusion.

(g) If, as the referral physician making this evaluation in the case of a pre-employment test, you determine that the employee's medical condition is a serious and permanent or long-term disability that is highly likely to prevent the employee from providing a sufficient amount of urine for a very long or indefinite period of time, you must set forth your determination and the reasons for it in your written statement to the MRO. As the MRO, upon receiving such a report, you must follow the requirements of § 40.195, where applicable.

(h) As the MRO, you must seriously consider and assess the referral physician's recommendations in making your determination about whether the employee has a medical condition that has, or with a high degree of probability could have, precluded the employee from providing a sufficient amount of urine. You must report your determination to the DER in writing as soon as you make it.

(i) As the employer, when you receive a report from the MRO indicating that a test is cancelled as provided in paragraph (d)(1) of this section, you take no further action with respect to the employee. The employee remains in the random testing pool.

§ 40.195 -- What happens when an individual is unable to provide a sufficient amount of urine for a pre-employment or return-to-duty test because of a permanent or long-term medical condition?

(a) This section concerns a situation in which an employee has a medical condition that precludes him or her from providing a sufficient specimen for a pre-employment or return-to-duty test and the condition involves a permanent or long-term disability. As the MRO in this situation, you must do the following:

(1) You must determine if there is clinical evidence that the individual is an illicit drug user. You must make this determination by personally conducting, or causing to be conducted, a medical evaluation and through consultation with the employee's physician and/or the physician who conducted the evaluation under § 40.193(d).

(2) If you do not personally conduct the medical evaluation, you must ensure that one is conducted by a licensed physician acceptable to you.

(3) For purposes of this section, the MRO or the physician conducting the evaluation may conduct an alternative test (*e.g.*, blood) as part of the medically appropriate procedures in determining clinical evidence of drug use.

(b) If the medical evaluation reveals no clinical evidence of drug use, as the MRO, you must report the result to the employer as a negative test with written notations regarding results of both the evaluation conducted under § 40.193(d) and any further medical examination. This report must state the basis for the determination that a permanent or long-term medical condition exists, making provision of a sufficient urine specimen impossible, and for the determination that no signs and symptoms of drug use exist.

(1) Check "Negative" (Step 6) on the CCF.

(2) Sign and date the CCF.

(c) If the medical evaluation reveals clinical evidence of drug use, as the MRO, you must report the result to the employer as a cancelled test with written notations regarding results of

both the evaluation conducted under § 40.193(d) and any further medical examination. This report must state that a permanent or long-term medical condition exists, making provision of a sufficient urine specimen impossible, and state the reason for the determination that signs and symptoms of drug use exist. Because this is a cancelled test, it does not serve the purposes of a negative test (*i.e.*, the employer is not authorized to allow the employee to begin or resume performing safety-sensitive functions, because a negative test is needed for that purpose).

(d) For purposes of this section, permanent or long-term medical conditions are those physiological, anatomic, or psychological abnormalities documented as being present prior to the attempted collection, and considered not amenable to correction or cure for an extended period of time, if ever.

(1) Examples would include destruction (any cause) of the glomerular filtration system leading to renal failure; unrepaired traumatic disruption of the urinary tract; or a severe psychiatric disorder focused on genito-urinary matters.

(2) Acute or temporary medical conditions, such as cystitis, urethritis or prostatitis, though they might interfere with collection for a limited period of time, cannot receive the same exceptional consideration as the permanent or long-term conditions discussed in paragraph (d)(1) of this section.

§ 40.197 -- What happens when an employer receives a report of a dilute specimen?

(a) As the employer, if the MRO informs you that a positive drug test was dilute, you simply treat the test as a verified positive test. You must not direct the employee to take another test based on the fact that the specimen was dilute.

(b) If the MRO informs you that a negative drug test was dilute, you may, but are not required to, direct the employee to take another test immediately. Such recollections must not be collected under direct observation, unless there is another basis for use of direct observation (*See*, § 40.67(b) and (c)).

(c) You must treat all employees the same for this purpose. For example, you must not retest some employees and not others. You may, however, establish different policies for different types of tests (*e.g.*, conduct retests in pre-employment test situations, but not in random test situations). You must inform your employees in advance of your decisions on these matters.

(d) If you direct the employee to take another test, you must ensure that the employee is given the minimum possible advance notice that he or she must go to the collection site.

(e) If you direct the employee to take another test, the result of the second test-not that of the original test-becomes the test of record, on which you rely for purposes of this part.

(f) If you require employees to take another test, and the second test is also negative and dilute, you are not permitted to make the employee take a third test because the second test was dilute.

(g) If you direct the employee to take another test and the employee declines to do so, the employee has refused the test for purpose of this part and DOT agency regulations.

§ 40.199 -- What problems always cause a drug test to be cancelled?

(a) As the MRO, when the laboratory discovers a "fatal flaw" during its processing of incoming specimens (*See*, § 40.83), the laboratory will report to you that the specimen has been "Rejected for Testing" (with the reason stated). You must always cancel such a test.

(b) The following are "fatal flaws":

- (1) There is no printed collector's name *and* no collector's signature;
- (2) The specimen ID numbers on the specimen bottle and the CCF do not match;
- (3) The specimen bottle seal is broken or shows evidence of tampering (and a split specimen cannot be re-designated, *See*, § 40.83(g)); and
- (4) Because of leakage or other causes, there is an insufficient amount of urine in the primary specimen bottle for analysis and the specimens cannot be re-designated (*See*, § 40.83(g)).

(c) You must report the result as provided in § 40.161.

§ 40.201 -- What problems always cause a drug test to be cancelled and may result in a requirement for another collection?

As the MRO, you must cancel a drug test when a laboratory reports that any of the following problems have occurred. You must inform the DER that the test was cancelled. You must also direct the DER to ensure that an additional collection occurs immediately, if required by the applicable procedures specified in paragraphs (a) through (e) of this section.

(a) The laboratory reports an "Invalid Result." You must follow applicable procedures in § 40.159 (recollection under direct observation may be required).

(b) The following are "fatal flaws":

- (1) There is no CCF;
- (2) In cases where a specimen has been collected, there is no specimen submitted with the CCF;
- (3) There is no printed collector's name and no collector's signature;
- (4) Two separate collections are performed using one CCF;
- (5) The specimen ID numbers on the specimen bottle and the CCF do not match;
- (6) The specimen bottle seal is broken or shows evidence of tampering (and a split specimen cannot be re-designated, *see* § 40.83(h)); or
- (7) Because of leakage or other causes, there is an insufficient amount of urine in the primary specimen bottle for analysis and the specimens cannot be re-designated (*see* § 40.83(h)).

(c) The laboratory's test of the primary specimen is positive and the split specimen is reported by the laboratory as "Failure to Reconfirm: Drug(s)/Drug Metabolite(s) Not Detected." You must follow applicable procedures in § 40.187(b) (no recollection is required in this case).

(d) The laboratory's test result for the primary specimen is adulterated or substituted and the split specimen is reported by the laboratory as "Adulterant not found within criteria," or "specimen not consistent with substitution criteria, as applicable. You must follow applicable procedures in § 40.187(c) (no recollection is required in this case).

(e) The laboratory's test of the primary specimen is positive, adulterated, or substituted and the split specimen is unavailable for testing. You must follow applicable procedures in § 40.187(d) (recollection under direct observation is required in this case).

(f) The examining physician has determined that there is an acceptable medical explanation of the employee's failure to provide a sufficient amount of urine. You must follow applicable procedures in § 40.193(d)(1) (no recollection is required in this case).

§ 40.203 -- What problems cause a drug test to be cancelled unless they are corrected?

(a) As the MRO, when a laboratory discovers a "correctable flaw" during its processing of incoming specimens (*See*, § 40.83), the laboratory will attempt to correct it. If the laboratory is unsuccessful in this attempt, it will report to you that the specimen has been "Rejected for Testing" (with the reason stated).

(b) The following are "correctable flaws" that laboratories must attempt to correct:

- (1) The collector's signature is omitted on the certification statement on the CCF.
- (2) The specimen temperature was not checked and the "Remarks" line did not contain an entry regarding the temperature being out of range.

(c) As the MRO, when you discover a "correctable flaw" during your review of the CCF, you must cancel the test unless the flaw is corrected.

(d) The following are correctable flaws that you must attempt to correct:

- (1) The employee's signature is omitted from the certification statement, unless the employee's failure or refusal to sign is noted on the "Remarks" line of the CCF.
- (2) The certifying scientist's signature is omitted on the laboratory copy of the CCF for a positive, adulterated, substituted, or invalid test result.
- (3) The collector uses a non-Federal form or an expired CCF for the test. This flaw may be corrected through the procedure set forth in § 40.205(b)(2), provided that the collection testing process has been conducted in accordance with the procedures in this part in an HHS-certified laboratory.

§ 40.205 -- How are drug test problems corrected?

(a) As a collector, you have the responsibility of trying to successfully complete a collection procedure for each employee.

(1) If, during or shortly after the collection process, you become aware of any event that prevents the completion of a valid test or collection (*e.g.*, a procedural or paperwork error), you

must try to correct the problem promptly, if doing so is practicable. You may conduct another collection as part of this effort.

(2) If another collection is necessary, you must begin the new collection procedure as soon as possible, using a new CCF and a new collection kit.

(b) If, as a collector, laboratory, MRO, employer, or other person implementing these drug testing regulations, you become aware of a problem that can be corrected (*See*, § 40.203), but which has not already been corrected under paragraph (a) of this section, you must take all practicable action to correct the problem so that the test is not cancelled.

(1) If the problem resulted from the omission of required information, you must, as the person responsible for providing that information, supply in writing the missing information and a statement that it is true and accurate. For example, suppose you are a collector, and you forgot to make a notation on the "Remarks" line of the CCF that the employee did not sign the certification. You would, when the problem is called to your attention, supply a signed statement that the employee failed or refused to sign the certification and that your statement is true and accurate. You must supply this information on the same business day on which you are notified of the problem, transmitting it by fax or courier.

(2) If the problem is the use of a non-Federal form, you must, as the person responsible for the use of the incorrect form, provide a signed statement that the incorrect form contains all the information needed for a valid DOT drug test, that the incorrect form was used inadvertently or as the only means of conducting a test, in circumstances beyond your control. The statement must also list the steps you have taken to prevent future use of non-Federal forms for DOT tests. For this flaw to have been corrected, the test of the specimen must have occurred at a HHS-certified laboratory where it was tested using the testing protocol in this part. You must supply this information on the same business day on which you are notified of the problem, transmitting it by fax or courier.

(3) You must maintain the written documentation of a correction with the CCF.

(4) You must mark the CCF in such a way (*e.g.*, stamp noting correction) as to make it obvious on the face of the CCF that you corrected the flaw.

(c) If the correction does not take place, as the MRO you must cancel the test.

§ 40.207 -- What is the effect of a cancelled drug test?

(a) A cancelled drug test is neither positive nor negative.

(1) As an employer, you must not attach to a cancelled test the consequences of a positive test or other violation of a DOT drug testing regulation (*e.g.*, removal from a safety-sensitive position).

(2) As an employer, you must not use a cancelled test for the purposes of a negative test to authorize the employee to perform safety-sensitive functions (*i.e.*, in the case of a pre-employment, return-to-duty, or follow-up test).

(3) However, as an employer, you must not direct a recollection for an employee because a test has been cancelled, except in the situations cited in paragraph (a)(2) of this section or other provisions of this part that require another test to be conducted (*e.g.*, §§ 40.159(a)(5) and 40.187(b)).

(b) A cancelled test does not count toward compliance with DOT requirements (*e.g.*, being applied toward the number of tests needed to meet the employer's minimum random testing rate).

(c) A cancelled DOT test does not provide a valid basis for an employer to conduct a non-DOT test (*i.e.*, a test under company authority).

§ 40.209 -- What is the effect of procedural problems that are not sufficient to cancel a drug test?

(a) As a collector, laboratory, MRO, employer or other person administering the drug testing process, you must document any errors in the testing process of which you become aware, even if they are not considered problems that will cause a test to be cancelled as listed in this subpart. Decisions about the ultimate impact of these errors will be determined by other administrative or legal proceedings, subject to the limitations of paragraph (b) of this section.

(b) No person concerned with the testing process may declare a test cancelled based on an error that does not have a significant adverse effect on the right of the employee to have a fair and accurate test. Matters that do not result in the cancellation of a test include, but are not limited to, the following:

(1) A minor administrative mistake (*e.g.*, the omission of the employee's middle initial, a transposition of numbers in the employee's social security number);

(2) An error that does not affect employee protections under this part (*e.g.*, the collector's failure to add bluing agent to the toilet bowl, which adversely affects only the ability of the collector to detect tampering with the specimen by the employee);

(3) The collection of a specimen by a collector who is required to have been trained (*See*, § 40.33), but who has not met this requirement;

(4) A delay in the collection process (*See*, § 40.61(a));

(5) Verification of a test result by an MRO who has the basic credentials to be qualified as an MRO (*See*, § 40.121(a) through (b)) but who has not met training and/or documentation requirements (*See*, § 40.121(c) through (e));

(6) The failure to directly observe or monitor a collection that the rule requires or permits to be directly observed or monitored, or the unauthorized use of direct observation or monitoring for a collection;

(7) The fact that a test was conducted in a facility that does not meet the requirements of § 40.41;

(8) If the specific name of the courier on the CCF is omitted or erroneous;

(9) Personal identifying information is inadvertently contained on the CCF (*e.g.*, the employee signs his or her name on the laboratory copy); or

(10) Claims that the employee was improperly selected for testing.

(c) As an employer, these types of errors, even though not sufficient to cancel a drug test result, may subject you to enforcement action under DOT agency regulations.

§ 40.210 Are drug tests other than urine permitted under the regulations?

No. Drug tests other than on urine specimens are not authorized for testing under this part. Only urine specimens screened and confirmed at HHS certified laboratories (see § 40.81) are allowed for drug testing under this part. Point-of-collection urine testing or instant tests are not authorized.

Subpart J--Alcohol Testing Personnel

§ 40.211 -- Who conducts DOT alcohol tests?

- (a) Screening test technicians (STTs) and breath alcohol technicians (BATs) meeting their respective requirements of this subpart are the only people authorized to conduct DOT alcohol tests.
- (b) An STT can conduct only alcohol screening tests, but a BAT can conduct alcohol screening and confirmation tests.
- (c) As a BAT- or STT-qualified immediate supervisor of a particular employee, you may not act as the STT or BAT when that employee is tested, unless no other STT or BAT is available and DOT agency regulations do not prohibit you from doing so.

§ 40.213 -- What training requirements must STTs and BATs meet?

To be permitted to act as a BAT or STT in the DOT alcohol testing program, you must meet each of the requirements of this section:

- (a) You must be knowledgeable about the alcohol testing procedures in this part and the current DOT guidance. Procedures and guidance are available from ODAPC (Department of Transportation, 1200 New Jersey Avenue SE., Washington, DC 20590, 202-366-3784, or on the ODAPC Web site, <http://www.transportation.gov/odapc>). You must keep current on any changes to these materials. You must subscribe to the ODAPC list-serve at (<https://www.transportation.gov/odapc/get-odapc-email-updates>).
- (b) You must receive qualification training meeting the requirements of this paragraph (b).
 - (1) Qualification training must be in accordance with the DOT Model BAT or STT Course, as applicable. The DOT Model Courses are available from ODAPC (Department of Transportation, 400 7th Street, SW., Room 10403, Washington DC, 20590, 202-366-3784, or on the ODAPC web site, <http://www.dot.gov/ost/dapc>). The training can also be provided using a course of instruction equivalent to the DOT Model Courses. On request, ODAPC will review BAT and STT instruction courses for equivalency.
 - (2) Qualification training must include training to proficiency in using the alcohol testing procedures of this part and in the operation of the particular alcohol testing device(s) (*i.e.*, the ASD(s) or EBT(s)) you will be using.
 - (3) The training must emphasize that you are responsible for maintaining the integrity of the testing process, ensuring the privacy of employees being tested, and avoiding conduct or statements that could be viewed as offensive or inappropriate.

(4) The instructor must be an individual who has demonstrated necessary knowledge, skills, and abilities by regularly conducting DOT alcohol tests as an STT or BAT, as applicable, for a period of at least a year, who has conducted STT or BAT training, as applicable, under this part for a year, or who has successfully completed a "train the trainer" course.

(c) Following your completion of qualification training under paragraph (b) of this section, you must demonstrate proficiency in alcohol testing under this part by completing three consecutive error-free mock tests.

(1) Another person must monitor and evaluate your performance, in person or by a means that provides real-time observation and interaction between the instructor and trainee, and attest in writing that the mock collections are "error-free." This person must be an individual who meets the requirements of paragraph (b)(4) of this section.

(2) These tests must use the alcohol testing devices (*e.g.*, EBT(s) or ASD(s)) that you will use as a BAT or STT.

(3) If you are an STT who will be using an ASD that indicates readings by changes, contrasts, or other readings in color, you must demonstrate as part of the mock test that you are able to discern changes, contrasts, or readings correctly.

(d) paragraphs (b) and (c) of this section before you begin to perform STT or BAT functions.

(e) *Refresher training.* No less frequently than every five years from the date on which you satisfactorily complete the requirements of paragraphs (b) and (c) of this section, you must complete refresher training that meets all the requirements of paragraphs (b) and (c) of this section.

(f) ***Error Correction Training.*** If you make a mistake in the alcohol testing process that causes a test to be cancelled (*i.e.*, a fatal or uncorrected flaw), you must undergo error correction training. This training must occur within 30 days of the date you are notified of the error that led to the need for retraining.

(1) Error correction training must be provided and your proficiency documented in writing by a person who meets the requirements of paragraph (b)(4) of this section.

(2) Error correction training is required to cover only the subject matter area(s) in which the error that caused the test to be cancelled occurred.

(3) As part of the error correction training, you must demonstrate your proficiency in the alcohol testing procedures of this part by completing three consecutive error-free mock tests. The mock tests must include one uneventful scenario and two scenarios related to the area(s) in which your error(s) occurred. The person providing the training must monitor and evaluate your performance and attest in writing that the mock tests were error-free.

(g) ***Documentation.*** You must maintain documentation showing that you currently meet all requirements of this section. You must provide this documentation on request to DOT agency representatives and to employers and C/TPAs who are negotiating to use your services.

(h) ***Other persons who may serve as BATs or STTs.***

(1) Anyone meeting the requirements of this section to be a BAT may act as an STT, provided that the individual has demonstrated initial proficiency in the operation of the ASD that he or she is using, as provided in paragraph (c) of this section.

(2) Law enforcement officers who have been certified by state or local governments to conduct breath alcohol testing are deemed to be qualified as BATs. They are not required to also complete the training requirements of this section in order to act as BATs. In order for a test conducted by such an officer to be accepted under DOT alcohol testing requirements, the officer must have been certified by a state or local government to use the EBT or ASD that was used for the test.

§ 40.215 -- What information about the DER do employers have to provide to BATs and STTs?

As an employer, you must provide to the STTs and BATs the name and telephone number of the appropriate DER (and C/TPA, where applicable) to contact about any problems or issues that may arise during the testing process.

§ 40.217 -- Where is other information on the role of STTs and BATs found in this regulation?

You can find other information on the role and functions of STTs and BATs in the following sections of this part:

§ 40.3-Definitions; § 40.223-Responsibility for supervising employees being tested; §§ 40.225-40.227-Use of the alcohol testing form; §§ 40.241-40.245-Screening test procedures with ASDs and EBTs; §§ 40.251-40.255-Confirmation test procedures; § 40.261-Refusals to test; §§ 40.263-40.265-Insufficient saliva or breath; § 40.267-Problems requiring cancellation of tests; §§ 40.269-40.271-Correcting problems in tests.

Subpart K--Testing Sites, Forms, Equipment and Supplies Used in Alcohol Testing

§ 40.221 -- Where does an alcohol test take place?

- (a) A DOT alcohol test must take place at an alcohol testing site meeting the requirements of this section.
- (b) If you are operating an alcohol testing site, you must ensure that it meets the security requirements of § 40.223.
- (c) If you are operating an alcohol testing site, you must ensure that it provides visual and aural privacy to the employee being tested, sufficient to prevent unauthorized persons from seeing or hearing test results.

(d) If you are operating an alcohol testing site, you must ensure that it has all needed personnel, materials, equipment, and facilities to provide for the collection and analysis of breath and/or saliva samples, and a suitable clean surface for writing.

(e) If an alcohol testing site fully meeting all the visual and aural privacy requirements of paragraph (c) is not readily available, this part allows a reasonable suspicion or post-accident test to be conducted at a site that partially meets these requirements. In this case, the site must afford visual and aural privacy to the employee to the greatest extent practicable.

(f) An alcohol testing site can be in a medical facility, a mobile facility (*e.g.*, a van), a dedicated collection facility, or any other location meeting the requirements of this section.

§ 40.223 -- What steps must be taken to protect the security of alcohol testing sites?

(a) If you are a BAT, STT, or other person operating an alcohol testing site, you must prevent unauthorized personnel from entering the testing site.

(1) The only people you are to treat as authorized persons are employees being tested, BATs, STTs, and other alcohol testing site workers, DERs, employee representatives authorized by the employer (*e.g.*, on the basis of employer policy or labor-management agreement), and DOT agency representatives.

(2) You must ensure that all persons are under the supervision of a BAT or STT at all times when permitted into the site.

(3) You may remove any person who obstructs, interferes with, or causes unnecessary delay in the testing process.

(b) As the BAT or STT, you must not allow any person other than you, the employee, or a DOT agency representative to actually witness the testing process (*See*, §§ 40.241-40.255).

(c) If you are operating an alcohol testing site, you must ensure that when an EBT or ASD is not being used for testing, you store it in a secure place.

(d) If you are operating an alcohol testing site, you must ensure that no one other than BATs or other employees of the site have access to the site when an EBT is unsecured.

(e) As a BAT or STT, to avoid distraction that could compromise security, you are limited to conducting an alcohol test for only one employee at a time.

(1) When an EBT screening test on an employee indicates an alcohol concentration of 0.02 or higher, and the same EBT will be used for the confirmation test, you are not allowed to use the EBT for a test on another employee before completing the confirmation test on the first employee.

(2) As a BAT who will conduct both the screening and the confirmation test, you are to complete the entire screening and confirmation process on one employee before starting the screening process on another employee.

(3) You are not allowed to leave the alcohol testing site while the testing process for a given employee is in progress, except to notify a supervisor or contact a DER for assistance in the

case an employee or other person who obstructs, interferes with, or unnecessarily delays the testing process.

§ 40.225 -- What form is used for an alcohol test?

(a) The DOT Alcohol Testing Form (ATF) must be used for every DOT alcohol test. The ATF must be a three-part carbonless manifold form. The ATF is found in **AppendixG** to this part. You may view this form on the ODAPC web site (<http://www.transportation.gov/odapc>).

(b) As an employer in the DOT alcohol testing program, you are not permitted to modify or revise the ATF except as follows:

(1) You may include other information needed for billing purposes, outside the boundaries of the form.

(2) You may use a ATF directly generated by an EBT which omits the space for affixing a separate printed result to the ATF, provided the EBT prints the result directly on the ATF.

(3) You may use an ATF that has the employer's name, address, and telephone number preprinted. In addition, a C/TPA's name, address, and telephone number may be included, to assist with negative results.

(4) You may use an ATF in which all pages are printed on white paper. The white pages must have either clearly discernible borders in the specified color for each page or designation statements for each copy in the specified color.

(5) As a BAT or STT, you may add, on the "Remarks" line of the ATF, the name of the DOT agency under whose authority the test occurred.

(6) As a BAT or STT, you may use a ATF that has your name, address, and telephone number preprinted, but under no circumstances can your signature be preprinted.

(c) As an employer, you may use an equivalent foreign-language version of the ATF approved by ODAPC. You may use such a non-English language form only in a situation where both the employee and BAT/STT understand and can use the form in that language.

§ 40.227 -- May employers use the ATF for non-DOT tests, or non-DOT forms for DOT tests?

(a) No, as an employer, BAT, or STT, you are prohibited from using the ATF for non-DOT alcohol tests. You are also prohibited from using non-DOT forms for DOT alcohol tests. Doing either subjects you to enforcement action under DOT agency regulations.

(b) If the STT or BAT, either by mistake, or as the only means to conduct a test under difficult circumstances (*e.g.*, post-accident test with insufficient time to obtain the ATF), uses a non-DOT form for a DOT test, the use of a non-DOT form does not, in and of itself, require the employer or service agent to cancel the test. However, in order for the test to be considered valid, a signed statement must be obtained from the STT or BAT in accordance with § 40.271(b).

§ 40.229 -- What devices are used to conduct alcohol screening tests?

ASDs listed on ODAPC's Web page for "Approved Screening Devices to

Measure Alcohol in Bodily Fluids” and EBTs listed on ODAPC’s Web page for “Approved Evidential Breath Measurement Devices” are the only devices you are allowed to use to conduct alcohol screening tests under this part. You may use an ASD for DOT alcohol tests only if there are instructions for its use in this part. An ASD can be used only for screening tests for alcohol, and must not be used for confirmation tests.

§ 40.231 -- What devices are used to conduct alcohol confirmation tests?

- (a) EBTs on ODAPC’s Web page for “Approved Evidential Breath Measurement Devices” that meet the requirements of paragraph (b) of this section are the only devices you may use to conduct alcohol confirmation tests under this part.
- (b) To conduct a confirmation test, you must use an EBT that has the following capabilities:
 - (1) Provides a printed triplicate result (or three consecutive identical copies of a result) of each breath test;
 - (2) Assigns a unique number to each completed test, which the BAT and employee can read before each test and which is printed on each copy of the result;
 - (3) Prints, on each copy of the result, the manufacturer's name for the device, its serial number, and the time of the test;
 - (4) Distinguishes alcohol from acetone at the 0.02 alcohol concentration level;
 - (5) Tests an air blank; and
 - (6) Performs an external calibration check.

§ 40.233 -- What are the requirements for proper use and care of EBTs?

- (a) As an EBT manufacturer, you must submit, for NHTSA approval, a quality assurance plan (QAP) for your EBT before ODAPC places the EBT on its Web page for “Approved Evidential Breath Measurement Devices.”
- (b) As the manufacturer, you must include, with each EBT, instructions for its use and care consistent with the QAP.
- (c) As the user of the EBT (*e.g.*, employer, service agent), you must do the following:
 - (1) You must follow the manufacturer's instructions (*See*, paragraph (b) of this section), including performance of external calibration checks at the intervals the instructions specify.
 - (2) In conducting external calibration checks, you must use only calibration devices appearing on NHTSA's CPL for "Calibrating Units for Breath Alcohol Tests."
 - (3) If an EBT fails an external check of calibration, you must take the EBT out of service. You may not use the EBT again for DOT alcohol testing until it is repaired and passes an external calibration check.
 - (4) You must maintain records of the inspection, maintenance, and calibration of EBTs as provided in § 40.333(a)(3).
 - (5) You must ensure that inspection, maintenance, and calibration of the EBT are performed by its manufacturer or a maintenance representative certified either by the manufacturer or by a state health agency or other appropriate state agency.

§ 40.235 -- What are the requirements for proper use and care of ASDs?

- (a) As an ASD manufacturer, you must submit, for NHTSA approval, a QAP for your ASD before NHTSA approves it and ODAPC places the device on its Web page for “Approved Screening Devices to Measure Alcohol in Bodily Fluids”. Your QAP must specify the methods used for quality control checks, temperatures at which the ASD must be stored and used, the shelf life of the device, and environmental conditions (*e.g.*, temperature, altitude, humidity) that may affect the ASD’s performance.
- (b) As a manufacturer, you must include with each ASD instructions for its use and care consistent with the QAP. The instructions must include directions on the proper use of the ASD, and, where applicable the time within which the device must be read, and the manner in which the reading is made.
- (c) As the user of the ADS (*e.g.*, employer, STT), you must follow the QAP instructions.
- (d) You are not permitted to use an ASD that does not pass the specified quality control checks or that has passed its expiration date.
- (e) As an employer, with respect to breath ASDs, you must also follow the device use and care requirements of § 40.233.

Subpart L--Alcohol Screening Tests

§ 40.241 -- What are the first steps in any alcohol screening test?

As the BAT or STT you will take the following steps to begin all alcohol screening tests, regardless of the type of testing device you are using:

- (a) When a specific time for an employee's test has been scheduled, or the collection site is at the employee's worksite, and the employee does not appear at the collection site at the scheduled time, contact the DER to determine the appropriate interval within which the DER has determined the employee is authorized to arrive. If the employee's arrival is delayed beyond that time, you must notify the DER that the employee has not reported for testing. In a situation where a C/TPA has notified an owner/operator or other individual employee to report for testing and the employee does not appear, the C/TPA must notify the employee that he or she has refused to test.
- (b) Ensure that, when the employee enters the alcohol testing site, you begin the alcohol testing process without undue delay. For example, you must not wait because the employee says he or she is not ready or because an authorized employer or employee representative is delayed in arriving.
 - (1) If the employee is also going to take a DOT drug test, you must, to the greatest extent practicable, ensure that the alcohol test is completed before the urine collection process begins.
 - (2) If the employee needs medical attention (*e.g.*, an injured employee in an emergency medical facility who is required to have a post-accident test), do not delay this treatment to conduct a test.

- (c) Require the employee to provide positive identification. You must see a photo ID issued by the employer (other than in the case of an owner-operator or other self-employer individual) or a Federal, state, or local government (*e.g.*, a driver's license). You may not accept faxes or photocopies of identification. Positive identification by an employer representative (not a co-worker or another employee being tested) is also acceptable. If the employee cannot produce positive identification, you must contact a DER to verify the identity of the employee.
- (d) If the employee asks, provide your identification to the employee. Your identification must include your name and your employer's name but is not required to include your picture, address, or telephone number.
- (e) Explain the testing procedure to the employee, including showing the employee the instructions on the back of the ATF.
- (f) Complete Step 1 of the ATF.
- (g) Direct the employee to complete Step 2 on the ATF and sign the certification. If the employee refuses to sign this certification, you must document this refusal on the "Remarks" line of the ATF and immediately notify the DER. This is a refusal to test.

§ 40.243 -- What is the procedure for an alcohol screening test using an EBT or non-evidential breath ASD?

As the BAT or STT, you must take the following steps:

- (a) Select, or allow the employee to select, an individually wrapped or sealed mouthpiece from the testing materials.
- (b) Open the individually wrapped or sealed mouthpiece in view of the employee and insert it into the device in accordance with the manufacturer's instructions.
- (c) Instruct the employee to blow steadily and forcefully into the mouthpiece for at least six seconds or until the device indicates that an adequate amount of breath has been obtained.
- (d) Show the employee the displayed test result.
- (e) If the device is one that prints the test number, testing device name and serial number, time, and result directly onto the ATF, you must check to ensure that the information has been printed correctly onto the ATF.
- (f) If the device is one that prints the test number, testing device name and serial number, time and result, but on a separate printout rather than directly onto the ATF, you must affix the printout of the information to the designated space on the ATF with tamper-evident tape or use a self-adhesive label that is tamper-evident.

(g) If the device is one that does not print the test number, testing device name and serial number, time, and result, or it is a device not being used with a printer, you must record this information in Step 3 of the ATF.

§ 40.245 -- What is the procedure for an alcohol screening test using a saliva ASD?

As the STT, you must take the following steps:

(a) Check the expiration date on the device and show it to the employee. You may not use the device after its expiration date.

(b) Open an individually wrapped or sealed package containing the device in the presence of the employee.

(c) Offer the employee the opportunity to use the device. If the employee uses it, you must instruct the employee to insert it into his or her mouth and use it in a manner described by the device's manufacturer.

(d) If the employee chooses not to use the device, or in all cases in which a new test is necessary because the device did not activate (*See*, paragraph (g) of this section), you must insert the device into the employee's mouth and gather saliva in the manner described by the device's manufacturer. You must wear single-use examination or similar gloves while doing so and change them following each test.

(e) When the device is removed from the employee's mouth, you must follow the manufacturer's instructions regarding necessary next steps in ensuring that the device has activated.

(f) (1) If you were unable to successfully follow the procedures of paragraphs (c) through (e) of this section (*e.g.*, the device breaks, you drop the device on the floor), you must discard the device and conduct a new test using a new device.

(2) The new device you use must be one that has been under your control or that of the employer before the test.

(3) You must note on the "Remarks" line of the ATF the reason for the new test. (Note: You may continue using the same ATF with which you began the test.)

(4) You must offer the employee the choice of using the device or having you use it unless the employee, in the opinion of the STT or BAT, was responsible (*e.g.*, the employee dropped the device) for the new test needing to be conducted.

(5) If you are unable to successfully follow the procedures of paragraphs (c) through (e) of this section on the new test, you must end the collection and put an explanation on the "Remarks" line of the ATF.

(6) You must then direct the employee to take a new test immediately, using an EBT for the screening test.

(g) If you are able to successfully follow the procedures of paragraphs (c)-(e) of this section, but the device does not activate, you must discard the device and conduct a new test, in the same

manner as provided in paragraph (f) of this section. In this case, you must place the device into the employee's mouth to collect saliva for the new test.

- (h) You must read the result displayed on the device no sooner than the device's manufacturer instructs. In all cases the result displayed must be read within 15 minutes of the test. You must then show the device and its reading to the employee and enter the result on the ATF.
- (i) You must never re-use devices, swabs, gloves or other materials used in saliva testing.
- (j) You must note the fact that you used a saliva ASD in Step 3 of the ATF.

§ 40.247 -- What procedures does the BAT or STT follow after a screening test result?

- (a) If the test result is an alcohol concentration of less than 0.02, as the BAT or STT, you must do the following:
 - (1) Sign and date Step 3 of the ATF; and
 - (2) Transmit the result to the DER in a confidential manner, as provided in § 40.255.
- (b) If the test result is an alcohol concentration of 0.02 or higher, as the BAT or STT, you must direct the employee to take a confirmation test.
 - (1) If you are the BAT who will conduct the confirmation test, you must then conduct the test using the procedures beginning at § 40.251.
 - (2) If you are not the BAT who will conduct the confirmation test, direct the employee to take a confirmation test, sign and date Step 3 of the ATF, and give the employee Copy 2 of the ATF.
 - (3) If the confirmation test will be performed at a different site from the screening test, you must take the following additional steps:
 - (i) Advise the employee not to eat, drink, put anything (*e.g.*, cigarette, chewing gum) into his or her mouth, or belch;
 - (ii) Tell the employee the reason for the waiting period required by § 40.251(a) (*i.e.*, to prevent an accumulation of mouth alcohol from leading to an artificially high reading);
 - (iii) Explain that following your instructions concerning the waiting period is to the employee's benefit;
 - (iv) Explain that the confirmation test will be conducted at the end of the waiting period, even if the instructions have not been followed;
 - (v) Note on the "Remarks" line of the ATF that the waiting period instructions were provided;
 - (vi) Instruct the person accompanying the employee to carry a copy of the ATF to the BAT who will perform the confirmation test; and
 - (vii) Ensure that you or another BAT, STT, or employer representative observe the employee as he or she is transported to the confirmation testing site. You must direct the employee not to attempt to drive a motor vehicle to the confirmation testing site.

(c) If the screening test is invalid, you must, as the BAT or STT, tell the employee the test is cancelled and note the problem on the "Remarks" line of the ATF. If practicable, repeat the testing process (*See*, § 40. 271).

Subpart M--Alcohol Confirmation Tests

§ 40.251 -- What are the first steps in an alcohol confirmation test?

As the BAT for an alcohol confirmation test, you must follow these steps to begin the confirmation test process:

(a) You must carry out a requirement for a waiting period before the confirmation test, by taking the following steps:

(1) You must ensure that the waiting period lasts at least 15 minutes, starting with the completion of the screening test. After the waiting period has elapsed, you should begin the confirmation test as soon as possible, but not more than 30 minutes after the completion of the screening test.

(i) If the confirmation test is taking place at a different location from the screening test (*See*, § 40.247(b)(3)) the time of transit between sites counts toward the waiting period if the STT or BAT who conducted the screening test provided the waiting period instructions.

(ii) If you cannot verify, through review of the ATF, that waiting period instructions were provided, then you must carry out the waiting period requirement.

(iii) You or another BAT or STT, or an employer representative, must observe the employee during the waiting period.

(2) Concerning the waiting period, you must tell the employee:

(i) Not to eat, drink, put anything (*e.g.*, cigarette, chewing gum) into his or her mouth, or belch;

(ii) The reason for the waiting period (*i.e.*, to prevent an accumulation of mouth alcohol from leading to an artificially high reading);

(iii) That following your instructions concerning the waiting period is to the employee's benefit; and

(iv) That the confirmation test will be conducted at the end of the waiting period, even if the instructions have not been followed.

(3) If you become aware that the employee has not followed the instructions, you must note this on the "Remarks" line of the ATF.

(b) If you did not conduct the screening test for the employee, you must require positive identification of the employee, explain the confirmation procedures, and use a new ATF. You must note on the "Remarks" line of the ATF that a different BAT or STT conducted the screening test.

(c) Complete Step 1 of the ATF.

- (d) Direct the employee to complete Step 2 on the ATF and sign the certification. If the employee refuses to sign this certification, you must document this refusal on the "Remarks" line of the ATF and immediately notify the DER. This is a refusal to test.
- (e) Even if more than 30 minutes have passed since the screening test result was obtained, you must begin the confirmation test procedures in § 40.253, not another screening test.
- (f) You must note on the "Remarks" line of the ATF the time that elapsed between the two events, and if the confirmation test could not begin within 30 minutes of the screening test, the reason why.
- (g) Beginning the confirmation test procedures after the 30 minutes have elapsed does not invalidate the screening or confirmation tests, but it may constitute a regulatory violation subject to DOT agency sanction.

§ 40.253 -- What are the procedures for conducting an alcohol confirmation test?

As the BAT conducting an alcohol confirmation test, you must follow these steps in order to complete the confirmation test process:

- (a) In the presence of the employee, you must conduct an air blank on the EBT you are using before beginning the confirmation test and show the reading to the employee.
 - (1) If the reading is 0.00, the test may proceed. If the reading is greater than 0.00, you must conduct another air blank.
 - (2) If the reading on the second air blank is 0.00, the test may proceed. If the reading is greater than 0.00, you must take the EBT out of service.
 - (3) If you take an EBT out of service for this reason, no one may use it for testing until the EBT is found to be within tolerance limits on an external check of calibration.
 - (4) You must proceed with the test of the employee using another EBT, if one is available.
- (b) You must open a new individually wrapped or sealed mouthpiece in view of the employee and insert it into the device in accordance with the manufacturer's instructions.
- (c) You must ensure that you and the employee read the sequential test number displayed on the EBT.
- (d) You must instruct the employee to blow steadily and forcefully into the mouthpiece for at least six seconds or until the device indicates that an adequate amount of breath has been obtained.
- (e) You must show the employee the result displayed on the EBT.
- (f) You must show the employee the result and unique test number that the EBT prints out either directly onto the ATF or onto a separate printout.

(g) If the EBT provides a separate printout of the result, you must attach the printout to the designated space on the ATF with tamper-evident tape, or use a self-adhesive label that is tamper-evident.

§ 40.255 -- What happens next after the alcohol confirmation test result?

(a) After the EBT has printed the result of an alcohol confirmation test, you must, as the BAT, take the following additional steps:

(1) Sign and date Step 3 of the ATF.

(2) If the alcohol confirmation test result is lower than 0.02, nothing further is required of the employee. As the BAT, you must sign and date Step 3 of the ATF.

(3) If the alcohol confirmation test result is 0.02 or higher, direct the employee to sign and date Step 4 of the ATF. If the employee does not do so, you must note this on the "Remarks" line of the ATF. However, this is not considered a refusal to test.

(4) If the test is invalid, tell the employee the test is cancelled and note the problem on the "Remarks" line of the ATF. If practicable, conduct a re-test. (*See*, § 40.271).

(5) Immediately transmit the result directly to the DER in a confidential manner.

(i) You may transmit the results using Copy 1 of the ATF, in person, by telephone, or by electronic means. In any case, you must immediately notify the DER of any result of 0.02 or greater by any means (*e.g.*, telephone or secure fax machine) that ensures the result is immediately received by the DER. You must not transmit these results through C/TPAs or other service agents.

(ii) If you do not make the initial transmission in writing, you must follow up the initial transmission with Copy 1 of the ATF.

(b) As an employer, you must take the following steps with respect to the receipt and storage of alcohol test result information:

(1) If you receive any test results that are not in writing (*e.g.*, by telephone or electronic means), you must establish a mechanism to establish the identity of the BAT sending you the results.

(2) You must store all test result information in a way that protects confidentiality.

Subpart N--Problems in Alcohol Testing

§ 40.261 -- What is a refusal to take an alcohol test, and what are the consequences?

(a) As an employee, you are considered to have refused to take an alcohol test if you:

(1) Fail to appear for any test within a reasonable time, as determined by the employer, after being directed to do so by the employer. This includes the failure of an employee (including an owner-operator) to appear for a test when called by C/TPA (*See*, § 40.241(b)(1));

(2) Fail to remain at the testing site until the testing process is complete;

(3) Fail to attempt to provide a saliva or breath specimen, as applicable, for any test required by this part or DOT agency regulations;

(4) Fail to provide a sufficient breath specimen, and the physician has determined, through a required medical evaluation, that there was no adequate medical explanation for the failure (*See*, § 40.265(c));

- (5) Fail to undergo a medical examination or evaluation, as directed by the employer as part of the insufficient breath procedures outlined at § 40.265(c);
- (6) Fail to sign the certification at Step 2 of the ATF (*See*, § 40.241(b)(7)); or
- (7) Fail to cooperate with any part of the testing process.

(b) As an employee, if you refuse to take an alcohol test, you incur the same consequences specified under DOT agency regulations for a violation of those DOT agency regulations.

(c) As a BAT or an STT, or as the physician evaluating a "shy lung" situation, when an employee refuses to test as provided in paragraph (a) of this section, you must terminate the portion of the testing process in which you are involved, document the refusal on the ATF (or in a separate document which you cause to be attached to the form), immediately notify the DER by any means (*e.g.*, telephone or secure fax machine) that ensures the refusal notification is immediately received. You must make this notification directly to the DER (not using a C/TPA as an intermediary).

(d) As an employee, when you refuse to take a non-DOT test or to sign a non-DOT form, you have not refused to take a DOT test. There are no consequences under DOT agency regulations for such a refusal.

§ 40.263 -- What happens when an employee is unable to provide a sufficient amount of saliva for an alcohol screening test?

(a) As the STT, you must take the following steps if an employee is unable to provide sufficient saliva to complete a test on a saliva screening device (*e.g.*, the employee does not provide sufficient saliva to activate the device).

(1) You must conduct a new screening test using a new screening device.

(2) If the employee refuses to make the attempt to complete the new test, you must discontinue testing, note the fact on the "Remarks" line of the ATF, and immediately notify the DER. This is a refusal to test.

(3) If the employee has not provided a sufficient amount of saliva to complete the new test, you must note the fact on the "Remarks" line of the ATF and immediately notify the DER.

(b) As the DER, when the STT informs you that the employee has not provided a sufficient amount of saliva (*See*, paragraph (a)(3) of this section), you must immediately arrange to administer an alcohol test to the employee using an EBT or other breath testing device.

§ 40.265 -- What happens when an employee is unable to provide a sufficient amount of breath for an alcohol test?

(a) If an employee does not provide a sufficient amount of breath to permit a valid breath test, you must take the steps listed in this section.

(b) As the BAT or STT, you must instruct the employee to attempt again to provide a sufficient amount of breath and about the proper way to do so.

(1) If the employee refuses to make the attempt, you must discontinue the test, note the fact on the "Remarks" line of the ATF, and immediately notify the DER. This is a refusal to test.

(2) If the employee again attempts and fails to provide a sufficient amount of breath, you may provide another opportunity to the employee to do so if you believe that there is a strong likelihood that it could result in providing a sufficient amount of breath.

(3) When the employee's attempts under paragraph (b)(2) of this section have failed to produce a sufficient amount of breath, you must note the fact on the "Remarks" line of the ATF and immediately notify the DER.

(4) If you are using an EBT that has the capability of operating manually, you may attempt to conduct the test in manual mode.

(5) If you are qualified to use a saliva ASD and you are in the screening test stage, you may change to a saliva ASD only to complete the screening test.

(c) As the employer, when the BAT or STT informs you that the employee has not provided a sufficient amount of breath, you must direct the employee to obtain, within five days, an evaluation from a licensed physician who is acceptable to you and who has expertise in the medical issues raised by the employee's failure to provide a sufficient specimen.

(1) You are required to provide the physician who will conduct the evaluation with the following information and instructions:

(i) That the employee was required to take a DOT breath alcohol test, but was unable to provide a sufficient amount of breath to complete the test;

(ii) The consequences of the appropriate DOT agency regulation for refusing to take the required alcohol test;

(iii) That the physician must provide you with a signed statement of his or her conclusions; and

(iv) That the physician, in his or her reasonable medical judgment, must base those conclusions on one of the following determinations:

(A) A medical condition has, or with a high degree of probability could have, precluded the employee from providing a sufficient amount of breath. The physician must not include in the signed statement detailed information on the employee's medical condition. In this case, the test is cancelled.

(B) There is not an adequate basis for determining that a medical condition has, or with a high degree of probability could have, precluded the employee from providing a sufficient amount of breath. This constitutes a refusal to test.

(C) For purposes of paragraphs (c)(1)(iv)(A) and (B) of this section, a medical condition includes an ascertainable physiological condition (*e.g.*, a respiratory system dysfunction) or a medically documented pre-existing psychological disorder, but does not include unsupported assertions of "situational anxiety" or hyperventilation.

(2) As the physician making the evaluation, after making your determination, you must provide a written statement of your conclusions and the basis for them to the DER directly (and not through a C/TPA acting as an intermediary). You must not include in this statement detailed information on the employee's medical condition beyond what is necessary to explain your conclusion.

(3) Upon receipt of the report from the examining physician, as the DER you must immediately inform the employee and take appropriate action based upon your DOT agency regulations.

§ 40.267 -- What problems always cause an alcohol test to be cancelled?

As an employer, a BAT, or an STT, you must cancel an alcohol test if any of the following problems occur. These are "fatal flaws." You must inform the DER that the test was cancelled and must be treated as if the test never occurred. These problems are:

- (a) In the case of a screening test conducted on a saliva ASD:
 - (1) The STT reads the result either sooner than or later than the time allotted by the manufacturer (*See*, § 40.245(h));
 - (2) The device does not activate *See*, § 40.245(g); or
 - (3) The device is used for a test after the expiration date printed on its package (*See*, § 40.245(a)).

- (b) In the case of a screening or confirmation test conducted on an EBT, the sequential test number or alcohol concentration displayed on the EBT is not the same as the sequential test number or alcohol concentration on the printed result (*See*, § 40.253(c), (e) and (f)).

- (c) In the case of a confirmation test:
 - (1) The BAT conducts the confirmation test before the end of the minimum 15-minute waiting period (*See*, § 40.251(a)(1));
 - (2) The BAT does not conduct an air blank before the confirmation test (*See*, §40.253(a));
 - (3) There is not a 0.00 result on the air blank conducted before the confirmation test (*See*, § 40.253(a)(1) and (2));
 - (4) The EBT does not print the result (*See*, § 40.253(f)); or
 - (5) The next external calibration check of the EBT produces a result that differs by more than the tolerance stated in the QAP from the known value of the test standard. In this case, every result of 0.02 or above obtained on the EBT since the last valid external calibration check is cancelled (*See*, § 40.233(a)(1) and (d)).

§ 40.269 -- What problems cause an alcohol test to be cancelled unless they are corrected?

As a BAT or STT, or employer, you must cancel an alcohol test if any of the following problems occur, unless they are corrected. These are "correctable flaws." These problems are:

- (a) The BAT or STT does not sign the ATF (*See*, §§ 40.247(a)(1) and 40.255(a)(1)).

- (b) The BAT or STT fails to note on the "Remarks" line of the ATF that the employee has not signed the ATF after the result is obtained (*See*, § 40.255(a)(2)).

- (c) The BAT or STT uses a non-DOT form for the test (*See*, § 40.225(a)).

§ 40.271 -- How are alcohol testing problems corrected?

(a) As a BAT or STT, you have the responsibility of trying to complete successfully an alcohol test for each employee.

(1) If, during or shortly after the testing process, you become aware of any event that will cause the test to be cancelled (*See*, § 40.267), you must try to correct the problem promptly, if practicable. You may repeat the testing process as part of this effort.

(2) If repeating the testing process is necessary, you must begin a new test as soon as possible. You must use a new ATF, a new sequential test number, and, if needed, a new ASD and/or a new EBT. It is permissible to use additional technical capabilities of the EBT (*e.g.*, manual operation) if you have been trained to do so in accordance with § 40.213(c).

(3) If repeating the testing process is necessary, you are not limited in the number of attempts to complete the test, provided that the employee is making a good faith effort to comply with the testing process.

(4) If another testing device is not available for the new test at the testing site, you must immediately notify the DER and advise the DER that the test could not be completed. As the DER who receives this information, you must make all reasonable efforts to ensure that the test is conducted at another testing site as soon as possible.

(b) If, as an STT, BAT, employer or other service agent administering the testing process, you become aware of a "correctable flaw" (*See*, § 40.269) that has not already been corrected, you must take all practicable action to correct the problem so that the test is not cancelled.

(1) If the problem resulted from the omission of required information, you must, as the person responsible for providing that information, supply in writing the missing information and a signed statement that it is true and accurate. For example, suppose you are a BAT and you forgot to make a notation on the "Remarks" line of the ATF that the employee did not sign the certification. You would, when the problem is called to your attention, supply a signed statement that the employee failed or refused to sign the certification after the result was obtained, and that your signed statement is true and accurate.

(2) If the problem is the use of a non-DOT form, you must, as the person responsible for the use of the incorrect form, certify in writing that the incorrect form contains all the information needed for a valid DOT alcohol test. You must also provide a signed statement that the incorrect form was used inadvertently or as the only means of conducting a test, in circumstances beyond your control, and the steps you have taken to prevent future use of non-DOT forms for DOT tests. You must supply this information on the same business day on which you are notified of the problem, transmitting it by fax or courier.

(c) If you cannot correct the problem, you must cancel the test.

§ 40.273 -- What is the effect of a cancelled alcohol test?

(a) A cancelled alcohol test is neither positive nor negative.

(1) As an employer, you must not attach to a cancelled test the consequences of a test result that is 0.02 or greater (*e.g.*, removal from a safety-sensitive position).

(2) As an employer, you must not use a cancelled test in a situation where an employee needs a test result that is below 0.02 (*e.g.*, in the case of a return-to-duty or follow-up test to authorize the employee to perform safety-sensitive functions).

(3) As an employer, you must not direct a recollection for an employee because a test has been cancelled, except in the situations cited in paragraph (a)(2) of this section or other provisions of this part.

(b) A cancelled test does not count toward compliance with DOT requirements, such as a minimum random testing rate.

(c) When a test must be cancelled, if you are the BAT, STT, or other person who determines that the cancellation is necessary, you must inform the affected DER within 48 hours of the cancellation.

(d) A cancelled DOT test does not provide a valid basis for an employer to conduct a non-DOT test (*i.e.*, a test under company authority).

§ 40.275 -- What is the effect of procedural problems that are not sufficient to cancel an alcohol test?

(a) As an STT, BAT, employer, or a service agent administering the testing process, you must document any errors in the testing process of which you become aware, even if they are not "fatal flaws" or "correctable flaws" listed in this subpart. Decisions about the ultimate impact of these errors will be determined by administrative or legal proceedings, subject to the limitation of paragraph (b) of this section.

(b) No person concerned with the testing process may declare a test cancelled based on a mistake in the process that does not have a significant adverse effect on the right of the employee to a fair and accurate test. For example, it is inconsistent with this part to cancel a test based on a minor administrative mistake (*e.g.*, the omission of the employee's middle initial) or an error that does not affect employee protections under this part. Nor does the failure of an employee to sign in Step 4 of the ATF result in the cancellation of the test. Nor is a test to be cancelled on the basis of a claim by an employee that he or she was improperly selected for testing.

(c) As an employer, these errors, even though not sufficient to cancel an alcohol test result, may subject you to enforcement action under DOT agency regulations.

§ 40.277 -- Are alcohol tests other than saliva or breath permitted under these regulations?

No, other types of alcohol tests (*e.g.*, blood and urine) are not authorized for testing done under this part. Only saliva or breath for screening tests and breath for confirmation tests using approved devices are permitted.

Subpart O--Substance Abuse Professionals and the Return-to-Duty Process

§ 40.281 -- Who is qualified to act as a SAP?

To be permitted to act as a SAP in the DOT drug testing program, you must meet each of the requirements of this section:

- (a) **Credentials.** You must have one of the following credentials:
- (1) You are a licensed physician (Doctor of Medicine or Osteopathy);
 - (2) You are a licensed or certified social worker;
 - (3) You are a licensed or certified psychologist;
 - (4) You are a licensed or certified employee assistance professional; or
 - (5) You are a drug and alcohol counselor certified by the National Association of Alcoholism and Drug Abuse Counselors Certification Commission (NAADAC) or by the International Certification Reciprocity Consortium/Alcohol and Other Drug Abuse (ICRC).
 - (6) You are a drug and alcohol counselor certified by an organization listed at <https://www.transportation.gov/oadpc/sap>.
- (b) **Basic knowledge.** You must be knowledgeable in the following areas:
- (1) You must be knowledgeable about and have clinical experience in the diagnosis and treatment of alcohol and controlled substances-related disorders.
 - (2) You must be knowledgeable about the SAP function as it relates to employer interests in safety-sensitive duties.
 - (3) You must be knowledgeable about this part, the DOT agency regulations applicable to the employers for whom you evaluate employees, and the DOT SAP Guidelines. You must keep current on any changes to these materials. You must subscribe to the ODAPC list-serve at <https://www.transportation.gov/odapc/get-odapc-email-updates>. DOT agency regulations, DOT SAP Guidelines, and other materials are available from ODAPC (Department of Transportation, 1200 New Jersey Avenue SE., Washington DC, 20590 (202-366-3784), or on the ODAPC Web site (<http://www.transportation.gov/odapc>).
- (c) **Qualification training.** You must receive qualification training meeting the requirements of this paragraph (c).
- (1) Qualification training must provide instruction on the following subjects:
 - (i) Background, rationale, and coverage of the Department's drug and alcohol testing program;
 - (ii) 49 C.F.R. Part 40 and DOT agency drug and alcohol testing rules;
 - (iii) Key DOT drug testing requirements, including collections, laboratory testing, MRO review, and problems in drug testing;
 - (iv) Key DOT alcohol testing requirements, including the testing process, the role of BATs and STTs, and problems in alcohol tests;
 - (v) SAP qualifications and prohibitions;
 - (vi) The role of the SAP in the return-to-duty process, including the initial employee evaluation, referrals for education and/or treatment, the follow-up evaluation, continuing treatment recommendations, and the follow-up testing plan;
 - (vii) SAP consultation and communication with employers, MROs, and treatment providers;
 - (viii) Reporting and recordkeeping requirements;

(ix) Issues that SAPs confront in carrying out their duties under the program.

(2) Following your completion of qualification training under paragraph (c)(1) of this section, you must satisfactorily complete an examination administered by a nationally-recognized professional or training organization. The examination must comprehensively cover all the elements of qualification training listed in paragraph (c)(1) of this section.

(3) You must meet the requirements of paragraphs (a), (b), and (c) of this section before you begin to perform SAP functions.

(d) **Continuing education.** During each three-year period from the date on which you satisfactorily complete the examination under paragraph (c)(2) of this section, you must complete continuing education consisting of at least 12 professional development hours (*e.g.*, CEUs) relevant to performing SAP functions.

(1) This continuing education must include material concerning new technologies, interpretations, recent guidance, rule changes, and other information about developments in SAP practice, pertaining to the DOT program, since the time you met the qualification training requirements of this section.

(2) Your continuing education activities must include documentable assessment tools to assist you in determining whether you have adequately learned the material.

(e) **Documentation.** You must maintain documentation showing that you currently meet all requirements of this section. You must provide this documentation on request to DOT agency representatives and to employers and C/TPAs who are using or contemplating using your services.

§ 40.283 -- How does a certification organization obtain recognition for its members as SAPs?

(a) If you represent a certification organization that wants DOT to authorize its certified drug and alcohol counselors to be added to § 40.281(a)(5), you may submit a written petition to DOT requesting a review of your petition for inclusion.

(b) You must obtain the National Commission for Certifying Agencies (NCCA) accreditation before DOT will act on your petition.

(c) You must also meet the minimum requirements of Appendix E to this part before DOT will act on your petition.

§ 40.285 -- When is a SAP evaluation required?

(a) As an employee, when you have violated DOT drug and alcohol regulations, you cannot again perform any DOT safety-sensitive duties for any employer until and unless you complete the SAP evaluation, referral, and education/treatment process set forth in this subpart and in applicable DOT agency regulations. The first step in this process is a SAP evaluation.

(b) For purposes of this subpart, a verified positive DOT drug test result, a DOT alcohol test with a result indicating an alcohol concentration of 0.04 or greater, a refusal to test (including by

adulterating or substituting a urine specimen) or any other violation of the prohibition on the use of alcohol or drugs under a DOT agency regulation constitutes a DOT drug and alcohol regulation violation.

§ 40.287 -- What information is an employer required to provide concerning SAP services to an employee who has a DOT drug and alcohol regulation violation?

As an employer, you must provide to each employee (including an applicant or new employee) who violates a DOT drug and alcohol regulation a listing of SAPs readily available to the employee and acceptable to you, with names, addresses, and telephone numbers. You cannot charge the employee any fee for compiling or providing this list. You may provide this list yourself or through a C/TPA or other service agent.

§ 40.289 -- Are employers required to provide SAP and treatment services to employees?

(a) As an employer, you are not required to provide a SAP evaluation or any subsequent recommended education or treatment for an employee who has violated a DOT drug and alcohol regulation.

(b) However, if you offer that employee an opportunity to return to a DOT safety-sensitive duty following a violation, you must, before the employee again performs that duty, ensure that the employee receives an evaluation by a SAP meeting the requirements of § 40.281 and that the employee successfully complies with the SAP's evaluation recommendations.

(c) Payment for SAP evaluations and services is left for employers and employees to decide and may be governed by existing management-labor agreements and health care benefits.

§ 40.291 -- What is the role of the SAP in the evaluation, referral, and treatment process of an employee who has violated DOT agency drug and alcohol testing regulations?

(a) As a SAP, you are charged with:

- (1) Making a face-to-face clinical assessment and evaluation to determine what assistance is needed by the employee to resolve problems associated with alcohol and/or drug use;
- (2) Referring the employee to an appropriate education and/or treatment program;
- (3) Conducting a face-to-face follow-up evaluation to determine if the employee has actively participated in the education and/or treatment program and has demonstrated successful compliance with the initial assessment and evaluation recommendations;

(4) Providing the DER with a follow-up drug and/or alcohol testing plan for the employee;
and

(5) Providing the employee and employer with recommendations for continuing education and/or treatment.

(b) As a SAP, you are not an advocate for the employer or employee. Your function is to protect the public interest in safety by professionally evaluating the employee and recommending appropriate education/treatment, follow-up tests, and aftercare.

§ 40.293 -- What is the SAP's function in conducting the initial evaluation of an employee?

As a SAP, for every employee who comes to you following a DOT drug and alcohol regulation violation, you must accomplish the following:

- (a) Provide a comprehensive face-to-face assessment and clinical evaluation.
- (b) Recommend a course of education and/or treatment with which the employee must demonstrate successful compliance prior to returning to DOT safety-sensitive duty.
 - (1) You must make such a recommendation for every individual who has violated a DOT drug and alcohol regulation.
 - (2) You must make a recommendation for education and/or treatment that will, to the greatest extent possible, protect public safety in the event that the employee returns to the performance of safety-sensitive functions.
- (c) Appropriate education may include, but is not limited to, self-help groups (*e.g.*, Alcoholics Anonymous) and community lectures, where attendance can be independently verified, and bona fide drug and alcohol education courses.
- (d) Appropriate treatment may include, but is not limited to, in-patient hospitalization, partial in-patient treatment, out-patient counseling programs, and aftercare.
- (e) You must provide a written report directly to the DER highlighting your specific recommendations for assistance (*See*, § 40.311(c)).
- (f) For purposes of your role in the evaluation process, you must assume that a verified positive test result has conclusively established that the employee committed a DOT drug and alcohol regulation violation. You must not take into consideration in any way, as a factor in determining what your recommendation will be, any of the following:
 - (1) A claim by the employee that the test was unjustified or inaccurate;
 - (2) Statements by the employee that attempt to mitigate the seriousness of a violation of a DOT drug or alcohol regulation (*e.g.*, related to assertions of use of hemp oil, "medical marijuana" use, "contact positives," poppy seed ingestion, job stress); or
 - (3) Personal opinions you may have about the justification or rationale for drug and alcohol testing.
- (g) In the course of gathering information for purposes of your evaluation in the case of a drug-related violation, you may consult with the MRO. As the MRO, you are required to cooperate with the SAP and provide available information the SAP requests. It is not necessary to obtain the consent of the employee to provide this information.

§ 40.295 -- May employees or employers seek a second SAP evaluation if they disagree with the first SAP's recommendations?

(a) As an employee with a DOT drug and alcohol regulation violation, when you have been evaluated by a SAP, you must not seek a second SAP's evaluation in order to obtain another recommendation.

(b) As an employer, you must not seek a second SAP's evaluation if the employee has already been evaluated by a qualified SAP. If the employee, contrary to paragraph (a) of this section, has obtained a second SAP evaluation, as an employer you may not rely on it for any purpose under this part.

§ 40.297 -- Does anyone have the authority to change a SAP's initial evaluation?

(a) Except as provided in paragraph (b) of this section, no one (*e.g.*, an employer, employee, a managed-care provider, any service agent) may change in any way the SAP's evaluation or recommendations for assistance. For example, a third party is not permitted to make more or less stringent a SAP's recommendation by changing the SAP's evaluation or seeking another SAP's evaluation.

(b) The SAP who made the initial evaluation may modify his or her initial evaluation and recommendations based on new or additional information (*e.g.*, from an education or treatment program).

§ 40.299 -- What is the SAP's role and what are the limits on a SAP's discretion in referring employees for education and treatment?

(a) As a SAP, upon your determination of the best recommendation for assistance, you will serve as a referral source to assist the employee's entry into a education and/or treatment program.

(b) To prevent the appearance of a conflict of interest, you must not refer an employee requiring assistance to your private practice or to a person or organization from which you receive payment or to a person or organization in which you have a financial interest. You are precluded from making referrals to entities with which you are financially associated.

(c) There are four exceptions to the prohibitions contained in paragraph (b) of this section. You may refer an employee to any of the following providers of assistance, regardless of your relationship with them:

(1) A public agency (*e.g.*, treatment facility) operated by a state, county, or municipality;
(2) The employer or a person or organization under contract to the employer to provide alcohol or drug treatment and/or education services (*e.g.*, the employer's contracted treatment provider);

(3) The sole source of therapeutically appropriate treatment under the employee's health insurance program (*e.g.*, the single substance abuse in-patient treatment program made available by the employee's insurance coverage plan); or

(4) The sole source of therapeutically appropriate treatment reasonably available to the employee (*e.g.*, the only treatment facility or education program reasonably located within the general commuting area).

§ 40.301 -- What is the SAP's function in the follow-up evaluation of an employee?

(a) As a SAP, after you have prescribed assistance under § 40.293, you must re-evaluate the employee to determine if the employee has successfully carried out your education and/or treatment recommendations.

(1) This is your way to gauge for the employer the employee's ability to demonstrate successful compliance with the education and/or treatment plan.

(2) Your evaluation may serve as one of the reasons the employer decides to return the employee to safety-sensitive duty.

(b) As the SAP making the follow-up evaluation determination, you must:

(1) Confer with or obtain appropriate documentation from the appropriate education and/or treatment program professionals where the employee was referred; and

(2) Conduct a face-to-face clinical interview with the employee to determine if the employee demonstrates successful compliance with your initial evaluation recommendations.

(c) (1) If the employee has demonstrated successful compliance, you must provide a written report directly to the DER highlighting your clinical determination that the employee has done so with your initial evaluation recommendation (*See*, § 40.311(d)).

(2) You may determine that an employee has successfully demonstrated compliance even though the employee has not yet completed the full regimen of education and/or treatment you recommended or needs additional assistance. For example, if the employee has successfully completed the 30-day in-patient program you prescribed, you may make a "successful compliance" determination even though you conclude that the employee has not yet completed the out-patient counseling you recommended or should continue in an aftercare program.

(d) (1) As the SAP, if you believe, as a result of the follow-up evaluation, that the employee has not demonstrated successful compliance with your recommendations, you must provide written notice directly to the DER (*See*, § 40.311(e)).

(2) As an employer who receives the SAP's written notice that the employee has not successfully complied with the SAP's recommendations, you must not return the employee to the performance of safety-sensitive duties.

(3) As the SAP, you may conduct additional follow-up evaluation(s) if the employer determines that doing so is consistent with the employee's progress as you have reported it and with the employer's policy and/or labor-management agreements.

(4) As the employer, following a SAP report that the employee has not demonstrated successful compliance, you may take personnel action consistent with your policy and/or labor-management agreements.

§ 40.303 -- What happens if the SAP believes the employee needs additional treatment, aftercare, or support group services even after the employee returns to safety-sensitive duties?

(a) As a SAP, if you believe that ongoing services (in addition to follow-up tests) are needed to assist an employee to maintain sobriety or abstinence from drug use after the employee

resumes the performance of safety-sensitive duties, you must provide recommendations for these services in your follow-up evaluation report (*See*, § 40.311(d)(10)).

(b) As an employer receiving a recommendation for these services from a SAP, you may, as part of a return-to-duty agreement with the employee, require the employee to participate in the recommended services. You may monitor and document the employee's participation in the recommended services. You may also make use of SAP and employee assistance program (EAP) services in assisting and monitoring employees' compliance with SAP recommendations. Nothing in this section permits an employer to fail to carry out its obligations with respect to follow-up testing (*See*, § 40.309).

(c) As an employee, you are obligated to comply with the SAP's recommendations for these services. If you fail or refuse to do so, you may be subject to disciplinary action by your employer.

§ 40.305 -- How does the return-to-duty process conclude?

(a) As the employer, if you decide that you want to permit the employee to return to the performance of safety-sensitive functions, you must ensure that the employee takes a return-to-duty test. This test cannot occur until after the SAP has determined that the employee has successfully complied with prescribed education and/or treatment. The employee must have a negative drug test result and/or an alcohol test with an alcohol concentration of less than 0.02 before resuming performance of safety-sensitive duties.

(b) As an employer, you must not return an employee to safety-sensitive duties until the employee meets the conditions of paragraph (a) of this section. However, you are not required to return an employee to safety-sensitive duties because the employee has met these conditions. That is a personnel decision that you have the discretion to make, subject to collective bargaining agreements or other legal requirements.

(c) As a SAP or MRO, you must not make a "fitness for duty" determination as part of this re-evaluation unless required to do so under an applicable DOT agency regulation. It is the employer, rather than you, who must decide whether to put the employee back to work in a safety-sensitive position.

§ 40.307 -- What is the SAP's function in prescribing the employee's follow-up tests?

(a) As a SAP, for each employee who has committed a DOT drug or alcohol regulation violation, and who seeks to resume the performance of safety-sensitive functions, you must establish a written follow-up testing plan. You do not establish this plan until after you determine that the employee has successfully complied with your recommendations for education and/or treatment.

(b) You must present a copy of this plan directly to the DER (*See*, § 40.311(d)(9)).

(c) You are the sole determiner of the number and frequency of follow-up tests and whether these tests will be for drugs, alcohol, or both, unless otherwise directed by the appropriate DOT agency regulation. For example, if the employee had a positive drug test, but your evaluation or the treatment program professionals determined that the employee had an alcohol problem as well, you should require that the employee have follow-up tests for both drugs and alcohol.

(d) However, you must, at a minimum, direct that the employee be subject to six unannounced follow-up tests in the first 12 months of safety-sensitive duty following the employee's return to safety-sensitive functions.

(1) You may require a greater number of follow-up tests during the first 12-month period of safety-sensitive duty (*e.g.*, you may require one test a month during the 12-month period; you may require two tests per month during the first 6-month period and one test per month during the final 6-month period).

(2) You may also require follow-up tests during the 48 months of safety-sensitive duty following this first 12-month period.

(3) You are not to establish the actual dates for the follow-up tests you prescribe. The decision on specific dates to test is the employer's.

(4) As the employer, you must not impose additional testing requirements (*e.g.*, under company authority) on the employee that go beyond the SAP's follow-up testing plan.

(e) The requirements of the SAP's follow-up testing plan "follow the employee" to subsequent employers or through breaks in service.

Example 1 to Paragraph (e): The employee returns to duty with Employer A. Two months afterward, after completing the first two of six follow-up tests required by the SAP's plan, the employee quits his job with Employer A and begins to work in a similar position for Employer B. The employee remains obligated to complete the four additional tests during the next 10 months of safety-sensitive duty, and Employer B is responsible for ensuring that the employee does so. Employer B learns of this obligation through the inquiry it makes under § 40.25.

Example 2 to Paragraph (e): The employee returns to duty with Employer A. Three months later, after the employee completes the first two of six follow-up tests required by the SAP's plan, Employer A lays the employee off for economic or seasonal employment reasons. Four months later, Employer A recalls the employee. Employer A must ensure that the employee completes the remaining four follow-up tests during the next nine months.

(f) As the SAP, you may modify the determinations you have made concerning follow-up tests. For example, even if you recommended follow-up testing beyond the first 12-months, you can terminate the testing requirement at any time after the first year of testing. You must not, however, modify the requirement that the employee take at least six follow-up tests within the first 12 months after returning to the performance of safety-sensitive functions.

§ 40.309 -- What are the employer's responsibilities with respect to the SAP's directions for follow-up tests?

(a) As the employer, you must carry out the SAP's follow-up testing requirements. You may not allow the employee to continue to perform safety-sensitive functions unless follow-up testing is conducted as directed by the SAP.

- (b) You should schedule follow-up tests on dates of your own choosing, but you must ensure that the tests are unannounced with no discernable pattern as to their timing, and that the employee is given no advance notice.
- (c) You cannot substitute any other tests (*e.g.*, those carried out under the random testing program) conducted on the employee for this follow-up testing requirement.
- (d) You cannot count a follow-up test that has been cancelled as a completed test. A cancelled follow-up test must be recollected.

§ 40.311 -- What are the requirements concerning SAP reports?

- (a) As the SAP conducting the required evaluations, you must send the written reports required by this section in writing directly to the DER and not to a third party or entity for forwarding to the DER (except as provided in § 40.355(e)). You may, however, forward the document simultaneously to the DER and to a C/TPA.
- (b) As an employer, you must ensure that you receive SAP written reports directly from the SAP performing the evaluation and that no third party or entity changed the SAP's report in any way.
- (c) The SAP's written report, following an initial evaluation that determines what level of assistance is needed to address the employee's drug and/or alcohol problems, must be on the SAP's own letterhead (and not the letterhead of another service agent) signed and dated by the SAP, and must contain the following delineated items:
 - (1) Employee's name and SSN;
 - (2) Employer's name and address;
 - (3) Reason for the assessment (specific violation of DOT regulations and violation date);
 - (4) Date(s) of the assessment;
 - (5) SAP's education and/or treatment recommendation; and
 - (6) SAP's telephone number.
- (d) The SAP's written report concerning a follow-up evaluation that determines the employee has demonstrated successful compliance must be on the SAP's own letterhead (and not the letterhead of another service agent), signed by the SAP and dated, and must contain the following items:
 - (1) Employee's name and SSN;
 - (2) Employer's name and address;
 - (3) Reason for the initial assessment (specific violation of DOT regulations and violation date);
 - (4) Date(s) of the initial assessment and synopsis of the treatment plan;
 - (5) Name of practice(s) or service(s) providing the recommended education and/or treatment;
 - (6) Inclusive dates of employee's program participation;
 - (7) Clinical characterization of employee's program participation;

(8) SAP's clinical determination as to whether the employee has demonstrated successful compliance;

(9) Follow-up testing plan;

(10) Employee's continuing care needs with specific treatment, aftercare, and/or support group services recommendations; and

(11) SAP's telephone number.

(e) The SAP's written report concerning a follow-up evaluation that determines the employee has not demonstrated successful compliance must be on the SAP's own letterhead (and not the letterhead of another service agent), signed by the SAP and dated, and must contain the following items:

(1) Employee's name and SSN;

(2) Employer's name and address;

(3) Reason for the initial assessment (specific DOT violation and date);

(4) Date(s) of initial assessment and synopsis of treatment plan;

(5) Name of practice(s) or service(s) providing the recommended education and/or treatment;

(6) Inclusive dates of employee's program participation;

(7) Clinical characterization of employee's program participation;

(8) Date(s) of the first follow-up evaluation;

(9) Date(s) of any further follow-up evaluation the SAP has scheduled;

(10) SAP's clinical reasons for determining that the employee has not demonstrated successful compliance; and

(11) SAP's telephone number.

(f) As a SAP, you must also provide these written reports directly to the employee if the employee has no current employer and to the gaining DOT regulated employer in the event the employee obtains another transportation industry safety-sensitive position.

(g) As a SAP, you are to maintain copies of your reports to employers for 5 years, and your employee clinical records in accordance with Federal, state, and local laws regarding record maintenance, confidentiality, and release of information. You must make these records available, on request, to DOT agency representatives (*e.g.*, inspectors conducting an audit or safety investigation) and representatives of the NTSB in an accident investigation.

(h) As an employer, you must maintain your reports from SAPs for 5 years from the date you received them.

§ 40.313 -- Where is other information on SAP functions and the return-to-duty process found in this regulation?

You can find other information on the role and functions of SAPs in the following sections of this part:

§ 40.3-Definition; § 40.347-Service agent assistance with SAP-required follow-up testing; § 40.355-Transmission of SAP reports; § 40.329(c)-Making SAP reports available to employees on request.

Appendix E to Part 40--SAP Equivalency Requirements for Certification Organizations.

Subpart P--Confidentiality and Release of Information

§ 40.321 -- What is the general confidentiality rule for drug and alcohol test information?

Except as otherwise provided in this subpart, as a service agent or employer participating in the DOT drug or alcohol testing process, you are prohibited from releasing individual test results or medical information about an employee to third parties without the employee's specific written consent.

(a) A "third party" is any person or organization to whom other subparts of this regulation do not explicitly authorize or require the transmission of information in the course of the drug or alcohol testing process.

(b) "Specific written consent" means a statement signed by the employee that he or she agrees to the release of a particular piece of information to a particular, explicitly identified, person or organization at a particular time. "Blanket releases," in which an employee agrees to a release of a category of information (*e.g.*, all test results) or to release information to a category of parties (*e.g.*, other employers who are members of a C/TPA, companies to which the employee may apply for employment), are prohibited under this part.

§ 40.323 -- May program participants release drug or alcohol test information in connection with legal proceedings?

(a) As an employer, you may release information pertaining to an employee's drug or alcohol test without the employee's consent in certain legal proceedings.

(1) These proceedings include a lawsuit (*e.g.*, a wrongful discharge action), grievance (*e.g.*, an arbitration concerning disciplinary action taken by the employer), or administrative proceeding (*e.g.*, an unemployment compensation hearing) brought by, or on behalf of, an employee and resulting from a positive DOT drug or alcohol test or a refusal to test (including, but not limited to, adulterated or substituted test results).

(2) These proceedings also include a criminal or civil action resulting from an employee's performance of safety-sensitive duties, in which a court of competent jurisdiction determines that the drug or alcohol test information sought is relevant to the case and issues an order directing the employer to produce the information. For example, in personal injury litigation following a truck or bus collision, the court could determine that a post-accident drug test result of an employee is relevant to determining whether the driver or the driver's employer was negligent. The employer is authorized to respond to the court's order to produce the records.

(b) In such a proceeding, you may release the information to the decision maker in the proceeding (*e.g.*, the court in a lawsuit). You may release the information only with a binding

stipulation that the decision maker to whom it is released will make it available only to parties to the proceeding.

(c) If you are a service agent, and the employer requests its employee's drug or alcohol testing information from you to use in a legal proceeding as authorized in paragraph (a) of this section (e.g., the laboratory's data package), you must provide the requested information to the employer.

(d) As an employer or service agent, you must immediately notify the employee in writing of any information you release under this section.

§ 40.325 -- [Reserved]

§ 40.327 -- When must the MRO report medical information gathered in the verification process?

(a) As the MRO, you must, except as provided in paragraph (c) of this section, report drug test results and medical information you learned as part of the verification process to third parties without the employee's consent if you determine, in your reasonable medical judgment, that:

(1) The information is likely to result in the employee being determined to be medically unqualified under an applicable DOT agency regulation; or

(2) The information indicates that continued performance by the employee of his or her safety-sensitive function is likely to pose a significant safety risk.

(b) The third parties to whom you are authorized to provide information by this section include the employer, a physician or other health care provider responsible for determining the medical qualifications of the employee under an applicable DOT agency safety regulation, a SAP evaluating the employee as part of the return to duty process (*See*, § 40.293(g)), a DOT agency, or the National Transportation Safety Board in the course of an accident investigation.

(c) If the law of a foreign country (e.g., Canada) prohibits you from providing medical information to the employer, you may comply with that prohibition.

§ 40.329 -- What information must laboratories, MROs, and other service agents release to employees?

(a) As an MRO or service agent you must provide, within 10 business days of receiving a written request from an employee, copies of any records pertaining to the employee's use of alcohol and/or drugs, including records of the employee's DOT-mandated drug and/or alcohol tests. You may charge no more than the cost of preparation and reproduction for copies of these records.

(b) As a laboratory, you must provide, within 10 business days of receiving a written request from an employee, and made through the MRO, the records relating to the results of the employee's drug test (*i.e.*, laboratory report and data package). You may charge no more than the cost of preparation and reproduction for copies of these records.

(c) As a SAP, you must make available to an employee, on request, a copy of all SAP reports (*See*, § 40.311).

§ 40.331 -- To what additional parties must employers and service agents release information?

As an employer or service agent you must release information under the following circumstances:

(a) If you receive a specific, written consent from an employee authorizing the release of information about that employee's drug or alcohol tests to an identified person, you must provide the information to the identified person. For example, as an employer, when you receive a written request from a former employee to provide information to a subsequent employer, you must do so. In providing the information, you must comply with the terms of the employee's consent.

(b) If you are an employer, you must, upon request of DOT agency representatives, provide the following:

(1) Access to your facilities used for this part and DOT agency drug and alcohol program functions.

(2) All written, printed, and computer-based drug and alcohol program records and reports (including copies of name-specific records or reports), files, materials, data, documents/documentation, agreements, contracts, policies, and statements that are required by this part and DOT agency regulations.

(c) If you are a service agent, you must, upon request of DOT agency representatives, provide the following:

(1) Access to your facilities used for this part and DOT agency drug and alcohol program functions.

(2) All written, printed, and computer-based drug and alcohol program records and reports (including copies of name-specific records or reports), files, materials, data, documents/documentation, agreements, contracts, policies, and statements that are required by this part and DOT agency regulations.

(d) If requested by the National Transportation Safety Board as part of an accident investigation, you must provide information concerning post-accident tests administered after the accident.

(e) If requested by a Federal, state or local safety agency with regulatory authority over you or the employee, you must provide drug and alcohol test records concerning the employee.

(f) Except as otherwise provided in this part, as a laboratory you must not release or provide a specimen or a part of a specimen to a requesting party, without first obtaining written consent from ODAPC. DNA testing and other types of identity testing are not authorized and ODAPC will not give permission for such testing. If a party seeks a court order directing you to

release a specimen or part of a specimen contrary to any provision of this part, you must take necessary legal steps to contest the issuance of the order (*e.g.*, seek to quash a subpoena, citing the requirements of § 40.13). This part does not require you to disobey a court order, however.

§ 40.333 -- What records must employers keep?

- (a) As an employer, you must keep the following records for the following periods of time:
 - (1) You must keep the following records for five years:
 - (i) Records of employee alcohol test results indicating an alcohol concentration of 0.02 or greater;
 - (ii) Records of employee verified positive drug test results;
 - (iii) Documentation of refusals to take required alcohol and/or drug tests (including substituted or adulterated drug test results);
 - (iv) SAP reports; and
 - (v) All follow-up tests and schedules for follow-up tests.
 - (2) You must keep records for three years of information obtained from previous employers under § 40.25 concerning drug and alcohol test results of employees.
 - (3) You must keep records of the inspection, maintenance, and calibration of EBTs, for two years.
 - (4) You must keep records of negative and cancelled drug test results and alcohol test results with a concentration of less than 0.02 for one year.
- (b) You do not have to keep records related to a program requirement that does not apply to you (*e.g.*, a maritime employer who does not have a DOT-mandated random alcohol testing program need not maintain random alcohol testing records).
- (c) You must maintain the records in a location with controlled access.
- (d) A service agent may maintain these records for you. However, you must ensure that you can produce these records at your principal place of business in the time required by the DOT agency. For example, as a motor carrier, when an FMCSA inspector requests your records, you must ensure that you can provide them within two working days.

Subpart Q--Roles and Responsibilities of Service Agents

§ 40.341 -- Must service agents comply with DOT drug and alcohol testing requirements?

- (a) As a service agent, the services you provide to transportation employers must meet the requirements of this part and the DOT agency drug and alcohol testing regulations.
- (b) If you do not comply, DOT may take action under the Public Interest Exclusions procedures of this part (*See*, Subpart R of this part) or applicable provisions of other DOT agency regulations.

§ 40.343 -- What tasks may a service agent perform for an employer?

As a service agent, you may perform for employers the tasks needed to comply with DOT agency drug and alcohol testing regulations, subject to the requirements and limitations of this part.

§ 40.345 -- In what circumstances may a C/TPA act as an intermediary in the transmission of drug and alcohol testing information to employers?

- (a) As a C/TPA or other service agent, you may act as an intermediary in the transmission of drug and alcohol testing information in the circumstances specified in this section only if the employer chooses to have you do so. Each employer makes the decision about whether to receive some or all of this information from you, acting as an intermediary, rather than directly from the service agent who originates the information (*e.g.*, an MRO or BAT).
- (b) The specific provisions of this part concerning which you may act as an intermediary are listed in Appendix F to this part. These are the only situations in which you may act as an intermediary. You are prohibited from doing so in all other situations.
- (c) In every case, you must ensure that, in transmitting information to employers, you meet all requirements (*e.g.*, concerning confidentiality and timing) that would apply if the service agent originating the information (*e.g.*, an MRO or collector) sent the information directly to the employer. For example, if you transmit drug testing results from MROs to DERs, you must transmit each drug test result to the DER in compliance with the MRO requirements set forth in §40.167.

§ 40.347 -- What functions may C/TPAs perform with respect to administering testing?

As a C/TPA, except as otherwise specified in this part, you may perform the following functions for employers concerning random selection and other selections for testing:

- (a) You may operate random testing programs for employers and may assist (*i.e.*, through contracting with laboratories or collection sites, conducting collections) employers with other types of testing (*e.g.*, pre-employment, post-accident, reasonable suspicion, return-to-duty, and follow-up).
- (b) You may combine employees from more than one employer or one transportation industry in a random pool if permitted by all the DOT agency drug and alcohol testing regulations involved.
 - (1) If you combine employees from more than one transportation industry, you must ensure that the random testing rate is at least equal to the highest rate required by each DOT agency.
 - (2) Employees not covered by DOT agency regulations may not be part of the same random pool with DOT covered employees.

(c) You may assist employers in ensuring that follow-up testing is conducted in accordance with the plan established by the SAP. However, neither you nor the employer are permitted to randomly select employees from a "follow-up pool" for follow-up testing.

§ 40.349 -- What records may a service agent receive and maintain?

(a) Except where otherwise specified in this part, as a service agent you may receive and maintain all records concerning DOT drug and alcohol testing programs, including positive, negative, and refusal to test individual test results. You do not need the employee's consent to receive and maintain these records.

(b) You may maintain all information needed for operating a drug/alcohol program (*e.g.*, CCFs, ATFs, names of employees in random pools, random selection lists, copies of notices to employers of selected employees) on behalf of an employer.

(c) If a service agent originating drug or alcohol testing information, such as an MRO or BAT, sends the information directly to the DER, he or she may also provide the information simultaneously to you, as a C/TPA or other service agent who maintains this information for the employer.

(d) If you are serving as an intermediary in transmitting information that is required to be provided to the employer, you must ensure that it reaches the employer in the same time periods required elsewhere in this part.

(e) You must ensure that you can make available to the employer within two days any information the employer is asked to produce by a DOT agency representative.

(f) On request of an employer, you must, at any time on the request of an employer, transfer immediately all records pertaining to the employer and its employees to the employer or to any other service agent the employer designates. You must carry out this transfer as soon as the employer requests it. You are not required to obtain employee consent for this transfer. You must not charge more than your reasonable administrative costs for conducting this transfer. You may not charge a fee for the release of these records.

(g) If you are planning to go out of business or your organization will be bought by or merged with another organization, you must immediately notify all employers and offer to transfer all records pertaining to the employer and its employees to the employer or to any other service agent the employer designates. You must carry out this transfer as soon as the employer requests it. You are not required to obtain employee consent for this transfer. You must not charge more than your reasonable administrative costs for conducting this transfer. You may not charge a fee for the release of these records.

§ 40.351 -- What confidentiality requirements apply to service agents?

Except where otherwise specified in this part, as a service agent the following confidentiality requirements apply to you:

- (a) When you receive or maintain confidential information about employees (*e.g.*, individual test results), you must follow the same confidentiality regulations as the employer with respect to the use and release of this information.
- (b) You must follow all confidentiality and records retention requirements applicable to employers.
- (c) You may not provide individual test results or other confidential information to another employer without a specific, written consent from the employee. For example, suppose you are a C/TPA that has employers X and Y as clients. Employee Jones works for X, and you maintain Jones' drug and alcohol test for X. Jones wants to change jobs and work for Y. You may not inform Y of the result of a test conducted for X without having a specific, written consent from Jones. Likewise, you may not provide this information to employer Z, who is not a C/TPA member, without this consent.
- (d) You must not use blanket consent forms authorizing the release of employee testing information.
- (e) You must establish adequate confidentiality and security measures to ensure that confidential employee records are not available to unauthorized persons. This includes protecting the physical security of records, access controls, and computer security measures to safeguard confidential data in electronic data bases.

§ 40.353 -- What principles govern the interaction between MROs and other service agents?

As a service agent other than an MRO (*e.g.*, a C/TPA), the following principles govern your interaction with MROs:

- (a) You may provide MRO services to employers, directly or through contract, if you meet all applicable provisions of this part.
- (b) If you employ or contract for an MRO, the MRO must perform duties independently and confidentially. When you have a relationship with an MRO, you must structure the relationship to ensure that this independence and confidentiality are not compromised. Specific means (including both physical and operational measures, as appropriate) to separate MRO functions and other service agent functions are essential.
- (c) Only your staff who are actually under the day-to-day supervision and control of an MRO with respect to MRO functions may perform these functions. This does not mean that those staff may not perform other functions at other times. However, the designation of your staff to perform MRO functions under MRO supervision must be limited and not used as a subterfuge to circumvent confidentiality and other requirements of this part and DOT agency regulations. You must ensure that MRO staff operate under controls sufficient to ensure that the independence and confidentiality of the MRO process are not compromised.

(d) Like other MROs, an MRO you employ or contract with must personally conduct verification interviews with employees and must personally make all verification decisions. Consequently, your staff cannot perform these functions.

§ 40.355 -- What limitations apply to the activities of service agents?

As a service agent, you are subject to the following limitations concerning your activities in the DOT drug and alcohol testing program:

(a) You must not require an employee to sign a consent, release, waiver of liability, or indemnification agreement with respect to any part of the drug or alcohol testing process covered by this part (including, but not limited to, collections, laboratory testing, MRO, and SAP services).

(b) You must not act as an intermediary in the transmission of drug test results from the laboratory to the MRO. That is, the laboratory may not send results to you, with you in turn sending them to the MRO for verification. For example, a practice in which the laboratory transmits results to your computer system, and you then assign the results to a particular MRO, is not permitted.

(c) You must not transmit drug test results directly from the laboratory to the employer (by electronic or other means) or to a service agent who forwards them to the employer. All confirmed laboratory results must be processed by the MRO before they are released to any other party.

(d) You must not act as an intermediary in the transmission of alcohol test results of 0.02 or higher from the STT or BAT to the DER.

(e) Except as provided in paragraph (f) of this section, you must not act as an intermediary in the transmission of individual SAP reports to the actual employer. That is, the SAP may not send such reports to you, with you in turn sending them to the actual employer. However, you may maintain individual SAP summary reports and follow-up testing plans after they are sent to the DER, and the SAP may transmit such reports to you simultaneously with sending them to the DER.

(f) As an exception to paragraph (e) of this section, you may act as an intermediary in the transmission of SAP report from the SAP to an owner-operator or other self-employed individual.

(g) Except as provided in paragraph (h) of this section, you must not make decisions to test an employee based upon reasonable suspicion, post-accident, return-to-duty, and follow-up determination criteria. These are duties the actual employer cannot delegate to a C/TPA. You may, however, provide advice and information to employers regarding these testing issues and how the employer should schedule required testing.

(h) As an exception to paragraph (g) of this section, you may make decisions to test an employee based upon reasonable suspicion, post-accident, return-to-duty, and follow-up determination criteria with respect to an owner-operator or other self-employed individual.

(i) Except as provided in paragraph (j) of this section, you must not make a determination that an employee has refused a drug or alcohol test. This is a non-delegable duty of the actual employer. You may, however, provide advice and information to employers regarding refusal-to-test issues.

(j) As an exception to paragraph (i) of this section, you may make a determination that an employee has refused a drug or alcohol test, if:

(1) You are authorized by a DOT agency regulation to do so, you schedule a required test for an owner-operator or other self-employed individual, and the individual fails to appear for the test without a legitimate reason; or

(2) As an MRO, you determine that an individual has refused to test on the basis of adulteration or substitution.

(k) You must not act as a DER. For example, while you may be responsible for transmitting information to the employer about test results, you must not act on behalf of the employer in actions to remove employees from safety-sensitive duties.

(l) In transmitting documents to laboratories, you must ensure that you send to the laboratory that conducts testing only the laboratory copy of the CCF. You must not transmit other copies of the CCF or any ATFs to the laboratory.

(m) You must not impose conditions or requirements on employers that DOT regulations do not authorize. For example, as a C/TPA serving employers in the pipeline or motor carrier industry, you must not require employers to have provisions in their DOT plans that PHMSA or FMCSA regulations do not require.

(n) You must not intentionally delay the transmission of drug or alcohol testing-related documents concerning actions you have performed, because of a payment dispute or other reasons.

Example 1 to Paragraph (n): A laboratory that has tested a specimen must not delay transmitting the documentation of the test result to an MRO because of a billing or payment dispute with the MRO or a C/TPA.

Example 2 to Paragraph (n): An MRO or SAP who has interviewed an employee must not delay sending a verified test result or SAP report to the employer because of such a dispute with the employer or employee.

Example 3 to Paragraph (n): A collector who has performed a urine specimen collection must not delay sending the drug specimen and CCF to the laboratory because of a payment or other dispute with the laboratory or a C/TPA.

Example 4 to Paragraph (n): A BAT who has conducted an alcohol test must not delay sending test result information to an employer or C/TPA because of a payment or other dispute with the employer or C/TPA.

(o) While you must follow the DOT agency regulations, the actual employer remains accountable to DOT for compliance, and your failure to implement any aspect of the program as required in this part and other applicable DOT agency regulations makes the employer subject to enforcement action by the Department.

Subpart R--Public Interest Exclusions

§ 40.361 -- What is the purpose of a public interest exclusion (PIE)?

- (a) To protect the public interest, including protecting transportation employers and employees from serious noncompliance with DOT drug and alcohol testing rules, the Department's policy is to ensure that employers conduct business only with responsible service agents.
- (b) The Department therefore uses PIEs to exclude from participation in DOT's drug and alcohol testing program any service agent who, by serious noncompliance with this part or other DOT agency drug and alcohol testing regulations, has shown that it is not currently acting in a responsible manner.
- (c) A PIE is a serious action that the Department takes only to protect the public interest. We intend to use PIEs only to remedy situations of serious noncompliance. PIEs are not used for the purpose of punishment.
- (d) Nothing in this subpart precludes a DOT agency or the Inspector General from taking other action authorized by its regulations with respect to service agents or employers that violate its regulations.

§ 40.363 -- On what basis may the Department issue a PIE?

- (a) If you are a service agent, the Department may issue a PIE concerning you if we determine that you have failed or refused to provide drug or alcohol testing services consistent with the requirements of this part or a DOT agency drug and alcohol regulation.
- (b) The Department also may issue a PIE if you have failed to cooperate with DOT agency representatives concerning inspections, complaint investigations, compliance and enforcement reviews, or requests for documents and other information about compliance with this part or DOT agency drug and alcohol regulations.

§ 40.365 -- What is the Department's policy concerning starting a PIE proceeding?

- (a) It is the Department's policy to start a PIE proceeding only in cases of serious, uncorrected noncompliance with the provisions of this part, affecting such matters as safety, the outcomes of test results, privacy and confidentiality, due process and fairness for employees, the honesty and integrity of the testing program, and cooperation with or provision of information to DOT agency representatives.

(b) The following are examples of the kinds of serious noncompliance that, as a matter of policy, the Department views as appropriate grounds for starting a PIE proceeding. These examples are not intended to be an exhaustive or exclusive list of the grounds for starting a PIE proceeding. We intend them to illustrate the level of seriousness that the Department believes supports starting a PIE proceeding. The examples follow:

(1) For an MRO, verifying tests positive without interviewing the employees as required by this part or providing MRO services without meeting the qualifications for an MRO required by this part;

(2) For a laboratory, refusing to provide information to the Department, an employer, or an employee as required by this part; failing or refusing to conduct a validity testing program when required by this part; or a pattern or practice of testing errors that result in the cancellation of tests. (As a general matter of policy, the Department does not intend to initiate a PIE proceeding concerning a laboratory with respect to matters on which HHS initiates certification actions under its laboratory guidelines.);

(3) For a collector, a pattern or practice of directly observing collections when doing so is unauthorized, or failing or refusing to directly observe collections when doing so is mandatory;

(4) For collectors, BATs, or STTs, a pattern or practice of using forms, testing equipment, or collection kits that do not meet the standards in this part;

(5) For a collector, BAT, or STT, a pattern or practice of "fatal flaws" or other significant uncorrected errors in the collection process;

(6) For a laboratory, MRO or C/TPA, failing or refusing to report tests results as required by this part or DOT agency regulations;

(7) For a laboratory, falsifying, concealing, or destroying documentation concerning any part of the drug testing process, including, but not limited to, documents in a "litigation package";

(8) For SAPs, providing SAP services while not meeting SAP qualifications required by this part or performing evaluations without face-to-face interviews;

(9) For any service agent, maintaining a relationship with another party that constitutes a conflict of interest under this part (*e.g.*, a laboratory that derives a financial benefit from having an employer use a specific MRO);

(10) For any service agent, representing falsely that the service agent or its activities is approved or certified by the Department or a DOT agency (such representation includes, but is not limited to , the use of a Department or DOT agency logo, title, or emblem);

(11) For any service agent, disclosing an employee's test result information to any party this part or a DOT agency regulation does not authorize, including by obtaining a "blanket" consent from employees or by creating a data base from which employers or others can retrieve an employee's DOT test results without the specific consent of the employee;

(12) For any service agent, interfering or attempting to interfere with the ability of an MRO to communicate with the Department, or retaliating against an MRO for communicating with the Department;

(13) For any service agent, directing or recommending that an employer fail or refuse to implement any provision of this part; or

(14) With respect to noncompliance with a DOT agency regulation, conduct that affects important provisions of Department-wide concern (*e.g.*, failure to properly conduct the selection process for random testing).

§ 40.367 -- Who initiates a PIE proceeding?

The following DOT officials may initiate a PIE proceeding:

- (a) The drug and alcohol program manager of a DOT agency;
- (b) An official of ODAPC, other than the Director; or
- (c) The designee of any of these officials.

§ 40.369 -- What is the discretion of an initiating official in starting a PIE proceeding?

- (a) Initiating officials have broad discretion in deciding whether to start a PIE proceeding.
- (b) In exercising this discretion, the initiating official must consider the Department's policy regarding the seriousness of the service agent's conduct (*See*, § 40.365) and all information he or she has obtained to this point concerning the facts of the case. The initiating official may also consider the availability of the resources needed to pursue a PIE proceeding.
- (c) A decision not to initiate a PIE proceeding does not necessarily mean that the Department regards a service agent as being in compliance or that the Department may not use other applicable remedies in a situation of noncompliance.

§ 40.371 -- On what information does an initiating official rely in deciding whether to start a PIE proceeding?

- (a) An initiating official may rely on credible information from any source as the basis for starting a PIE proceeding.
- (b) Before sending a correction notice (*See*, § 40.373), the initiating official informally contacts the service agent to determine if there is any information that may affect the initiating official's determination about whether it is necessary to send a correction notice. The initiating official may take any information resulting from this contact into account in determining whether to proceed under this subpart.

§ 40.373 -- Before starting a PIE proceeding, does the initiating official give the service agent an opportunity to correct problems?

- (a) If you are a service agent, the initiating official must send you a correction notice before starting a PIE proceeding.
- (b) The correction notice identifies the specific areas in which you must come into compliance in order to avoid being subject to a PIE proceeding.
- (c) If you make and document changes needed to come into compliance in the areas listed in the correction notice to the satisfaction of the initiating official within 60 days of the date you receive the notice, the initiating official does not start a PIE proceeding. The initiating official

may conduct appropriate fact finding to verify that you have made and maintained satisfactory corrections. When he or she is satisfied that you are in compliance, the initiating official sends you a notice that the matter is concluded.

§ 40.375 -- How does the initiating official start a PIE proceeding?

(a) As a service agent, if your compliance matter is not correctable (*See*, § 40.373(a)), or if have not resolved compliance matters as provided in § 40.373(c), the initiating official starts a PIE proceeding by sending you a notice of proposed exclusion (NOPE). The NOPE contains the initiating official's recommendations concerning the issuance of a PIE, but it is not a decision by the Department to issue a PIE.

(b) The NOPE includes the following information:

- (1) A statement that the initiating official is recommending that the Department issue a PIE concerning you;
- (2) The factual basis for the initiating official's belief that you are not providing drug and/or alcohol testing services to DOT-regulated employers consistent with the requirements of this part or are in serious noncompliance with a DOT agency drug and alcohol regulation;
- (3) The factual basis for the initiating official's belief that your noncompliance has not been or cannot be corrected;
- (4) The initiating official's recommendation for the scope of the PIE;
- (5) The initiating official's recommendation for the duration of the PIE; and
- (6) A statement that you may contest the issuance of the proposed PIE, as provided in § 40.379.

(c) The initiating official sends a copy of the NOPE to the ODAPC Director at the same time he or she sends the NOPE to you.

§ 40.377 -- Who decides whether to issue a PIE?

(a) The ODAPC Director, or his or her designee, decides whether to issue a PIE. If a designee is acting as the decision maker, all references in this subpart to the Director refer to the designee.

(b) To ensure his or her impartiality, the Director plays no role in the initiating official's determination about whether to start a PIE proceeding.

(c) There is a "firewall" between the initiating official and the Director. This means that the initiating official and the Director are prohibited from having any discussion, contact, or exchange of information with one another about the matter, except for documents and discussions that are part of the record of the proceeding.

§ 40.379 -- How do you contest the issuance of a PIE?

(a) If you receive a NOPE, you may contest the issuance of the PIE.

(b) If you want to contest the proposed PIE, you must provide the Director information and argument in opposition to the proposed PIE in writing, in person, and/or through a representative. To contest the proposed PIE, you must take one or more of the steps listed in this paragraph (b) within 30 days after you receive the NOPE.

(1) You may request that the Director dismiss the proposed PIE without further proceedings, on the basis that it does not concern serious noncompliance with this part or DOT agency regulations, consistent with the Department's policy as stated in § 40.365.

(2) You may present written information and arguments, consistent with the provisions of § 40.381, contesting the proposed PIE.

(3) You may arrange with the Director for an informal meeting to present your information and arguments.

(c) If you do not take any of the actions listed in paragraph (b) of this section within 30 days after you receive the NOPE, the matter proceeds as an uncontested case. In this event, the Director makes his or her decision based on the record provided by the initiating official (*i.e.*, the NOPE and any supporting information or testimony) and any additional information the Director obtains.

§ 40.381 -- What information do you present to contest the proposed issuance of a PIE?

(a) As a service agent who wants to contest a proposed PIE, you must present at least the following information to the Director:

(1) Specific facts that contradict the statements contained in the NOPE (*See*, § 40.375(b)(2) and (3)). A general denial is insufficient to raise a genuine dispute over facts material to the issuance of a PIE;

(2) Identification of any existing, proposed or prior PIE; and

(3) Identification of your affiliates, if any.

(b) You may provide any information and arguments you wish concerning the proposed issuance, scope and duration of the PIE (*See*, § 40.375(b)(4) and (5)).

(c) You may provide any additional relevant information or arguments concerning any of the issues in the matter.

§ 40.383 -- What procedures apply if you contest the issuance of a PIE?

(a) DOT conducts PIE proceedings in a fair and informal manner. The Director may use flexible procedures to allow you to present matters in opposition. The Director is not required to follow formal rules of evidence or procedure in creating the record of the proceeding.

(b) The Director will consider any information or argument he or she determines to be relevant to the decision on the matter.

(c) You may submit any documentary evidence you want the Director to consider. In addition, if you have arranged an informal meeting with the Director, you may present witnesses and confront any person the initiating official presents as a witness against you.

(d) In cases where there are material factual issues in dispute, the Director or his or her designee may conduct additional fact-finding.

(e) If you have arranged a meeting with the Director, the Director will make a transcribed record of the meeting available to you on your request. You must pay the cost of transcribing and copying the meeting record.

§ 40.385 -- Who bears the burden of proof in a PIE proceeding?

(a) As the proponent of issuing a PIE, the initiating official bears the burden of proof.

(b) This burden is to demonstrate, by a preponderance of the evidence, that the service agent was in serious noncompliance with the requirements of this part for drug and/or alcohol testing-related services or with the requirements of another DOT agency drug and alcohol testing regulation.

§ 40.387 -- What matters does the Director decide concerning a proposed PIE?

(a) Following the service agent's response (*See*, § 40.379(b)) or, if no response is received, after 30 days have passed from the date on which the service agent received the NOPE, the Director may take one of the following steps:

(1) In response to a request from the service agent (*See*, § 40.379(b)(1)) or on his or her own motion, the Director may dismiss a PIE proceeding if he or she determines that it does not concern serious noncompliance with this part or DOT agency regulations, consistent with the Department's policy as stated in § 40.365.

(i) If the Director dismisses a proposed PIE under this paragraph (a), the action is closed with respect to the noncompliance alleged in the NOPE.

(ii) The Department may initiate a new PIE proceeding against you on the basis of different or subsequent conduct that is in noncompliance with this part or other DOT drug and alcohol testing rules.

(2) If the Director determines that the initiating official's submission does not have complete information needed for a decision, the Director may remand the matter to the initiating official. The initiating official may resubmit the matter to the Director when the needed information is complete. If the basis for the proposed PIE has changed, the initiating official must send an amended NOPE to the service agent.

(b) The Director makes determinations concerning the following matters in any PIE proceeding that he or she decides on the merits:

- (1) Any material facts that are in dispute;
- (2) Whether the facts support issuing a PIE;
- (3) The scope of any PIE that is issued; and
- (4) The duration of any PIE that is issued.

§ 40.389 -- What factors may the Director consider?

This section lists examples of the kind of mitigating and aggravating factors that the Director may consider in determining whether to issue a PIE concerning you, as well as the scope and duration of a PIE. This list is not exhaustive or exclusive. The Director may consider other factors if appropriate in the circumstances of a particular case. The list of examples follows:

- (a) The actual or potential harm that results or may result from your noncompliance;
- (b) The frequency of incidents and/or duration of the noncompliance;
- (c) Whether there is a pattern or prior history of noncompliance;
- (d) Whether the noncompliance was pervasive within your organization, including such factors as the following:
 - (1) Whether and to what extent your organization planned, initiated, or carried out the noncompliance;
 - (2) The positions held by individuals involved in the noncompliance, and whether your principals tolerated their noncompliance; and
 - (3) Whether you had effective standards of conduct and control systems (both with respect to your own organization and any contractors or affiliates) at the time the noncompliance occurred;
- (e) Whether you have demonstrated an appropriate compliance disposition, including such factors as the following:
 - (1) Whether you have accepted responsibility for the noncompliance and recognize the seriousness of the conduct that led to the cause for issuance of the PIE;
 - (2) Whether you have cooperated fully with the Department during the investigation. The Director may consider when the cooperation began and whether you disclosed all pertinent information known to you;
 - (3) Whether you have fully investigated the circumstances of the noncompliance forming the basis for the PIE and, if so, have made the result of the investigation available to the Director;
 - (4) Whether you have taken appropriate disciplinary action against the individuals responsible for the activity that constitutes the grounds for issuance of the PIE; and
 - (5) Whether your organization has taken appropriate corrective actions or remedial measures, including implementing actions to prevent recurrence;
- (f) With respect to noncompliance with a DOT agency regulation, the degree to which the noncompliance affects matters common to the DOT drug and alcohol testing program;
- (g) Other factors appropriate to the circumstances of the case.

§ 40.391 -- What is the scope of a PIE?

- (a) The scope of a PIE is the Department's determination about the divisions, organizational elements, types of services, affiliates, and/or individuals (including direct employees of a service agent and its contractors) to which a PIE applies.

- (b) If, as a service agent, the Department issues a PIE concerning you, the PIE applies to all your divisions, organizational elements, and types of services that are involved with or affected by the noncompliance that forms the factual basis for issuing the PIE.
- (c) In the NOTE (*See*, § 40.375(b)(4)), the initiating official sets forth his or her recommendation for the scope of the PIE. The proposed scope of the PIE is one of the elements of the proceeding that the service agent may contest (*See*, § 40.381(b)) and about which the Director makes a decision (*See*, § 40.387(b)(3)).
- (d) In recommending and deciding the scope of the PIE, the initiating official and Director, respectively, must take into account the provisions of paragraphs (e) through (j) of this section.
- (e) The pervasiveness of the noncompliance within a service agent's organization (*See*, § 40.389(d)) is an important consideration in determining the scope of a PIE. The appropriate scope of a PIE grows broader as the pervasiveness of the noncompliance increases.
- (f) The application of a PIE is not limited to the specific location or employer at which the conduct that forms the factual basis for issuing the PIE was discovered.
- (g) A PIE applies to your affiliates, if the affiliate is involved with or affected by the conduct that forms the factual basis for issuing the PIE.
- (h) A PIE applies to individuals who are officers, employees, directors, shareholders, partners, or other individuals associated with your organization in the following circumstances:
- (1) Conduct forming any part of the factual basis of the PIE occurred in connection with the individual's performance of duties by or on behalf of your organization; or
 - (2) The individual knew of, had reason to know of, approved, or acquiesced in such conduct. The individual's acceptance of benefits derived from such conduct is evidence of such knowledge, acquiescence, or approval.
- (i) If a contractor to your organization is solely responsible for the conduct that forms the factual basis for a PIE, the PIE does not apply to the service agent itself unless the service agent knew or should have known about the conduct and did not take action to correct it.
- (j) PIEs do not apply to drug and alcohol testing that DOT does not regulate.
- (k) The following examples illustrate how the Department intends the provisions of this section to work:
- Example 1 to § 40.391.* Service Agent P provides a variety of drug testing services. P's SAP services are involved in a serious violation of this Part 40. However, P's other services fully comply with this part, and P's overall management did not plan or concur in the noncompliance, which in fact was contrary to P's articulated standards. Because the noncompliance was isolated in one area of the organization's activities, and did not pervade the entire organization, the scope of the PIE could be limited to SAP services.
- Example 2 to § 40.391.* Service Agent Q provides a similar variety of services. The conduct forming the factual basis for a PIE concerns collections for a transit authority. As in Example 1,

the noncompliance is not pervasive throughout Q's organization. The PIE would apply to collections at all locations served by Q, not just the particular transit authority or not just in the state in which the transit authority is located.

Example 3 to § 40.391. Service Agent R provides a similar array of services. One or more of the following problems exists: R's activities in several areas-collections, MROs, SAPs, protecting the confidentiality of information-are involved in serious noncompliance; DOT determines that R's management knew or should have known about serious noncompliance in one or more areas, but management did not take timely corrective action; or, in response to an inquiry from DOT personnel, R's management refuses to provide information about its operations. In each of these three cases, the scope of the PIE would include all aspects of R's services.

Example 4 to § 40.391. Service Agent W provides only one kind of service (e.g., laboratory or MRO services). The Department issues a PIE concerning these services. Because W only provides this one kind of service, the PIE necessarily applies to all its operations.

Example 5 to § 40.391. Service Agent X, by exercising reasonably prudent oversight of its collection contractor, should have known that the contractor was making numerous "fatal flaws" in tests. Alternatively, X received a correction notice pointing out these problems in its contractor's collections. In neither case did X take action to correct the problem. X, as well as the contractor, would be subject to a PIE with respect to collections.

Example 6 to § 40.391. Service Agent Y could not reasonably have known that one of its MROs was regularly failing to interview employees before verifying tests positive. When it received a correction notice, Y immediately dismissed the erring MRO. In this case, the MRO would be subject to a PIE but Y would not.

Example 7 to § 40.391. The Department issues a PIE with respect to Service Agent Z. Z provides services for DOT-regulated transportation employers, a Federal agency under the HHS-regulated Federal employee testing program, and various private businesses and public agencies that DOT does not regulate. The PIE applies only to the DOT-regulated transportation employers with respect to their DOT-mandated testing, not to the Federal agency or the other public agencies and private businesses. The PIE does not prevent the non-DOT regulated entities from continuing to use Z's services.

§ 40.393 -- How long does a PIE stay in effect?

(a) In the NOPE (*See*, § 40.375(b)(5)), the initiating official proposes the duration of the PIE. The duration of the PIE is one of the elements of the proceeding that the service agent may contest (*See*, § 40.381(b)) and about which the Director makes a decision (*See*, § 40.387(b)(4)).

(b) In deciding upon the duration of the PIE, the Director considers the seriousness of the conduct on which the PIE is based and the continued need to protect employers and employees from the service agent's noncompliance. The Director considers factors such as those listed in § 40.389 in making this decision.

(c) The duration of a PIE will be between one and five years, unless the Director reduces its duration under § 40.407.

§ 40.395 -- Can you settle a PIE proceeding?

At any time before the Director's decision, you and the initiating official can, with the Director's concurrence, settle a PIE proceeding.

§ 40.397 -- When does the Director make a PIE decision?

The Director makes his or her decision within 60 days of the date when the record of a PIE proceeding is complete (including any meeting with the Director and any additional fact-finding that is necessary). The Director may extend this period for good cause for additional periods of up to 30 days.

§ 40.399 -- How does the Department notify service agents of its decision?

If you are a service agent involved in a PIE proceeding, the Director provides you written notice as soon as he or she makes a PIE decision. The notice includes the following elements:

- (a) If the decision is not to issue a PIE, a statement of the reasons for the decision, including findings of fact with respect to any material factual issues that were in dispute.
- (b) If the decision is to issue a PIE-
 - (1) A reference to the NOPE;
 - (2) A statement of the reasons for the decision, including findings of fact with respect to any material factual issues that were in dispute;
 - (3) A statement of the scope of the PIE; and
 - (4) A statement of the duration of the PIE.

§ 40.401 -- How does the Department notify employers and the public about a PIE?

- (a) The Department maintains a document called the "List of Excluded Drug and Alcohol Service Agents." This document may be found on the Department's web site (<http://www.transportation.gov/odapc>). You may also request a copy of the document from ODAPC.
- (b) When the Director issues a PIE, he or she adds to the List the name and address of the service agent, and any other persons or organizations, to whom the PIE applies and information about the scope and duration of the PIE.
- (c) When a service agent ceases to be subject to a PIE, the Director removes this information from the List.
- (d) The Department also publishes a Federal Register notice to inform the public on any occasion on which a service agent is added to or taken off the List.

§ 40.403 -- Must a service agent notify its clients when the Department issues a PIE?

- (a) As a service agent, if the Department issues a PIE concerning you, you must notify each of your DOT-regulated employer clients, in writing, about the issuance, scope, duration, and

effect of the PIE. You may meet this requirement by sending a copy of the Director's PIE decision or by a separate notice. You must send this notice to each client within three working days of receiving from the Department the notice provided for in § 40.399(b).

(b) As part of the notice you send under paragraph (a) of this section, you must offer to transfer immediately all records pertaining to the employer and its employees to the employer or to any other service agent the employer designates. You must carry out this transfer as soon as the employer requests it.

§ 40.405 -- May the Federal courts review PIE decisions?

The Director's decision is a final administrative action of the Department. Like all final administrative actions of Federal agencies, the Director's decision is subject to judicial review under the Administrative Procedure Act (5 U.S.C. 551 *et. seq.*).

§ 40.407 -- May a service agent ask to have a PIE reduced or terminated?

(a) Yes, as a service agent concerning whom the Department has issued a PIE, you may request that the Director terminate a PIE or reduce its duration and/or scope. This process is limited to the issues of duration and scope. It is not an appeal or reconsideration of the decision to issue the PIE.

(b) Your request must be in writing and supported with documentation.

(c) You must wait at least nine months from the date on which the Director issued the PIE to make this request.

(d) The initiating official who was the proponent of the PIE may provide information and arguments concerning your request to the Director.

(e) If the Director verifies that the sources of your noncompliance have been eliminated and that all drug or alcohol testing-related services you would provide to DOT-regulated employers will be consistent with the requirements of this part, the Director may issue a notice terminating or reducing the PIE.

§ 40.409 -- What does the issuance of a PIE mean to transportation employers?

(a) As an employer, you are deemed to have notice of the issuance of a PIE when it appears on the List mentioned in § 40.401(a) or the notice of the PIE appears in the **Federal Register** as provided in § 40.401(d). You should check this List to ensure that any service agents you are using or planning to use are not subject to a PIE.

(b) As an employer who is using a service agent concerning whom a PIE is issued, you must stop using the services of the service agent no later than 90 days after the Department has

published the decision in the Federal Register or posted it on its web site. You may apply to the ODAPC Director for an extension of 30 days if you demonstrate that you cannot find a substitute service agent within 90 days.

(c) Except during the period provided in paragraph (b) of this section, you must not, as an employer, use the services of a service agent that are covered by a PIE that the Director has issued under this subpart. If you do so, you are in violation of the Department's regulations and subject to applicable DOT agency sanctions (*e.g.*, civil penalties, withholding of Federal financial assistance).

(d) You also must not obtain drug or alcohol testing services through a contractor or affiliate of the service agent to whom the PIE applies.

Example to Paragraph (d): Service Agent R was subject to a PIE with respect to SAP services. As an employer, not only must you not use R's own SAP services, but you also must not use SAP services you arrange through R, such as services provided by a subcontractor or affiliate of R or a person or organization that receives financial gain from its relationship with R.

(e) This section's prohibition on using the services of a service agent concerning which the Director has issued a PIE applies to employers in all industries subject to DOT drug and alcohol testing regulations.

Example to Paragraph (e): The initiating official for a PIE was the FAA drug and alcohol program manager, and the conduct forming the basis of the PIE pertained to the aviation industry. As a motor carrier, transit authority, pipeline, railroad, or maritime employer, you are also prohibited from using the services of the service agent involved in connection with the DOT drug and alcohol testing program.

(f) The issuance of a PIE does not result in the cancellation of drug or alcohol tests conducted using the service agent involved before the issuance of the Director's decision or up to 90 days following its publication in the Federal Register or posting on the Department's web site, unless otherwise specified in the Director's PIE decision or the Director grants an extension as provided in paragraph (b) of this section.

Example to Paragraph (f): The Department issues a PIE concerning Service Agent N on September 1. All tests conducted using N's services before September 1, and through November 30, are valid for all purposes under DOT drug and alcohol testing regulations, assuming they meet all other regulatory requirements.

§ 40.411 -- What is the role of the DOT Inspector General's office?

(a) Any person may bring concerns about waste, fraud, or abuse on the part of a service agent to the attention of the DOT Office of Inspector General.

(b) In appropriate cases, the Office of Inspector General may pursue criminal or civil remedies against a service agent.

(c) The Office of Inspector General may provide factual information to other DOT officials for use in a PIE proceeding.

§ 40.413 -- How are notices sent to service agents?

- (a) If you are a service agent, DOT sends notices to you, including correction notices, notices of proposed exclusion, decision notices, and other notices, in any of the ways mentioned in paragraph (b) or (c) of this section.
- (b) DOT may send a notice to you, your identified counsel, your agent for service of process, or any of your partners, officers, directors, owners, or joint venturers to the last known street address, fax number, or e-mail address. DOT deems the notice to have been received by you if sent to any of these persons.
- (c) DOT considers notices to be received by you-
 - (1) When delivered, if DOT mails the notice to the last known street address, or five days after we send it if the letter is undeliverable;
 - (2) When sent, if DOT sends the notice by fax or five days after we send it if the fax is undeliverable; or
 - (3) When delivered, if DOT sends the notice by e-mail or five days after DOT sends it if the e-mail is undeliverable.

The initial and confirmation cutoff levels for all testing **except post accident** tests are as follows:

	Initial Test Cutoff Level (NG/ML)	Confirmation Test Cutoff Level (NG/ML)
Marijuana metabolites	50	15
Cocaine metabolites	300	150
Opiate metabolites	2000	Morphine 2000 Codeine 2000
Phencyclidine (PCP)	25	25
Amphetamines	1000	Amphetamine 200 Methampheta- mine 200

The cut off levels for **post accident** testing are different as shown below:

The following summarizes the procedure for analysis of blood and urine specimens submitted under the FRA post-accident program:

This information in italics is not published in the Federal regulations. Rather, FRA has set these levels with the designated laboratory for post accident tests. Informational sheets displaying these cutoffs are included with all test results.

***Urine Integrity Test:** Urine is tested for pH, specific gravity, and/or creatinine. If the pH or temperature is out of range, specific gravity is less than 1.003 and/or creatinine less than 20 mg/dL, or the sample appears adulterated, both the urine and the blood specimen may be tested for drugs.*

***Analysis of Drugs/Initial Testing:** Initial testing is performed on urine by KIMS(kinetic*

interaction of microparticles in solution), or blood if urine is not available, by radioimmunoassay for the drug groups shown. If the tests are negative (that is, the results are below the cutoff), routinely no further analysis is performed.

Drug or Metabolite ^{a/}	Initial Tests Cutoffs(ng/mL) ^{b/}	
	Urine	Blood
Cannabinoids.....	20	10
Cocaine	300	20
Opioids	300	50
Amphetamines/Metamphetamine.....	300	50
Phencyclidine	25	2.5
Barbiturates	200	100
Benzodiazepines	100	50

Analysis of Other Drugs/Confirmation: If the initial test is presumptively positive, the urine and/or the blood specimens are analyzed using gas chromatography-mass spectrometry. Except as noted, only confirmed positive findings are reported; they are reported as quantitative results based on the confirmatory analysis.

Confirmation Test Cutoffs(ng/mL) ^{b/}	Specific Drug or Metabolite		
	Urine	Blood	
Cannabinoids	Delta-9-		
	Tetrahydrocannabinol (THC) ^{c/}	--	1
	THCA (a metabolite of THC)	15	5
Cocaine	Cocaine	50	10
	Benzoylcegonine (metabolite of cocaine).....	50	10

- ** a. Metabolites and/or analogs of these compounds may also be detected.
- * b. These methods and cutoffs are subject to periodic review and update.
- c. THC is the active constituent of marijuana or hashish preparations.

Opioids		
Morphine (total)	300	--
Morphine (unconjugated)	--	20
Codeine (total)	300	--
Codeine (unconjugated)	--	20
6-MonoAcetylmorphine	LOQ ^{34/}	LOQ
Phencyclidine	25	2.5
Amphetamines		
Amphetamine	100	20
Methamphetamine	100	20
Barbiturates		
Pentobarbital	200	100
Secobarbital	200	100
Amobarbital	200	100
Butalbital	200	100
Phenobarbital	1000	1000
Benzodiazepines		
Nordiazepam	LOQ ^{d/}	20
Oxazepam	LOQ	20
Temazepam	LOQ	20
N-Desalkylflurazepam	LOQ	20
Alpha-Hydrxylatprazolam	LOQ	
Alpha-Hydrxytriazolam	LOQ	
Diazepam	--	20
Flurazepam	--	20
Chlordiazepoxide	--	20
Alprazolam	--	10
Triazolam	--	10

Urine benzodiazepine concentrations are reported if above the LOQ and only if the concentrations are above the cutoff. If a blood specimen is not received and the urine benzodiazepine concentration is greater than the LOQ, the urine specimen may be reported.

Note: If a drug included in a drug group is detected below the cutoff and another drug in that group is present above the cutoff, the first drug may be reported.

Analysis of Alcohol: The blood specimen (or urine if no blood is available) is analyzed for ethyl alcohol by gas chromatography. If the blood specimen is positive, the analysis is repeated using a separate portion of the specimen and the urine is also analyzed by gas chromatography.

<i>Substance</i>	<i>Initial Test Cutoff (g/100mL)</i>	<i>Confirmation Cutoff (g/100mL)</i>
<i>Ethyl alcohol</i>	0.01	0.01

Analysis in the case of a fatality: If urine or blood is not available, or as directed by the FRA,

³⁴ Limit of quantitation

other body fluids and/or tissue may be analyzed.

Special Assays: *On direction from the FRA, the designated laboratory may perform tests for additional controlled substances and/or metabolites. If such tests are performed, they are specifically described on each individual report.*

d. LOQ: Limit of quantitation.

e. A confirmed urine positive for amphetamine or metamphetamine will result in a d & l isomer analysis and is reported as the % of each isomer present.

Appendix A- DOT Standards for Urine Collection Kits

Appendix B-DOT Drug Testing Semi-Annual Lab Report to Employers

Appendix C- DOT Drug Semi-Annual Laboratory Report to DOT

Appendix D-Report Format: Split Specimen Failure to Reconfirm

Appendix E- SAP Equivalency Requirements For Certification Organizations

Appendix F-Testing Information that C/TPAs May Transmit to Employees

Appendix G-Alcohol Testing Form (ATF)

Appendix H-DOT Drug and Alcohol Testing Management System (MIS) Data Collection Form

HOURS OF SERVICE (FREIGHT OPERATING EMPLOYEES)³⁵

Time on duty---A railroad may not require or allow a train employee to **(1)** remain or go on duty in any month where the employee had spent a total of 276 hours on duty, or waiting for transportation, in deadhead transportation to a place of final release, or in any other mandatory service for the carrier; **(2)** remain or go on duty for a period in excess of 12 consecutive hours; **(3)** remain or go on duty unless the employee has had at least 10 consecutive hours off duty during the prior 24 hours; and **(4)** remain or go on duty after that employee has initiated an on-duty period each day for **(a)** 6 consecutive days, unless that employee has had at least 48 consecutive hours off duty at the employee's home terminal during which time the employee is unavailable for any service; Provided, however, an employee may work a 7th consecutive day if that employee completed his final on-duty time on his 6th consecutive day at the away from home terminal, and such employees who works a 7th consecutive day back from his home terminal shall have at least 72 consecutive hours off duty at his home terminal; In addition, **(b)** for a period of 18 months after enactment, if an existing collective bargaining agreement expressly provides for such a schedule (and after 18 months a new collective bargaining agreement so provides), such schedule is provided by a pilot program authorized by a collective bargaining agreement, or such schedule is provided by a pilot program under 49 U.S.C 21108 related to employees' work and rest schedules, in situations where an employee works 7 consecutive days, the employee may be given at least 72 consecutive hours off duty at the employee's home terminal during which time the employee is unavailable for service.

The Secretary may waive **(4) above** if a collective bargaining agreement provides a different arrangement and such is in the public interest and consistent with railroad safety.

The time an employee is actually engaged in or connected with the movement of any train;

³⁵ The sleeping quarters provisions of the hours of service law is discussed separately in this book.

and commingled service. Time on duty shall not include interim periods of 4 or more hours between designated terminals¹⁷³⁶ where the employee is prevented from leaving his or her designated terminal by an act of God, track obstruction, casualty, derailment or other major disabling equipment failure, which derailment or disabling equipment failure was the result of a cause not known to the carrier at the time the employee left the designated terminal and which could not have been foreseen and only then at a place where suitable facilities for food and lodging were available.

So long as an employee performs any work which is subject to the Hours of Service Act during a tour of duty, then the entire work during that tour of duty is counted as time on duty.

Crews of wreck or relief trains may work up to 16 hours in any period of 24 consecutive hours when an emergency exists and the work of the crew is related to that emergency. An emergency ceases to exist when the track is cleared and open for traffic.

Shorter hours of service and time on duty for less periods of time than set forth in the statute may be negotiated under collective bargaining.

Limbo Time---

A railroad carrier may not require or allow an employee to exceed a total of 40 hours per calendar month spent in waiting for deadhead transportation or in deadhead transportation from duty assignment to place of final release, following 12 consecutive hours on duty that is neither time on duty nor time off duty, not including interim periods of rest. Beginning 1 year after enactment, the railroad may not allow or require an employee to exceed 30 hours per calendar month in limbo time. Such limitations shall not apply where the train carrying the employee is delayed by a casualty, an accident, track obstruction, act of God, derailment, major equipment failure that prevents the train from advancing, or a delay resulting from a cause unknown and unforeseeable to the railroad when the employee left the terminal. If time spent in deadhead transportation, waiting for deadhead transportation, plus time on duty, exceeds 12 hours, the railroad shall provide the employee an additional time off duty equal to the number of hours exceeding 12 hours.

Each railroad shall report to the Secretary each instance where an employee spends time waiting for deadhead transportation or in deadhead transportation in excess of the requirements above.

Communicating during time off duty---A railroad shall not communicate with an employee by telephone, by pager, or in any other manner that could reasonably be expected to disrupt the employee's rest, during the employee's minimum off-duty period of 10 consecutive hours, during an interim rest period of at least 4 consecutive hours, or during additional off duty hours to be taken by the employee as discussed above. This section is not applicable where communication is necessary to notify an employee during an emergency. In addition, the Secretary may waive this section for commuter or intercity passenger railroads if the Secretary

³⁶ **Designated terminal** is defined in the law as the home or away from home terminal for a particular crew assignment. 45 U.S.C. § 21101(1)

determines that such waiver will not reduce safety and is necessary to maintain efficient operations.

The Act shall not apply in any case of casualty or unavoidable accident or of an act of God; nor where the delay is the result of a cause not known to the carrier at the time an employee left a terminal, and which could not have been foreseen.

Short-line railroads which employ no more than 15 persons may obtain an exemption from the Act upon good cause shown. The Secretary must find that the exemption is in the public interest and will not adversely affect safety.

NOTE: The FRA has issued three extensive interpretations of agency policy covering the provisions of the 2008 hours of service amendments. They appear at 74 Federal Register 30665, 77 Federal Register 12408, and the latest on September 24, 2013 at 78 Federal Register 58829.

49 U.S.C. §§ 21103-21107, 21303-21304

49 C.F.R. §§ 228.1-228.23

HOURS OF SERVICE (COMMUTER AND PASSENGER OPERATING EMPLOYEES)³⁷

The new rules differ in certain areas from hours-of-service regulations imposed on freight railroad employees.

Among the differences is that passenger and commuter train hours-of-service regulations are more stringent for assignments between 8 p.m. and 4 a.m.; there is no cumulative-hours limit for passenger and commuter train crews; passenger and commuter train operators must submit certain employee work schedules for scientific study to determine schedule-specific risks of fatigue; and passenger and commuter carriers must take steps to mitigate fatigue among crews on-duty between 8 p.m. and 4 a.m.

The FRA said that based on its “understanding” of current fatigue science, and information received through the Railroad Safety Advisory Committee (RSAC), FRA determined that the requirements imposed on train employees by the Rail Safety Improvement Act of 2008 were not appropriate for passenger train employees.³⁸

The FRA said that while it “agrees that [a 10-hour call requirement] would provide predictability as to when an employee will be called to work, adopting a 10-hour call requirement is not possible at this time, as it was not a part of the proposed rule. The regulation requires labor

³⁷ Shortlines with fewer than 15 employees are exempt from these regulations.

³⁸ In **Appendix D**, FRA issued a guidance to commuter and intercity passenger railroads for those who might adopt a Fatigue Management Plan.

involvement in the determination of fatigue mitigation tools to be applied, so there may be opportunities to voluntarily make use of this schedule practice.”³⁹

Following are key provisions, as outlined by the FRA, of the new hours-of-service rules:

Limitations on time-on-duty in a single tour: 12 consecutive hours of time on duty or 12 nonconsecutive hours on duty if broken by an interim release of at least four consecutive hours in a 24-hour period that begins at the beginning of the duty tour.

Limitations on consecutive duty tours or total duty: If employee initiates an on-duty period each day for six consecutive calendar days include at least one “Type 2” assignment (between 8 p.m. and 4 a.m.), employee must have 24 consecutive hours off-duty at the employee’s home terminal.

Additionally, if an employee initiates an on-duty period on 13 or more calendar days in a period of 14 consecutive days, then the employee must have two consecutive calendar days without initiating an on-duty period at the employee’s home terminal. Employees may be permitted to perform service on an additional day to facilitate their return to their home terminal.

These limitations on consecutive duty tours or total duty do not take effect until April 15, 2012.

Cumulative limits on time on-duty: None.

Mandatory off-duty periods: Eight consecutive hours (10 consecutive hours if time on duty reaches 12 consecutive hours).

Specific rules for nighttime operations: Schedules that include any time on duty between 8 p.m. and 4 a.m. must be analyzed using a validated biomathematical model of human performance and fatigue approved by FRA.

Additionally, schedules with excess risk of fatigue must be mitigated or supported by a determination that mitigation is not possible and the schedule is operationally necessary and approved by FRA.

The analysis must be completed and required submissions made by April 15, 2012.

Specific rules for unscheduled assignments: The potential for fatigue presented by unscheduled work assignments must be mitigated as part of a railroad’s FRA-approved mitigation plan.

Use of fatigue science: Passenger train employees’ work schedules are to be analyzed under an FRA-approved validated biomathematical fatigue model with the exception of certain schedules (completely within the hours of 4 a.m. and 8 p.m., or nested within other schedules that have been

³⁹ On October 26, 2018, FRA sought to conduct a study of the impact of commute time on the fatigue and safety of locomotive engineers. As the result of a complaint by rail labor, FRA has agreed to add conductors to the study. *See*, 84 Fed. Reg.19990 (May 7, 2019).

previously modeled and shown to present an acceptable level of risk for fatigue, and otherwise in compliance with the limitations in the regulation).

HOURS OF SERVICE (YARDMASTERS)

Yardmasters are not specifically covered by a federal statute. However, it is the nature of the work performed, rather than the job title that determines whether an employee is covered by the hours of service laws. Because of specific work being performed by a yardmaster, he/ she may come under the provisions of an operating crew, a dispatcher, or a signalman. The following examples brings the yardmaster within the hours of service laws:

- issuing a track warrant;
- communication of mandatory directives affecting the movement of a train;
- repositioning of switches, whether remotely or manually;
- watching shoves and EOTs;
- supplanting utility employees;
- relaying communications to a train crew;
- relaying orders affecting train movement between the dispatcher and the train crew;
- causing switches to be lined either electronically or manually;
- has the ability to control switches; or
- he/she has a control panel and can operate a signal to block out a track.

HOURS OF SERVICE (DISPATCHERS)

Where two or more shifts are used, 9 hours is the maximum permissible time on duty during any 24-hour period that an operator, train dispatcher or other employee who dispatches, reports, transmits, receives or delivers orders relating to train movement may be permitted or required to remain on duty. Where one shift is employed, the employee may work for 12 hours in any 24-hour period.

In case of an emergency, train operators and dispatchers may be permitted to remain on duty for 4 additional hours in any consecutive 24-hour period not exceeding 3 days in any consecutive 7-day period.

The commingled service provisions are applicable to train dispatchers.

Extraterritorial Dispatching

In the absence of a waiver, all dispatching of railroad operations that occur in the U.S. shall be performed in the U.S., with one exception. There may be dispatching in Mexico or Canada in an emergency, but only for the duration of the emergency.

49 U.S.C. § 21105

HOURS OF SERVICE (SIGNALMEN)

It shall be unlawful for any railroad to require or permit a person engaged in installing, repairing or maintaining signal systems, who shall have been continuously on duty for 12 hours, to continue on duty or to go on duty until he has had at least 10 consecutive hours off duty during the prior 24 hours.

A signalman during his 10 hours off duty may not be interrupted by the railroad or its subcontractors.

If the employee who is engaged in installing, repairing and maintaining systems in performing other service for the carrier, all such time is counted as time on duty.

"Time on duty" shall commence when an individual reports for duty and terminate when he is finally released from duty, except (1) time spent in travel on returning from a trouble call (whether to the person's residence or to the headquarters) such time shall be considered neither time on duty nor time off duty; (2) if, at the end of the scheduled duty hours, the employee has not completed his trip from the final outlying work site to his headquarters or to his residence, then the time spent in travel outside the scheduled duty hours shall be considered neither time on duty nor time off duty; (3) if an employee is reduced from duty at an outlying work site prior to the end of such scheduled duty hours in order to comply with this law, the period of time required for the trip on the outlying work site to headquarters or to the individual's residence shall be considered neither time on duty nor time off duty; (4) all time spent in transportation on an on-track vehicle shall be considered time off duty; (5) regularly scheduled meal periods and other release periods of 30 minutes or more up to 60 minutes shall be considered time off duty, but shall not break an individual's continuity of service and release periods of more than one hour shall be considered time off duty and shall break an individual's continuity of service.

The employee may be required to remain on duty for a time period not to exceed 4 additional hours in any 24-hour consecutive period whenever an actual emergency exists and work of the employee is related to such emergency. An emergency ceases to exist when the signal systems are restored to service. The employee may not conduct routine repairs, maintenance, or inspections under the emergency provisions.

The hours of service provisions under this law are the exclusive law applicable to signal employees operating motor vehicles.

The Secretary may reduce the maximum hours a signal employee may be required or allowed to remain on duty; increase the minimum hours an employee may be required to rest; Also, the Secretary may limit or eliminate the time that is considered neither on duty nor off duty that an employee spends returning from an outlying worksite after scheduled duty hours or returning from a trouble call to headquarters or home. He may increase the amount of time that constitutes a release period, that does not break the continuity of service and is considered time on duty, and to require other changes to railroad operating and scheduling practices that could affect employee fatigue and rail safety.

As with operating crews, the Secretary, in issuing regulations, shall consider scientific and medical research. The RSAC provisions are also applicable to signalmen, as are the pilot projects.

49 U.S.C. §§ 21102; 21104-21106; 21303

CONDUCTOR CERTIFICATION

(There are references to Part 240 of FRA's regulations, which relate to the engineer certification regulation).

Subpart A — General

§ 242.1 Purpose and scope.

[cf. 240.1]

This part prescribes minimum Federal safety standards for the eligibility, training, testing, certification and monitoring of all conductors to whom it applies. This part does not restrict a railroad from adopting and enforcing additional or more stringent requirements consistent with this part.

§ 242.3 Application and responsibility for compliance.

[cf. 240.3]

This part applies to all railroads, including their contractors, except:

A railroad that operates only on track inside an installation that is not part of the general railroad system of transportation; or (2) Rapid transit operations in an urban area that are not connected to the general railroad system of transportation.

§ 242.5 Effect and construction.

[cf. 240.5]

Except as prohibited under § 242.213 nothing in this part shall be (a) construed to create or prohibit an eligibility or entitlement to employment in other service for the railroad as a result of denial, suspension, or revocation of certification under this part; (b) deemed to abridge any additional procedural rights or remedies not inconsistent with this part that are available to the employee under a collective bargaining agreement, the Railway Labor Act, or (with respect to employment at will) at common law with respect to removal from service or other adverse action taken as a consequence of this part.

§ 242.7 Definitions.

[cf. 240.7]

Some of the definitions include:

Conductor means the crewmember in charge of a train or yard crew as defined in part 218 of this chapter.

Job aid means information regarding other than main track physical characteristics that supplements the operating instructions of the territory over which the locomotive or train movement will occur. *See*, definitions of “main track” and “physical characteristics” in this section. A job aid may consist of training on the territory pursuant to 49 C.F.R. 242.119, maps, charts or visual aids of the territory, or a person or persons to contact who are qualified on the territory and who can describe the physical characteristics of the territory. At a minimum, a job aid must cover characteristics of a territory including: permanent close clearances, location of permanent derails and switches, assigned radio frequencies in use and special instructions required for movement, if any, and railroad-identified unique operating conditions.

Locomotive engineer means any person who moves a locomotive or group of locomotives regardless of whether they are coupled to other rolling equipment except:

- (1) A person who moves a locomotive or group of locomotives within the confines of a locomotive repair or servicing area as provided for in 49 C.F.R. 218.5 and 218.29(a)(1); or
- (2) A person who moves a locomotive or group of locomotives for distances of less than 100 feet and this incidental movement of a locomotive or locomotives is for inspection or maintenance purposes.

Medical examiner means a person licensed as a doctor of medicine or doctor of osteopathy. A medical examiner can be a qualified full-time salaried employee of a railroad, a qualified practitioner who contracts with the railroad on a fee-for-service or other basis, or a qualified practitioner designated by the railroad to perform functions in connection with medical evaluations of employees. As used in this rule, the medical examiner owes a duty to make an honest and fully informed evaluation of the condition of an employee.

On-the-job training means job training that occurs in the work place (*i.e.*, the employee learns the job while doing the job). In the context of this part, the on-the-job training portion of the program must be based on a model generally accepted by the educational community, and must consist of the following three key components:

- (1) A brief statement describing the tasks and related steps the employee must be able to perform;
- (2) A statement of the conditions (*ie.*, tools, equipment, documentation, briefings, demonstrations, and practice) necessary for learning transfer; and
- (3) A statement of the standards by which proficiency can be measured through a combination of task/step accuracy, completeness, and repetition.

Passenger conductor means a conductor who has also received emergency preparedness training under part 239 of this chapter

Physical characteristics means the actual track profile of and physical location for points within a specific yard or route that affect the movement of a locomotive or train. Physical characteristics includes both main track physical characteristics and other than main track physical characteristics.

Qualified instructor means a person who has demonstrated, pursuant to the railroad's written program, an adequate knowledge of the subjects under instruction and, where applicable, has the necessary operating experience to effectively instruct in the field, and has the following qualifications:

- (1) Is a certified conductor under this part; and
- (2) Has been selected as such by a designated railroad officer, in concurrence with the designated employee representative, where present; or
- (3) In absence of concurrence provided in paragraph (2) of this definition, has a minimum of 12 months service working as a train service employee.

If a railroad does not have designated employee representation, then a person employed by the railroad need not comply with items (2) or (3) of this definition to be a qualified instructor.

Territorial qualifications means possessing the necessary knowledge concerning a railroad's operating rules and timetable special instructions including familiarity with applicable main track and other than main track physical characteristics of the territory over which the locomotive or train movement will occur.

§ 242.9 Waivers.
[cf. 240.9]

A person subject to a requirement of this part may petition the Administrator for a waiver of compliance with such requirement in accordance with 49 C.F.R. part 211.

§ 242.11 Penalties and consequences for noncompliance.
[cf. 240.11]

A person who violates any requirement of this part or causes the violation of any such requirement is subject to a civil penalty of at least \$650 and not more than \$25,000 per violation, except that: Penalties may be assessed against individuals only for willful violations, and, where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$100,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense.

In addition, a person who violates any requirement of this part or causes the violation of any such requirement may be subject to disqualification from all safety-sensitive service.

A person who knowingly and willfully falsifies a record or report required by this part may be subject to criminal penalties under 49 U.S.C. 21311.

§ 242.13 Information collection requirements.

[cf. 240.13]

The information collection requirements of this Part were reviewed by the Office of Management and Budget.

Subpart B — Program and Eligibility Requirements

§ 242.101 Certification program required.

[cf. 240.101]

Each railroad in operation shall have in effect a written program for certifying conductors. A railroad commencing operations after the effective date shall have such a program in effect prior to commencing operations.

Each railroad shall have a certification program approved in accordance with § 242.103 that includes:(1) A designation of the types of service that it determines will be used in compliance with the criteria established in § 242.107; (2) A procedure for evaluating prior safety conduct that complies with the criteria established in § 242.109; (3) A procedure for evaluating visual and hearing acuity that complies with the criteria established in § 242.117; (4) A procedure for training that complies with the criteria established in § 242.119; (5) A procedure for knowledge testing that complies with the criteria established in § 242.121; and (6) A procedure for monitoring operational performance that complies with the criteria established in § 242.123.

§ 242.103 Approval of design of individual railroad programs by FRA.

[cf. 240.103 & 238.505]

Each railroad shall submit its written certification program and request for approval in accordance with the procedures contained in appendix B to this part. Class I and Class II railroads shall submit a program and request for approval by Sept. 30, 2012; and Class III railroads(including switching and terminal railroads) by Jan. 31, 2013. A railroad commencing operations after these dates shall submit its program and request at least 60 days prior to commencing operations.

Each railroad shall:

Simultaneous with its filing with the FRA, serve a copy of any submission, resubmission, or a material modification filed on the president of each labor organization that represents the railroad's employees subject to this part; and

Not later than 45 days from the date of such filing a submission, any designated representative of railroad employees subject to this part may comment on the submission, resubmission, or material modification:

§ 242.105 Schedule for implementation.

[cf. 240.201]

This section contains the timetable for implementation of the rule.

Each railroad shall:

In writing, designate as certified conductors all persons authorized by the railroad to perform the duties of a conductor as of January 1, 2012; and (2) Issue a certificate that complies with § 242.207 to each person that it designates.

After Sept. 1, 2012, the railroad shall designate as certified conductors those who have been authorized to perform conductor duties between Jan. 1, 2012 and the dates set forth in paragraph (d) or (e).

After Dec. 1, 2012, no class I(including Amtrak) or class II(including commuter railroads), shall initially certify or recertify a person unless he/she has been tested and evaluated in accordance with subpart B.

After April 1, 2013, no class III railroad(including switching and terminal railroads) shall certify or recertify a person unless he/she has been tested and evaluated in accordance with subpart B.

No railroad shall permit or require a person, designated as a certified conductor to perform service as a certified conductor for more than a 36-month period. At the end of the 36 month period, he/she must pass the tests and evaluations requested by the rule to remain qualified. A certified conductor who is eligible to receive a retirement pension in accordance with the terms of an applicable agreement or in accordance with the terms of the Railroad Retirement Act within 36 months from the pertinent date for compliance with the procedures for testing and evaluation may request, in writing, that a railroad not recertify that person, until 36 months from the pertinent date for compliance with the mandatory procedures for testing and evaluation

Upon receipt of a written request, a railroad may wait to recertify the person making the request until the end of the 36-month period. If a railroad grants any request, it must grant the request of all eligible persons to every extent possible.

A person who is subject to recertification under 49 C.F.R. part 240 may not make a request pursuant to this section.

§ 242.107 Types of service.

[cf. 240.107]

A railroad may issue certificates for either of the following types of service:

(1) Conductor; and (2) Passenger conductor.

A railroad shall not reclassify the certification of any type of certified conductor to a different type of conductor certification during the period in which the certification is

otherwise valid except when a conductor completes 49 C.F.R. part 239 emergency training and is certified as a passenger conductor.

Each railroad is authorized to impose additional conditions or operational restrictions on the service a conductor may perform beyond those identified in this section, provided those conditions or restrictions are not inconsistent with this part.

§ 242.109 Determinations required for certification and recertification.

[cf. 240.109, 240.203 and 240.205]

Each railroad, prior to initially certifying or recertifying any person as a conductor, shall determine in writing that:

- (1) The individual meets the eligibility requirements of 242.111, 242.113, 242.115 and 242.403;
- (2) The individual meets the vision and hearing acuity standards of § 242.117;
- (3) The individual has the necessary knowledge, as demonstrated by successfully completing a test that meets the requirements of § 242.121; and (4) Where a person has not previously been certified, that the person has completed a training program that meets the requirements of § 242.119.

A railroad's program shall provide a candidate for certification or recertification a reasonable opportunity to review and comment in writing on any record which contains information concerning the person's prior safety conduct, including motor vehicle driving record.

§ 242.111. Prior safety conduct as motor vehicle operator.

[cf.240.111 and 240.115]

No certified or recertified conductor can operate as a conductor if he does not obtain and evaluate the information required within 60 days of the dates required in this section.

If the conductor requests the information required of this section but is unable to obtain it, that person or the railroad certifying or recertifying that person may apply for a waiver under part 211 from the Railroad Safety Board. A railroad shall certify or recertify a person during the pendency of the waiver request if the person otherwise meets the eligibility requirements provided in § 242.109.

Individual's duty. Except for persons designated as conductors under paragraph (a) or (b) of § 242.105 or for persons covered by § 242.109(f), each person seeking certification or recertification under this part shall, within 366 days preceding the date of the railroad's decision on certification or recertification:

- (a) make information concerning his or her driving record available to the railroad; and
- (b) take any additional actions, including providing any necessary consent required by State,

Federal, or foreign law to make his or her driving record available; and request that the chief of each driver licensing agency provide a copy of that agency's available information concerning his or her driving record to the railroad; and shall report motor vehicle incidents to the employing railroad within 48 hours of being convicted for, or completed state action to cancel, revoke, suspend, or deny a motor vehicle drivers license for, such violations.

Evaluation of record. When evaluating a person's motor vehicle driving record, a railroad shall not consider information concerning motor vehicle driving incidents that occurred:

- (1) Prior to the effective date of this rule;
- (2) More than 36 months before the month in which the railroad is making its certification decision; or
- (3) At a time other than that specifically provided for in § 242.111, § 242.115, or § 242.403 of this part.

The railroad shall provide the data to the railroad's SAP, together with any information concerning the person's railroad service record, and shall refer the person for evaluation to determine if the person has an active substance abuse disorder;

If the person is evaluated as currently affected by an active substance abuse disorder, the provisions of § 242.115(d) will apply.

§ 242.113 Prior safety conduct as an employee of a different railroad.
[cf. 240.113 and 240.205]

Except for persons designated as conductors under paragraphs (a) or (b) of § 242.105, or for persons covered by § 242.109(f), each person seeking certification or recertification shall, within 366 days preceding the date of the railroad's decision on certification or recertification:

Request that the former employing railroad provide a copy of that railroad's available information concerning his or her service record pertaining to compliance or non-compliance with §§ 242.111, 242.115 and 242.403 to the other railroad that is considering such certification or recertification; and provide any consent that may be required.

§242.115 Substance abuse disorders and alcohol drug rules compliance.
[cf. 240.119 and 240.205]

The regulation adopts similar alcohol and drug requirements that apply to the hours of service employees and under the engineer certification regulations. In determining whether a person may be or remain certified as a conductor, a railroad shall consider conduct that occurred within a period of 60 consecutive months prior to the review.

§ 242.117 Vision and hearing acuity.
[cf. 240.121 and 240.207]

The standards for visual acuity and hearing acuity are similar to the requirements under

the engineer certification regulations.

§ 242.119 Training.

[cf. 240.123 and 240.213]

This section requires that each railroad shall determine that the person has the knowledge to safely perform as a conductor in each type of service that the person will be permitted to perform.

In making this determination, a railroad shall have written documentation showing that:

- (1) The person completed a training program;
- (2) The person demonstrated his or her knowledge by achieving a passing grade under the testing and evaluation procedures of that training program; and
- (3) The person demonstrated that he or she is qualified on the physical characteristics of the railroad, or its pertinent segments, over which that person will perform service.

A railroad shall designate in its program (a) the time period in which a conductor must be absent from a territory or yard, before requalification on physical characteristics is required;(b)the procedures used to qualify or re-qualify a person on the physical characteristics;(c)no later than 365 days after the effective date perform initial instructional briefings to ensure that each of its conductors have knowledge of the Federal railroad safety laws that relate to the safety-related tasks the employees are assigned to perform; and (d) shall determine that the person has demonstrated sufficient knowledge of the railroad's rules and practices for the safe movement of trains.

§ 242.121 Knowledge testing

This section would require railroads to provide for the initial and periodic testing of conductors. That testing would have to effectively examine and measure a conductor's knowledge of 5 subject areas: Safety and operating rules; timetable instructions; compliance with all applicable Federal regulations; the physical characteristics of the territory on which a person will be or is currently serving as a conductor; and the use of any job aid that a railroad may provide a conductor.

Railroads would have discretion to design the tests that will be employed. However, they must be submitted to FRA for approval, and such discretion will be monitored by FRA.

Also, at all testing the railroads are required to provide the person(s) being tested with an opportunity to consult with a supervisory employee, who possesses territorial qualifications for the territory, to explain a question.

§ 242.123 Monitoring operational performance.

[cf. 240.129 and 240.303]

Each railroad shall monitor the conduct of its certified conductors by performing

unannounced operating rules compliance tests.

§ 242.125 Certification determinations made by other railroads.

[cf. 240.225]

A railroad may rely on determinations made by another railroad concerning that person's certification.

A hiring railroad may shorten the training of a previously uncertified conductor who has extensive operating experience or who had his/her certification expire.

§ 242.127 Reliance on qualification requirements of other countries.

[cf. 240.227]

A Canadian railroad that is required to comply with this regulation or a railroad that conducts joint operations with a Canadian railroad may certify that a person is eligible to be a conductor.

Subpart C — Administration of the Certification Program

§ 242.201 Time limitations for certification.

[cf. 240.217]

(a) After the pertinent date in paragraph (d) or (e) of § 242.105, a railroad shall not certify or recertify a person as a conductor in any type of service, if the railroad is making:

(1) A determination concerning eligibility under §§242.111, 242.113, 242.115 and 242.403 of this part and the eligibility data being relied on was furnished more than 366 days before the date of the railroad's certification decision;

(2) A determination concerning visual and hearing acuity and the medical examination being relied on was conducted more than 450 days before the date of the railroad's certification decision; or

(3) A determination concerning demonstrated knowledge and the knowledge examination being relied on was conducted more than 366 days before the date of the railroad's certification decision; or

(4) A determination concerning demonstrated knowledge and the knowledge examination being relied on was conducted more than 24 months before the date of the railroad's recertification decision if the railroad administers a knowledge testing program pursuant to § 242.121 of this chapter at intervals that do not exceed 24 months.

(b) The time limitations of paragraph (a) of this section do not apply to a railroad that is making a certification decision in reliance on determinations made by another railroad in accordance with paragraph (c)(3) of this section, § 242.125, or § 242.127.

(c) No railroad shall:

(1) Permit or require a person, designated under paragraph (a) or (b) of § 242.105, to perform service as a certified conductor for more than the 36-month period unless that person has been determined to be eligible in accordance with procedures that comply with subpart B;(2) Certify a person as a conductor for an interval of more than 36 months; or (3) Rely on a certification issued by another railroad that is more than 36 months old.

(d) Except as provided for in § 242.105(concerning initial implementation of the program), a railroad shall issue each person a certificate no later than 30 days from the date of its decision to certify or recertify that person.

§ 242.203 Retaining information supporting determinations.

[cf. 240.215]

A railroad that issues, denies, or revokes a certificate shall maintain detailed records six years for each certified conductor or applicant for certification.

§ 242.205 Identification of certified persons and record keeping.

[cf. 240.221]

After Sept. 1, 2012, a railroad shall maintain a list identifying each person designated as a certified conductor, including conductors working in joint operations territory.

§ 242.207 Certificate components.

[cf. 240.223]

This section sets forth the information required to be contained on a certificate.

§ 242.209 Maintenance of the certificate.

[cf. 240.305]

Each conductor shall have the certificate in his or her possession while on duty as a conductor and display it upon request .

§ 242.211 Replacement of certificates.

[cf. 240.301]

(a) A railroad shall have a system for the prompt replacement of lost, stolen or mutilated certificates at no cost to conductors. A temporary certificate will be valid for up to 30 days.

§ 242.213 Multiple certifications.

(a) A person may hold certification for multiple types of conductor service, including holding both conductor and locomotive engineer certification.

- (b) A person may hold both conductor and locomotive engineer certification.
- (c) A railroad that issues multiple certificates to a person, shall, to the extent possible, coordinate the expiration date of those certificates.
- (d) Except as provided in paragraph (e) of this section, a locomotive engineer, including a remote control operator, who is operating a locomotive without an assigned certified conductor must either be (i) certified as both a locomotive engineer under 49 C.F.R. part 240 and as a conductor under this part or (ii) accompanied by a person certified as a conductor under this part but who will be attached to the crew in a manner similar to that of an independent assignment.
- (e) **Passenger railroad operations only.** If the conductor is removed from a train for a medical, police or other such emergency after the train departs from an initial terminal, the train may proceed to the first location where the conductor can be replaced without incurring undue delay without the locomotive engineer being a certified conductor. However, an assistant conductor or brakeman must be on the train and the locomotive engineer must be informed that there is no certified conductor on the train, prior to any movement.
- (f) A person who holds a current conductor and/or locomotive engineer certificate from more than one railroad shall immediately notify the other certifying railroad(s) if his or her conductor or locomotive engineer recertification has been denied or revoked.
- (g) A person who is certified to perform multiple types of conductor service and who has had any of those certifications revoked may not perform any type of conductor service during the period of revocation.
- (h) A person who holds a current conductor and locomotive engineer certificate and who has had his or her conductor certification revoked for a violation of § 242.403(e)(1) through (e)(5) or (e)(12) may not work as a locomotive engineer during the period of revocation. However, a person who holds a current conductor and locomotive engineer certificate and who has had his or her conductor certification revoked under §242.403(e)(6) through (e)(11) may work as a locomotive engineer during the period of revocation.

For purposes of determining the period in which a person may not work as a certified locomotive engineer due to a revocation of his or her conductor certification, only violations of §§ 242.403(e)(1) through (e)(5) or (e)(12) will be counted. Thus, a person who holds a current conductor and locomotive engineer certificate and who has had his or her conductor certification revoked three times in less than 36 months for two violations of § 242.403(e)(6) and one violation of § 242.403(e)(1) would have their conductor certificate revoked for 1 year, but would not be permitted to work as a locomotive engineer for one month (i.e., the period of revocation for one violation of §242.403 (e)(1)).

A person who holds a current conductor and locomotive engineer certificate and who has had his or her locomotive engineer certification revoked under part 240(i.e., engineer certification) may not work as a conductor during the period of revocation.

A person who has had his or her locomotive engineer certification revoked under §242.403(e)(1) through (e)(12) may not obtain a conductor certificate during the period of revocation.

A person who had his or her conductor certification revoked may not obtain a locomotive engineer certificate pursuant to part 240 of this chapter during the period of revocation.

A railroad that denies a person conductor certification or recertification under § 242.401 shall not, solely on the basis of that denial, deny or revoke that person's locomotive engineer certification or recertification.

A railroad that denies a person locomotive engineer certification or recertification under § 240.219 shall not, solely on the basis of that denial, deny or revoke that person's conductor certification or recertification.

In lieu of issuing multiple certificates, a railroad may issue one certificate to a person who is certified to perform multiple types of conductor service or is certified as a conductor and a locomotive engineer.

§ 242.215 Railroad oversight responsibilities.
[cf. 240.309]

No later than March 31. of each year (beginning in calendar year 2014), each Class I railroad (including the National Railroad Passenger Corporation and a railroad providing commuter service) and Class II railroad shall conduct a formal annual review and analysis concerning the administration of its program for responding to detected instances of poor safety conduct by certified conductors during the prior calendar year.

Subpart D — Territorial Qualification and Joint Operations

§ 242.301 Requirements for territorial qualification.
{cf. 240.2291

(a) Except as provided in paragraph (c), (d), or (e) of this section, a railroad, including a railroad that employs conductors working in joint operations territory, shall not permit or require a person to serve as a conductor unless that railroad determines that the person is certified as a conductor and possesses the necessary territorial qualifications for the applicable territory pursuant to Sec. 242.119.

(b) Each person who is called to serve as a conductor shall:

(1) Meet the territorial qualification requirements on the segment of track upon which he or she will serve as a conductor; and

(2) Immediately notify the railroad upon which he or she is employed if he or she does not meet the required territorial qualifications.

(c) Except as provided in paragraph (e) of this section, if a conductor lacks territorial qualification on main track physical characteristics required by paragraph (a) of this section, he or she shall be assisted by a person who meets the territorial qualification requirements for main track physical characteristics.

(1) For a conductor who has never been qualified on main track physical characteristics of the territory over which he or she is to serve as a conductor, the assistant shall be a person who is certified as a conductor, meets the territorial qualification requirements for main track physical characteristics, and is not an assigned crew member.

(2) For a conductor who was previously qualified on main track physical characteristics of the territory over which he or she is to serve as a conductor, but whose qualification has expired, the assistant may be any person, including an assigned crewmember other than the locomotive engineer so long as serving as the assistant would not conflict with that crewmember's other safety sensitive duties, who meets the territorial qualification requirements for main track physical characteristics.

(d) If a conductor lacks territorial qualification on other than main track physical characteristics required by paragraph (a) of this section, where practicable, he or she shall be assisted by a person who is a certified conductor and meets the territorial qualification requirements for other than main track physical characteristics. Where not practicable, the conductor shall be provided an appropriate up-to-date job aid.

(e) An assistant is not required if the movement is on a section of main track with an average grade of less than 1% over 3 continuous miles, and

(1) The maximum distance the locomotive or train will be operated does not exceed one mile; or

(2) The maximum authorized speed for any operation on the track does not exceed 20 miles per hour; or

(3) Operations are conducted under operating rules that require every locomotive and train to proceed at a speed that permits stopping within one half the range of vision of the locomotive engineer.

Subpart E — Denial and Revocation of Certification

§ 242.401 Denial of certification.

[cf. 240.219]

A railroad shall notify a candidate for certification or recertification that forms the basis for denying the person certification and provide the person a reasonable opportunity to explain or rebut that adverse information in writing prior to denying certification.

The document explaining the basis for the denial shall be served on the person within 10 days after the railroad's decision and shall give the date of the decision.

A railroad shall not determine that a person failed to meet the eligibility requirements of this part and shall not deny the person's certification if sufficient evidence exists to establish that an intervening cause prevented or materially impaired the conductor's ability to comply with the railroad operating rule or practice which constitutes a violation

§ 242.403 Criteria for revoking certification.

[cf. 240.117 and 240.305]

A certified conductor who has demonstrated a failure to comply with railroad rules and practices shall have his or her certification revoked.

A certified conductor who is called by a railroad to perform the duty of a train crew member other than that of conductor or locomotive engineer shall not have his or her certification revoked based on actions taken or not taken while performing that duty.

Limitations on consideration of prior operating rule compliance data.

In determining whether a person may be or remain certified as a conductor, a railroad shall consider as operating rule compliance data only conduct in (e)(1) through (e)(11) of this section that occurred within a period of 36 consecutive months prior to the determination.

A railroad shall only consider violations of its operating rules and practices that involve:

(1) Failure to take appropriate action to prevent the locomotive engineer of the train the conductor is assigned to from failing to control a locomotive or train in accordance with a signal indication, excluding a hand or a radio signal indication or a switch, that requires a complete stop before passing it, when the conductor is located in the operating cab, or otherwise has knowledge of the signal indication. Appropriate action does not mean that a conductor must prevent a violation from occurring at all costs; the duty may be met by warning an engineer of a potential or foreseeable violation.

(2) Failure to take appropriate action to prevent the locomotive engineer of the train the conductor is assigned to from failing to adhere to limitations concerning train speed:

(i) When the conductor is located in the operating cab and the speed at which the train was operated exceeds the maximum authorized limit by at least 10 miles per hour. Where restricted speed is in effect, railroads shall consider only those violations of the conditional clause of restricted speed rules (i.e., that requires stopping within one half of the locomotive engineer's range of vision), or which cause reportable accidents or incidents under part 225, except for accidents and incidents that are classified as "covered data" under § 225.5. Appropriate action does not mean that a conductor must prevent a violation from occurring at all costs; the duty may be met by warning an engineer of a potential or foreseeable violation.

(ii) When not in the operating cab, the conductor is deemed to have taken appropriate action when in compliance with all applicable Railroad Operating Rules and Special

Instructions.

- (3) Failure to perform or have knowledge that a required brake test was performed.
- (4) Occupying main track or a segment of main track without proper authority or permission.
- (5) Failure to comply with prohibitions against tampering with locomotive mounted safety devices; or to prevent the locomotive engineer from failing to comply with prohibitions against tampering .
- (6) Failure to comply with the flagging requirement, rolling equipment in the clear, switches rules, hand operated fixed derails set forth in §218.99, and the alcohol and drug regulations which cause reportable accidents or incidents.
- (7) Failure to comply with § 218.101(leaving rolling and on-track maintenance-of-way equipment in the clear) which cause a reportable accident or incident; however such incidents shall be considered as a violation only for the purposes of paragraphs (a)(2) and (3) of § 242.405.
- (8) Failure to comply with §218.103(hand operated switches, including crossover switches) if the failure causes a reportable accident or incident.
- (9) Failure to comply with §218.105(additional operational requirements for hand-operated main track switches) if the failure causes a reportable accident or incident.
- (10) Failure to comply with §218.107(Additional operational requirements for hand-operated crossover switches) if the failure causes a reportable accident or incident.
- (11) Failure to comply with §218,109(Hand operated fixed derails) if the failure causes an accident or incident.
- (12) Failure to comply with §219.101(alcohol and drugs), but such incidents shall be considered a violation only for purposes of §242.405(a)(2) and (3).
- (13) A railroad shall not be permitted to deny or revoke an employee's certification based upon additional conditions or operational restrictions imposed pursuant to § 242.107(d). Therefore, a railroad could not revoke a certificate for a more stringent rule or practice as required in this rule.

If in any single incident that violates more than one operating rule or practice, it shall be treated as a single violation. A violation of one or more operating rules or that occurs during an operational compliance test shall be counted in determining the periods of ineligibility.

§ 242.405 Periods of ineligibility.
[cf. 240.11 7(g)-a]

(a) A period of ineligibility shall:

(1) Begin, for a person not currently certified, on the date of the railroad's written determination that the most recent incident has occurred; or

(2) Begin, for a person currently certified, on the date of the railroad's notification to the person that recertification has been denied or certification has been revoked; and

(3) Be determined according to the following standards:

(i) On other than main track where restricted speed or the operational equivalent thereof is in effect, the periods of revocation for violation of §§242.403(e)(6) through (e)(8), (e)(10) or (e)(11) shall be reduced by one half provided that another revocable event has not occurred within the previous 12 months.

(ii) In the case of a single incident involving violation of one or more of the operating rules or practices described in § 242.403 (e)(1) through (e)(11), the person shall have his or her certificate revoked for a period of 30 calendar days.

(iii) In the case of two separate incidents involving a violation of one or more of the operating rules or practices described in paragraphs (e)(1) through (e)(11) of §242.403, that occurred within 24 months of each other, the person shall have his or her certificate revoked for a period of six months.

(iv) In the case of three separate incidents involving violations of one or more of the operating rules or practices, described in paragraphs (e)(1) through (e)(12) of §242.403, that occurred within 36 months of each other, the person shall have his or her certificate revoked for a period of one year.

(v) In the case of four separate incidents involving violations of one or more of the operating rules or practices, described in paragraphs (e)(1) through (e)(12) of § 242.403, that occurred within 36 months of each other, the person shall have his or her certificate revoked for a period of three years.

(vi) Where, based on the occurrence of violations described in paragraph (e)(12) of §242.403, different periods of ineligibility may result under the provisions of this section and §242.115, the longest period of revocation shall control.

(b) Any or all periods of revocation provided in paragraph (a) of this section may consist of training.

(c) **Reduction in period of ineligibility.** A person whose certification is denied or revoked shall be eligible for grant or reinstatement of the certificate prior to the expiration of the initial period of revocation only if:

(1) The denial or revocation of certification in accordance with the provisions of

paragraph (a)(3) of this section is for a period of one year or less;

(2) Certification is denied or revoked for reasons other than noncompliance with the alcohol and drug regulations.

(3) The person is evaluated by a railroad officer and determined to have received adequate remedial training;

(4) The person successfully completes any mandatory program of training or retraining, if that is determined to be necessary by the railroad prior to return to service; and

(5) At least one half the pertinent period of ineligibility specified in paragraph (a)(3) of this section has elapsed.

§ 242.407 Process for revoking certification.

[cf. 240.307]

(a) Except as provided for in § 242.115(g)(relating to voluntary referral for substance abuse), a railroad that certifies or recertifies a person as a conductor and, during the period that certification is valid, acquires reliable information regarding violation(s) of § 242.403(e) or § 242.115(e)(relating to alcohol or drug violations within 60 months prior to a review) shall revoke the person's conductor certificate.

(b) Pending a revocation determination under this section, the railroad shall:

(1) Upon receipt of reliable information regarding violation(s) of § 242.403(e) or §242.115(e) of this chapter, immediately suspend the person's certificate;

(2) Prior to or upon suspending the person's certificate, provide notice of the reason for the suspension, the pending revocation, and an opportunity for a hearing before a presiding officer other than the investigating officer. Written confirmation which conforms to the notification provisions of an applicable collective bargaining agreement shall be deemed to satisfy the written confirmation requirements of this section. In the absence of an applicable collective bargaining agreement provision, the written confirmation must be made within 96 hours.

(3) Convene the hearing within the deadline prescribed by either paragraph (c)(1) of this section or the applicable collective bargaining agreement as permitted under paragraph (d) of this section;

(4) No later than the convening of the hearing and notwithstanding the terms of an applicable collective bargaining agreement, the railroad convening the hearing shall provide the person with a copy of the written information and list of witnesses the railroad will present at the hearing. If requested, a recess to the start of the hearing will be granted if that information is not provided until just prior to the convening of the hearing. If the information was provided through statements of an employee of the convening railroad, the railroad will make that employee available for examination during the hearing required by paragraph (b)(3) of this section.

Examination may be telephonic where it is impractical to provide the witness at the hearing.

(5) Determine, on the record of the hearing, whether the person no longer meets the certification requirements of this part stating explicitly the basis for the conclusion reached;

(6) When appropriate, impose the pertinent period of revocation provided for in § 242.405 or § 242.115; and

(7) Retain the record of the hearing for 3 years after the date the decision is rendered.

(c) Except as provided for in paragraphs (d), (f), (i) and (j) of this section, a hearing required by this section shall be conducted in accordance with the following procedures:

(1) The hearing shall be convened within 10 days of the date the certificate is suspended unless the conductor requests or consents to delay in the start of the hearing.

(2) The hearing shall be conducted by a presiding officer, who can be any proficient person authorized by the railroad other than the investigating officer.

(3) The presiding officer will exercise the powers necessary to regulate the conduct of the hearing for the purpose of achieving a prompt and fair determination of all material issues in controversy.

(4) The presiding officer shall convene and preside over the hearing.

(5) Testimony by witnesses at the hearing shall be recorded verbatim.

(6) All relevant and probative evidence shall be received unless the presiding officer determines the evidence to be unduly repetitive or so extensive and lacking in relevancy that its admission would impair the prompt, orderly, and fair resolution of the proceeding.

(7) The presiding officer may:

(i) Adopt any needed procedures for the submission of evidence in written form;

(ii) Examine witnesses at the hearing;

(iii) Convene, recess, adjourn or otherwise regulate the course of the hearing; and

(iv) Take any other action authorized by or consistent with the provisions of this part and permitted by law that may expedite the hearing or aid in the disposition of the proceeding.

(8) Parties may appear and be heard on their own behalf or through designated representatives. Parties may offer relevant evidence including testimony and may conduct such examination of witnesses as may be required for a full disclosure of the relevant facts.

(9) The record in the proceeding shall be closed at conclusion of the hearing unless the presiding officer allows additional time for the submission of information. In such instances the record shall be left open for such time as the presiding officer grants for that purpose.

(10) No later than 10 days after the close of the record, a railroad official, other than the investigating officer, shall prepare and sign a written decision in the proceeding.

(11) The decision shall:

(i) Contain the findings of fact as well as the basis therefore, concerning all material issues of fact presented on the record; and

(ii) Be served on the employee.

(12) The railroad shall have the burden of proving that the conductor's conduct was not in compliance with the applicable railroad operating rule or practice or part 219 of this chapter.

(d) A hearing required by this section which is conducted in a manner that conforms procedurally to the applicable collective bargaining agreement shall be deemed to satisfy the procedural requirements of this section.

(e) A hearing required under this section may be consolidated with any disciplinary or other hearing arising from the same facts, but in all instances a railroad official, other than the investigating officer, shall make separate findings as to the revocation required under this section.

(f) A person may waive the right to the hearing provided under this section. That waiver shall:

(1) Be made in writing;

(2) Reflect the fact that the person has knowledge and understanding of these rights and voluntarily surrenders them; and

(3) Be signed by the person making the waiver.

(g) A railroad that has relied on the certification by another railroad under the provisions of § 242.127 or § 242.301, shall revoke its certification if, during the period that certification is valid, the railroad acquires information which convinces it that another railroad has revoked its certification. The requirement to provide a hearing under this section is satisfied when any single railroad holds a hearing and no additional hearing is required prior to a revocation by more than one railroad arising from the same facts.

(h) The period of certificate suspension prior to the commencement of a hearing shall be credited towards satisfying any applicable revocation period imposed in accordance with the provisions of § 242.405.

(i) A railroad:

(1) Shall not revoke the person's certification as provided for in paragraph (a) of this section if sufficient evidence exists to establish that an intervening cause prevented or materially impaired the conductor's ability to comply with the railroad operating rule or practice which constitutes a violation under § 242.403(e)(1) through (e)(11) of this part; or

(2) May decide not to revoke the person's certification as provided for in paragraph (a) of this section if sufficient evidence exists to establish that the violation of § 242.403(e)(1) through (e)(11) of this part was of a minimal nature and had no direct or potential effect on rail safety.

(j) The railroad shall place the relevant information in the records.

(k) Provided that the railroad makes a good faith determination after a reasonable inquiry that the course of conduct provided for in paragraph (i) of this section is appropriate, the railroad which does not suspend a conductor's certification, as provided for in paragraph (b) of this section, is not in violation of paragraph (a) of this section.

Subpart F — Dispute Resolution Procedures

§242.501 Review board established.

[cf. 240.401]

(a) Any person who has been denied certification, denied recertification, or has had his or her certification revoked and believes that a railroad incorrectly determined that he or she failed to meet the certification requirements, may petition the Federal Railroad Administrator to review the railroad's decision.

(b) FRA Administrator has delegated initial responsibility for adjudicating such disputes to the Operating Crew Review Board.

(c) The Operating Crew Review Board shall be composed of employees of the Federal Railroad Administration selected by the Administrator.

§ 242.503 Petition requirements.

[cf. 240.403]

(a) To obtain review of a railroad's decision to deny certification, deny recertification, or revoke certification, a person shall file a petition for review that complies with this section.

(b) Each petition shall:

(1) Be in writing;

(2) Be submitted in triplicate to the Docket Clerk, Office of Chief Counsel, Federal Railroad Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590;

(3) Contain all available information that the person thinks supports the person's belief that the railroad acted improperly, including:

- (i) The petitioner's full name;
- (ii) The petitioner's current mailing address;
- (iii) The petitioner's daytime telephone number;
- (iv) The petitioner's e-mail address (if available);
- (v) The name and address of the railroad; and

(vi) The facts that the petitioner believes constitute the improper action by the railroad, specifying the locations, dates, and identities of all persons who were present or involved in the railroad's actions (to the degree known by the petitioner);

(4) Explain the nature of the remedial action sought;

(5) Be supplemented by a copy of all written documents in the petitioner's possession or reasonably available to the petitioner that document that railroad's decision; and

(6) Be filed in a timely manner.

(c) A petition seeking review filed with FRA more than 120 days after the date the railroad's denial or revocation decision was served on the petitioner will be denied as untimely except that the Operating Crew Review Board for cause shown may extend the petition filing period at any time in its discretion:

(1) Provided the request for extension is filed before the expiration of the period provided in this paragraph (c); or

(2) Provided that the failure to timely file was the result of excusable neglect.

(d) A party aggrieved by a Board decision to deny a petition as untimely or not in compliance with the requirements of this section may file an appeal with the Administrator in accordance with § 242.511.

§ 242.505 Processing certification review petitions.

[cf. 240.405]

(a) Each petition shall be acknowledged in writing by FRA. The acknowledgment shall contain the docket number assigned to the petition and a statement of FRA's intention that the Board will render a decision on this petition within 180 days from the date that the railroad's response is received or from the date upon which the railroad's response period has lapsed

pursuant to paragraph (c) of this section.

(b) FRA shall notify the railroad that it has received the petition and provide the railroad with a copy of the petition.

(c) Within 60 days from the date of the notification provided in paragraph (b) of this section, the railroad may submit to FRA any information that the railroad considers pertinent to the petition. Late filings will only be considered to the extent practicable.

(d) A railroad that submits such information shall identify the petitioner and provide a copy of the information being submitted to FRA to the petitioner, and submit the information in triplicate to the Docket Clerk, Federal Railroad Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590;

(e) Each petition will then be referred to the Operating Crew Review Board for a decision, and based on the record, the Board, acting upon the majority opinion of its members and with the advice of its Senior Counsel, shall grant, deny or remand the petition.

(g) If the Board finds that there is insufficient basis for granting or denying the petition, the Board shall afford the parties an opportunity to provide additional information or argument consistent with its findings.

(h) **Standard of review for factual issues.** When considering factual issues, the Board will determine whether there is substantial evidence to support the railroad's decision, and a negative finding is grounds for dismissal.

(i) **Standard of review for procedural issues.** Pursuant to its reviewing role, the Board will consider procedural disputes, which involve questions of whether the process followed by the railroad, such as correct adherence to time limits prescribed in FRA's rule or a governing agreement, was appropriate and fair. The standard that the Board applies to a procedural dispute is to determine whether substantial harm was caused the petitioner by virtue of the failure to adhere to the dictated procedures for making the railroad's decision. A finding of substantial harm is grounds for reversing the railroad's decision.

(j) **Standard of review for legal issues.** Pursuant to its reviewing role, the Board will consider whether the railroad's legal interpretations of regulations or statutes administered by FRA are correct based on a *de novo* review.

(k) The Board will determine whether the denial or revocation of certification or recertification was improper under this regulation (i.e., based on an incorrect determination that the person failed to meet the certification requirements of this regulation) and grant or deny the petition accordingly. The Board will not otherwise consider the propriety of a railroad's decision, i.e., it will not consider whether the railroad properly applied its own more stringent requirements.

§ 242.507 Request for a hearing.

[cf. 240.407]

If adversely affected by the Operating Crew Review Board decision, either the petitioner before the Board or the railroad involved shall have a right to an administrative proceeding as prescribed by § 242.509 by filing a written request within 20 days of receiving service of the decision.

If a party fails to request a hearing within the period provided in paragraph (b) of this section, the Operating Crew Review Board's decision will constitute final agency action.

The specific requirements that must be contained in the request for a hearing are set out in this section.

§ 242.509 Hearings.

[cf. 240.409]

- (a) An administrative hearing for a conductor certification petition shall be conducted by a presiding officer, who can be any person authorized by the Administrator, including an administrative law judge.
- (b) The presiding officer may exercise the powers of the Administrator to regulate the conduct of the hearing for the purpose of achieving a prompt and fair determination of all material issues in controversy.
- (c) The presiding officer shall convene and preside over the hearing. The hearing shall be a de novo hearing to find the relevant facts and determine the correct application of this part to those facts. The presiding officer may determine that there is no genuine issue covering some or all material facts and limit evidentiary proceedings to any issues of material fact as to which there is a genuine dispute.
- (d) The presiding officer may authorize discovery of the types and quantities which in the presiding officer's discretion will contribute to a fair hearing without unduly burdening the parties. The presiding officer may impose appropriate non-monetary sanctions, including limitations as to the presentation of evidence and issues, for any party's willful failure or refusal to comply with approved discovery requests.
- (e) Every petition, motion, response, or other authorized or required document shall be signed by the party filing the same, or by a duly authorized officer or representative of record, or by any other person. If signed by such other person, the reason therefor must be stated and the power of attorney or other authority authorizing such other person to subscribe the document must be filed with the document. The signature of the person subscribing any document constitutes a certification that he or she has read the document; that to the best of his or her knowledge, information and belief every statement contained in the document is true and no such statements are misleading; and that it is not interposed for delay or to be vexatious.
- (f) After the request for a hearing is filed, all documents filed or served upon one party must be served upon all parties. Each party may designate a person upon whom service is to be made

when not specified by law, regulation, or directive of the presiding officer. If a party does not designate a person upon whom service is to be made, then service may be made upon any person having subscribed to a submission of the party being served, unless otherwise specified by law, regulation, or directive of the presiding officer. Proof of service shall accompany all documents when they are tendered for filing.

(g) If any document initiating, filed, or served in, a proceeding is not in substantial compliance with the applicable law, regulation, or directive of the presiding officer, the presiding officer may strike or dismiss all or part of such document, or require its amendment.

(h) Any party to a proceeding may appear and be heard in person or by an authorized representative.

(i) Any person testifying at a hearing or deposition may be accompanied, represented, and advised by an attorney or other representative, and may be examined by that person.

(j) Any party may request to consolidate or separate the hearing of two or more petitions by motion to the presiding officer, when they arise from the same or similar facts or when the matters are for any reason deemed more efficiently heard together.

(k) Except as provided in § 242.507(c) of this part and paragraph (u)(4) of this section, whenever a party has the right or is required to take action within a period prescribed by this part, or by law, regulation, or directive of the presiding officer, the presiding officer may extend such period, with or without notice, for good cause, provided another party is not substantially prejudiced by such extension. A request to extend a period which has already expired may be denied as untimely.

(l) An application to the presiding officer for an order or ruling not otherwise specifically provided for in this part shall be by motion. The motion shall be filed with the presiding officer and, if written, served upon all parties. All motions, unless made during the hearing, shall be written. Motions made during hearings may be made orally on the record, except that the presiding officer may direct that any oral motion be reduced to writing. Any motion shall state with particularity the grounds therefor and the relief or order sought, and shall be accompanied by any affidavits or other evidence desired to be relied upon which is not already part of the record. Any matter submitted in response to a written motion must be filed and served within fourteen (14) days of the motion, or within such other period as directed by the presiding officer.

(m) Testimony by witnesses at the hearing shall be given under oath and the hearing shall be recorded verbatim. The presiding officer shall give the parties to the proceeding adequate opportunity during the course of the hearing for the presentation of arguments in support of or in opposition to motions, and objections and exceptions to rulings of the presiding officer. The presiding officer may permit oral argument on any issues for which the presiding officer deems it appropriate and beneficial. Any evidence or argument received or proffered orally shall be transcribed and made a part of the record. Any physical evidence or written argument received or proffered shall be made a part of the record, except that the presiding officer may authorize the substitution of copies, photographs, or descriptions, when deemed to be appropriate.

(n) The presiding officer shall employ the Federal Rules of Evidence for United States Courts and Magistrates as general guidelines for the introduction of evidence. Notwithstanding paragraph (m) of this section, all relevant and probative evidence shall be received unless the presiding officer determines the evidence to be unduly repetitive or so extensive and lacking in relevancy that its admission would impair the prompt, orderly, and fair resolution of the proceeding.

(o) The presiding officer may:

- (1) Administer oaths and affirmations;
- (2) Issue subpoenas as provided for in § 209.7 of this chapter;
- (3) Adopt any needed procedures for the submission of evidence in written form;
- (4) Examine witnesses at the hearing;
- (5) Convene, recess, adjourn or otherwise regulate the course of the hearing; and
- (6) Take any other action authorized by or consistent with the provisions of this part and permitted by law that may expedite the hearing or aid in the disposition of the proceeding.

(p) The petitioner before the Operating Crew Review Board, the railroad involved in taking the certification action, and FRA shall be parties at the hearing. All parties may participate in the hearing and may appear and be heard on their own behalf or through designated representatives. All parties may offer relevant evidence, including testimony, and may conduct such cross-examination of witnesses as may be required to make a record of the relevant facts.

(q) The party requesting the administrative hearing shall be the “hearing petitioner.” The hearing petitioner shall have the burden of proving its case by a preponderance of the evidence. Hence, if the hearing petitioner is the railroad involved in taking the certification action, that railroad will have the burden of proving that its decision to deny certification, deny recertification, or revoke certification was correct. Conversely, if the petitioner before the Operating Crew Review Board is the hearing petitioner, that person will have the burden of proving that the railroad's decision to deny certification, deny recertification, or revoke certification was incorrect. The party who is not the hearing petitioner will be a respondent.

(r) FRA will be a mandatory party to the administrative hearing. At the start of each proceeding, FRA will be a respondent.

(s) The record in the proceeding shall be closed at the conclusion of the evidentiary hearing unless the presiding officer allows additional time for the submission of additional evidence. In such instances the record shall be left open for such time as the presiding officer grants for that purpose.

(t) At the close of the record, the presiding officer shall prepare a written decision in the proceeding.

(u) The decision:

(1) Shall contain the findings of fact and conclusions of law, as well as the basis for each concerning all material issues of fact or law presented on the record;

- (2) Shall be served on the hearing petitioner and all other parties to the proceeding;
- (3) Shall not become final for 35 days after issuance;
- (4) Constitutes final agency action unless an aggrieved party files an appeal within 35 days after issuance; and
- (5) Is not precedential.

§ 242.511 Appeals.

[cf. 240.411]

- (a) Any party aggrieved by the presiding officer's decision may file an appeal. The appeal must be filed within 35 days of issuance of the decision with the Federal Railroad Administrator, 1200 New Jersey Avenue, SE., Washington, DC 20590 and with the Docket Clerk, U.S. Department of Transportation, Docket Operations (M-30), West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590. A copy of the appeal shall be served on each party. The appeal shall set forth objections to the presiding officer's decision, supported by reference to applicable laws and regulations and with specific reference to the record. If no appeal is timely filed, the presiding officer's decision constitutes final agency action.
- (b) A party may file a reply to the appeal within 25 days of service of the appeal. The reply shall be supported by reference to applicable laws and regulations and with specific reference to the record, if the party relies on evidence contained in the record.
- (c) The Administrator may extend the period for filing an appeal or a response for good cause shown, provided that the written request for extension is served before expiration of the applicable period provided in this section.
- (d) The Administrator has sole discretion to permit oral argument on the appeal. On the Administrator's own initiative or written motion by any party, the Administrator may grant the parties an opportunity for oral argument.
- (e) The Administrator may remand, vacate, affirm, reverse, alter or modify the decision of the presiding officer and the Administrator's decision constitutes final agency action except where the terms of the Administrator's decision (for example, remanding a case to the presiding officer) show that the parties' administrative remedies have not been exhausted.
- (f) An appeal from an Operating Crew Review Board decision pursuant to § 242.503(d) must be filed within 35 days of issuance of the decision with the Federal Railroad Administrator, 1200 New Jersey Avenue, SE., Washington, DC 20590 and with the Docket Clerk, U.S. Department of Transportation, Docket Operations (M-30), West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, D.C. 20590. A copy of the appeal shall be served on each party. The Administrator may affirm or vacate the Board's decision, and may remand the petition to the Board for further proceedings. An Administrator's decision to affirm the Board's decision

constitutes final agency action.

APPENDIX A TO PART 242—SCHEDULE OF CIVIL PENALTIES

This Appendix sets forth the penalties for violations.

APPENDIX B TO PART 242--PROCEDURES FOR SUBMISSION AND APPROVAL OF CONDUCTOR CERTIFICATION PROGRAMS

[cf. Appendix B to part 240]

This appendix establishes procedures for the submission and approval of a railroad's program concerning the training, testing, and evaluating of persons seeking certification or recertification as a conductor in accordance with the requirements of this part. It also contains guidance on how FRA will exercise its review and approval responsibilities.

APPENDIX C TO PART 242—PROCEDURES FOR OBTAINING AND EVALUATING MOTOR VEHICLE DRIVING RECORD DATA

[cf. Appendix C to Part 240]

This appendix outlines the procedures available to individuals and railroads for complying with the requirements of §§ 242.109 and 242.111. Those provisions require that railroads consider the motor vehicle driving record of each person prior to issuing him or her certification or recertification as a conductor.

APPENDIX D TO PART 242—MEDICAL STANDARDS GUIDELINES

- [cf. Appendix F to Part 240]

This appendix provides greater guidance on the procedures that should be employed in administering the vision and hearing requirements of § 242.117.

CERTIFICATION OF LOCOMOTIVE ENGINEERS⁴⁰

SUMMARY:

Classes Of Engineers

For the purposes of this rule, operation of a locomotive would be divided into two distinct classifications or types of service. The types are: **train service engineers** who would have the knowledge and skill to operate any train under all conditions; and **locomotive servicing engineers** who would have the capacity to operate locomotives without cars attached.

⁴⁰ On May 9, 2019, the FRA issued a Notice of Proposed Rulemaking to make the engineer certification regulations consistent with the conductor certification regulations.

Categories That Must Be Examined

Under FRA's system, railroads themselves would issue the certificates and could not require or permit anyone to operate a locomotive unless that person held the proper certificate. Although railroads will be free to have more stringent criteria, FRA's rule will require railroads, as a minimum, to make four determinations concerning anyone being authorized to operate a locomotive. Prior to issuing a certificate, each railroad must determine that the prospective operator:

(1) has the necessary visual and hearing acuity to perform such service;

(2) has the necessary knowledge, as demonstrated by passage of a written examination;

(3) has the necessary skills to operate a locomotive or train, as demonstrated by passage of a performance skills test; and

(4) is eligible to become an operator, as demonstrated by a review of the person's prior record of conduct as a railroad employee and as a motor vehicle operator.

1. Vision and Hearing

In making a determination concerning a person's vision and hearing a railroad will have to review a competent medical evaluation of the individual's acuity levels. If warranted by the person's physical condition, the operator will be required to use appropriate corrective devices while on-duty.

2. Knowledge

In making a determination concerning the person's knowledge a railroad will have to administer a written examination covering the appropriate rules and safety practices of that railroad. Initially, railroads will have considerable discretion in developing these tests until time permits greater standardization of such test. To improve operator competency, FRA requires supplemental training triggered either by the passage of time or significant changes in operations.

3. Performance Skills

a. Monitoring

In making a determination about the person's performance skills a railroad will have to administer a skills test either by monitoring the person's computer simulated operation of a train or by monitoring actual operation of a test train. In addition, railroads will have data concerning the person's operational monitoring program. That monitoring program will require annual evaluations of an operator's skills during routine operations.

b. Training

As alternative to such testing at initial certification, a railroad can rely on fact that person has successfully completed a training program appropriate for the type of operations he or she will

perform. Standards for the training of future locomotive engineers also are included in this rule. Railroads that elect to conduct such training programs will obtain approval of their overall program. Students will be authorized to operate locomotives and trains when supervised by instructors.

4. Motor Vehicle History

In making determinations about the person's eligibility to be an engineer, b railroads will have to consider, where pertinent history exists, the individual's recent (previous 3-5 years) conduct as a railroad employee and as a motor vehicle operator. Such considerations are limited to evaluating instances where the operator candidate voluntarily has created such a behavioral history. A system is provided for evaluating the significance, for the purposes of this rule, of instances in which the person had been involved with alcohol or drugs either while on duty as a railroad employee or while operating a motor vehicle.

5. Substance Abuse

Any single incident of substance abuse would trigger an evaluation by a skilled professional (e.g., medical review officers and Employee Assistance Program (EAP) counselors) of the significance to be attached to such an event. Both railroad employment incidents and motor vehicle driving incidents involving substance abuse would generate this response. The professional would have to consider whether the person is currently dependent on alcohol or drugs or has a treatable disorder involving abuse of alcohol or drugs as a manifestation. If the professionals conclude that such a condition exists, railroads could permit the person to perform service subject to the aftercare and testing provisions contained in FRA's alcohol and drug rules after sufficient intervention has occurred.

Certification candidates would have the responsibility for furnishing the data concerning driving history. They would have to query the relevant state agencies and the National Driver's Register and make the results available to the railroad.

6. Revocation

a. Substance Abuse

Mandatory revocation of the certificate is prescribed for multiple instances of work related detection of substance abuse, regardless of how detected. The period of revocation varies based on the manner of detection. A mandatory nine month revocation would be imposed if the event giving rise to the evaluation was the result of on the job possession, use, or impairment involving alcohol or a controlled substance.

Refusal to submit to chemical testing would be rated as the same as if the test were positive. Whenever a certificate is revoked, completion of the requisite time period and an EAP evaluation showing no current controlled substance abuse disorder are predicates for recertification.

b. Motor Vehicle History

FRA's rule provides a system for evaluating a variety of instances in which the person

operated a train unsafely, including the matter of or motor vehicle driving safety.

c. Instances of Poor Safety Performance

Multiple types of incidents of poor safety performance while at the controls of a train will be considered under this evaluation system. For example, operating without proper authority, excessive speeding, and tampering with safety devices would be among the types of unsafe behavior that would result in revocation of certification. In each of the five specific types of events identified by FRA, the incident involves a very dangerous situation in which it is appropriate to hold a locomotive engineer directly responsible for his or her conduct.

Mandatory periods of revocation are provided for single incidents and for multiple incidents of poor train operation that may occur in any three to five year interval. The severity of the response contains gradations to deter repeat offenders. Candidates would be given an opportunity to review any comment on any adverse train operation data before a railroad considered it.

7. Certificate

Railroads will issue engineers deemed qualified a certificate documenting their status and engineers must have that certificate in their possession while on duty. Certificates would have to be renewed at 36-month intervals after again making the four determinations identified above.

8. Failure to Certify

Review of a railroad's decision not to certify would be performed by FRA. Initial review would be simple and prompt. Those dissatisfied with the initial review could request a formal, trial-type hearing procedure for further review. Hearing officer decisions could be appealed to the FRA Administrator before becoming administratively final.

9. Monitoring

Periodic monitoring of locomotive engineer safety performance will be required. Both over and covert periodic monitoring is required as well as a formal annual evaluation of the effectiveness of the safety performance of a railroad's corps of locomotive engineers.

10. Penalties and Disqualification

FRA also is making certain locomotive engineer actions, such as excessive speeding, that are not currently proscribed by specific regulation, unlawful under the provisions of this rule. This will enable FRA to independently respond, through the use of its civil penalty and disqualification procedures, to instances of unlawful behavior by certified locomotive engineers.

SECTION BY SECTION SUMMARY OF FRA REGULATION

As the result of the statute, the Secretary has issued the following regulation⁴¹
Subpart A — General

⁴¹ Because of the complexity of the regulations, the specific section number is identified. Some of the subsections are not summarized and therefore one should look at the actual regulations for specific details.

49 C.F.R. § 240.1-- Purpose and Scope

This part prescribes minimum Federal safety requirements for the eligibility, training, testing, certification, and monitoring of all locomotive engineers. It covers any person who operates a locomotive. It does not restrict a railroad from implementing additional or more stringent requirements that are not inconsistent with this part.

§ 240.3 -- Applicability

(a) This part applies to all railroads, including contractors, that operate locomotives on standard gage track that is part of the general railroad system of transportation, except:

(1) rapid transit operations in an urban area that are not connected with the general system of transportation; and

(2) a railroad that operates only on track inside an installation which is not part of the general railroad system of transportation.

§ 240.5 -- Construction

(a) These regulations preempt any State law, rule, regulation, order, or standard covering the same subject matter in accordance with the Federal Railroad Safety Act.

(b) They do not preempt an additional or more stringent state law necessary to reduce local safety hazards that is not incompatible with Federal law and does not impose unreasonable burden on interstate commerce.

(c) They do not preempt any State criminal law that imposes sanctions for reckless conduct that leads to actual loss of life, injury, or damage to property.

(d) They do not preempt or otherwise alter collective bargaining agreements that employ other job classification titles to identify operators of locomotives.

(e) They do not preempt or otherwise alter the authority of a railroad to initiate disciplinary sanctions against its employees, including managers and supervisors.

(f) Nothing in this part shall be construed to create or prohibit an eligibility or entitlement to employment in other service for the railroad as a result of denial, suspension, or revocation of certification under this part.

§ 240.7 Definitions

This contains definitions for the following words:

"Administrator"

"Alcohol"

"Controlled Substance"

"Current Employee"

"Designated Supervisor of Locomotive Engineers" is a person designated as such by a railroad in accordance with §240.105.

"Drug"

"Dual Purpose Vehicle"

"EAP Counselor"

"File, filed and filing"

"FRA"

"FRA Representative"

"Instructor Engineer"

"Joint Operations"

"Knowingly"

"Locomotive"

"Locomotive Engineer" means any person who moves a locomotive or group of locomotives, regardless of whether they are coupled to other rolling equipment except:

(1) a person who moves a locomotive or group of locomotives within the confines of a locomotive repair servicing area as provided for in 49 C.F.R. 218.5 (f) and 218.29 (a)(1); or

(2) a person who moves a locomotive or group of locomotives for distances of less than 100 feet and this incidental movement of a locomotive or locomotives is for inspection or maintenance purposes.

"Main Track" means a track upon which the operation of trains is governed by one or more of the following methods of operation: timetable; mandatory directive; signal indication; or any form of absolute or block system.

"Medical Examiner"

"Newly Hired Employee"

"Person" means a railroad, a manager, supervisor, official, or other employee or agent of a railroad, any owner, manufacturer, lessor, or lessee of railroad equipment, track or facilities, any independent contractor providing goods or services to a railroad, and any employee of such owner, manufacturer, lessor, lessee, or independent contractor.

"Qualified"

"Railroad" means all forms of non-highway ground transportation that runs on rail or electromagnetic guideways, including commuter service and high speed ground transportation systems, without regard to whether those systems use new technology not associated with traditional railroads. It does not include rapid transit operations. That are not connected to the general railroad system.

"Railroad Officer"

"Railroad rolling stock"

"Roadway maintenance equipment"

"Segment"

"Service"

"Specialized Roadway Maintenance Equipment"

"Substance abuse disorder"

"Type I Simulator" means a replica of the control compartment of a locomotive with all associated control equipment that:

(1) functions in response to a person's manipulation and causes the gauges associated with such controls to appropriately respond to the consequences of that manipulation;

(2) pictorially, audibly and graphically illustrates the route to be taken;

(3) graphically, audibly, and physically illustrates the consequences of control manipulations in terms of their effect on train speed, braking capacity, and in-train force levels throughout the train; and

(4) is computer enhanced so that it can be programmed for specific train consists and the known physical characteristics of the line illustrated.

"**Type II Simulator**" is similar to a Type I Simulator, except that it does not physically illustrate the consequences of control manipulations.

"**Type III Simulator**" is similar to Type I and Type II Simulators, except that it only graphically illustrates the route to be taken and graphically illustrates the consequences of control manipulations.

§ 240.9-- Waivers

This provides for the same waiver procedures as under the FRA's general waiver requirements.

§ 240.11-- Penalties & Consequences for Noncompliance

(a) Any person who violates this part or causes the violation of any such requirement is subject to a civil penalty of at least \$500, but not more than \$11,000 per violation, except that: penalties may be assessed against individuals only for willful violations, and, where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$22,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. Appendix A contains a schedule of civil penalty amounts used in connection with this rule.

(b) Also, the employee may be subject to disqualification.(See, Part 209).

(c) Anyone who falsifies any record required by the rule may be subject to criminal penalties under 45 U.S.C. § 21311.

(d) FRA may also issue an emergency order, compliance order, and/or injunction.

§240.13-- Information Collection Requirement

This is a technical requirement concerning paperwork reduction.

Subpart B — Component Elements of the Certification Process

49 C.F.R. § 240.101-- Certification Program Required

(a) After the effective date, each railroad in operation on that date and subject to this part shall have a written program for certifying the qualifications of locomotive engineers.

(b) A railroad commencing operations after the effective date shall have such a program prior to commencing operations.

(c) Each railroad's certification program shall:

(1) have a procedure for designating any person it determines to be qualified as a supervisor of locomotive engineers that complies with the criteria established in § 240.105;

(2) contain a designation of the classes of service that it determines will be used in compliance with the criteria established in § 240.107;

(3) have a procedure for evaluating prior safety conduct that complies with the criteria established in § 240.109;

(4) have a procedure for evaluating visual and hearing acuity that complies with the criteria established in § 240.121;

(5) have a procedure for training that complies with the criteria established in § 240.123;

(6) have a procedure for knowledge testing that complies with the criteria established in § 240.125;

(7) have a procedure for skill performance evaluation that complies with the criteria established in § 240.127; and

(8) have a procedure for operational monitoring that complies with the criteria established in § 240.129.

§ 240. 103-- Approval of Design of Individual Railroad Programs by FRA

(a) Each railroad shall submit a written program and description of program conformity with Appendix B.

(b) That submission shall contain an election either (1) to train student engineers and thereby obtain authority for that railroad to initially certify a person as an engineer in an appropriate class of service or (2) to recertify only engineers trained by other railroads. A railroad that elects to train student engineers may either conduct the training program or employ a training program conducted by some other entity.

(c) A railroad's program is considered approved 30 days after the pertinent filing date unless the Administrator notifies the railroad in writing that the program does not conform.

(d) The railroad shall resubmit its program within 30 days after the date of such notice of deficiencies. A failure to resubmit the program with the necessary revisions will be considered a failure to implement a program under this part.

(e) A railroad that intends to materially modify its program after receiving initial FRA approval shall submit a description of how it intends to modify the program at least 30 days prior to implementing such a change.

§240.104-- Criteria for Determining Whether a Railroad Operation Requires A Certified Locomotive Engineer

Any person operating a locomotive or group of locomotives, regardless of being coupled to other rolling stock, must be a certified locomotive engineer, except:

- (1) specialized roadway maintenance equipment, including to and from work site, or
- (2) dual purpose vehicle which is: (i) specialized roadway maintenance equipment, including to and from work site;(ii) moving under authority of MOW rules(§ 214.353); (iii)operator trained and qualified accordance with roadway worker protection; and(iv) when hauling cars, with sufficient air brakes (i.e., not less than 85%).

§ 240.105-- Criteria for Selection of Designated Supervisors of Locomotive Engineers

(a) Any person a railroad is considering for qualification as a supervisor of locomotive engineers shall:

- (1) know and understand the requirements of this part;
- (2) appropriately test and evaluate the knowledge, skills, and ability of locomotive engineers;
- (3) have the necessary supervisory experience to prescribe appropriate remedial action; and is a certified engineer.

For railroads without DSLE(s) the chief operating officer will determine if any designate possesses the necessary performance skills (§ 240.127), taking into consideration any special operating characteristics.

§ 240.107-- Criteria for Designation of Classes of Service

(a) Each railroad's program shall reflect which of the three classes of service, provided for in paragraph (b) of this section, that it will issue certifications for under its program.

(b) A railroad may issue certificates to the following classes of service:

- (1) Train service engineers,
- (2) Locomotive servicing engineers, and
- (3) Student engineers.

(c) The following operational constraints apply to each class of service:

(1) Train service engineers may operate locomotives singly or in multiples and may move them with or without cars coupled to them;

(2) Locomotive servicing engineers may operate locomotives singly or in multiples but may not move them with cars coupled to them; and

(3) Student engineers may operate only under direct and immediate supervision of an instructor engineer.

(d) Each railroad is authorized to impose additional conditions or operational restrictions on the service an engineer may perform beyond those identified in this section provided those conditions or restrictions are not inconsistent with this part.

§ 240.109-- General Criteria for Eligibility Based on Prior Safety Conduct

(a)....

(b) A railroad shall evaluate the prior safety conduct of any person it is considering for qualification as a locomotive engineer. A person is ineligible if he/she has an adverse record of prior safety conduct as provided for in § 240.115, § 240.117 and § 240.119.

(c) The railroad shall evaluate data which reflects the person's prior safety conduct as a railroad employee and as an operator of a motor vehicle.

(d)....

(e) When evaluating the motor vehicle driving record or railroad employment record, the railroad shall not consider information concerning the driving record or prior railroad safety conduct which occurred prior to the effective date.

(f) The employee shall have an opportunity to comment on any record which contains the person's prior safety conduct, including records concerning substance abuse (if the railroad would use such information to render the employee ineligible).

(g) All comments under (f) shall be retained by the railroad.

The information to be evaluated shall include: (1) the railroad's own records; (2) data furnished by any other railroad formerly employing the person; and (3) data furnished by any governmental agency with pertinent motor vehicle driving records.

(h) Nothing in this section shall be deemed as imposing a duty or requirement that a person have prior railroad employment experience or obtain a motor vehicle driver's license in order to become a certified locomotive engineer.

§ 240.111-- Individual's Duty to Furnish Data on Prior Safety Conduct as Motor Vehicle Operator

(a) Each person seeking certification or recertification shall, within 366 days before the

railroad's decision or certification:

(1) make his/her driving record available to the railroad; and

(2) take any additional actions, including providing any necessary consent, required by State or Federal law to make information concerning his/her driving record available to that railroad;

(b) Each person seeking certification or recertification shall:

(1) request, in writing, that the chief of each driver licensing agency (that last issued the person's license and from any other state that issued his/her a license within 5 years), provide a copy of that agency's information concerning his/her driving record to the railroad; and

(2) request that a check of the National Driver Register be performed and be provided to that railroad.

(c)

(d)

(e)

(f) If advised by the railroad that a driver licensing agency or the National Highway Traffic Safety Administration has informed the railroad that additional information concerning that person's driving history may exist in the files of a state agency not previously contacted in accordance with this section, such person shall:

(1) request that licensing agency to provide such information.

(2)....

(g) Any person who has never obtained a driving license is not required to comply with (b).

The request required for compliance shall be submitted within the 366 days preceding the date of the railroad's decision concerning initial certification and/or recertification.

(h) Each certified engineer or person seeking initial certification shall report incidents pursuant to § 240.115(b)(1) & (2) within 48 hours of conviction or completed state action.

**§ 240.113-- Individual's Duty to Furnish Data on Prior Safety Conduct
as an Employee of a Different Railroad**

(a) Each person seeking certification or recertification shall, within 366 days preceding the railroad's decision on certification or recertification take the actions required by paragraph (b) to make information concerning his/her prior railroad service record available to the railroad that is considering such certification or recertification.

(b) Each person seeking certification or recertification under this part shall request, in writing, that the former employing railroad provide a copy of that railroad's available information concerning his/her service record to the railroad that is considering such certification or recertification.

(c)....

§ 240.115-- Criteria for Consideration of Prior Safety Conduct as Motor Vehicle Operator

(a)....

(b) When evaluating a person's motor vehicle driving record, a railroad shall not consider information concerning motor vehicle driving incidents that occurred more than 36 months before the month in which the railroad is making its certification decision.

A railroad shall only consider information concerning the following types of motor vehicle incidents:

(1) conviction for operating a motor vehicle while under the influence of or impaired by, alcohol or a controlled substance;

(2) conviction for refusal to undergo such testing for above when suspected of operating a vehicle while under the influence of alcohol or a controlled substance.

(c) If such an incident is identified, the railroad shall provide the information to the EAP counselor, together with the person's service record, and shall refer the person for evaluation.

If the employee is evaluated as not currently affected by an active substance abuse disorder, the above data shall not be used in considering certification. However, if the EAP counselor recommends, the railroad shall condition the certification on participation in further treatment and/or follow-up testing.

If the person is evaluated as currently affected by substance abuse disorder, the person shall not be certified.

§ 240.117-- Criteria for Consideration of Operating Rules Compliance Data

(a)....

(b) A person who has demonstrated a failure to comply with railroad rules and practices for the safe operation of trains shall not be currently certified as a locomotive engineer, or

(c) (1) shall have certification revoked.

(2) A DSLE who is monitoring and fails to take appropriate action to prevent violation of paragraph (he shall have his certification revoked. The duty may be met by warning the engineer of the potential or foreseeable violation. The DSLE will not be held culpable when conducting operational tests(§§ 217.9 and 240.303)

(d) Limitations on consideration of prior operating rule compliance data. In reviewing whether a person may be or remain certified as a locomotive engineer, a railroad shall only consider conduct described in paragraph (e) that occurred within a period of 36 consecutive months prior to the review. A review of certification shall be initiated promptly upon the occurrence and documentation of any incident of conduct described in this paragraph.

(e) A railroad shall only consider violations of its operating rules and practices that involve:

(1) Failure to control a locomotive or train in accordance with a signal indication that requires a complete stop before passing it;

(2) Failure to adhere to limitations concerning train speed when the speed at which the train was operated exceeds the maximum authorized limit by at least 10 miles per hour. Where restricted speed is in effect, railroads shall consider only those violations of the conditional clause of restricted speed rules (*i.e.*, the clause that requires stopping within one half of the locomotive engineer's range of vision), or the operational equivalent thereof, which cause reportable accidents or incidents under part 225 of this chapter, except for accidents and incidents that are classified as "covered data" under § 225.5 of this chapter (*i.e.*, employee injury/illness cases reportable exclusively because a physician or other licensed health care professional either made a one-time topical application of a prescription-strength medication to the employee's injury or made a written recommendation that the employee: Take one or more days away from work when the employee instead reports to work (or would have reported had he or she been scheduled) and takes no days away from work in connection with the injury or illness; work restricted duty for one or more days when the employee instead works unrestricted (or would have worked unrestricted had he or she been scheduled) and takes no other days of restricted work activity in connection with the injury or illness; or take over-the-counter medication at a dosage equal to or greater than the minimum prescription strength, whether or not the employee actually takes the medication, as instances of failure to adhere to this section;

(3) Failure to adhere to procedures for the safe use of train or engine brakes when the procedures are required for compliance with transfer, initial, or intermediate terminal test;

(4) Occupying main track or track segment without proper authority;

(5) Tampering with locomotive mounted safety devices or knowingly operating or permitting to be operated with unauthorized disabled safety device controlling the locomotive;

(6) Noncompliance with § 219.101 (*i.e.* alcohol/drug tests); however, such incidents shall be a violation only under (g)(2) and (g)(3) of this section.

(f) If in any single incident the person's conducted contravened more than one operating rule or practice, that event shall be treated as a single violation for the purposes of this section. A

violation of (e)(1) through (e)(5) that occurs during operational compliance test under this regulation shall be counted in determining period of ineligibility.

(g) A period of ineligibility described in this paragraph begins on the date of the most recent violation for a person not then currently certified. If the person is currently certified it begins on date of notification of the denial. The following standards shall apply to such consideration:

(1) In the case of single incident involving violation of one or more of these sections, the person shall have certificate revoked for a period of one month.

(2) In the case of two separate incidents involving violations of one or more of these sections that occurred within 24 months of each other, the person shall be ineligible to hold a certificate for a period of six months.

(3) In the case of more than three such violations in any consecutive 36 months interval, the person shall be ineligible to hold a certificate for a period of one year.

(4) Where incidents of noncompliance with different sections of this Chapter occur, the longest period of ineligibility shall be imposed.

(h) **Future eligibility to hold certificate.**

(1) Only a person whose certification has been denied or revoked for a period of one year or less under (g)(3) for reasons other than § 219.101, shall be eligible for grant or reinstatement of the certificate prior to the expiration of the initial period of ineligibility. In order to qualify for grant or reinstatement, the person must also meet paragraphs (h)(1) through (3).

(2) The person shall not be eligible for grant or reinstatement unless and until —

(i) The person has been evaluated by the railroad designated supervisor of locomotive engineers and determined to have received adequate remedial training;

(ii) The person has successfully completed any mandatory program of training or retraining if the railroad determined this was necessary prior to return to service; and

(iii) At least one-half the pertinent period of ineligibility specified in paragraph (g)(2) has elapsed.

(i) The FRA has concluded that certain types of incidents are too minor to warrant decertification. Therefore, this new section provides in no event shall incidents that meet the criteria of paragraphs (i)(1) through (4) of this section be considered as prior incidents for the purposes of paragraph (g)(3) of this section even though such incidents could have been or were validly determined to be violations at the time they occurred. Incidents that shall not be considered under paragraph (g)(3) of this section are those that:

- (1) Occurred prior to effective date of this amendment;
 - (2) Involved violations of one or more of the following operating rules or practices:
 - (i) Failure to control a locomotive or train in accordance with a signal indication;
 - (ii) Failure to adhere to limitations concerning train speed;
 - (iii) Failure to adhere to procedures for the safe use of train or engine brakes; or
 - (iv) Entering track segment without proper authority;
 - (3) Were or could have been found to be violations under this section as it read prior to May 10, 1993; and
 - (4) Would not be a violation of paragraph (e) of this section as amended.
- (j) The following shall not be considered a under (g) (3) if it involved violation of failure to control in accordance with signal indication that requires a complete stop, or exceeded the maximum authorized speed by at least 10 mph or one half the authorized speed; and would not be a violation of paragraph (e).

§ 240.119-- Criteria for Consideration of Substance Abuse Disorder and Alcohol/Drug Rules Compliance

- (a)....
- (b) Fitness requirement.
 - (1) A person who has an active substance abuse disorder shall not be currently certified as a locomotive engineer.
 - (2) and (3) Unless eligible for a voluntary referral program, a certified engineer who has an active substance abuse disorder shall be suspended from certification. Certification may be reinstated as provided in (d). If placed in a voluntary referral program, the evaluation shall be confidential.
- (c) Prior alcohol/drug conduct; Federal rule compliance.

In reviewing whether a person may be or remain certified as a locomotive engineer, a railroad shall consider any violations of the alcohol and drug regulations that occurred within a period of 60 consecutive months prior to the review. A review of certification shall be initiated promptly upon the occurrence of any alcohol or drug incident of conduct.

Violation of the following alcohol/drug regulations shall result in ineligibility to hold a certificate:^{1/}

Violation of:

§219.102			§219.101		Both .101 and .102	
1 viol.	2 viol.	more than 2 viol.	2 or more viol.	1 viol.	2 or more viol. of either	1 viol of each
Until EAP evaluation & completion of any RR required rehab. ^{2/}	2 years	5 years	5 years	9mos ^{2/}	5 years	3 years

^{1/}In cases of refusal to provide a sample for testing, the drug testing regulations apply regarding the sanction to be imposed.

^{2/}If the violation was discovered through "co-worker report" in § 219.405 and the engineer waives investigation, then the certificate shall be suspended only during evaluation and any required treatment.

Once returned to service the employee shall be subject to follow-up alcohol and drug testing for up to 60 months. Such tests shall not be fewer than 6 alcohol tests and 6 drug tests during the first 12 months.

(d) **Future eligibility to hold certificate following alcohol/drug violation.** If the employee has been denied certification, or it has been revoked or suspended because of an alcohol/drug violation, the person shall not be eligible for reinstatement until the person has (1) been evaluated by an EAP counselor; (2) completed any program of counseling or treatment; and (3) presented a urine sample that tests negative.

(e) **Confidentiality protected.** The railroad under § 219.403 ("Voluntary Referral Policy") shall treat voluntary referrals for substance abuse counseling and treatment as confidential; and the certification status of an engineer who is successfully assisted under the procedures of that section shall not be adversely affected. The only exception is if the person at any time refuses to cooperate in a recommended course of counseling or treatment.

§ 240.121-- Criteria for Consideration of Vision and Hearing Acuity Data

(a)....

(b) In general, no person shall be certified who does not have visual acuity and/or hearing acuity that meets or exceeds the levels prescribed in this section and Appendix X. (An exception is where the railroad's medical examiner determines that the person still has the ability to operate

a locomotive safely).

(c) Each person shall have the following visual acuity:

(1) for distant viewing either (i) distant visual acuity of at least 20/40 (Snellen) in each eye without corrective lenses or (ii) distant visual acuity separately corrected to at least 20/40 (Snellen) with corrective lenses and distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without corrective lenses;

(2) a field of vision of at least 70 degrees in the horizontal meridian in each eye; and

(3) the ability to recognize and distinguish between the colors of railroad signals by successfully completing one of the tests in Appendix X.

(d) Unless the railroad medical examiner determines that a person still has the ability to safely operate a locomotive, each person shall have hearing acuity that meets or exceeds the following thresholds when tested by use of an audiometric device, (calibrated to American National Standard Specification for Audiometers, S 3.6-1969): the person does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz, 2,000 Hz with or without use of a hearing aid.

(e) Even though not meeting the above requirements, the railroad's medical examiner may determine that the person has the ability to operate the locomotive safely, and the person may be certified conditioned on any restrictions the medical examiner imposes in writing.

(f) As a condition of maintaining certification, the engineer is obligated to notify the railroad's medical department or official if vision or hearing has deteriorated and that he no longer meets the standards or requirements of this section.

§ 240.123-- Criteria for Initial and Continuing Education

(a)....

(b) A railroad shall provide for the continuing education of certified locomotive engineers.

(c) Initial training shall at a minimum:

(1) be composed of classroom, skill performance, and familiarization with physical characteristic components;

(2) include both knowledge and performance skill testing;

(3) be conducted under the supervision of a qualified class instructor;

(4) be subdivided into segments or periods of appropriate duration to effectively cover the following subject matter areas: (i) personal safety, (ii) operating rules, (iii) mechanics, (iv) train

handling procedures (including train brake tests), (v) familiarization with physical characteristics, and (vi) compliance with Federal regulations;

(5) be conducted so that the performance skill component shall (i) be under the supervision of a qualified instructor engineer located in the same control compartment whenever possible; (ii) place the student engineer at the controls of a locomotive for a significant portion of the time; and (iii) permit the student to experience whatever variety of types of trains are normally operated by the railroad.

(d) A person may acquire familiarity with physical characteristics of a territory by methods described in the railroad's plan as described in Appendix B(which applies to new railroads or newly acquired railroads). Otherwise the person must acquire familiarization with hyrail trips or lite locomotive trips in compliance with the plan submission.

§ 240.125-- Criteria for Testing Knowledge

(a)....

(b) A railroad shall have procedures for testing to determine that the person has sufficient knowledge of the railroad's rules and practices.

(c) The testing methods selected by the railroad shall be:

(1) designed to examine a person's knowledge of the railroad's rules and practices for the safe operation of trains;

(2) objective in nature;

(3) administered in written form;

(4) cover the following subjects: (i) personal safety practices; (ii) operating practices; (iii) equipment inspection practices; (iv) train handling practices including familiarity with the physical characteristics of the territory; and (v) compliance with Federal safety rules;

(5) sufficient to accurately measure the person's knowledge of the subjects covered; and

(6) conducted without open reference books or other materials.

(d) The test shall be documented in writing.

§ 240.127-- Criteria for Examining Skill Performance

(a)....

(b) A railroad shall have procedures for examining the performance skills to determine whether the person has the skills to safely operate locomotives and/or trains in the most

demanding class of service.

(c) The testing procedures selected by the railroad shall be:

(1) designed to examine a person's skills in safely operating locomotives or trains when performing the most demanding class or type of service;

(2) conducted by a designated supervisor of locomotive engineers; who does not need to be qualified on physical characteristics of the territory which test will be conducted;

(3) cover the following subjects during the test period (i) operating practices; (ii) equipment inspection practices; (iii) train handling practices; and (iv) compliance with Federal safety rules;

(4) be of sufficient length to effectively evaluate the person's ability to operate trains; and

(5) conducted when the person is at the controls of the type of train, or Type I or Type II simulator to be normally operated on that railroad or segment of railroad.

(d) The conduct of the test shall be documented in writing and shall contain:

(1) the relevant facts concerning the train being operated;

(2) the constraints applicable to its operation; and

(3) the factors observed and relied on for evaluation purposes by the designated supervisor.

§ 240.129-- Criteria for Monitoring Operational Performance of Certified Engineers

(a)....

(b) A railroad shall have procedures for monitoring operational performance of a locomotive engineer.

(c) The procedures shall be designed:

(1) to determine that the person possesses and routinely employs the skills to safely operate locomotives and/or trains;

(2) so that each engineer shall be annually monitored;

(3) so that the locomotive engineer is either accompanied by the designated supervisor for a reasonable length of time or has his/her train handling activities electronically recorded by a train operations event recorder;

(d) The procedures may be designed so that the locomotive engineer being monitored is at the controls of the type of train normally operated, or at the controls of a Type I and Type II

simulator.

(e) The testing and examination procedures shall be designed:

(1) so that each locomotive engineer shall be given at least one unannounced test each calendar year.

(2) to test engineer compliance with signals that display less than a "clear" aspect.

(3) to test engineer compliance with provisions that require affirmative response by the locomotive engineer to less favorable conditions than that which existed prior to initiation of the test;

(4) to test engineer compliance with provisions most often cited by the railroad as the cause of train accidents or train incidents;

(5) so that the administration of these test is effectively distributed throughout whatever portion of a 24-hour day that the railroad conducts its operations; and

(6) so that individual tests are administered without prior notice to the engineer being tested.

Subpart C — Implementation of the Certification Process

49 C.F.R. § 240.201-- Schedule for Implementation

(a) Each railroad in operation on that date shall designate in writing any person(s) it deems qualified as a designated supervisor of locomotive engineers.

(b) Each railroad shall designate in writing all persons that it deems to be qualified as locomotive engineers for the purpose of compliance with this part. Each railroad shall issue a certificate that complies with § 240.223 to each person that it designates as qualified.

(c) No railroad shall permit an employee to perform service for more than 36 months, unless the person has been certified in compliance with this subpart C.

(d) No railroad shall permit or require any person to operate a locomotive in any class of locomotive or train service unless that person has been certified as a qualified locomotive engineer and issued a certificate that complies with § 40.223.

(e) No Class I railroad (including Amtrak) or railroad providing commuter service shall initially certify or recertify a person as a locomotive engineer in either locomotive or train service unless that person has been tested, evaluated, and determined to be qualified in accordance with procedures that comply with subpart C.

(f)....

(g)....

(h) A railroad may continue to designate any person it deems qualified prior to the effective date for compliance.

(i) A new railroad commencing operations prior to the pertinent date for compliance by a railroad of its class may designate persons as certified locomotive engineers on the basis of paragraph (b) until the pertinent date for compliance.

§ 240.203-- Determinations Required As a Prerequisite to Certification

(a) This requires the railroads before certifying an engineer determine that the person:

(1) meets the requirements of § 240.115 (motor vehicle safety, § 240.117 (operating rules), and § 240.119 (alcohol/drug);

(2) meets the vision and hearing acuity standards of § 240.121;

(3) has the necessary knowledge, by passing a test, that meets the requirements of § 240.125 (the railroad's rules and practices);

(4) passes an operational performance test under § 240. 127; and

(5) if not previously certified, has completed a training program that meets § 240.123.

(b) A railroad may certify a person as a student engineer after determining that the person meets the visual and hearing acuity standards of § 240.121. A railroad may subsequently certify a student engineer as either a locomotive servicing engineer or a train service engineer without further review of their acuity status as required under paragraph (b) of this section provided it determines that:

(1) the person successfully completed a training program that complies with § 240.127;

(2) the person meets the eligibility requirements of §§ 240.109 (prior safety conduct) and 240.119 (alcohol/drug); and

(3) a period of not more than 24 months has elapsed since the student engineer certification was issued.

§ 240.205-- Procedures for Determining Eligibility Based on Prior Safety Conduct

(a) Each railroad, prior to certifying or recertifying an engineer for any class of service shall determine that he meets the eligibility requirements involving prior conduct as a motor vehicle operator, involving prior conduct as a railroad worker, and involving substance abuse disorders and alcohol/drug rules compliance.

(b) The railroad shall have documentation of the determinations made in (a), including any EAP evaluations whether the person is affected by an active substance abuse disorder.

§ 240.207-- Procedures for Making the Determination on Vision and Hearing Acuity

(a) Each railroad, prior to initially certifying or recertifying any person as an engineer for any class of service, shall determine that the person has visual acuity and hearing acuity prescribed in § 240.121.

(b) The railroad shall have or file the medical examiner's certificate that the acuity standards have been met, or that the standards were not met and whether the person can still be certified under certain conditions.

(c) The examinations must be by a licensed optometrist and audiologist or a technician responsible to that person.

(d) If the examination discloses that the person needs either corrective lenses or a hearing aid, or both, either to meet the threshold acuity levels or to meet a lower threshold (determined by the railroad's medical examiner to be sufficient to safely operate a locomotive or train on that railroad), that fact shall be noted on the certificate issued.

(e) Any person with such a certificate notation shall use the relevant device while operating a locomotive in locomotive or train service unless the railroad's medical examiner determines that the person can safely operate without using the device.

§ 240.209-- Procedures for Making the Determination on Knowledge

A railroad shall certify or recertify an engineer that exhibited his/her knowledge for safe operation of trains by achieving a passing grade after participating in testing procedures. If the person fails the test, he/she cannot operate a train prior to being reexamined.

§ 240.211-- Procedures for Making the Determination on Performance Skills

This section requires the engineer to demonstrate his/her skills to safely operate in the most demanding class of service by achieving a passing grade during testing. The person may be reexamined upon failing the test.

§ 240.213-- Procedures for Making the Determination on Completion of Training Program

(a) The engineer is required to have the knowledge and skills to safely operate a locomotive or train in the most demanding class or type of service that the person will be permitted to perform.

(b) In making this determination, the employee shall:

- (1) complete a training program (§ 240.123);
- (2) has knowledge and skills by achieving a passing grade under the testing and evaluation procedures; and
- (3) the person is familiar with the physical characteristics of the railroad or its pertinent segments.

§ 240.215-- Retaining Information Supporting Determinations

- (a) The railroad shall maintain a record for each certified engineer that contains the information the railroad relied on in making the determinations.
- (b) The information shall include records:
 - (1) of the person's prior safety conduct;
 - (2) of data from another railroad;
 - (3) of the motor vehicle driving record; and
 - (4) furnished by the person concerning eligibility.

The information also shall include that obtained by § 240.207 regarding vision and hearing acuity.

- (c) § 240.207 regarding vision and hearing acuity.
- (d) § 240.209 regarding knowledge; and
- (e) § 240.211 regarding skills.
- (f) If the railroad is relying on the training program of another entity, the railroad shall maintain the data furnished by such entity.
- (g) If a railroad is relying on a certification made by another railroad, the railroad shall maintain the data furnished.
- (h) All records required under this section shall be retained for a period of four years.
- (i) It shall be unlawful for any railroad to knowingly or any individual to willfully:
 - (1) make, cause to be made, or participate in the making of a false entry on the record(s);or
 - (2) otherwise falsify that record through material misstatement, omission, or mutilation.

(j) A railroad may maintain the information required to be retained in an electronic format.

§ 240.217-- Time Limitations for Making Determinations

(a) A railroad shall not certify a person unless it is:

(1) eligibility based on visual and hearing acuity medical data less than 366 days old;

(2) data concerning demonstrated knowledge and the knowledge examination being relied on shall be less than 366 days old;

(3) data concerning demonstrated performance skills and the performance skills testing shall be less than 366 days old; or.

(4) data concerning demonstrated performance skills and skill testing conducted 366 days before the railroad's decision.

(b) The time limitations do not apply to a railroad that is making a certification decision based on determinations made by another railroad in accordance with paragraph (c)(2), § 240.227 or 240.229.

(c) No railroad shall:

(1) certify a person as a qualified locomotive engineer for an interval of more than 36 months; or

(2) rely on a certification issued by another railroad that is more than 36 months old.

(d) The certificate shall be issued no later than 30 days from the date of its decision to certify or recertify the person.

§ 240.219-- Denial of Certification

(a) A railroad shall notify a candidate for certification of information that forms the basis for denying the person certification and provide the person an opportunity to explain or rebut that adverse information in writing prior to denying certification.

(b) This section does not require further opportunity to comment if the railroad's denial is based on § 240.115 (motor vehicle safety), § 240.117 (operating rules), and § 240.119 (alcohol/drugs).

(c) If it denies a person certification or recertification, a railroad shall notify the person of the adverse decision and explain, in writing, the basis for its denial decision. The document explaining the basis for the denial shall be mailed or delivered to the person within 10 days after the railroad's decision and shall identify the date of the decision.

§ 240.221-- Identification of Qualified Persons

- (a) A railroad shall maintain a written record identifying each person designated by it as a supervisor of locomotive engineers.
- (b) A railroad shall maintain a written record identifying each person designated as a certified locomotive engineer. That listing of certified engineers shall indicate the class of service the railroad determines each person is qualified to perform and date of the railroad's certification decision.
- (c) If joint operations are involved, the controlling railroad shall maintain the listing of persons.
- (d) The listing required by paragraphs (a), (b) and (c) shall be updated at least annually.
- (e)....

§ 240.223-- Criteria for the Certificate

- (a) This section outlines what information is required to be contained in each certificate.
- (b)....
- (c)....
- (d) It shall be unlawful for any railroad to knowingly or any individual to willfully:
 - (1) make, cause to be made, or participate in the making of a false entry on that certificate;
 - or
 - (2) otherwise falsify that certificate through material misstatement, omission, or mutilation.

§ 240.225-- Reliance on Qualification Determinations Made by Other Railroads

Any railroad that is considering certification of a person as a qualified engineer may rely on determinations made by another railroad concerning that person's qualifications, so long as they meet the requirements of this regulation for certifying its own employees. If a program does not specify training for previously certified engineer, the engineer must take a retraining program.

§ 240.227-- Reliance on Qualification Requirements of Other Countries.

- (a) A railroad that conducts joint operations with a Canadian railroad may certify that a person is qualified provided the employee of a Canadian railroad meets or exceeds the qualifications standards issued by Transport Canada for such service.

(b) Any Canadian railroad that is required to comply with this regulation may certify that a person is qualified:

- (1) the person is employed by the Canadian railroad; and
- (2) the employee of a Canadian railroad meets or exceeds the qualifications standards issued by Transport Canada for such service.

§ 240.229-- Requirements for Joint Operations Territory

(a), (b) A railroad that is responsible for controlling the conduct of joint operations with another railroad shall not permit or require any person to operate a locomotive in any class unless the person has been certified, and shall certify the said person as a qualified engineer for purposes of joint operations.

(c) This sets out the requirements if the controlling railroad relies on certification issued by another railroad. In addition, the employing railroad shall determine that the person operating on controlling railroad is certified and qualified on that track segment.

(d)....

(e) A railroad responsible for controlling the conduct of joint operations with another railroad shall be deemed to be in compliance when it provides a qualified person to accompany a locomotive engineer who lacks joint operations certification during that engineer's operations in joint operation territory.

(f) A railroad that is responsible for controlling the conduct of joint operations with another railroad may permit a certified locomotive engineer to operated a locomotive in any class of train or engine service without determining that the person has been certified as a qualified locomotive engineer for the purposes of joint operations when a minimal joint operation is involved. For the purposes of this section a minimal joint operation exists when a locomotive or train belonging to one railroad is being operated on the same track on which operations are conducted by the railroad controlling operations, under the following conditions;

(1) The maximum authorized speed for operations on the track does not exceed 20 miles per hour;

(2) The track is other than a main track;

(3) Operations are conducted under operating rules that require every locomotive and train to proceed at a speed that permits stopping within one half the range of vision of the locomotive engineer; and

(4) The maximum distance for joint operations on the track does not exceed one mile.

§240.231-- Requirements for Locomotive Engineers Unfamiliar With Characteristics in Other Than Joint Operations

(a) No engineer shall operate over territory unless qualified on physical characteristics pursuant to the railroad's program, except as provided in (b).

(b) Except as provided in (c), if the engineer lacks qualifications as required in (a), any person, other than assigned crew member, qualified over the territory pursuant to the railroad's program shall serve as pilot.

(1) If the engineer has never been qualified over the territory, the pilot shall be a qualified or certified engineer and be other than an assigned crew member.

(2) If the engineer's qualifications over the territory has expired, the pilot may be any person, other than a crew member, qualified on the territory;

(c) Pilots are not required if movement is on track with average grade of less than 1% over 3 continuous miles, and

(1) Track is other than main; or

(2) Maximum distance does not exceed one mile; or

(3) Maximum speed for any operation does not exceed 20 mph; or

(4) Operations require all trains or locomotives to proceed at speed than requires stopping within one half the range of vision.

Subpart D — Administration of the Certification Programs

49 C.F.R. § 240.301-- Replacement of Certificates

This section requires prompt replacement of lost, stolen or mutilated certificates.

§ 240.303-- Operational Monitoring Requirements

(a) The railroad is required to monitor the engineer by operational monitoring observations and by conducting unannounced operating rules compliance tests.

(b) Each locomotive engineer shall be given at least one operational monitoring observation by a qualified supervisor of locomotive engineers in each calendar year, and

(c) Each locomotive engineer shall be given at least one unannounced compliance test each calendar year.

(d) The unannounced tests shall includes the engineer responding to:

(1) signals that display less than a "clear" aspect;

(2) less favorable operating conditions than that which existed prior to the test;

(3) rules which resulted in accidents/incidents on the railroad.

(4), (5) and (6) the tests shall be distributed throughout the day without prior notice to the engineer. The results shall be recorded.

§ 240.305-- Prohibited Conduct by Certified Engineers

(a) It shall be unlawful to:

(1) Operate past a signal indication, excluding hand or radio signal or switch that requires complete stop before passing.

(2) Exceeding maximum authorized speed by at least 10 mph. Only conditional clause of restricted speed, or operational equivalent thereof, which ; or

(3) Failure to adhere to brake procedures under §§232.12 & .13 and Part 238;

(4) Failure to comply with any mandatory directive by occupying a main track or segment of track without authority.

(5) Tampering with locomotive mounted safety devices or knowingly operating or permitting to be operated with unauthorized disabled safety device in control locomotive.

(6) Be a DSLE who is monitoring and fails to take appropriate action to prohibit a violation of this section. A DSLE will not be held liable for conducting operational tests under §§ 217.9 and 240.303.

(b) Each locomotive engineer who has received a certificate required under this part shall:

(1) have that certificate in his/her possession while on duty as an engineer; and

(2) display that certificate upon request.

(c) Any locomotive engineer who is notified or called to operate a locomotive or train that would cause him/her to exceed the limits set forth in subpart B shall immediately notify the railroad that he/she is not qualified to perform that anticipated service.

(d) A locomotive engineer who has a current certificate from more than one railroad shall immediately notify the unaffected railroad(s) if he/she is denied re-certification by a railroad or has his/her certification revoked by a railroad.

(e)....

§ 240.307-- Revocation of Certification

(a) Except as provided in 240.119(f), if a person no longer meets the qualification requirements, the railroad shall revoke the person's certificate.

(b) Pending a revocation determination under this section, the railroad shall:

(1) Upon receipt of reliable information indicating the person's lack of qualification under this part, immediately suspend the person's certificate;

(2) Provide written notice of the reason for the suspension, the pending revocation, and an opportunity for hearing before a presiding officer other than the investigating official; In the

absences of an applicable collective bargaining agreement, written confirmation must be made within 96 hours;

(3) convene the hearing within the deadline prescribed by either (c)(1) or applicable collective bargaining agreement;

(4) determine, based on the record of the hearing, whether the person meets the qualification requirements;

(5) when appropriate impose the revocation period set out in § 240.117 or 240.119. . . . ;
and

(6) retain the record of the hearing for 3 years after the date of the decision.

(c) Except as provided for in paragraphs (d), (f) (i), and (j) of this section, a hearing required by this section shall be conducted in accordance with the following procedures:

(1) The hearing shall be convened within 10 days of the date the certificate is suspended unless the locomotive engineer requests or consents to delay in the start of the hearing.

(2) The hearing shall be conducted by a presiding officer, who can be any qualified person authorized by the railroad other than the charging officer.

(3) The presiding officer will exercise the powers necessary to regulate the conduct of the hearing for the purpose of achieving a prompt and fair determination of all material issues in controversy.

(4) The presiding officer shall convene and preside over the hearing.

(5) Testimony by witnesses at the hearing shall be recorded verbatim.

(6) All relevant and probative evidence shall be received unless the presiding officer determines the evidence to be unduly repetitive or so extensive and lacking in relevancy that its admission would impair the prompt, orderly, and fair resolution of the proceeding.

(7) The presiding officer may:

(i) Adopt any needed procedures for the submission of evidence in written form;

(ii) Examine witnesses at the hearing;

(iii) Convene, recess, adjourn or otherwise regulate the course of the hearing; and

(iv) Take any other action authorized by or consistent with the provisions of this part and permitted by law that may expedite the hearing or aid in the disposition of the proceeding.

(8) Parties may appear and be heard on their own behalf or through designated

representatives. Parties may offer relevant evidence including testimony and may conduct such examination of witnesses as may be required for a full disclosure of the relevant facts.

(9) The record in the proceeding shall be closed at conclusion of the hearing unless the presiding officer allows additional time for the submission of information. In such instances the record shall be left open for such time as the presiding officer grants for that purpose.

(10) At the close of the record, the railroad official, other than investigating officer shall sign a written decision in the proceeding.

(11) The decision shall:

(i) Contain the findings of fact as well as the basis therefor, concerning all material issues of fact presented on the record; and

(ii) Be served on the employee.

(12) The railroad shall have the burden of proving that the locomotive engineer's conduct was not in compliance with the applicable railroad operating rule or practice or Part 219 of this chapter.

(d) A hearing required by this section which is conducted in a manner that conforms procedurally to the applicable collective bargaining agreement shall be deemed to satisfy the procedural requirements of this section.

(e) A hearing required under this section may be consolidated with any disciplinary or other hearing arising from the same facts, but in all instances the presiding officer for the hearing shall make separate findings as to the revocation required under this section.

(f) A person may waive the right to the hearing provided under this section. That waiver shall:

(1) Be made in writing;

(2) Reflect the fact that the person has knowledge and understanding of these rights and voluntarily surrenders them; and

(3) Be signed by the person making the waiver.

(g) A railroad that has relied on the certification by another railroad under the provisions of § 240.227 or § 240.229, shall revoke its certification if, during the period that certification is valid, the railroad acquires information which convinces it that another railroad has revoked its certification after determining, in accordance with the provisions of this section, that the person no longer meets the qualification requirements of this part. The requirement to provide a hearing under this section is satisfied when any single railroad holds a hearing and no additional hearing is required prior to a revocation by more than one railroad arising from the same facts.

(h) The period of certificate suspension prior to the commencement of a hearing required under this section shall be credited towards satisfying any applicable revocation period imposed in accordance with the provisions of § 240.117.

(i) A railroad shall not determine that a person failed to meet qualification requirements and shall not revoke certification if substantial evidence exists that:

- (a) Intervening cause prevented or materially impaired engineer's ability to comply with railroad's operating rules which would violate § 240.117(e)(1) through (5); or
- (b) violation was of a minimal nature and had no direct or potential effect on rail safety.

(j) A railroad shall place relevant information in the records (§240.309 Class I and II and § 240.215 Class III) if evidence becomes available, that meets criteria of (i) .

(k) It is not a violation if the railroad makes a good faith determination that the criteria of (i) was met.

§ 240.309-- Railroad Oversight Responsibilities

(a) Beginning in calendar year 1993, each Class I railroad (including Amtrak and a railroad providing commuter service) and Class II railroad shall conduct a formal annual review and analysis, no later than March 31 of each year concerning the administration of its program for responding to detected instances of poor safety conduct by certified locomotive engineers during the prior calendar year.

(b)....

(c) Based on that review and analysis each railroad shall determine what action(s) it will take to improve the safety of train operations to reduce or eliminate future incidents of that nature.

(d) The FRA may require a report of the findings reached during annual review.

(e) This subsection sets out 10 areas of poor safety conduct for the reporting purposes.

(f) This subsection requires each category of poor safety conduct shall also identify the incidents reported by the railroad from each category.

(g) This subsection requires that the railroad identify the remedial action taken in each of the areas of poor safety conduct.

(h) This requires that the railroad identify the discipline in which punishment initially imposed was reduced.

Subpart E — Dispute Resolution Procedures

49 C.F.R. § 240.401-- Review Board Established

(a) Any employee adversely affected by a railroad's decision under this regulation who

believes that a railroad incorrectly determined that he/she failed to meet the qualification requirements may petition the Federal Railroad Administrator to review it.

(b) The Federal Railroad Administrator has delegated initial responsibility for adjudicating such disputes to the Locomotive Engineer Review Board, which

(c) Shall be composed of at least three employees of the Federal Railroad Administration.

§ 240.403-- Petition Requirements

(a)....

(b) This sets forth the specific procedures to follow when filing a petition and the contents required in the petition.

(c) & (d) A petition seeking review of a railroad's decision to deny or revoke certification shall be filed within 120 days after the date of the railroad's denial decision.

§ 240.405-- Processing Qualification Review Petitions

This section sets out the procedures to be followed by the Review Board.

(a) The petition shall be acknowledged in writing by FRA, and a statement that the FRA will render a decision within 180 days from date railroad's response is received or response period lapsed.

(b)....

(c) The railroad will be given a period of not exceed 60 days to submit to FRA any information that the railroad considers pertinent to the petition.

(d) Triplicate copies to be served upon FRA.

(e)....

(f) The Board will only determine whether the railroad's denial was improper under the regulation.

(g)....

§ 240.407-- Request for a Hearing

(a) If adversely affected by the decision, either the original petitioner or the railroad involved shall have a right to an administrative hearing concerning that decision.

(b) To exercise that right, the adversely affected party shall file a written request to the Docket

Clerk within 20 days of service of the Board's decision on them.

- (c) Failure to request the hearing in time will automatically waive any further review.
- (d) This sets out what is required in the request for the hearing. The petitioner must specify in some detail what issues need to be reviewed.
- (e) The presiding officer sets the hearings schedule and agenda, not the FRA.

§ 240.409—Hearings

This sets out the procedures to be followed in the FRA hearing.

- (a), (b) & (c) The hearing shall be conducted by any presiding officer authorized by FRA, including an administrative law judge. \Such person may be a FRA employee. The hearing is a de novo proceeding (i.e., a completely new proceeding), not a review of the initial decision. The presiding officer has the power to grant any appropriate relief based on the facts.
- (d) The presiding officer may authorize discovery, and is given authority to sanction for willful noncompliance.
- (e) Pleadings must be signed, which certifies that the contents are true.
- (f) This sets out the procedures for service of the papers and the requirement for a proof of service.
- (g) If documents are improperly filed, the presiding officer may require them to be corrected or stricken.
- (h) Any party has the right to be represented by a union representative or an attorney.
- (i) Any person testifying at a hearing or by deposition is entitled to an attorney.
- (j) This provides for consolidation or separation where there are 2 or more petitions being considered at the same time.
- (k) This section allows extensions to be granted where the opposing party is not substantially prejudiced.
- (l) This provision sets out the procedures for making a motion. There is a 14 day response period for a motion.
- (m) Testimony shall be under oath and recorded verbatim.
- (n) The presiding officer shall apply the Federal Rules of Evidence as general guidelines.

- (o) The presiding officer may administer oaths, issue subpoenas, examine witnesses, etc.
- (p) The petitioner before the LERB, the railroad, and the FRA shall be parties at the hearing. All parties may present witnesses and conduct cross examination.
- (q) The party requesting the hearing shall be the “hearing petitioner” and shall have the burden of proof.
- (r) FRA is a mandatory party to the administrative hearing.
- (s) The record will normally be closed at the conclusion of the hearing, unless the presiding officer rules otherwise.
- (t) This section sets out what must be contained in the final decision. It shall set out findings of fact and conclusions of law. The decision constitutes final agency action unless an aggrieved party files an appeal within 35 days after issuance.

§ 240.411-- Appeals

- (a) Any party aggrieved by the presiding officer's decision may file an appeal within 35 days of issuance of the decision with the Federal Railroad Administrator.

A copy of the appeal shall be served on each party. The appeal shall set forth objections to the presiding officer's decision, supported by reference to applicable laws and regulations and with specific reference to the record. If no appeal is filed, the presiding officer's decision constitutes final agency action.

- (b) A party may file a reply to the appeal within 25 days of service of the appeal. The reply shall be supported by reference to applicable laws and regulations and with specific reference to the record, if the party relies on evidence contained in the record.
- (c) The Administrator may extend the period for filing an appeal or a response for good cause shown.
- (d) On the Administrator's own initiative or written motion by any party, the Administrator may grant the parties an opportunity for oral argument.
- (e) Administrator may remand, vacate, affirm, alter or modify decision and this constitutes final agency action when administrative remedies have been exhausted.

APPENDIX A-This sets forth the schedule of civil penalties.

APPENDIX B-This appendix establishes the procedures the railroad must follow in its certification program.

APPENDIX C- Procedures for obtaining and evaluating motor vehicle driving record.

APPENDIX D-Identification of state agencies that perform national driver register check.

APPENDIX E- Recommended procedures for conducting skill performance tests.

TRAINING REGULATIONS^{42 43}

In 2008, Congress required FRA, as delegated by the Secretary, to issue this training regulation and mandated that FRA's regulation cover the training of certain employees, defined by the statute as "safety-related railroad employee." Congress also required that the employees be covered regardless of whether their employer is actually a railroad. (See, 49 U.S.C. 20102 and 20162.

Such employees include:

- Employees covered by the hours of service (HOS) laws.
- Employees performing work as an operating employee (including supervisors), even if not covered by the HOS laws.
- All engineering or maintenance-of-way (MOW) employees, including bridge workers, who inspect, install, repair, or maintain track, roadbed, signal, and communication systems.
- Mechanical personnel who inspect, repair, or maintain any locomotive, passenger car, or freight car. Mechanical personnel who inspect, repair, or maintain any other railroad on-track equipment are also included when the equipment is in service that constitutes a train movement.
- Any person, including a supervisor, who makes the determination that an MOW vehicle is safe for use in accordance with , Subpart D without repair of a non-complying condition.
- Any person who, as a primary duty, directly instructs, mentors, inspects, or tests others engaged in a safety-related task. This description generally covers first-line supervisors of safety-related railroad employees.
- Persons who conduct periodic oversight required by the Part 243 regulation even though they may not directly perform other safety-related tasks performed by other persons as described in the definition of safety-related railroad employee.

Key Provisions of 49 C.F.R. Part 243

- Employers must submit training programs to FRA.
- Employers must designate existing and new employees by category / training.
- Employers must train employees to measurable standards (including OJT when applicable).
- Some employers must conduct periodic oversight and annual reviews to determine the adequacy of training programs.
- Employers must retain adequate records.

⁴² It should be noted that there exists certain training requirements in other FRA regulations--Maintenance of Equipment; Passenger Equipment Safety Standards; Brake System Safety Standards for Freight Engineering/Track Maintenance; Signal and Train Control; and Operating Practices.

⁴³ At the RSAC meeting on April 24, 2019, the RSAC agreed to consider the certification of dispatchers. The matter will be handled by a working group.

- Beginning January 1, 2020, Training Organizations/Learning Institutions (TO/LIs) must have FRA approval before providing training services to employers of safety-related railroad employees.
- The regulation encourages any organization (*i.e.*, railroads, contractors, associations, to develop model training programs and submit them to FRA so they can be shared with the industry and used by small employers.

The term “employers” includes railroads and contractors. The purpose of training to measurable standards is to prove that the employees are qualified in a particular category and therefore can be expected to do the job safely and in accordance with all applicable employer rules and Federal regulations. When required, OJT means job training that occurs in the workplace, *i.e.*, the employee learns the job while doing the job.

The regulation also includes entities that do not maintain fixed facilities (*i.e.*, do not have a physical location), but may rent or lease meeting space to deliver training.

SECTION BY SECTION SUMMARY:

§243.101, Employer program required

Employers do not have to wait for FRA approval before adopting, implementing, and complying with training program(s). Employers that commence operations after the regulatory implementation dates must submit training programs to FRA before commencing operations and must adopt, implement, and comply with training programs upon commencing operations.

Classifying safety-related railroad employees means that each employer must identify its employees in categories or subcategories by class, craft, task, or other terminology. Classification of employees is not necessarily by job title. Classification is based on performance of safety-related tasks. Therefore, an employer is not compelled to use job titles that have traditionally been used by the railroad industry to classify railroad employee workgroups (*e.g.*, carman, brakeman, machinist, switchman).

Key learning points are generally captured in terminal learning objectives. Terminal learning objectives are the learning objectives that apply to the entire course curriculum. A terminal learning objective is written to describe each major job performance outcome expected as a result of training.

Training design, development, and delivery The regulation provides flexibility to design and develop the training requirements.

It encourages using technology to deliver training, and only seeks to ensure safety-related employees have the skills to properly perform safety-related tasks.

On the Job Training. When tasks require neuromuscular coordination to learn, FRA will generally expect OJT or another formal training delivery method to include a “hands-on training component.”

OJT must be structured and consist of the following three elements:

1. **Task** – a brief statement describing the tasks and related steps the employee learning the job must be able to perform.

2. **Conditions** – the tools, equipment, documentation, briefings, demonstration, and practice necessary for learning transfer.

3. **Standards** – the way in which proficiency is measured through a combination of completeness and repetition.

Contractor/railroad relationships must be understood between the parties. If a contractor chooses to train its own safety-related employees to perform safety-related duties on a railroad, the contractor must prove to the railroad that the training program was approved by FRA (by providing the approval document from FRA). Railroads that use contracted safety-related employees to perform safety-related duties are required to retain proof of contractor approval documents.

Training program submission dates for employers differ based on the size of the employer. January 1, 2020, is the implementation date for large employers (400,000 or more total employee work hours annually). May 1, 2021, is the implementation date for smaller employers (fewer than 400,000 total employee work hours annually).

The definition of each category or subcategory must include a list of Federal railroad safety laws, regulations, and orders with which the employee is required to comply based on the employee's assignments and duties, broken down at a minimum to the applicable part of the C.F.R., section of the U.S.C., or citation to an order.

Terminal learning objectives are used to describe what participants will know and be able to do after training, and what levels of learning the designated instructor (DI) intends to achieve in the course. Once the terminal learning objectives are developed, the DI should focus on ensuring that participants are able to meet the objectives as a result of the training. For more information on developing terminal learning objectives. (See, <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy>).

FRA will consider, on a case-by-case basis, alternate approaches to OJT in lieu of the traditional approach (See, 49 C.F.R. § 243.5 – On the-job training).

Thus, where FRA has indicated in the Occupational Categories/Subcategories Matrix that FRA expects to see OJT, alternate approaches may be substituted. FRA will certainly look favorably on alternate approaches that, similarly to OJT requirements, show a training regimen that includes the same types of considerations as required in 49 C.F.R. § 243.101(d)(1)-(3).

A **DI** is a person designated as an instructor by an employer or a TO/LI who has demonstrated, per the training program submitted by the employer or TO/LI, an adequate knowledge of the subject matter under instruction and, where applicable, has the necessary experience to effectively provide formal training on the subject matter.

§243.103, Training components identified in program

Each employer's training program must contain sufficient detail to enable FRA to make assessments during the review of each training program submitted. The submission must include the following components:

- A unique name and identifier for each formal course of study.
- A course description including terminal learning objectives.
- A brief description of the target audience.

- A course outline.
- Method of course delivery.
- Course duration.
- Federal law, regulations or FRA orders covered.
- Type of test/assessment to demonstrate employee proficiency.
- A document for each OJT program that includes the roles and responsibilities of each category of person involved in the administering, implementing, and applying the OJT and developing and implementing guidelines for program coordination.
- Contact information for the employer's (primary) training point of contact for each employee occupational category if applicable.
- Additional information if any TO/LIs developed and delivered all or part of the training.

Although the regulation allows small employers to submit hard copies of training programs to FRA, all employers, regardless of size, are encouraged to use the secure Web portal to facilitate faster processing and to ensure the required information is contained in the submission. New users to the Web portal must first register at: <http://safetydata.fra.dot.gov/SPAccountRequests/default.aspx?app=part243>. Once registration is complete and accepted, the Web portal may be accessed at: <https://rrsp.fra.dot.gov/Part243Training/>.

The regulation does not require the railroads to submit its courses to FRA (*i.e.*, lesson plans, instructor guides, participant guides, job aids, practical exercises, tests/assessments, and other materials used in the delivery of any course).

§243.105, Optional model program development

FRA encourages model programs to allow organizations, businesses, or associations to develop training programs that could be used by multiple employers and should result in lower training development costs.

Model programs submitted to FRA before May 1, 2019, are considered approved and may be implemented 180 days after date of submission, unless FRA notifies the organization that developed and submitted the program that the program contains deficiencies. An employer that uses an FRA-approved model program only needs to submit the unique identifier and any additional information specific to that employer or that deviates from the model program.

Program detail requirements are the same as previously discussed in 49 C.F.R. § 243.103. An employer can adopt a model program at the Web portal. However, an employer must get authorization from the model program developer. The Web portal will provide the contact information of the developer. Employers wishing to adopt and implement a model program must contact the model program developer and obtain the associated course/training materials necessary for training safety-related railroad employees. It is up to the model program developers to decide whether to make their programs free or fee-based, as well as whether to track users.

§243.107, Training program submission, introductory information required

An employer must answer five questions with respect to training that is administered to safety related railroad employees. Will you as the employer:

1. Primarily conduct training for your own safety-related railroad employees using your own resources?
2. Conduct training for safety-related railroad employees other than your own?

3. Implement a training program conducted by some other entity on its behalf, but adopted by you as the employer?
4. Qualify safety-related railroad employees previously qualified by other employers?
5. Qualify safety-related railroad employees previously trained by a training organization or learning institution?

The TO/LI's full name needs to be provided if an employer uses a TO/LI to train all or some of its safety-related railroad employees. This also includes new hires previously trained by a TO/LI.

The Web portal will provide the steps required with the submission.

Unless the employer is a contractor relying on a railroad to train its safety-related railroad employees and retain records as a TO/LI would, the employer has a duty to provide FRA the relevant information under 49 C.F.R. § 243.103, and if applicable, 49 C.F.R. §§ 243.109, 243.113, and 243.205.

If the employer:

1. Trains its own safety-related railroad employees using its own resources, no additional explanation in the associated narrative fields is necessary. Move on to the next web page and complete the submission.

2. Conducts training for safety-related railroad employee's other than its own, the employer shall list the categories of safety-related railroad employees it trains, and describe whether the training delivered will comprise all or part of the overall training program in the field provided in the web page.

Railroads are required to create a training record for each safety-related railroad employee it trains in accordance with 49 C.F.R. § 243.203.

3. Adopts and implements a training program developed by another entity (e.g., a previously approved model program or a program developed by a TO/LI), the employer shall list the categories of safety-related railroad employees it will train, and describe, whether the training will comprise all or part of the overall training program in the field provided in the web page. If an employer will adopt and implement a previously approved model program, it will be the employer's responsibility to know the Unique Course/Catalog Identification Number, and acquire all associated curriculum and training delivery materials from the developer/entity. FRA is not involved in this transaction.

4. Qualifies safety-related railroad employees previously qualified by other employers, the employer shall list the categories of safety-related railroad employees it qualifies

5. Qualifies safety-related railroad employees previously trained by a training organization or learning institution, the employer shall include the full name of the TO/LI in the field provided in the web page. The employer shall also create a training record for each safety-related railroad employee in accordance with 49 C.F.R. § 243.203.

§ 243.109, Training program submission, review, and approval

Process

Apprenticeships and intern programs that began before the employer's initial program may continue, but must be described in the initial submission required by 49 C.F.R. § 243.101(a) and (b).

Informational filings relating to previously approved programs can be submitted at any time, but no later than 30 days after the calendar year in which the modification occurred. All new courses and/or refresher courses developed since the previous submission must be submitted using the same criteria as discussed in 49 C.F.R. §§ 243.103 and 243.107. With respect to model program revisions, the developer (business, organization, association, *etc.*) is required to notify known users of the model program of informational filings concerning model program revisions.

New portions or substantial revisions to a previously approved program not described in informational filings are considered approved and may be implemented upon submission to FRA.

Each railroad must serve copies of each relevant program or revision on each labor organization president that represents the railroad's employees simultaneous with its filing with FRA, and the labor organization president may file a comment no later than 90 days after the railroad's filing.

Following submission, FRA will review the program and inform the employer as to whether the initial program conforms to the regulations. If FRA determines that all or part of the program does not conform, FRA will inform the employer of the specific deficiencies. The deficient

portions of the nonconforming program may remain in effect until approval of the revised program, unless FRA provides notification otherwise. An employer must resubmit the portion of its program, as revised to address specific deficiencies, within 90 days after the date of any notice of deficiencies from FRA. A failure to resubmit the program with the necessary revisions must be considered a failure to implement a program under 49 C.F.R. part 243.

§ 243.111, Approval of programs filed by training organizations or learning institutions

TO/LIs must submit training programs for safety-related railroad employees to FRA for review and approval before offering such services. Except, those TO/LI's that have provided training to safety-related employees before January 1, 2019, may continue without FRA approval until January 1, 2020 (extensions may be granted on a case-by-case basis). TO/LIs must submit and include all information previously discussed and required for an employer's program per 49 C.F.R. § 243.101, unless the requirement could only apply to an employer's program.

TO/LIs must also submit the following information:

1. The full corporate or business name;
2. The primary business and email address;
3. The primary telephone number and POC;
4. A list of DIs;
5. A resume for each DI showing how subject-matter expert and training experience was acquired, unless the DI is employed by a railroad;
6. A list of references for the TO/LI's past services; and
7. A brief, but detailed, summary statement indicating how the TO/LI determined the knowledge, skills, and abilities necessary to develop training courses for safety-related

railroad employees.

Substantial additions/revisions to programs that are not considered informational filings must receive FRA approval before implementation. Informational filings for previously approved programs are considered approved upon submission and may be implemented, provided they are submitted to FRA no later than 30 days after the end of the calendar year in which the modifications occurred. In addition, the informational filing must contain the same information as required in the initial filing (e.g., description of new or refresher courses, OJT, or practice sessions added, changes to delivery of training, or qualifying employees).

A student's training transcript or training record must be provided by the TO/LI to any employer upon request by the student.

§ 243.113, Electronic and written program submission requirements

Employers with 400,000 or more total employee work hours annually and TO/LIs must submit training programs (including model programs) electronically via FRA's Web portal. Before electronic submission, the employer, TO/LI, or association must provide the following

information at the FRA Web portal to gain access:

1. Name of employer, TO/LI, or association;
2. POC name and job titles (minimum of two);
3. POC mailing addresses;
4. POC system or main headquarters address located in the United States;
5. POC email address; and
6. POC daytime telephone number.

Written material programs submitted for review must be addressed to: FRA, 1200 New Jersey Avenue SE, Washington, DC 20590. Notice of approval, partial approval, and disapproval will be provided via U.S. mail and/or email.

§ 243.201, Employee qualification requirements

Implementation dates – Depending on size, each employer must declare the designations of its existing safety-related employees by occupational category or subcategory before commencing operations, and only permit designated employees to perform safety-related service in that

category. Employers must follow the implementation dates: September 1, 2020 – Employers with 400,000 or more total employee work hours annually.

January 1, 2022 – Employers with fewer than 400,000 total employee work hours annually.

FRA may grant extensions on a case-by-case basis.

Employers that commence operations after the published implementation dates for filing a program has passed must designate their employees, and either:

- Train those designated employees according to the employer's program;
- Retain records from prior training; or
- Ensure knowledge through performance testing when records are missing.

For new hire employees to become a member of an occupational category, the employee must successfully complete all formal training curriculums, including OJT when required.

When OJT is required, the employee must demonstrate proficiency in all safety-related tasks, to the DI's satisfaction.

Safety-related employees qualified or trained by anyone other than the current employer may be deemed qualified provided:

1. A record of training from the previous entity is obtained; or
2. If no training records exist, the current employer may perform testing to assess the knowledge, skills, and abilities of the employee to be a member of the occupational category.

When an employee has not performed the safety-related duties, or has not received any training

associated with the occupational category in the previous 180 days, testing as described above (Item 2) is required.

§ 243.203, Records

Employee records – Employers must maintain records to prove the qualification status of each of its safety-related railroad employees. Records of former safety-related railroad employees must be retained for 6 years after the employment relationship ends. Current employee records must be accessible at the employer's system headquarters.

The record must contain the following information:

- Employee name.
- Each occupational category or subcategory deemed qualified including date(s).
- Dates and title of each formal training course successfully completed.
- If the course was provided by an FRA-approved TO/LI, attach copy of transcript.
- OJT program unique name or identifier.
- Date OJT successfully completed.
- Name of person(s) who determined the employee is qualified to perform safety-related tasks in occupational category.

Periodic oversight and annual review records must be accessible for 3 calendar years after the end of the year to which the event relates.

TO/LIs must make records available to FRA upon request during normal business hours. In addition, TO/LIs must make an employee's, former employee's, or individual learner's records available to that person or that person's representative upon his or her written authorization (this applies to railroads, holding companies, joint ventures, and contractors).

Electronic records management – Employers and TO/LIs must use reasonable security methods to prevent unauthorized access and ensure data integrity. The program must use an employee ID and password or comparable protocol for program access to include the following standards:

- No two persons may have the same ID.
- A record cannot be deleted or altered by anyone after the record is certified by the author.

Amended records must be:

- Electronically stored apart from the record it amends; or
- Electronically attached as information without changing the original record.

Amended records must uniquely identify the person making the amendment. Employers and TO/LIs must provide FRA access to electronic records in a usable format. Electronic records furnished to FRA must be authenticated by an employer's representative upon request.

Transferring records – Employers ceasing to do business and taken over by another company must transfer records to the new employer. The new employer is required to maintain the records for the remainder of the period prescribed by the regulation.

§ 243.205, Periodic oversight

Periodic oversight is limited in scope and requires focus on FRA regulations pertaining to:

- 49 C.F.R. part 214, Railroad Workplace Safety
- 49 C.F.R. part 218, Railroad Operating Practices
- 49 C.F.R. part 220, Railroad Communications

The periodic oversight is similar to 49 C.F.R. § 217.9, *Program of operational tests and inspections; recordkeeping*, in that it requires structured tests and inspections, which means: (1) a change in the work environment requiring an employee action, and (2) observations to determine compliance with Federal law, regulations, and FRA orders. All railroads regardless of size must conduct periodic oversight. Only qualified supervisors can perform oversight. Railroads are required to identify supervisory personnel in each category or subcategory responsible, except when:

- A contractor is required or voluntarily agrees to provide oversight of its own employees;
- or
- The railroad does not have a qualified supervisor to conduct oversight of a contractor's employees.

A railroad may train a contractor to provide periodic oversight.

Periodic oversight commences the day an employer files its training program with FRA under 49 C.F.R. § 243.101.

Periodic oversight is not required for locomotive engineers and conductors whose oversight is already required by other regulations. However, railroads should use data collected under 49 C.F.R. part 217, Railroad Operating Rules; part 240, Qualification and Certification of Locomotive Engineers; and part 242, Qualification and Certification of Conductors, to determine if additional training is needed to close performance gaps.

Periodic oversight options when contractors are involved – Railroads are not required to conduct periodic oversight of a contractor's employees when the contractor:

- Employs more than 15 employees;
- Directly trains its own employees for safety-related duties; and
- Employs supervisors capable of periodic oversight.

If all three conditions are met, the contractor is obligated to provide oversight of its own employees.

Railroad duty to contractors – A railroad is not required to conduct operational tests on contractor employees working on its property. If a railroad conducts oversight and observes contractor employee noncompliance, the railroad has a duty to notify both the employee and the employer/contractor.

Detailed records – each employer that conducts periodic oversight must keep a record of each test. The record must include the following information:

Date, time, and location of the test or inspection.

Result of the test or inspection.

The records must specify each person administering tests and inspections, and each person tested.

The record must also indicate whether the employee complied with monitored duties, and any intervention used to remediate the noncompliance.

§ 243.207, Annual review

The annual review is to assess if any training program improvements are possible by reviewing information that may indicate gaps in employee knowledge or performance. An annual review is not required for a railroad with fewer than 400,000 employee work hours annually or contractors, although contractors must use any information provided by a railroad to adjust training that is specific to personal and work-group safety.

Railroads are required to designate a person(s) to conduct a written annual review. The annual review must be designed to identify knowledge or performance gaps in occupational categories and determine whether adjustments to the training component of the program are the appropriate intervention to close those gaps or otherwise improve the effectiveness of the program.

Sources of information for the annual review include:

- Periodic oversight data as required by 49 C.F.R. § 243.205.
- Accident/incident data.
- FRA inspection report data.
- Employee post-course training evaluation feedback (if available).
- Feedback from labor organizations (if available).

The annual review must be completed before September 1 of each year.

§ 243.209, Railroad maintained list of contractors utilized

Railroads that use contractors for safety-related duties must maintain a list at its system headquarters with the following information:

- The full corporate or business name of the contractor.
- Contractor's primary business address, email address, and primary telephone number.

WHISTLEBLOWER PROTECTION

I. WHISTLEBLOWER PROTECTIONS:

A railroad may not discharge, demote, suspend, reprimand, or in any other way discriminate, in whole or in part, against an employee for the following:

- (1) for assisting in an any investigation relating to a violation of federal law, rule, or regulation relating to railroad safety or security, gross fraud, waste, or abuse of Federal grants or other public funds to be used for rail safety or security. This includes protection for providing such information to a supervisor or such other person who has the authority to investigate, discover, or terminate the misconduct;
- (2) to refuse to violate or assist in the violation of a rail safety or security requirement;
- (3) file a complaint related to a violation of rail safety or security law or regulation, or testify in such a proceeding;
- (4) notifying the railroad or Secretary of a work-related personal illness or injury;
- (5) cooperating with a safety or security investigation by the Sec. of Transportation, Secretary of Homeland Security, or the National Transportation Safety Board;
- (6) furnishing information to the NTSB or any other public official relating to an accident or incident resulting in an injury or death or damage to property. Such protections also apply to reporting a hazardous condition, refusing to work when confronted by a hazardous condition, or refusing to authorize the use of defective hazardous equipment.

(7) Prompt medical attention.

A railroad or person shall not deny, delay, or interfere with the medical or first aid treatment of an injured employee. If transportation to a hospital is requested by an injured employee, the railroad shall promptly arrange to have the injured employee transported to the nearest medically appropriate hospital. A railroad shall not discipline, or threaten discipline to an employee seeking medical treatment, or for following orders or a treatment plan of a treating physician. Provided, however, it will not be a violation if the refusal by the railroad is pursuant to the FRA's medical standards regs. or a carrier's medical standards for fitness for duty.

II. PROCEDURES FOR SEEKING RELIEF:

Within 180 days after an alleged violation occurs, a complaint must be filed with the Secretary of Labor.²¹⁴⁴/An OSHA investigator will review the complaint and interview witnesses. He/she will make a recommendation. If either side is not satisfied with the recommendation, an appeal may be taken to an Administrative Law Judge. Such appeal must be filed within 30 days. A further appeal may be taken to the Administrative Review Board. If the Secretary of Labor has not issued a decision in 210 days, the employee may file a lawsuit in a

⁴⁴ On December 5, 2013, OSHA announced that, in addition to paper filing, employees will be able to file complaints online.

U.S. district court, and seek a jury trial. It shall be a full review of the facts. There is no specific statute of limitations in the whistleblower law. However, a catch-all federal law applies. 28 U.S.C 1658(a) states: "Except as otherwise provided by law, a civil action arising under an Act of Congress enacted after the date of enactment[Dec. 1, 1990] of this section may not be commenced later than 4 years after the cause of action accrues."

Also, any final decision by the Secretary of Labor may be appealed by filing an appeal in the U.S. court of appeals for the circuit in which the violation occurred or the circuit in which the employee resided on the date of such violation. The petition for review must be filed within 60 days of the final order.

Burden of Proof:

The employee need only show that his protected activity was a 'contributing factor' in the retaliatory discharge or discrimination, not the sole or even predominant cause. In other words, a contributing factor is any factor, which tends to affect in any way the outcome of the decision. This means that an employee does not have to prove his protected conduct was a significant, motivating, substantial, or predominant factor in an adverse personnel action. In other words, if the protected activity played any part at all, even to the slightest degree, then it is a "contributing factor."

The Railroad's burden of proof is much higher than an employee's. Once the employee proves his initial case as mentioned above, the burden shifts to the railroad to demonstrate by clear and convincing evidence the railroad would have taken the same unfavorable personnel action in the absence of the protected activity.

No Need to Prove Retaliatory Motive

An employee need not demonstrate the existence of a retaliatory motive on the part of the supervisory employee taking the alleged prohibited personnel action in order to establish that his disclosure was a contributing factor to the adverse personnel action."

Meaning of Disparate Treatment

Even if an injured employee violates a Rule, the railroad nevertheless violates the whistleblower law if it disciplines that injured employee after ignoring other employees who followed the same practice. The key is whether the railroad treats one employee differently from another.

III. REMEDIES:

Remedies shall include reinstatement with the same seniority, back pay with interest, and including compensation for special damages(such as, retirement rights, insurance, and emotional distress) and , court costs, expert witness fees, and reasonable attorneys' fees. In addition, relief may include punitive damages not to exceed \$250,000.

Nothing herein preempts or diminishes any other rights against harassment, etc., provided by either Federal or State law, nor diminishes any rights under collective bargaining agreements. For example, the employee may seek relief under the whistleblower law, in addition to any rights he/she has under the railway Labor Act. Keep in mind, even if the employee loses has Railway

Labor Act case, if the whistleblower case is proven, the OSHA has the power to order reinstatement.

No agency may disclose the name of an employee who has provided information about an alleged violation of this section.

IV. SOME EXAMPLES OF HARASSMENT AND INTIMIDATION

1. Supervisors discouraging employees from filing accident reports;
2. Targeting employees for increased monitoring and testing.(The close supervisor scrutiny includes more frequent safety assessments; alcohol/ drug testing);
3. Supervisors attempting to influence medical care;
4. Light duty programs where injured employees come to work, but sit and do nothing. (This allows a railroad to minimize reporting of lost work days);
5. Availability policies where employee must work a certain number of days a year or is no longer a full time employee;
6. Supervisor compensation based in part on the number of reported injuries;
7. Employees being assigned "points" for safety incidents, injuries regardless of cause;
8. You are injured, and the railroad supervisor requires you to give a statement before allowing you to receive medical care.

V. OSHA AGREEMENT WITH BNSF:⁴⁵

OSHA has signed an agreement with the BNSF Railway Co. for a revision of some personnel policies that OSHA alleged violated the whistleblower law. The major provisions include:

1. Changing BNSF's disciplinary policy so that injuries no longer play a role in determining the length of an employee's probation following a record suspension for a serious rule violation. As of Aug. 31, 2012, BNSF has reduced the probations of 136 employees who were serving longer probations because they had been injured on-the-job.
2. Eliminating a policy that assigned points to employees who sustained on-the-job injuries.
3. Revising a program that required increased safety counseling and prescribed operations testing so that work-related injuries will no longer be the basis for enrolling employees in the program. As part of the negotiations leading up to the accord, BNSF removed from the program approximately 400 workers.

⁴⁵ To date, no other railroad has entered into such an agreement with OSHA.

4. Instituting a higher level review by BNSF's upper management and legal department for cases in which an employee who reports an on-duty personal injury is also assessed discipline related to the incident giving rise to the injury.
5. Implementing a training program for BNSF's managers and labor relations and human resources professionals to educate them about their responsibilities under the FRSA. The training will be incorporated into BNSF's annual supervisor certification program.
6. Making settlement offers in 36 cases to employees who filed whistleblower complaints with OSHA alleging they were harmed by one or more of the company's previous policies.

49 U.S.C. §20109

NOTE: The FRA also has a regulation covering harassment and intimidation. A railroad shall adopt an Internal Control Plan which prohibits harassment and intimidation of any employee that is designed to prevent an employee from receiving proper medical treatment, or from reporting an accident, incident, injury or illness. Unlike the whistleblower law, the employee does not receive compensation for any violation. 49 C.F.R §225.33.

NO REQUIREMENT TO WORK IF EXPOSED TO IMMINENT DANGER

A railroad may not discharge or in any manner discriminate against an employee for refusing to work when confronted by a hazardous condition if

(a) the refusal is made in good faith and no reasonable alternative to refusal to work is available; and

(b) the hazardous condition is of such a nature that a reasonable person would conclude that:

- (1) The condition presents an imminent danger of death or serious injury; or
- (2) There is insufficient time to eliminate the danger through resort to regular statutory channels; and

(c) the employee, where possible, has notified the employer of his concern of such hazardous condition and of his intention not to perform the work unless the condition is corrected immediately.

The remedies for a violation are the same as set forth in the other whistleblower requirements.

49 U.S.C. § 20109(b)

FREIGHT CAR SAFETY STANDARDS

The freight car safety standards set forth in detail all of the components of a freight car

which may be considered to be defective. The components covered by the standards are wheels,^{46/} axles, plain bearing box, roller bearing, trucks, car bodies, couplers, and cushioning devices. In general, the various components are considered to be defective if they are cracked, broken, portions missing, or worn.

A railroad freight car which has any component which is defective under the regulations may be moved to another location for repair only if a person designated by the railroad shall determine that (a) it is safe to move the car and (b) the maximum speed and other restrictions necessary for safe movement. The person in charge of the train shall be notified in writing and inform all other crew members of the presence of the defective car and the restrictions upon movement. In addition, a bad order tag shall be securely attached to the side of the car. A copy of each tag shall be retained for 90 days by the railroad.

At each location where a freight car is placed in a train, the freight car shall be inspected before the train departs. In addition, there are periodic inspections required. (See, this book under heading **Testing and Inspections of Power Brakes**.)

The safety appliances regulations provide additional requirements for other components of a car. Below is the Table of Contents of the regulation:

Subpart A: General

- §215.3 - Application.
- §215.11 - Designated inspectors.
- §215.5 - Definitions.
- §215.13 - Pre-departure inspection.
- §215.7 - Prohibited acts.
- §215.15 - Periodic inspection.
- §215.9 - Movement of defective cars for repair.
- §215.1 - Scope of part.

Subpart B: Freight Car Components

- §215.129 - Defective cushioning device.
- §215.115 - Defective roller bearing.
- §215.101 - Scope.
- §215.123 - Defective couplers.
- §215.109 - Defective plain bearing box: Journal lubrication system.
- §215.117 - Defective roller bearing adapter.
- §215.103 - Defective wheel.
- §215.125 - Defective uncoupling device.

⁴⁶ FRA has granted a master waiver of the Freight Car Safety Standards permitting continued use of discolored heat-treated, curved plate wheels, which have superior resistance to thermal abuse. FRA has stated that data gathered under the waiver, together with results of analysis already provided, may support a permanent change in the regulation.

§215.111 - Defective plain bearing.
§215.119 - Defective freight car truck.
§215.105 - Defective axle.
§215.127 - Defective draft arrangement.
§215.113 - Defective plain bearing wedge.
§215.121 - Defective car body.
§215.107 - Defective plain bearing box: General.

Subpart C: Restricted Equipment

§215.203 - Restricted cars.
§215.201 - Scope.
Subpart D: Stenciling

Appendix D to part 215 - Pre-departure Inspection Procedure
Appendix A to part 215 - Railroad Freight Car Components
Appendix B to part 215 - Schedule of Civil Penalties 1
Appendix C to part 215 - FRA Freight Car Standards Defect Code

REFLECTORIZATION OF FREIGHT CARS

§ 224.101 General requirements.

Freight cars shall be equipped with retro-reflective sheeting that conforms to the requirements of this part, and shall be inspected and maintained in accordance with this subpart or in accordance with an alternative standard providing at least an equivalent level of safety after special approval of FRA under § 224.15.

§ 224.103 Characteristics of retro-reflective sheeting.

(a) **Construction.** Retro-reflective sheeting shall consist of a smooth, flat, transparent exterior film with micro-prismatic retro-reflective elements embedded in or suspended beneath the film so as to form a non-exposed retro-reflective optical system.

(b) **Color.** Retro-reflective sheeting applied pursuant to this part shall be yellow, fluorescent yellow, or white as specified by the chromaticity coordinates of ASTM International's Standard D 4956-04, "Standard Specification for Retro-reflective Sheeting for Traffic Control." The Director of the Federal Register approves the incorporation by reference of this standard in this section in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated standard from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959 or at <http://www.astm.org>.

You may inspect a copy of the incorporated standard at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Ave., S.E., Washington, DC 20580, or at the National Archives and Records Administration (NARA). For information on the availability of this

material at NARA, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(c) **Performance.** Retro-reflective sheeting applied pursuant to this part shall meet the requirements of ASTM D 4956-04, for Type V Sheeting if metalized or Type VII Sheeting if non-metalized, except for the initial minimum values of the coefficient of retroreflection, and shall, as initially applied, meet the minimum values for the coefficient of retroreflection specified in Table 1 of this subpart.

TABLE 1 OF SUBPART B.—MINIMUM COEFFICIENT OF RETROREFLECTION (RA) (IN CANDELA/LUX/METER²) REQUIREMENT FOR RETROREFLECTIVE SHEETING (MINIMUM PHOTOMETRIC PERFORMANCE REQUIREMENTS)

Entrance angle	Observation angle			
	0.2 Degree		0.5 Degree	
	Yellow or fluorescent yellow	White	Yellow or fluorescent yellow	White
-4°	400	600	100	160
30°	220	350	45	75

(d) **Certification.** The characters “FRA-224”, constituting the manufacturer’s certification that the retro-reflective sheeting conforms to the requirements of paragraphs (a) through (c) of this section, shall appear at least once on the exposed surface of each piece of sheeting in the final application. The characters shall be a minimum of three millimeters high, and shall be permanently stamped, etched, molded, or printed within the product and each certification shall be spaced no more than four inches apart.

(e) **Alternative standards.** Upon petition by a freight rolling stock owner or railroad under § 224.15, the Associate Administrator may approve an alternative technology as providing equivalent safety. Any such petition shall provide data and analysis sufficient to establish that the technology will result in conspicuity and durability at least equal to sheeting described in paragraphs (a) through (c) applied in accordance with this part and will present a recognizable visual target that is suitably consistent with freight rolling stock equipped with retro-reflective sheeting meeting the technical requirements of this part to provide the intended warning to motorists.

§ 224.105 Sheeting dimensions and quantity.

Retro-reflective sheeting shall be applied along the length of each railroad freight car and locomotive side as described in § 224.106. Unless otherwise specified, retro-reflective sheeting applied under this part shall be applied in strips 4 inches wide and 18 or 36 inches long, as

practicable. The amount of retro-reflective sheeting to be applied to each car or locomotive subject to this part is dependent on the length of the car or locomotive and the color of the sheeting. For purposes of this part, the length of a railroad freight car or locomotive is measured from endsill to endsill, exclusive of the coupler and draft gear. Each side of a railroad freight car subject to this part, including each unit of multi-unit cars, and each side of a locomotive subject to this part must be equipped with at least the minimum amount of retroreflective sheeting specified in Table 2 of this subpart.

TABLE 2 OF SUBPART B.—MINIMUM QUANTITY REQUIREMENT FOR RETRO-REFLECTIVE SHEETING ON FREIGHT ROLLING STOCK

Freight car or locomotive length	Minimum area of retroreflective sheeting required (per car/locomotive side)—yellow sheeting (ft ²)	Minimum area of retroreflective sheeting required (per car/locomotive side)—white sheeting (ft ²)
Less than 50 ft.	3.5	4.0
Over 50 ft. to 60 ft	4.0	5.0
Over 60 ft. to 70 ft	4.5	5.5
Over 70 ft. to 80 ft	5.0	6.0
Over 80 ft. to 90 ft	5.5	7.0
Over 90 ft. to 100 ft. ¹	6.0	7.5

¹ Freight cars or locomotives over 100 ft. in length must be equipped with an additional one-half a square foot of sheeting on each side for every additional 10 feet of length.

§ 224.106 Location of retro-reflective sheeting.

(a) ***Railroad freight cars.*** The retro-reflective sheeting shall be applied along the length of each railroad freight car side in the manner provided by a uniform industry standard accepted by the Associate Administrator that provides for distribution of material along the length of each car and as close as practicable to 42 inches above the top of rail. In the event such a standard is not proffered by industry or accepted by the Associate Administrator, the criteria set forth in this subpart shall apply. Retro-reflective sheeting applied under this part must be located clear of appurtenances and devices such as ladders and other safety appliances, pipes, or other attachments that may obscure its visibility. Retro-reflective sheeting need not be applied to discontinuous surfaces such as bolts, rivets, door hinges, or other irregularly shaped areas that may prevent the sheeting from adhering to the car sides. In addition, retro-reflective sheeting need not be applied over existing or required car stencils and markings. If necessary to avoid appurtenances, discontinuous surfaces, or existing or required car markings or stencils, 4x18 and 4x36 inch strips of retro-reflective material may be divided into 4x9 inch strips and applied on either side of the appurtenance, discontinuous surface, or car markings or stencils, as practicable. Unless otherwise specified, retro-reflective sheeting shall be applied along the sides of freight rolling stock at intervals not to exceed every 12 feet, as practicable. If it is not practicable to apply retro-reflective sheeting every 12 feet because of existing stencils appurtenances, or discontinuous surfaces, the sheeting shall be applied at the next smallest interval practicable.

(1) **General rule.** On railroad freight cars other than flat cars and tank cars, retro-reflective sheeting shall be applied in either a vertical or horizontal pattern along the length of the car sides, with the bottom edge of the sheeting as close as practicable to 42 inches above the top of rail. Retro-reflective sheeting shall not be applied below the side sill.

(i) **Vertical application.** If retro-reflective sheeting is applied in a vertical pattern, at least one 4x36 inch strip or two 4x18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. Between these two vertical end strips, a minimum of one 4x18 inch strip shall be applied at least every 12 feet, as practicable.

(ii) **Horizontal application.** If retro-reflective sheeting is applied in a horizontal pattern, at least 4 x 36 inch strip, or two 4x 18 inch strips above or next to the other, shall be applied as close to each end of the car as practicable. Between these end strips, a minimum of one 4 x 18 inch strip shall be applied at least every 12 feet, as practicable.

(2) **Tank cars.** On tank cars, retro-reflective sheeting shall be applied vertically to each car side and centered on the horizontal centerline of the tank, or as near as practicable. If it is not practicable to safely apply the sheeting centered vertically about the horizontal centerline of the tank, the sheeting may be applied vertically with its top edge no lower than the horizontal centerline of the tank. A minimum of either one 4 x 36 inch strip or two 4 x 18 in strips, one above the other, shall be applied as close to each end of the car as practicable. Between those two end strips, a minimum of one 4 x 18 inch strip shall be applied at least every 12 feet, as practicable. Retro-reflective sheeting applied under this part shall not be located in the spillage area directly beneath the manway used to load and unload the tank.

(3) **Flat cars.** On flat cars, retro-reflective sheeting shall be applied in a horizontal pattern along the length of the side sill with the bottom edge of the sheeting no lower than the bottom of the side sill and the top edge of the sheeting no higher than the top of the car deck or floor. At least two 4x18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. If the side sill is less than 8 inches wide, one 4x36 inch strip, or two 4x18 inch strips may be applied one next to the other, dividing the strips into nine inch segments as necessary in accordance with paragraph (a) of this section. Between the two end strips, a minimum of one 4x18 inch strip shall be applied at least every 12 feet, as practicable. If a car has a separate rack structure, retro-reflective sheeting may be applied to the flat car portion only in accordance with the requirements of this section. For cars without continuous side sills, retro-reflective sheeting may be applied to other surfaces inboard of the sides, such as the center sill, provided that the sheeting is not obscured by other components.

(4) **Cars of special construction.** This paragraph applies to any car the design of which is not compatible with the patterns of application otherwise provided in this section. Retro-reflective sheeting shall conform as closely as practicable to the requirements of paragraphs (a)(1) through (a)(3) of this section and shall have the minimum amount of sheeting described in § 224.105 distributed along the length of each car side.

(b) **Locomotives.** Locomotives subject to this part shall be equipped with at least the minimum amounts of retro-reflective sheeting required by § 224.105 either in strips four inches wide and 18 or 36 inches long and spaced as uniformly as practicable along the length of the locomotive sides, or in one continuous strip, at least four inches wide, along the length of the locomotive. Retro-

reflective sheeting applied to locomotive sides shall be applied as close as practicable to 42 inches from the top of the rail.

Appendix A—Schedule of Penalties

Appendix B—Form Reflectorization Implementation Compliance Report

Appendix C—Guidelines for Submitting Reflectorization Implementation Compliance Reports

SAFETY APPLIANCES

The Safety Appliance Acts provide that all locomotives and cars be equipped with power brakes so that brakemen will not be required to use the hand brake for that purpose of controlling the speed of trains; that all cars must be equipped with automatic couplers so that cars may be coupled automatically by impact, and uncoupled without the necessity of men going between the ends of the cars; and that all cars must be equipped with secure grab irons and handholds on their sides and ends for use in coupling and uncoupling. The use and placement of these safety appliances are required to be uniform.

One section of these Acts cover power brake systems and authorizes the Secretary of Transportation to set minimum percentages of power brake cars on any train. It also provides that the Secretary shall fix the rules, standards, and instructions for the installation, inspection, maintenance, and repair of power and train brakes, with the proviso that any changes in the rules must be for the sole purpose of achieving safety. This will be summarized in detail under the separate heading of "Power Brakes."

The FRA's safety appliances regulations set forth the requirements for the **dimensions, location, number, and manner of application** of the safety appliances on all types of cars and locomotives including track motor cars. The safety appliances covered are hand brakes, brake step, running board, sill steps, ladders, end ladder clearance, roof handholds, side handholds, horizontal end handholds, vertical end handholds, uncoupling levers and drawbars.

If a car becomes defective or insecure while in transit it may be hauled to the nearest available repair point even if it is to a point on a connecting carrier's line. If the nearest point is on the railroad hauling the car it must be repaired on that railroad. In all cases it must be necessary to make such repairs and such repairs cannot be made except at such a repair point.

In 2011, the FRA amended the safety appliance regulations to permit railroads to submit requests for the approval of existing industry standards relating to the arrangements on newly constructed railroad equipment in lieu of the specific provisions contained in part 231. FRA stated that its purpose was to allow it to consider technological advancements and ergonomic design standards for new construction.

An outline of the FRA safety appliance regulations is listed below:

49 C.F.R. PART 231-RAILROAD SAFETY APPLIANCE STANDARDS

Contents

§231.0 Applicability and penalties.

§231.1 Box and other house cars built or placed in service before October 1, 1966.

- §231.2 Hopper cars and high-side gondolas with fixed ends.
- §231.3 Drop-end high-side gondola cars.
- §231.4 Fixed-end low-side gondola and low-side hopper cars.
- §231.5 Drop-end low-side gondola cars.
- §231.6 Flat cars.
- §231.7 Tank cars with side platforms.
- §231.8 Tank cars without side sills and tank cars with short side sills and end platforms.
- §231.9 Tank cars without end sills.
- §231.10 Caboose cars with platforms.
- §231.11 Caboose cars without platforms.
- §231.12 Passenger-train cars with wide vestibules.
- §231.13 Passenger-train cars with open-end platforms.
- §231.14 Passenger-train cars without end platforms.
- §231.15 Steam locomotives used in road service.
- §231.16 Steam locomotives used in switching service.
- §231.17 Specifications common to all steam locomotives.
- §231.18 Cars of special construction.
- §231.19 Definition of "Right and Left."
- §231.20 Variation in size permitted.
- §231.21 Tank cars without underframes.
- §231.22 Operation of track motor cars.
- §231.23 Unidirectional passenger-train cars adaptable to van-type semi-trailer use.
- §231.24 Box and other house cars with roofs. 16 feet 10 inches or more above top of rail.
- §231.25 Track motorcars (self-propelled 4-wheel cars which can be removed from the rails by men).
- §231.26 Pushcars.
- §231.27 Box and other house cars without roof hatches or placed in service after October 1, 1966.
- §231.28 Box and other house cars with roof hatches built or placed in service after October 1, 1966.
- §231.29 Road locomotives with corner stairways.
- §231.30 Locomotives used in switching service.
- §231.31 Drawbars for freight cars; standard height.
- §231.33 Procedure for special approval of existing industry safety appliance standards.
- §231.35 Procedure for modification of an approved industry safety appliance standard for new railcar construction.

Appendix A to part 231-Schedule of Civil Penalties

49 U.S.C. §§ 20301-20306, 20102

49 C.F.R. §§ 231.1-231.30

POSITIVE TRAIN CONTROL⁴⁷

§ 236.1001 Purpose and scope

This section describes both the purpose and the scope of subpart I. Subpart I provides performance-based regulations for the development, test, installation, and maintenance of Positive Train Control (PTC) Systems, and the associated personnel training requirements, that are

⁴⁷ Congress has extended the effective date of PTC until December 31, 2020.

mandated for installation by FRA. This subpart also details the process and identifies the documents that railroads and operators of passenger trains are to utilize and incorporate in their PTC implementation plans. This subpart also details the process and procedure for obtaining FRA approval of such plans.

§ 236.1003 Definitions

Paragraph (a) reinforces the applicability of existing definitions of subparts A through H. The definitions of subparts A through H are applicable to subpart I, unless otherwise modified by this part.

Paragraph (b) introduces definitions for a number of terms that have specific meanings within the context of subpart I.

§ 236.1005 Requirements for Positive Train Control Systems

Section 236.1005 includes the minimum statutory requirements and provides information defining the necessary PTC functions and the situations under which PTC systems must be installed. Each PTC system must be reliable and perform the functions specified in the new law. Paragraph (a)(1)(i) applies the statutory requirement that a mandatory PTC system must be designed to prevent train-to-train collisions.

A PTC system mandated by this subpart is not required to prevent a collision caused by a train that derails and moves over an area not covered by track and onto a neighboring or adjacent track (known as a “secondary collision”). Available PTC technology does not track the rear end of each train as a target that another train must be stopped short of but instead relies on the signal system to indicate the appropriate action. In non-signalized territory the PTC system can enforce the limits of the authority and the upper limit of restricted speed, but it cannot guarantee that the trains sharing the authority will not collide.

At diamond crossings, paragraph (a)(1)(i) requires certain protections for such operations. Those that have one or more PTC routes intersecting with one or more routes without a PTC system must have an interlocking signal arrangement in place developed in accordance with subparts A through G of part 236 and a PTC enforced stop on all PTC routes. If the maximum speed on at least one of the intersecting tracks is more than 40 miles per hour, then the routes without a PTC system must also have either some type of positive stop enforcement or a split-point derail on each approach to the crossing and incorporated into the signal system, and a permanent maximum speed limit of 20 miles per hour.

The non-PTC line may be outfitted with some other mechanism that ensures a positive stop of the unequipped crossing train.

--Overspeed derailments.

Paragraph (a)(1)(ii) states that PTC systems mandated under subpart I be designed to prevent overspeed derailments and addresses specialized requirements for doing so.

--Roadway work zones.

Paragraph (a)(1)(iii) requires PTC systems mandated under subpart I be designed to

prevent incursions into established work zone limits.

--Movement over main line switches.

Paragraph (a)(1)(iv) requires PTC systems mandated under subpart I be designed to prevent the movement of a train through a main line switch in the improper position. Paragraph (a)(2) requires PTC systems to obey and enforce all such indications and authorities provided by these safety-critical underlying systems.

--Other functions.

Under §236.1005 (a)(3), each PTC system required by subpart I must also perform any other functions specified in subpart I. In addition to the general performance standards required under paragraphs (a)(1)-(3), paragraph (a)(4) sets more prescriptive performance standards, such as preventing unintended movements onto PTC main lines and possible collisions at switches by ensuring proper integration and enforcement of the PTC system as it relates to derails and switches protecting access to the main line or at highway-rail grade crossings.

Paragraph (a)(4)(v) states that hazard detectors integrated into the PTC system—as required by paragraph (c) of this section or the FRA approved Positive Train Control Safety Plan (“PTCSP”)—must provide an appropriate warning and associated applicable enforcement through the PTC system.

Paragraph (a)(5) addresses the issue of broken rails, which is the leading cause of train derailments. The rule strictly limits the speed of passenger and freight operations in those areas where broken rail detection is not provided.

--Deployment requirements.

Paragraph (b) contains requirements for where and when PTC systems must be installed. Each applicable railroad carrier must implement a PTC system in accordance with its PTC Implementation Plan (PTCIP) The PTCIP was statutorily required to be submitted by April 16, 2010, and must explain how the railroad or railroads intend to implement an operating PTC system by December 31, 2015. Except as provided under § 236.1006, onboard components required for and responsive to the PTC system must be installed on each lead locomotive that operates over those tracks, and on any rear end unit control cab locomotive that is capable of controlling the train when it moves in the reverse direction. FRA has limited a Class I railroad’s main lines to tracks and segments documented in the timetables last filed before October 16, 2008, by the Class I railroads with FRA under § 217.7 of this title over which 5 million or more gross tons of railroad traffic is transported annually If all trains in the location are limited to restricted speed, they will be considered tracks other than main line by definition. However, for any tracks used by passenger trains, any designation of track as other than main line will be performed on a case-by-case basis in accordance with §236.1019.

Once a Class I railroad’s main lines are determined, a PTC system must be installed and operated on those main line tracks over which passenger trains are operated or any PIH materials are transported, and on all railroads’ main lines over which regularly scheduled intercity rail passenger transportation or commuter rail passenger transportation is provided. After December 31, 2018, no intercity or commuter passenger operations may operate on any track that does not

have a PTC system installed, except as described in the proposed rule. A PTC system must be installed on any track—regardless of its ownership or the weight of annual traffic—before any intercity or commuter rail passenger operation may operate. Thus, any passenger or freight track over which such passenger trains operate must be PTC equipped.

For the purposes of passenger trains, a main line is determined regardless of the amount (i.e., 5 million or more gross tons annually), except where temporary rerouting may occur in accordance with §236.1005(g)-(k).

The rule also provides an exception for those main lines that would not be main lines but for the existence of passenger trains and are not deemed by FRA main lines due to limited or no freight railroad operations. This exception is permissible pursuant to 49 U.S.C. §20157(i)(2)(B). In addition to determining which tracks require PTC system implementation and operation, paragraph (b) requires such installation be performed by the “host railroad.” Subpart I makes a distinction between the railroad that has effective operating control over a segment of track, and a railroad that is simply passing its trains across the same segment of track. This is in contrast to a tenant railroad, which is any railroad that uses a segment of track but does not exercise operational control of the movements of its trains. The terms “host railroad” and “tenant railroad” are defined as such in the definitions listed under § 235.1003.

Paragraph (b)(2) states that the determination of Class I freight railroad main lines required to be equipped be initially established and reported as follows using a 2008 traffic base for gross tonnage and determine the presence of PIH traffic based on 2008 shipments and routings. If increases in traffic occur that require a line to be equipped and the PTCIP has already been filed, an amendment would be required. Gross tonnage would be measured over two years to avoid unusual spikes in traffic driving investments inappropriately. However, if the 5 million gross tons threshold was met based on the prior two years of traffic, and PIH was added to the route, the railroad would be required to promptly file a PTCIP amendment and thereafter equip the line by the end of December 31, 2015 or within two years, whichever is later.

Once a PTC system is installed, it cannot be removed or treated as inoperative unless such discontinuance or modification is approved by FRA in accordance with § 236.1021.

Paragraph (c) provides information regarding the installation and integration of hazard detectors into PTC systems.

Paragraph (c)(3) provides, in the case of high speed service (as described in § 236.1007 as any service operating at speeds greater than 90 mph), that FRA will require the hazard analysis to address any hazards on the route, along with a reason why additional hazard detectors are not required to provide warning and enforcement for hazards not already protected by an existing hazard detector.

Under paragraph (d), each lead locomotive operating with a PTC system be equipped with an operative crashworthy event recorder that captures safety-critical data routed to the engineer’s display that the engineer must obey, as well as the text of mandatory directives and authorized speeds.

A PTC system required by subpart I must be designed to prevent the movement of a train through a main line switch in the wrong position. Paragraph (e) provides information on switch point monitoring, indication, warning of misalignment, and associated enforcement.

Paragraph (e)(2) addresses movements over switches in dark territory and under conditions of excessive risk, even if in block signal territory

Paragraph (f) provides information for determining whether a PTC system is considered to be configured to prevent train-to-train collisions, as required under paragraph (a).

Paragraphs (g) through (k) all concern situations where temporary rerouting may be necessary (emergencies and planned maintenance) and would affect application of the operational rules under subpart I.

§ 236.1006 Equipping locomotives operating in PTC territory

Under paragraph (a), all trains operating over PTC territory must be PTC-equipped. Each lead locomotive to be operated with a PTC onboard apparatus if it is controlling a train operating on a track equipped with a PTC system in accordance subpart I. The PTC onboard apparatus should operate and function in accordance with the PTCSP governing the particular territory. The conductor shall have equal access to the computer screen.

§ 236.1007 Additional Requirements for High Speed Service

Section 236.1007 sets the intervals for the high speed safety performance targets for operations up to 125 miles per hour.

§ 236.1009 Procedural requirements

As of April 16, 2010, each Class I railroad carrier and each entity providing regularly scheduled intercity or commuter rail passenger transportation shall develop and submit to FRA a plan for implementing a PTC system by December 31, 2015, and that FRA shall not permit the installation of any PTC system or component in revenue service unless the Administrator has certified them through the approval process contained in this part.

There are three major elements of the PTC System Certification process: PTC Implementation Plan (PTCIP) submission and approval, receipt or use of a Type Approval number—which may be provided with approval of a PTC Development Plan (PTCDP)—and PTC Safety Plan (PTCSP) submission to receive PTC System Certification. While § 236.1009 provides for the procedural requirements for this process, the contents for the applicable filings are provided for under § 236.1011, 236.1013, and 236.1015. The PTCIP is the written plan that defines the specific details of how and when the railroad will implement the PTC system. The PTCDP provides a detailed discussion of specific elements of the proposed technology and product that will be used to implement PTC. Approval of the PTCDP comes in the form of a Type Approval number that applies to the subject PTC system. The PTCSP provides the railroad-specific elements demonstrating that the system, as installed, meets the required safety performance objectives.

Approval of the PTCSP comes in the form of a PTC System Certification.

§ 236.1011 PTC Implementation Plan content requirements

This section describes the minimum required contents of a PTC Implementation Plan. A PTCIP is a railroad's plan for complying with the installation of mandatory PTC systems. The PTCIP consists of implementation schedules, narratives, rules, technical documentation, and relevant excerpts of agreements that an individual railroad will use to complete mandatory PTC implementation.

§ 236.1013 PTCDP content requirements and Type Approval

As noted in the discussion above regarding § 236.1009, each PTCSP must be submitted with a Type Approval number identifying a PTC system that FRA believes could fulfill the requirements of subpart 1. Under § 236.1009, a railroad may submit an existing Type Approval number in lieu of a PTC Development Plan (PTCDP) if the PTC system it intends to implement and operate is identical to the one described in that Type Approval's associated PTCDP. This section describes the contents of the PTCDP required to obtain FRA approval in the form of issuance of a Type Approval number.

§ 236.1015 PTCSP content requirements and PTC System Certification

The PTC Safety Plan (PTCSP) is the core document that provides the Associate Administrator the information necessary to certify that the as-built PTC system fulfills the required statutory PTC functions and is in compliance with the requirements of this subpart. Issuance of a PTC System Certification is contingent upon the approval of the PTCSP by the Associate Administrator. The filing and approval of the PTCSP and issuance of a PTC System Certification is a mandatory prerequisite for PTC system operation in revenue service. Each PTCSP is unique to each railroad and must address railroad-specific implementation issues associated with the PTC system identified by the submitted Type Approval.

§ 236.1017 Independent Third Party Review of Verification and Validation

This requires a railroad to engage in an independent assessment of its PTC system if the FRA determines one is needed. In the event an independent assessment is required, § 236.1017 proposes the applicable rules and procedures. Paragraph (a) establishes factors considered by FRA when requiring a third party assessment.

§ 236.1019 Main line track exceptions

Requests for designation of track over which rail operations are conducted as "other than main line track" for passenger and commuter railroads, or freight railroads operating jointly with passenger or commuter railroads. Such relief may be granted only after request by the railroad or railroads filing a PTCIP and approval by the Associate Administrator.

§ 236.1021 Discontinuances, material modifications, and amendments

This section includes lengthy descriptions of what changes may, or may not, require FRA approval. There are various places elsewhere in subpart I that also require the filing of a RFA.

§ 236.1023 Errors and Malfunctions

In the event of a safety-essential PTC system component failing to perform as intended, under § 236.1023 the cause shall be identified and corrective action be taken without undue delay. Until the repair is completed, the railroad and vendors are required to take appropriate measures to assure the safety of train movements, roadway workers, and on-track equipment. This requirement mirrors the current requirements of 49 C.F.R. § 236.11, which applies to all signal system components.

§ 236.1027 Exclusions.

This section retains similarities to, but also establishes contrasts with, § 236.911, which deals with exclusions from subpart H. In particular, § 236.911(c) offers reassurance that a standalone computer aided dispatching (CAD) system would not be considered a safety-critical processor-based system within the purview of subpart H. §236.911, however, states that “a subsystem or component of an office system must comply with the requirements of this subpart if it performs safety-critical functions within, or affects the safety performance of, a new or next-generation train control system.”

For subpart I, FRA will retain the exception referred to in § 236.911 for CAD systems not associated with a PTC system.

§ 236.1029 PTC system use and en route failures

This section sets out minimum requirements, in addition to those found in the PTC system’s plans, for each PTC system with a PTC System Certification. Railroads are allowed, and encouraged, to adopt more restrictive rules that increase safety.

Paragraph (d) requires that each member of the operating crew can view the PTC display and execute any functions necessary to the crew member's duties. The locomotive engineer shall not be required to perform functions related to the PTC system while the train is moving that have the potential to distract the engineer from the performance of other safety-critical duties.(Where two-person crews are employed, availability of a screen and any needed function keys will enable the second crew person to carry out PTC onboard computer-related activities without distracting the locomotive engineer from maintaining situational awareness of activities outside the locomotive cab. FRA’ s existing regulations for train control in § 236.515 requires that the cab signal display be clearly visible to each member of the crew. FRA believes the decision to operate with one PTC screen, only accessible to the engineer, can only be made after careful analysis of the human factor implications, the associated risks, and the sensitivity of the safety analysis that is used to potentially justify the decision. FRA notes that the principles of crew resource management and current crew briefing practices in the railroad industry require that all members of a functioning team (e.g., engineer, conductor, dispatcher, roadway worker in charge) have all relevant information available to facilitate constructive interactions and permit incipient errors to

be caught and corrected.)

§ 236.1031 Previously approved PTC systems

For PTC systems that have previously been approved or recognized by FRA prior to the adoption of this subpart, FRA has an expedited certification process in this section.

§ 236.1033 Communications and security requirements

Subpart I requires specific communications security requirements for PTC system messages. In data communications, “cleartext” is a message or data in a form that is immediately comprehensible to a human being without additional processing. In particular, it implies that this message is transferred or stored without cryptographic protection.

§ 236.1035 Field testing requirements.

Initial field or subsequent regression testing of a PTC product on the general rail system is often required before the product has been certified in order to obtain data to support the safety case presented in the PTCSP. To ensure the safety of the public and train crews, prior FRA approval is required to conduct test operations on the general rail system. This paragraph sets out an alternative to the waiver process when only part 236 regulations are involved.

§§ 236.1037 through 236.1049

In subpart H, §§236.917 through 236.929 contain various requirements that involve PSPs. FRA believes that these requirements should apply equally to PTC systems governed by subpart I. FRA has included §§ 236.1037 to 236.1049 to inform interested parties how these elements would apply. FRA intends that the meanings of those sections in subpart H, as described in the preamble and final rule, will also apply equally in the context of this proposal.

OPERATING RULES

1. FILING OF OPERATING RULES AND TRAINING

Each railroad shall file with FRA a copy of its operating rules, timetables, and timetable special instructions.

49 C.F.R. Part 217

2. OPERATIONAL TESTS AND INSPECTIONS

Each railroad shall:

- have a written program of operational tests and inspections;
- keep a record of the date, time, place, and result of each operational test and inspection, which shall specify each officer administering the test, and the name of each employee tested. The records shall be retained at system headquarters and at each division headquarters where the tests and inspections are conducted for one calendar year;

--retain a copy of a current program for periodic performance of the tests and inspections;

Reviews of tests and inspections:

(This section does not apply to a railroad with less than 400,000 employee work hours annually).

Each railroad shall conduct periodic reviews and analysis of the program, and keep a copy of the review at each division headquarters or system headquarters as follows:

--The designated officer of each division headquarters or system headquarters(if no system headquarters exist) a written quarterly review of the accident/incident data, the results of prior operational tests and inspections, and other pertinent safety data to identify relevant operating rules related to those accidents/incidents occurring during that quarter.

--The designated officer of each system headquarters office responsible for development and administration of the program of operational tests and inspections shall conduct a review of the program on six month basis to ensure that the quarterly reviews have been properly completed, and appropriate adjustments made, and that the testing officers are properly performing their duties.

--Annual Review. Before March 1 of each year, a railroad(except those with less than 400,000 total employee hours) shall retain a copy at its divisional headquarters and at its system headquarters of the number, type, and result of each operational test and activities. The results shall be retained for 3 years.

--Railroads are permitted to retain results by electronic recordkeeping.

Written program of instruction, training, and examination:

Effective July 1, 2008, each railroad shall maintain a written program of instruction, training, and examination of employees for compliance with the operating rules. The written program shall include procedures covering new technology.

An employee who completes all of the instruction, training, and examination shall be considered qualified.

After Jan. 1, 2009, no employee shall perform work requiring compliance with the operating rules unless qualified on the rules within the previous 3 years.

49 C.F.R. § 217.1-217.13

3. GOOD FAITH CHALLENGE PROCEDURES^{48/}

⁴⁸ The maintenance of way employees have similar protection under Parts 214 and 217.

An employee shall inform the railroad or employer whenever the employee makes a good faith determination that the employee has been directed to either take actions that would violate FRA regulations regarding handling of equipment, switches, and fixed derails, or to take actions that would violate the railroad's operating rules implementing such requirements.

Each railroad or employer shall adopt and implement procedures which guarantee each employee the right to challenge in good faith the procedures of the carrier. There shall be a prompt and equitable resolution of the challenges.

As part of the training, the employee shall be instructed on the procedures required in a good faith challenge. The employee shall be provided a copy of the written procedures.

This will not take away any rights the employee has under collective bargaining agreement, or any federal law.

The written procedures shall include:

--Grant each employee the right to challenge any directive;

--The employee shall not be required to comply with a directive until the challenge is resolved; However, he could be required to perform tasks unrelated to the challenge;

--An employee, other than the challenging employee may be directed to perform the challenged task, so long as such employee is informed of the challenge and does not also make a good faith challenge of the task;

--In the event that the person issuing the directive determines that the challenge was not made in good faith, or that there is no reasonable alternative, an immediate review shall be provided by at least one officer. (This provision does not apply to railroads which have less than 400,000 work hours annually.) This immediate review shall not be conducted by the person issuing the challenged directive, or his subordinate.

--If the officer making the final decision determines that no violation has occurred, and directs the employee to perform the challenged task, he shall inform the employee the Federal law protects him from retaliation if he still refuses to perform the work, and the refusal was lawful and in good faith;

--The employee shall be afforded the opportunity to document electronically or in writing any protest;

--Upon written request, the employee has a right to a further review by a designated officer, within 30 days after expiration of the month during which the challenge occurred. The employer's decision shall be in writing. Each decision shall be maintained for 1 calendar year after the year in which the verification decision was made;

--A copy of all of the procedures shall be kept at the railroad's system headquarters and at each division headquarters.

49 C.F.R. § 218.97

4. SHOVING OR PUSHING MOVEMENTS

Any person violating an operating rule which complies with this section is a violation of this regulation.

The requirements of this part do not apply to rolling equipment intentionally shoved or pushed to permit the rolling equipment to roll without power attached.

Job briefing. Rolling equipment shall not be shoved or pushed until the engineer has been briefed by the employee who will direct the move. The job briefing shall include the means of communication to be used, and how point protection will be provided.

During the shoving or pushing, the employee effecting the movement shall not engage in any unrelated task.

Point Protection. When rolling equipment or lite locomotive is shoved or pushed, point protection shall be provided by a crewmember or other qualified employee by:

--Visually determining that the track is clear. The determination that the track is clear may be made with the aid of monitored cameras or other technological means, provided that it and the procedures for use provide an equivalent level of protection.; and giving signals or instructions necessary to control the movement.

All remote control movements are considered shoving or pushing movements, except when the remote control operator controlling the movement is riding the leading end of the leading locomotive in a position to visually determine conditions in the direction of movement.

When initiating a remote control shoving or pushing movement:

--the remote control operator shall visually determine the direction of movement. If no confirmation is received, the movement shall be ended immediately.

--If technology is relied upon, whether primarily or as a safeguard, to provide pull-out protection by preventing the movement from exceeding the limits of a remote control zone, the technology shall be demonstrated to be failsafe; or to provide suitable redundancy to prevent unsafe failure.

Remote control zone, exception to track is clear requirements. After an initial track is clear determination has been made in an activated remote control zone, it is not necessary to make a new determination prior to each subsequent shoving or pushing movement provided that:

(1) The controlling locomotive of the remote control movement is on the leading end in the direction of movement, i.e., the movement occurs on the pull-out end;

(2) The remote control zone is not jointly occupied; and

(3) The initial determination was made by a crewmember of either:

- (i) The remote control crew;
- (ii) A relieved remote control crew who has transferred the remote control zone directly to the relieving crew; or
- (iii) The last jointly occupying crew who directly communicates, i.e., not through a third party, to a remote control crewmember that the remote control zone is no longer jointly occupied and meets the requirements for track is clear.

Exceptions. A railroad does not need to comply in the following circumstances:

- (1) Push-pull operations when operated from the leading end in the direction of movement, i.e., push mode;
- (2) Shoving or pushing operations with manned helper locomotives or distributed power locomotives assisting a train when the train is being operated from the leading end in the direction of movement;
- (3) During the performance of roadway maintenance activity under the direct control of a roadway worker performing work in accordance with railroad operating rules specific to roadway workers; or
- (4) When the leading end of a shoving movement is on a main track or signaled siding, under the following conditions:
 - (i) The train dispatcher gives authority or permission to make the movement and verifies that:
 - (A) Another movement or work authority is not in effect within the same or overlapping limits unless conflicting movements are protected; and
 - (B) A main track is not removed from service by a work authority within the same or overlapping limits;
 - (ii) Movement is limited to the train's authority;
 - (iii) Movement shall not be made into or within yard limits, restricted limits, drawbridges, or work authority limits;
 - (iv) Movement shall not enter or foul a highway-rail grade crossing or pedestrian crossing except when:
 - (A) Crossing gates are in the fully lowered position; or
 - (B) A designated and qualified employee is stationed at the crossing and has the ability to communicate with trains; or
 - (C) At crossings equipped only with flashing lights or passive warning devices, when it is clearly seen that no traffic is approaching or stopped at the crossing and the leading end of the movement over the crossing does not exceed 15 miles per hour; and
 - (v) Movement shall not be made into or within interlocking limits or controlled point limits unless the following conditions are met:
 - (A) The signal governing movement is more favorable than restricting

aspect;

(B) Each signal governing movement into and through interlocking limits or controlled point limits shall be continuously observed by a member of that crew who is in a position to determine that the train's movement has occupied the circuit controlling that signal as evidenced by that signal assuming its most restrictive aspect; and

(C) The movement does not exceed the train's length.

49 C.F.R. §218.99

5. LEAVING ROLLING AND ON-TRACK MAINTENANCE-OF-WAY EQUIPMENT IN THE CLEAR

(a) Each railroad shall adopt and comply with an operating rule which complies with this section.

When any person violates any requirement of an operating rule which complies with the requirements of this section, that person shall be considered to have violated the requirements of this section.

(b) Rolling and on-track maintenance-of-way equipment shall not be left where it will foul a connecting track unless:

(1) The equipment is standing on a main track and a siding track switch that the equipment is fouling is lined for the main track on which the equipment is standing; or

(2) The equipment is standing on a siding and a main track switch that the equipment is fouling is lined for the siding on which the equipment is standing; or

(3) The equipment is standing on a yard switching lead track, and the yard track switch that the equipment is fouling is lined for the yard switching lead track on which the equipment is standing; or

(4) The equipment is on an industry track beyond the clearance point of the switch leading to the industry.

(c) Each railroad shall implement procedures that enable employees to identify clearance points and a means to identify locations where clearance points will not permit a person to safely ride on the side of a car.

6. HAND OPERATED SWITCHES, INCLUDING CROSSOVER SWITCHES

Each railroad shall adopt and comply with an operating rule which complies with the requirements of this section.

When any person violates any requirement of an operating rule which complies with the requirements of this section, that person shall be considered to have violated the requirements of this section.

Each railroad shall specify minimum requirements necessary for an adequate job briefing.

Employees operating or verifying the position of a hand-operated switch shall:

- (1) Conduct job briefings, before work is begun, each time a work plan is changed, and at completion of the work;
- (2) Be qualified on the railroad's operating rules relating to the operation of the switch;
- (3) Be individually responsible for the position of the switch in use;
- (4) Visually determine that switches are properly lined for the intended route and that no equipment is fouling the switches;
- (5) Visually determine that the points fit properly and the target, if so equipped, corresponds with the switch's position;
- (6) After operating a switch and before making movements in either direction over the switch, ensure that the switch is secured from unintentional movement of the switch points;
- (7) Ensure that a switch is not operated while rolling and on-track maintenance-of-way equipment is fouling the switch, or standing or moving over the switch; and
- (8) After operating a switch, ensure that when not in use, each switch is locked, hooked, or latched, if so equipped.

Rolling and on-track maintenance-of-way equipment shall not foul a track until all hand-operated switches connected with the movement are properly lined, or in the case of hand-operated switches designed and permitted to be trailed through, until the intended route is seen to be clear or the train has been granted movement authority. When a conflicting movement is approaching a hand-operated switch, the track shall not be fouled or the switch operated.

When rolling and on-track maintenance-of-way equipment has entered a track, the hand-operated switch to that track shall not be lined away from the track until the equipment has passed the clearance point of the track.

Additional operational requirements for hand-operated main track switches.

- (a) Each railroad shall adopt and comply with an operating rule which complies with the requirements of this section.
- (b) When any person violates any requirement of an operating rule which complies with the requirements of this section, that person shall be considered to have violated the requirements of this section.

Designating switch position.

The normal position of a hand-operated main track switch shall be designated by the railroad in writing and the switch shall be lined and locked in that position when not in use except

when:

- (1) The train dispatcher directs otherwise with respect to the position of a hand-operated main track switch and the necessary protection is provided; or
- (2) The hand-operated switch is left in the charge of a crewmember of another train, a switch tender, or a roadway worker in charge.

Additional job briefing requirements for hand-operated main track switches.

- (1) Before a train or a train crew leaves the location where any hand-operated main track switch was operated, all crewmembers shall have verbal communication to confirm the position of the switch.
- (2) In the case of exclusive track occupancy authority, foul time, or train coordination, when a roadway worker qualified to operate hand-operated main track switches is granted permission by the roadway worker in charge to occupy or otherwise use the limits of the exclusive track occupancy, such employee receiving permission to occupy the working limits shall report the position of any such switches operated upon expiration of the authority limits to the roadway worker in charge or to a designated intermediary employee who shall convey the switch position to the roadway worker in charge.

Releasing Authority Limits.

In non-signaled territory, before an employee releases the limits of a main track authority and a hand-operated switch is used to clear the main track, and, prior to departing the switch's location, the following conditions are required:

- (1) The employee releasing the limits, after conducting a job briefing in accordance with this subpart, shall report to the train dispatcher that the hand-operated main track switch has been restored to its normal position and locked, unless the train dispatcher directs that the hand-operated main track switch be left lined and locked in the reverse position and the necessary protection is provided;
- (2) If the report of the switch position is correct, the train dispatcher shall repeat the reported switch position information to the employee releasing the limits and ask whether that is correct; and
- (3) The employee releasing the limits shall then confirm to the train dispatcher that this information is correct.

Additional operational requirements for hand-operated crossover switches.

- (a) Each railroad shall adopt and comply with an operating rule which complies with the requirements of this section. When any person including, but not limited to, each railroad, railroad officer, supervisor, and employee violates any requirement of an operating rule which complies with the requirements of this section, that person shall be considered to have violated the requirements of this section.
- (b) Hand-operated crossover switches, generally. Both hand-operated switches of a crossover shall be properly lined before rolling and on-track maintenance-of-way equipment begins a crossover movement. A crossover movement shall be completed before either hand-operated crossover switch is restored to normal position.

- (c) Correspondence of hand-operated crossover switches. Hand-operated crossover switches shall be left in corresponding position except when:
- (1) Used to provide blue signal protection under Sec. 218.27 of this part; or
 - (2) Used for inaccessible track protection under Sec. 214.327 of this chapter; or
 - (3) Performing maintenance, testing or inspection of crossover switches in traffic control system (TCS) territory; or
 - (4) One crew is using both tracks connected by the crossover during continuous switching operations.

7. HAND-OPERATED FIXED DERAILS

(a) (1) Each railroad shall adopt and comply with an operating rule which complies with the requirements of this section. When any person including, but not limited to, each railroad, railroad officer, supervisor, and employee violates any requirement of an operating rule which complies with the requirements of this section, that person shall be considered to have violated the requirements of this section.

(2) Each railroad shall specify minimum requirements necessary for an adequate job briefing.

(b) General.

(1) The normal position of fixed derails is in the derailing position except as provided in part 218, subpart B of this chapter, or the railroad's operating rules or special instructions.

(2) Fixed derails shall be kept in the derailing position whether or not any rolling and on-track maintenance-of-way equipment is on the tracks they protect, except as provided in paragraph (b)(1) of this section or when changed to permit movement.

(3) Movement must not be made over a fixed derail in the derailing position.

(c) Employees operating or verifying the position of a fixed derail shall:

(1) Conduct job briefings, before work is begun, each time a work plan is changed, and at completion of the work;

(2) Be qualified on the railroad's operating rules relating to the operation of the derail;

(3) Be individually responsible for the position of the derail in use;

(4) Determine that the target, if so equipped, corresponds with the derail's position;

(5) Determine that the derail is secured by: (i) Placing the throw lever in the latch stand, if so equipped; (ii) Placing the lock or hook in the hasp, if so equipped; and (iii) Testing such latches, locks or hooks; and

(6) Ensure that when not in use, derails are locked, hooked, or latched in the normal position if so equipped.

Appendix D to Part 218--Requirements and Considerations for Implementing Technology Aided Point Protection

This appendix provides further explanation and requirements for exercising the option to provide point protection with the aid of technology as permitted in Sec. 218.99(b)(3)(i). The regulation permits the visual determination necessary to provide point protection, i.e., a

determination that the track is clear, for a shoving or pushing movement to "be made with the aid of monitored cameras or other technological means, provided that it and the procedures for use provide an equivalent level of protection to that of a direct visual determination by a crewmember or other qualified employee properly positioned to make the observation as prescribed in this section and appendix D to this part." This appendix addresses the general requirements and considerations for all technology aided point protection as well as specific additional requirements for those operations involving remote control operations at public highway-rail grade crossings, private highway-rail grade crossings outside the physical confines of a railroad yard, pedestrian crossings outside the physical confines of a railroad yard, and yard access crossings.

49 C.F.R. part 21

8. BLUE FLAG PROTECTION

Blue signal protection must be provided whenever workmen are on, under or between rolling equipment. "Workman" means railroad employees assigned to inspect, test, repair, or service railroad rolling equipment, or their components including brake systems. Train and yard crews are excluded except when assigned to perform such work on railroad rolling equipment that is not part of the train or yard movement they have been called to operate.

On Track Other Than Main Track:

- (a) Blue signal must be displayed at or near each manually operated switch providing access to the track.
- (b) Each such switch must be lined against movement to that track and locked with effective locking device.
- (c) If switch is remotely controlled, the operator of the switch is required to inform the person in charge of the workmen that the switch providing access to the track has been lined against movement on the track and is locked. Locking devices may not be removed until informed by person in charge of workmen that it is safe.
- (d) If crossovers are involved, both switches at each crossover must be protected as in (a), (b) and (c).

On Main Track:

- (a) Blue signal must be displayed at each end of rolling equipment.
- (b) If equipment to be protected includes one or more locomotives, blue signal must be attached to controlling locomotive.
- (c) If emergency repair work and blue signals are not available, the enginemen or operator must be notified and measures taken to protect the employees.

(Similar procedures are applicable at a locomotive servicing track area and at a shop repair track area.)

49 U.S.C. §§ 20131-20132

49 C.F.R. §§ 218.1-218.30

9. BLUE FLAG PROTECTION FOR UTILITY EMPLOYEES

There are requirements for the protection of utility employees while working in yards. This includes such operations as operating switches, working with yard and train crews in assembling trains, participating in power brake inspections and performing federal freight car safety standard inspections. A new section has been added to the Blue Flag regulations to cover the utility employee work. This section describes the circumstances which the utility employee may be permitted to function as a member of a train or yard crew without blue flag protection:

- (a) This requires that before a utility employee becomes a temporary member of a train or yard crew, he/she must be subject to the same requirements as other yard or train crews with regard to efficiency tests to determine compliance with operating rules, timetable and special instructions; and also subject to the drug and alcohol regulations as well as the Hours of Service Act.
- (b) The utility employee shall perform service as a member of only one train or yard crew at any given time. The employee's assignment must be completed before being assigned to a second crew. Therefore, such an employee could not simultaneously perform duties on two different trains.
- (c) The utility employee may serve as a member of a yard and train crew without blue flag protection only under the following conditions:
 - (1) The train and yard crew is assigned a controlling locomotive that is under the actual control of the locomotive engineer of that crew;
 - (2) The locomotive engineer is in the cab of the controlling locomotive;
 - (3) The locomotive engineer may be temporarily replaced by a member of his/her crew so long as the locomotive remains stationary;
 - (4) The utility employee must establish communication with the crew by contacting the designated crew member on arriving at the train and before commencing any duties with the crew. A utility employee shall not be excluded from blue signal protection unless effective communications is established. If a radio malfunction prevents the required crew notice, then the utility employee must be protected by the blue signal, unless the communication is achieved by talking in person or other equivalent forms of telecommunications. The "designated crew member" is defined as an individual designated under the railroad's operating rules as the point of contact between a train or a yard crew and a utility employee working with that crew. Such

person is typically the conductor, yard engine foreman or locomotive engineer. It should be pointed out that a single locomotive engineer in helper service or a single hostler must provide blue signal protection to a utility employee;

(5) Before any duties are performed, the designated crew member shall provide notice to each of the other crew members of the presence and identity of the utility employee.

(6) The utility employee must be performing one or more of the following functions: set or release hand brakes; couple or uncouple air hoses and other electrical or mechanical connections; prepare rail cars for coupling; set wheel blocks or wheel chains; conduct air brake test which includes cutting air brake components in or out and position retaining valves; inspect, test, install, remove or replace a rear end marking device or end of train device. (It should be emphasized that the utility employee shall not be assigned other responsibilities without full blue flag protection. Therefore, under all other circumstances a utility employee working on, under, or between railroad rolling equipment must be provided with blue signal protection).

(d) The rule prohibits an engineer working alone from going on, under, or between rolling equipment to perform inspections, tests, repairs, or servicing without blue signal protection unless the following conditions are met:

(1) Each locomotive in the locomotive engineer's charge is either (i) coupled to the train or other railroad rolling equipment to be assisted or (ii) stopped a sufficient distance from the train or rolling equipment to ensure a separation of at least 50 feet; and,

(2) Before a controlling locomotive is left unattended, the one-member crew shall secure the locomotive as follows:

- (i) The throttle is in the IDLE position;
- (ii) The generator field switch is in the off position;
- (iii) The reverser handle is removed (if so equipped);
- (iv) The isolation switch is in the ISOLATE position;
- (v) The locomotive independent (engine) brake valve is fully applied;
- (vi) The hand brake on the controlling locomotive is fully applied (if so equipped); and
- (vii) A bright orange engineer's tag (a tag that is a minimum of three by eight inches with the words ASSIGNED LOCOMOTIVE-DO NOT OPERATE) is displayed on the control stand of the controlled locomotive.

If the single engineer crew is working in helper service, safety must also be assured by effective communication between engineers of the controlling locomotives to prevent unexpected movement.

(e) When the utility employee has completed all work he/she shall notify the ranking crew member. Then the ranking crew member shall give notice to each of the other crew members that the utility employee is being released.

(f) No more than 3 utility employees may be attached to one train or yard crew at any given time.

(g) Any railroad employee who is not assigned to a specific train or yard crew shall be provided blue signal protection.

(h) Nothing in this new section shall affect the protection required with respect to inspection of rear end marking devices.

See, Appendix B to part 218 for Statement of Agency Enforcement Policy on Blue Signal Protection For Utility Workers

49 C.F.R. § 218.22

10. FLAG PROTECTION FOR TRAINS AND LOCOMOTIVES

Each railroad must have in effect an operating rule which meets the following requirements:

(a) The main tracks within yard limits may be used, clearing the time an approaching designated class train is due to leave the nearest station where time is shown. In a case of failure to clear the time designated class train, flag protection must be provided. In yard limits where main tracks are governed by block signal system rules, flag protection is not required.

(b) Trains and engines, except designated class trains, within yard limits must be prepared to stop within one-half the range of visions but not exceeding 20 miles per hour, unless the main track is known to be cleared by block signal indications.

(c) Within yard limits, movements against the current of traffic on the main track must not be made unless protected by train order, yard-master or other official under the same restrictions in (b) above.

Flag protection shall be provided:

(a) When a train is moving on the main track at less than one-half the maximum authorized speed, flag protection against following trains on the same track must be provided by crew members by dropping off single lighted fuses at intervals that do not exceed the burning time of the fuses.

(b) When a train is moving on main track at more than one-half the maximum authorized speed in which it may be overtaken, the crew members shall be responsible for providing protection and must take into consideration grade, curvature of track, weather conditions, sight, distance and relative speed of the trains.

(c) When a train stops on the main track, flag protection against the following train on the same track must be provided as follows: a crew member with flagman's signals must immediately go back to the prescribed distance in timetable and place at least two torpedoes on the rail at least 100 feet apart and display at least one lighted fuse. He may then return one-half of the distance to the train where he must remain until he has stopped the approaching train or is recalled. When recalled, he must leave one lighted fuse. When the train departs, a crew member must leave one lighted fuse and until the train resumes speed not less than one-half the maximum authorized speed, he must drop off single lighted fuses at intervals that do not exceed the burning time.

(d) If required by the railroad's operating rules, a forward crew member must protect the front of the train by immediately going forward at least the distance prescribed by timetable placing at least two torpedoes on the rail 100 feet apart, displaying one lighted fuse, and remaining at that location until recall.

Flag protection is *not* required if:

- (1) the rear of the train is protected by at least two block signals;
- (2) the rear of the train is protected by an absolute block;
- (3) the rear of the train is within interlocking limits;
- (4) a train order specifies that the flag protection is not required;
- (5) a railroad operates only one train at any given time.

49 C.F.R. §§ 218.31-218.37

11. TAMPERING WITH SAFETY DEVICES

Any individual who willfully disables a safety device is liable for a civil penalty, as well as being subject to disqualification from performing safety-sensitive functions on a railroad. The penalty against an individual for willfully disabling is up to \$7,500. If the employee willfully operates a locomotive with disabled equipment, the fine is up to \$5,000.

A "safety device" is defined as any locomotive-mounted equipment that is used either to assure that the locomotive operator is alert, not physically incapacitated, aware of and complying with the indications of a signal system or other operational control system or to record data concerning the operation of that locomotive or the train it is powering.

The specific devices that are intended to be included by FRA are: event recorder, alerters, deadman controls, automatic cab signals, cab signal whistles, automatic train stop equipment, and automatic train control equipment. (FRA does not consider the following equipment to be followed by the rule: radios, monitors for end of train devices, bells or whistles that are not connected to alerters, deadman pedals, signal system devices, fans for controlling interior temperature of locomotive cabs, and locomotive performance monitoring devices unless they record data such as train speed and airbrake operations).

If an alerter, deadman pedal, or event record becomes defective in route, it will be necessary to notify a designated person of that condition.

In summary, to assess a civil penalty, the FRA will need proof that the individual had intended to disable one of the above listed devices, had acted voluntarily, had in fact disabled the device, and either had knowledge of the law or had recklessly disregarded the law.

When a relief crew boards a moving locomotive while the preceding crew leaves the train, there is no requirement that the relief crew inspect the locomotive. In other words, this rule does not require any new inspections to be performed, but any existing regulations that require inspection must be complied with.

The railroads are strictly liable under this rule for the conduct of its employees when a train is operated with a disabled device. There is no requirement to prove willfulness against the railroad.

49 U.S.C. § 20138
49 C.F.R. §§ 218.51-61

12. BLUE FLAG PROTECTION FOR MAINTENANCE OF WAY EMPLOYEES IN CAMP CARS

(Note: See also discussion under heading "Roadway Worker Protection")

"Camp cars" is defined in the regulations as any on-track vehicle, including outfit, camp, or bunk cars or modular homes mounted on flat cars used to house rail employees. It does not include wreck trains. Also, the rule does not apply to camp cars while they are in a train.

Warning signal display.

(a) Warning signals, (i.e., a white disk with the words "Occupied Camp Car") in black lettering during daylight hours and illuminated white signal at night, displayed in accordance with these rules signify that employees are in, around, or in the vicinity of camp cars. Once the signals have been displayed—

(1) The camp cars may not be moved for coupling to other rolling equipment or moved to another location;

(2) Rolling equipment may not be placed on the same track so as to reduce or block the view of a warning signal; and

(3) Rolling equipment may not pass a warning signal.

(b) Warning signals indicating the presence of occupied camp cars, displayed in accordance with these rules shall be displayed by a designated occupant of the camp cars or that person's immediate supervisor. The signal(s) shall be displayed as soon as such cars are placed on the track, and such signals may only be removed by those same individuals prior to the time the cars are moved to another location.

Methods of protection for camp cars.

When camp cars requiring protection are on either main track or track other than main track:

- (a) A warning signal shall be displayed at or near each switch providing access to that track;
- (b) The person in charge of the camp car occupants shall immediately notify the person responsible for directing train movements on that portion of the railroad where the camp cars are being parked;
- (c) Once notified of the presence of camp cars and their location on main track or other than main track, the person responsible for directing train movements on that portion of the railroad where the camp cars are being parked shall take appropriate action to alert affected personnel of the presence of the cars;
- (d) Each manually operating switch providing access to track on which the camp cars are located shall be lined against movement to that track and secured with an effective locking device and spiked; and
- (e) Each remotely controlled switch providing access to the track on which the camp cars are located shall be protected in accordance with the next section below.

Remotely controlled switches.

- (a) After the operator of the remotely controlled switch is notified that a camp car is to be placed on a particular track, he shall line such switch against movement to that track and apply an effective locking device applied to the lever, button, or other device controlling the switch before informing the person in charge of the camp car occupants that protection has been provided.
- (b) The operator may not remove the locking device until informed by the person in charge of the camp car occupants that protection is no longer required.
- (c) The operator shall maintain for 15 days a written record of each notification that contains the following information:
 - (1) The name and craft of the employee in charge who provided notification;
 - (2) The number or other designation of the track involved;
 - (3) The date and time the operator notified the employee in charge that protection had been provided in accordance with paragraph (a) of this section; and
 - (4) The date and time the operator was informed that the work had been completed, and the name and craft of the employee in charge who provided this information.

(d) When occupied camp cars are parked on main track, a derail, capable of restricting access to that portion of the track on which such equipment is located, shall be positioned no less than 150 feet from the end of such equipment and locked in a derailing position with an effective locking device, and a warning signal must be displayed at the derail.

Alternative methods of protection.

Instead of providing protection for occupied camp cars in accordance with these rules, the following methods of protection may be used:

(a) When occupied camp cars are on track other than main track:

(1) A warning signal must be displayed at or near each switch providing access to or from the track;

(2) Each switch providing entrance to or departure from the area must be lined against movement to the track and locked with an effective locking device; and

(3) If the speed within this area is restricted to not more than 5 miles per hour, a derail capable of restricting access to that portion of track on which the camp cars are located, will fulfill the requirements of a manually operated switch in compliance with paragraph (a)(2) of this section when positioned at least 50 feet from the end of the camp cars to be protected by the warning signal, when locked in a derailing position with an effective locking device, and when a warning signal is displayed at the derail.

(b) Except as provided in paragraph (a) of this section, when occupied camp cars are on track other than main track:

(1) A derail, capable of restricting access to that portion of the track on which such equipment is located, will fulfill the requirements of a manually operated switch when positioned no less than 150 feet from the end of such equipment; and

(2) Each derail must be locked in a derailing position with an effective locking device and a warning signal must be displayed at each derail.

Movement of occupied camp cars.

Occupied cars may not be humped or flat switched unless coupled to a locomotive.

Appendix A -Penalty Schedule

Appendix B-Statement of Agency Enforcement Policy on Blue Signal Protection for Utility Workers

Appendix C- Statement of Agency Enforcement Policy on Tampering

49 U.S.C. § 20144

49 C.F.R. §§ 218.71-218.80

OCCUPATIONAL SAFETY AND HEALTH ACT

The general duty of an employer under OSHA requires that a worker be provided a place of employment which is "free from recognized hazards that are causing or are likely to cause death or serious physical harm." If the workplace is unsafe, the OSHA is violated.

In addition to the federal railroad safety laws and regulations, railroad workers are covered under the various occupational safety and health laws. The OSHA law covers railroad workers where another federal agency has not exercised authority over the particular working condition involved. Therefore, it is necessary to determine whether the FRA issued a rule or regulation over a specific working condition. If not, the OSHA laws are applicable.

It should be kept in mind that all of the working conditions of a railroad worker are subject either to the railroad safety laws or the OSHA law. The intent is that there should be no gaps in coverage.

During the mid 70's the FRA considered adopting the federal OSHA standards as FRA standards. However, that rulemaking was terminated in 1978 and, instead, a Policy Statement was issued. That document explained what FRA considered to be within its jurisdiction, and what would continue to be enforced by the Department of Labor. The OSHA regulations cover Subparts A through Z. Each subpart will be identified, and where FRA has addressed the subject matter this will be discussed. In general, where the subject matter relates to operational safety (i.e. safe movement of equipment over rails), the FRA will exercise its jurisdiction. All other aspects will be enforced by the Department of Labor where the conditions are similar to those in any industry.

Subpart A — General

This sets out the overall purpose and scope of the OSHA regulations, and the procedures to be followed.

Subpart B — Adoption and Extension of Established Federal Standards

This part does not involve the railroad industry.

Subpart C — General Safety and Health Provisions

This allows access to employee exposure and medical records.

Subpart D — Walking Working Surfaces

OSHA regulations concerning working surfaces deal with such matters as ladders, stairways, platforms, scaffolds and floor openings. Generally, these regulations are applicable in railroad offices, shops, and other fixed work places. There are three

principal exceptions to the rule. First, they would not apply with respect to the design of locomotives and other rolling equipment used on a railroad. Second, FRA is responsible for the safe movement of rolling stock through railroad repair shops. OSHA regulations on guarding of open pits, ditches, etc., would not apply to inspection pits in locomotive or car repair facilities. Third, the OSHA regulations would not apply to ladders, platforms, and other surfaces on signal masts, centenary systems, railroad bridges, turntables, and similar structures or to walkways beside the tracks in yards along the right-of-way.

Subpart E — Means of Egress

By their own terms, OSHA regulations concerning egress do not apply to rolling equipment. However, the regulations do apply to the extent of the regulatory language to fixed railroad facilities, other than employee sleeping quarters covered by the Hours of Service Act.

Subpart F — Powered Platforms, Manlifts and Vehicle Mounted Work Platforms

OSHA regulations apply to the railroad industry. A work platform would be regulated by OSHA, even if mounted on an on-track vehicle. It should be noted the OSHA regulation does not apply to the vehicle on which such a platform is mounted. *See*, 29 C.F.R. § 1910.67(b)(3). FRA is responsible for all vehicles that are utilized on track during the period of such usage.

Subpart G — Occupational Health and Environmental Control

These rules impose certain standards related to ventilation, occupational noise exposure, and radiation. The rules apply in the railroad industry, with the following exceptions.

First, the OSHA ventilation standards (29 C.F.R. § 1910.94) do not contain any provisions which address hazards growing out of railroad operations, as such. They have no application to locomotive cab or caboose environments, to passenger equipment, or to operational situations in yards or along the right-of-way.

Second, FRA is responsible for determining what exposure levels are permissible, what regulatory steps may be necessary in this area, if any, and what remedial measures are feasible. *See*, e.g. 49 C.F.R. part 210 and 40 C.F.R. part 201; 45 U.S.C. § 62 (a)(3).

Subpart H — Hazardous Materials

The transportation of hazardous materials by rail is governed wholly by Department of Transportation regulations (Chapter I, Title 49, Code of Federal Regulations). However, the OSHA regulations apply in those circumstances where the Department of Transportation regulations do not apply (i.e. to the use, handling and storage of hazardous substances in most work situations). To the extent working conditions may be affected by both (1) the shipment and carriage of hazardous materials

and (2) the storage or use of such materials prior to their introduction into the stream of transportation, FRA shall work with OSHA to assure the coherent and comprehensive regulation of this subject matter.

Subpart I — Personal Protective Equipment

OSHA regulations concerning personal protective equipment apply, except to the extent the general requirements might be read to require protective equipment over hazards growing out of the railroad operations.

Subpart J — General Environmental Controls

This relates to sanitation, temporary labor camps, color codes for marking physical hazards and specifications for accident prevention signs and tags. The provisions concerning sanitation (29 C.F.R. §§ 1910.141, 1910.143) generally apply to railroad work places. It should be noted that the regulations themselves contain certain limited exclusions for "mobile crews" and "normally unattended work locations as long as employees have transportation immediately available to nearby toilet facilities." *See*, 29 C.F.R. §§ 1910.141 (c)(i) and (ii); 1910.143(a)(1). Certain areas of FRA/OSHA jurisdictional overlap do exist. For instance, under the Locomotive Inspection Act, FRA must ascertain whether a locomotive and all its appurtenances are in proper condition and safe to operate. *See*, in addition, 21 C.F.R. part 1250 (Food and Drug Administration regulations on Interstate Conveyance Sanitation).

Theoretically, OSHA standards concerning temporary labor camps (29 C.F.R. § 1910.142) apply to specified facilities except those subject to FRA jurisdiction under section 2(a)(3) of the Hours of Service Act (45 U.S.C. 62(a)(3)).

OSHA regulations establishing a color code for physical hazards (29 C.F.R. §1910.141) apply to hazards other than those arising out of the railroad operations. Railroads are encouraged to use the code to identify hazards arising out of railroad operations whenever practicable.

The OSHA specifications for accident prevention signs and tags do not cover safety signs designed for railroads (29 C.F.R. § 1910.145(a)(1)).

Subpart K — Medical and First Aid; Subpart L- Fire Protection

The OSHA regulations apply here, except with respect to fire protection on rolling stock. Although, FRA has not published specific "fire protection" standards denominated as such. FRA standards for locomotive inspection and maintenance contain provisions designed, in part, to prevent fires (49 C.F.R. part 230). The Locomotive Inspection Act (45 U.S.C. §§ 22-34) requires FRA inspectors to make general determinations concerning whether locomotives are in "proper conditions and safe to operate in the service to which the same are put." In addition, the FRA Freight Car Safety Standards (49 C.F.R. part 215) contain requirements which are designed to prevent overheated journals.

Subpart M — Compressed Gas and Compressed Air Equipment

The OSHA regulations apply except that (1) the Department of Transportation hazardous materials regulations control and shipment and transportation of compressed gas and (2) use of compressed gas in the course of railroad operations falls within FRA's current exercise of jurisdiction. The OSHA regulations contain an exclusion for compressed air machinery used on transportation vehicles (29 C.F.R. § 1910.169(a)(1)).

Subpart N — Materials Handling Storage

The OSHA regulations apply with two exceptions. First, the general requirements of 29 C.F.R. § 1910.176 have no application to the operations of railroads.

The second exception pertains to locomotive cranes and other on-track vehicles which are used for maintenance of way and other purposes. Locomotive cranes and other on-track vehicles used to haul other rail equipment are subject to the requirements of the Locomotive Inspection Act, which is enforced by FRA. The Safety Appliance Acts may also apply. (*See*, 45 U.S.C. 8; 49 C.F.R. §§ 231.25, 231.26). OSHA has excluded locomotive cranes used in wrecking service from the coverage of its standards (29 C.F.R. § 1910.180(b)(1)).

Subpart O — Machinery and Machine Guarding; Subpart P — Hand and Portable Powered Tools and Other Hand-used Equipment; Subpart Q — Welding, Cutting and Brazing; Subpart S — Electrical

The OSHA regulations apply to railroads under subparts O through S. Therefore, the OSHA regulations apply to railroad shops and other work places. The one exception is that 29 C.F.R. § 1910.308(c)(2) (electrical standards) excludes rail rolling stock and electrified rail systems.

Subparts T through Y — Have No Application to the Railroads

Subpart Z — Toxic and Hazardous Substances

The OSHA regulations apply except with respect to the shipment or transportation of hazardous materials, which is controlled by the Department of Transportation hazardous materials regulations, and the regulation of air contaminants in locomotive cab and caboose environments. Specific FRA regulations bearing on the locomotive cab environment address cab ventilation (49 C.F.R. § 230.229(f)(2)) and exhaust gases (49 C.F.R. § 230.259). In addition, the Locomotive Inspection Act prescribes a general requirement that each locomotive be safe and in proper condition.

Construction Standards Section 1910.12 of OSHA's General Industry standards provides that the standards contained in 29 C.F.R. part 1926 relating to construction work are adopted as regulations under section 6 of the OSHA Act and shall apply to every

"employment" engaged in construction work. "Construction work" is broadly defined to include construction, alteration, and/or repair, including painting and decorating. To the extent that hazardous construction working conditions do not fall within FRA's exercise of authority relating to the safety of railroad operations, the OSHA standards apply.^{49/}

29 U.S.C. §§ 651-678

29 C.F.R. §§ 1910-1919, 1926

43 Fed. Reg. 10,583 (March 14, 1978)

HAZARDOUS MATERIALS

Federal hazardous material transportation law directs the Secretary of Transportation to establish regulations for the safe transportation of hazardous materials in commerce, as the Secretary considers appropriate. The Secretary is authorized to apply these regulations to persons who transport hazardous materials in commerce to persons who perform pre-transportation functions that relate to assuring the safe transportation of hazardous materials in commerce, specifically persons who offer for transportation or otherwise cause hazardous materials to be transported in commerce. The law also authorizes the Secretary to apply these regulations to persons who manufacture or maintain packagings or components of packagings that are represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce. Federal hazardous material transportation law also applies to anyone who indicates by marking or other means that a hazardous material is present in a package or transport conveyance when it is not, and to anyone who tampers with a package or transport conveyance used to transport hazardous materials or a required marking, label, placard, or shipping description. In 49 C.F.R. 1.53, the Secretary delegated authority to issue regulations to the Pipeline and Hazardous Materials Safety Administration (PHMSA).

On November 5, 2015, RSAC accepted a task No. 15-10 which was directed to review and evaluate the following:

49 C.F.R. Part 171. Review, discuss, and consider updates to regulations related to materials incorporated by reference in § 171.7, particularly the American Association of Railroads (AAR) Manual of Standards and Recommended Practices, Section C-III, Specifications for Tank Cars, Specification M-1002, as well as the definitions in § 171.8.

49 C.F.R. Parts 173 and 174. Review, discuss, and consider updates to regulations related to tank car loading and unloading operations including trans-loading operations (§§ 173.31(g)(1) and 174.67(a)(3)).

49 C.F.R. Part 174. Review safety data, discuss, and consider revisions to the regulations related but not limited to, train placement, movement of defective tank cars, shipping papers, notice to train crews, coupling speed restrictions, and movement of trailers or containers on flat cars, and the movement of energy products in large blocks or in unit trains.

49 C.F.R. Parts 173, 179 and 180 Definitions. Review, investigate, discuss, and consider updates to regulations with definitions of critical terms such as "tank car," "tank car facility," "failure," etc. and the consistent application of those terms throughout the regulations.

⁴⁹ The FRA, pursuant to the Rail Safety Improvement Act of 1988, was required to issue bridge safety standards for protection of maintenance of way employees. Those regulations are discussed in a separate heading.

49 C.F.R. Part 179 Specifications for Tank Cars. Review, investigate, and consider updates to regulations to organize, simplify and clarify the regulations related to tank car construction and quality assurance programs.

Some of the issues above have been finalized, and will be discussed herein.

There are 10 parts to the hazardous materials regulations:

Parts	Subject covered
171	This includes definitions, incident reporting requirements, a listing of sections, material incorporated by reference, and procedural requirements.
172	This contains a listing of hazardous materials in a table ⁵⁰ and various communications requirements for shipping paper descriptions, marking and labeling of packages, placarding of vehicles and bulk packaging, training requirements, emergency response communication, and security plans.
173	This contains general requirements for shipments and packaging, including various hazard class definitions for classifying materials, lists the DOT packaging authorized for specific materials and references the appropriate sections of parts 178, 179 and 180 when DOT specification packagings are required.
174-177	These contain requirements applicable to the various transport modes. part 174 applies to transportation by rail.
178	This is addressed primarily to container manufacturers and sets out detailed construction specifications for all types of packaging.
179	This addresses specifications for railroad tank cars, reporting and recordkeeping.
180	This provides for requirements for the continuing qualification and maintenance of packagings.

Each hazardous material is identified as shown below. In addition, some materials are listed by Packing Group.

Identification

Example

⁵⁰ The **current table** also appears at 81 Fed. Reg. 35484, 35514 (June 2, 2016). The Table lists each hazardous material description and proper shipping name, class or division, ID numbers, label codes, special provisions, packaging, quantity limitations, and vessel storage requirements.

- | | |
|--------------------------------|-------------------------|
| 1. Proper Shipping Name | Liquified Petroleum Gas |
| 2. Hazard Class or Division | 2.1 |
| 3. Identification Number | UN1075 |
| 4. Packing Group ⁵¹ | — |

In a train, each loaded placarded rail car carrying hazardous materials and each rail car immediately adjacent to it must be inspected by the carrier whenever the train is required to be inspected. Each loaded placarded tank car must be inspected by the carrier before acceptance at the originating points and when received in interchange. These inspections are required even though inspections (such as power brake) may not be required at interchange by other regulations. The required inspection is to see that the car is not leaking, and that air and hand brakes, journal boxes, and trucks are in proper condition for service. Rail cars containing Explosives 1.1 and 1.2 are also required to have additional inspections.

The train crew must have a document indicating the position in the train of each loaded placarded car containing hazardous material.

In general, placarded tank cars containing hazardous materials must be positioned in a train not less than the sixth car from the engine or occupied caboose. Cars placarded "radioactive" or "residue"^{52/} must be separated from a locomotive or caboose by at least one non-placarded car. The regulations set forth the specific spacing permitted for cars containing particular types of hazardous materials. The table below gives greater detail of some of the placement requirements: *See, e.g.,* 49 C.F.R. §§ 174.84 and 174.85 for specific placement requirements.

⁵¹ Packing Groups are identified by a Roman Numeral I, II or III. "I" indicates the greatest degree of danger presented by the material. "II" is medium danger and "III" is minor danger. Materials in Hazard Class 2 and 7, and ORM-D materials do not have packing groups.

⁵² A new proposed definition of "residue" was approved by a RSAC on April 9, 2014 and submitted to the FRA for adoption. The new proposed definition states: "**Residue** means the hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent practicable and before the packaging is either refilled or cleaned of hazardous material and purged to remove any hazardous vapors. The extent practicable means an unloading facility has unloaded a bulk package using properly functioning service equipment and plant process equipment."

Placement of HM Cars

Car Type	Where Placed
Combustible Liquid Class "Keep away from food" Class 9	No restrictions
Explosives (Division 1.1 and 1.2) Poisonous gas (Division 7.3, Hazard Zone A) Poisonous liquid (Division 6.1, Hazard Zone A)	Must not be nearer than 6th car from the engine or caboose; May be placed next to similarly placarded cars, but it cannot be next to car: —with different kind of placard, —open-top with shiftable load or protruding beyond the ends of the car, —loaded TOFC/COFC flatcar, —with operating automatic refrigeration temperature control equipment, —with internal combustion engine.
Radioactive (Class 7)	Cannot be next to: —engine, —any loaded, placarded car with a different type of placard, —undeveloped film, —an occupied caboose.
Loaded, Placarded tank car	Must not be nearer than 6th car from engine or occupied caboose; Cannot be next to: —"Radioactive" cars, —car placarded with square background, —cars with shiftable loads or protruding beyond the ends of the car, —internal combustion engine or temperature control equipment.
Tank cars with residue placard	Must be one car separation from engine or occupied caboose.

The switching of certain placarded cars containing a white square background must not:

1. Be allowed to move under its own momentum; or be coupled into or struck by any other rail car with more force than is necessary to complete the coupling.⁵³
2. Where track gradient makes handbrakes use necessary, (1) the brakes must be tested; (b) the cut of HM cars must wait until the previous cut has cleared the lead; and (c) any cut of cars following HM cars must wait until the placarded cut has cleared the lead.

There are additional standards relating to information required on waybills, reporting hazardous materials incidents, correcting violations, procedures for handling leaking tank cars and leaking packages, marking, switching, and handling of placarded cars and various types of hazardous materials.

Miscellaneous Haz. Mat. Dockets:

1. Docket No. PHMSA-2013-0225 (HM-218H)

On June 3, 2016, PHMSA issued amendments to clarify some of the existing regulations. They include removing the packing group (PG) II designation for certain organic peroxides, self-reactive substances, and explosives; incorporating requirements for trailers of manifold acetylene cylinders; providing requirements to allow for shipments of damaged wet electric batteries; and revising the packaging of nitric acid, testing of pressure relief devices on cargo tanks, and shipments of black or smokeless powder for small arms.

2. Docket HM-181 - Hazard Communication, Classification and Packaging:⁵⁴

On December 21, 1990, the DOT, in Docket No. HM-181 (55 Fed. Reg. 52402), made significant changes to the hazard communication, classification and packaging requirements outlined above. Each of the 10 separate parts of the regulations were amended. In general, the new regulations are based upon performance standards, wherein the then current rules were design specifications. This change was made in order to be consistent with the United Nations Recommendations concerning classification, hazard communication and packaging. The major features of that rule are:

1. Formal changes, such as consolidation of the §§ 172.101 and 172.102 hazardous materials tables into one table and elimination of approximately 100 packaging specifications, should substantially reduce the volume of the regulations.
2. Standard international units (SI units) of measurement generally replace U.S.

⁵³ See, 49 C.F.R. § 174.83 for specific rules covering switching of placarded cars.

⁵⁴ On April 3, 2002, the DOT issued a final rule covering harmonization with the UN Recommendations(67 Fed. Reg. 15743)(*See, also*, fn.30), and on May 13, 2002, the DOT issued an Advisory Guidance on Packaging and Shipper Responsibilities(67 Fed. Reg. 31974).

customary units of measurement. U.S. customary units are included following the SI units. (*See*, § 171.6.)

3. Hazard class definitions are aligned generally with the U.N. Recommendations and use the same numerical nomenclature. (For example, "flammable solids" are "Division 4.1 materials," "flammable liquids" are "Class 3 materials." (Certain DOT hazard classes, such as combustible liquid and ORM-D are retained.) (*See*, subpart D of Part 173.)

4. Hazardous materials descriptions are aligned with the U.N. Recommendations, except in certain instances where shipping descriptions unique to the U.S. transportation system are retained. (*See*, § 172.101.)

5. Hazard communication requirements for identifying materials which are poisonous by inhalation were made applicable to gases, in addition to liquids, to correct a safety deficiency in the regulations. (*See*, § 172.203.)

6. Packaging requirements for a material are based on the Packing Group of the material, its vapor pressure and chemical compatibility between the packaging and the hazardous material.

7. Materials packaged under the IMDG Code generally are acceptable for inland transport away from a port area for the first time. (*See*, § 171.12.)

8. **Non bulk packaging** must be capable of withstanding a vibration test, in addition to the other performance tests, to address transportation rigors not taken into account by the U.N. tests. (*See*, § 173.24a.)

9. **Re-use of plastic and metal drums** are linked to minimum thickness requirements, to ensure that these reused packaging are capable of withstanding the rigors of transportation. (Minimum thickness requirements substitute for the lack of performance tests in the U.N. standards with regard to puncture resistance, abrasion resistance and metal fatigue.) (*See*, § 173.28.)

10. For materials which are **poisonous by inhalation**, packaging provisions are enhanced and, in some instances, are more restrictive.

11. Bulk packaging provisions are enhanced with regard to **filling limits** (i.e., outage requirements) and requirements for **reclosing pressure relief devices** for bulk packaging used for flammable or poisonous liquids. (*See*, § 172.24b.)

12. To correct a shortcoming in the U.N. system, criteria were included for defining categories of gases which are **poisonous by inhalation** (Division 2.3). (*See*, § 173.115.)

13. For ease of use, simplicity and to reduce the volume of the HMR, **generic packaging** sections replaced, for the most part, material-specific packaging sections in part 173.

For example, there is one non bulk packaging section (§ 173.202) for most Packing Group II liquids, rather than individual sections for poisons, flammables, corrosives, etc. Similarly, there is a series of generic packaging sections for bulk, related to the hazard characteristics of the material to be transported.

14. In Part 178, 100 specifications for DOT **non bulk packagings** were eliminated and replaced with 20 U.N. performance-oriented packaging standards. (See, Subpart L of part 178.)

15. Packaging manufacturers are required to notify their customers in writing of any **specification shortfalls** on steps that the user must take (such as the procedure for closing a packaging after filling) to conform with the applicable specification. (See, § 178.2).

16. Requirements for conduct of **performance tests**, including design qualification tests and periodic retests, are included in part 178 for all packagings manufactured to U.N. standards. (See, § 178.601).

17. **"Mix and Match"** of shipping papers and identification numbers were allowed during a transition period.

The **physical appearance of the placards** are as follows:⁵⁵

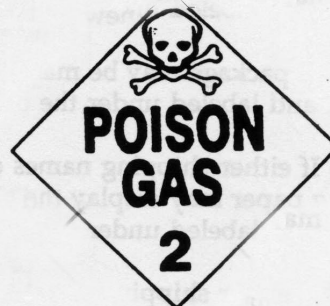
⁵⁵ Wherever an * appears on the placards shown here, they must contain the compatibility designation as shown in the compatibility table in § 174.81.



EXPLOSIVES 1.1, EXPLOSIVES 1.4, EXPLOSIVES 1.5, EXPLOSIVES 1.6
 Background color: orange
 Symbol, text, numerals and border: black



OXYGEN
 Background color: yellow
 Symbol, text, numerals
 and border: black



POISON GAS
 Background color: white
 Symbol, text, numerals
 and border: black



NON-FLAMMABLE GAS
Background color: green
Symbol, text, numerals
and border: white



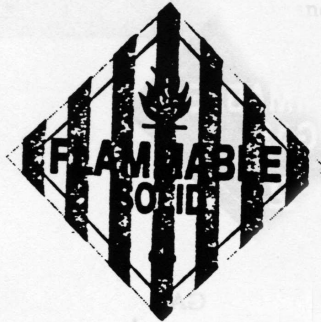
FLAMMABLE GAS
Background color: red
Symbol, text, numerals
and border:



FLAMMABLE
Background color: red
Symbol, text, numerals
and border: white
The word "GASOLINE"
may be used in the place of
"FLAMMABLE"



COMBUSTIBLE
Background color: red
Symbol, text, numerals
and border: white
On a COMBUSTIBLE
placard with a white
bottom the numerals
must be in red or black.
The words "FUEL OIL"
may be used in place of
the word
"COMBUSTIBLE"



FLAMMABLE SOLID
Background color: white with seven vertical red stripes
Symbol, text, numerals and border: black



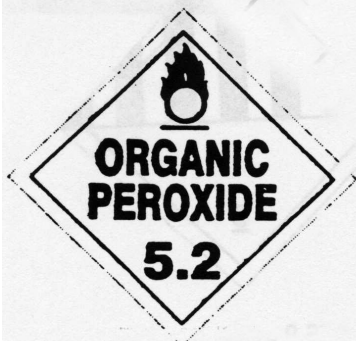
SPONTANEOUSLY COMBUSTIBLE
Background color: red in the lower half and white in the upper half.
Symbol, text, numerals and border: black



DANGEROUS WHEN WET
Background color: blue
Symbol, text, numerals and border: white



OXIDIZER
Background color: yellow
Symbol, text, numerals and border: black



ORGANIC PEROXIDE
Background color: yellow
Symbol, text, numerals
and border: black



HARMFUL TO AQUATIC LIFE
Background color: white
Symbol, text, numerals
and border: black



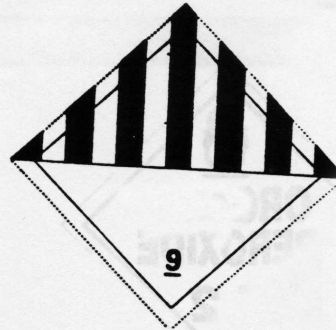
POISON
Background color: white
Symbol, text, numerals
and border: black



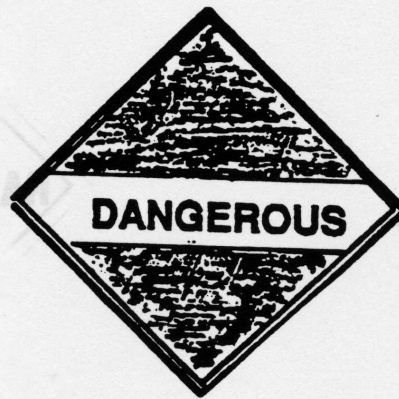
RADIOACTIVE
Background color: white
in the lower portion with
a yellow triangle in the
upper portion
Symbol, text, numerals
and border: black



CORROSIVE
Background color: black in the lower portion with a white triangle in the upper portion
Text and numerals: white
Symbol and border: black



CLASS 9
Background color: white with seven black vertical stripes on the top half. The lower half must be white with the class number 9 underlined.



DANGEROUS
Background Color: black print on white background with red triangles

The following table summarizes the placards, placard color and symbol for each class of hazardous material:

CLASS	PLACARD COLOR	PLACARDS	SYMBOL
Class 1 Explosives Div. 1.1 Div. 1.2 Div. 1.3	Orange	Explosives	Bursting Ball
Div. 1.4			
Div. 1.5			Blasting Agents
Div. 1.6			
Class 2 Gasses Div. 2.1			Red	Flammable Gas	Flame
Div. 2.2	Green	Nonflammable Gas	Cylinder
Special placard Div. 2.2	Yellow	O2	Burning Ball
Div. 2.3	White	Poison Gas	Skull & Bones
Class 3 Flammable & Combustible Liquids	Red	Flammable	Flame
		Combustible	Flame
		Gasoline	Flame
Class 4 Flammable Solids Div. 4.1	Red Stripe	Flammable Solid	Flame
Spontaneously combustible Div. 4.2	White Top Red Bottom Diamond	Spontaneously Combustible	Flame
Dangerous when hot Div. 4.3	Blue	Dangerous When Wet	Flame
Class 5 Oxidizers Div. 5.1	Yellow	Oxidizer	Burning Ball
Organic Peroxide Div. 5.2	Yellow	Organic Peroxide	Burning Ball
Class 6 Poisonous Div. 6.1 (PG I&II)	White	Poison	Skull & Cross bones
Poisonous Div. 6.1 (PG III)	White	Keep Away From Food	Wheat & X

Infectious Substances	None		
Class 7 Radioactive	Yellow Top White Bottom Diamond	Radioactive	Propeller
Class 8 Corrosive	White Top Black Bottom Diamond	Corrosive	Test Tube & Hands
Class 9 Misc. Hazardous Material	Vertical Black and White Striped Top White bottom Diamond	Class 9	None
Mixed loads of hazard classes	Upper and Lower Triangles Red on White Background	Dangerous	None

In Dockets 175A and 201, which are summarized in more detail below, in 1995 DOT amended the haz mat rules to require facilities that build, repair, and ensure the structural integrity of tank cars, to develop and implement a quality assurance program (QAP); allow the use of non-destructive testing (NDT) techniques, in lieu of prescribed periodic hydrostatic pressure tests, for fusion welded tank cars; require thickness measurements of tank cars; allow the continued use of tank cars, with limited reduced shell thicknesses, for certain hazardous materials; increase the frequency for inspection and testing of tank cars for added safety; clarify tank car pre-trip inspection requirements; expand the use of thermal protection systems and head protection on tank cars to include certain other high hazard materials; add new requirements for bottom-discontinuity protection; require the use of protective coatings on insulated tank cars; prohibit the use of self-energized manways located below the liquid level of the tank; removed grandfather provisions allowing certain uses of tank cars; and improved the puncture resistance of tank cars used for certain high hazard materials, including those that are poisonous-by-inhalation (PIH) and those determined by the Environmental Protection Agency (EPA) to pose health and environmental risks. The intended effects of these actions were to improve the crashworthiness of tank cars and to increase the probability of detecting critical tank car defects.

In the late 1960s and early 1970s, there were a number of accidents involving head punctures of tank cars. As a result, the DOT required certain tank cars carrying flammable gas, anhydrous ammonia, or ethylene oxide to be equipped with head shields, shelf couplers and thermal insulation. These rules applied to DOT 105,111⁵⁶, 112 and 114 tank cars. (See, 39 Fed.

⁵⁶ As the result of a catastrophic accident in Canada during the summer of 2013, the PHMSA issued improvements in the construction of type 111 tank cars. This is summarized elsewhere.

On May 7, 2014, DOT issued an Emergency Order requiring railroads, within 30 days, to notify State Emergency Response Commissions in each state where trains transporting more than 1 million gallons of **Bakken crude oil** (approximately 35 tank cars) of the expected movement of such trains. If the SERC is not notified, the

Reg. 27252 and 41 Fed. Reg. 21475). However, those tank cars with less than 18,500 gallons capacity could continue in service without head protection. In 1995, DOT eliminated the 18,500 gallon exemption.

3. HM-175A CRASHWORTHINESS PROTECTION REQUIREMENTS FOR TANK CARS:

This regulation was promulgated in 1995(See, 60 Fed. Reg. 49047), and **amended in 2016, which is summarized elsewhere.**

a. Regarding the head protection systems for existing tank cars with capacities less than 18,500 gallons, DOT required that there be full-head protection. Then existing tank cars having a half-head protection, were not required to be modified. All tank cars transporting Division 2.2 materials were required to be equipped with head protection. Then existing tank cars without head protection are required to have a full-head protection installed when used to transport a Class 2 material.

b. Full-head protection is required for tank cars constructed from aluminum or nickel plate, when used to transport any hazardous material.

c. Thermal protection for Class 2 material is required when a thermal analysis of the tank car lading showed that a release would occur other than through the safety relief valve when the tank car is subjected to either a 100 minute pool fire or a 30 minute torch fire. Additionally, a shipper or owner of a Class 2 material must perform an analysis of the characteristics of the material and the thermal resistance capabilities of the tank car.

Regarding a tank car constructed from aluminum and nickel plate, the owner of such tank car is required to perform an analysis of the tank car, and if a release would occur, other than through the safety release valve, a thermal protection system will be required.

d. For tank cars transporting a material which is **poisonous by inhalation**, it shall be an insulated DOT 105S tank car or a non-insulated, but thermally protected, DOT 112 or 114 tank car having a metal jacket. A rule issued in January 2009 required PIH tank cars to have improved puncture resistance from a side impact with a combination of thicker inner shells and/or thicker outer jackets depending on the specific haz mat being transported. In addition, each end of the tank car must be protected with a full head shield where not already mandated by regulation, and strengthened valves, top fillings and nozzles used to load and unload the tank car are required to prevent a release in a rollover accident. The rule also imposed a 50 mph maximum speed on all loaded PIH cars and allows for an increase in the gross weight of the tank car. Also, it required tank car owners to prioritize the retirement or replacement of PIH cars built prior to 1989 with

transportation of the crude oil is prohibited. On May 13, 2014, FRA requested OMB for emergency processing of the new information as required by the emergency order.

On May 7, 2014, FRA issued a Safety Advisory urging railroads and shippers of Bakken crude oil to use tank car designs with the highest level of integrity available in their fleet and avoid the use of older 111 tank cars.

non normalized steel.

e. The construction of new tank cars having an internal self-energized manway located below the liquid level of the lading is prohibited.

f. Effective July 1, 1996, the use of non-pressure tank cars was prohibited for transporting materials poisonous by inhalation. These tank cars are primarily DOT 111A, which have known to be highly susceptible to rupture in a railroad derailment.

g. The use of 105A 100W, 111A 100W4, 112A 200W, and 114A 340W tank cars for transporting ethyl chloride and ethyl methyl ether is prohibited. Also, the use of 111A non-pressure tank cars for Class 2 (compressed gas) materials such as ammonia solutions, ethyl amine, ethyl chloride, ethyl methyl ether, and ethylene oxide is prohibited.

h. There are 3 levels of protection permitted for the types of discontinuity (i.e., bottom outlets that extend 1 inch or more; blind flanges and washouts that extend 2 & 5/8 inches or more; and sumps and internally closed washouts that extend 5 inches or more), and requirements for the protection of each valve and fitting from mechanical damage.

i. To retard rust or corrosion, a protective coating on a carbon steel tank shell and tank jacket is required. In addition, protective coatings for all new tank cars, and for existing tank cars are required when a repair to the tank car necessitates the complete removal of a jacket.

j. The transportation of halogenated organic compounds is restricted to transportation of such products in only DOT 112S 200W (non jacketed tank cars) constructed from AAR TC-128 normalized steel. (The older steel specification, such as ASTM A212 grade B has less puncture resistance than the steels currently in use, such as TC-128).

k. In general, the regulation allowed 5 years for modification for the tank cars which were built after the effective date of the final rule. For tank cars built prior to the effective date, the phase-in period was 10 years--at least 50% of the fleet was required to be in conformance by July 1, 2001, and the balance by July 1, 2006. However, regarding tank cars transporting division 2.1 material, the tank cars were required to be modified by July 1, 2001.

4. HM-201 DETECTION AND REPAIR OF CRACKS, PITS, CORROSION, LINING FLAWS AND OTHER DEFECTS OF TANK CAR TANKS:

This rulemaking set out the requirements for testing, inspection and repair of various defects in tank cars. It is recognized that many tank car defects are not routinely detected. Therefore, this rulemaking was issued.

a. The FRA found that **cracks in tank cars** may reach a critical size within about 400,000 miles of railroad service. Tank cars travel at an average of about 18,000 miles per year. Therefore, an inspection and test interval of 10 years was required, which would allow for two opportunities to inspect the equipment before a predicted failure. Also, the rule covers corrosion, and required inspection and testing at least before the next scheduled tank hydrostatic pressure

test date.

b. The FRA recognized that some high-mileage tank cars travel in excess of 200,000 miles before there would be a requirement for the first periodic **inspection**. Therefore, FRA intends to assess whether there is a necessity to require owners to retain car mileage records and to inspect the tank cars before 200,000 miles of service.

c. **Bottom shelf of fusion welded tank cars** shall be inspected periodically by appropriate non-destructive testing techniques, such as optically aided visual inspections, ultrasonic radiographic, magnetic particle, and dye penetrant testing methods, in lieu of a hydrostatic pressure test.

d. A **leakage test shall include all piping**, with all valves and accessories in place and operative, except that during the test any venting devices set to discharge at less than the test pressure must be removed or rendered inoperative. The test pressure shall be maintained for at least 5 minutes at a pressure of not less than 50% of the tank test pressure. The leakage test is to be conducted at 30 psig for tank cars having a test pressure less than or equal to 200 psig and a leak test at 50 psig for tank cars having a tank pressure greater than 200 psig.

e. A **structural integrity inspection** and test is required in areas known to develop cracks. Such inspection and test shall include transverse fillet wells greater than a 1/4 inch within 48 inches of the bottom longitudinal centerline, the termination of longitudinal fillet wells greater than 1/4 inch within 4 feet of the bottom longitudinal centerline, and all tank shell butt wells within 2 feet of the bottom longitudinal centerline. It is intended that the inspection be limited to the known areas of crack initiation.

f. Regarding **service-life shell fitness**, there is no overall limit on the amount of surface area with localized reduced shell thickness; rather, such limitations apply only to the top shell of the tank and areas that are separated by at least 16 inches. The thickness deduction table is also modified to differentiate between corrosion and mechanical damage. Downrating is permissible and a tank car owner may mark a tank as meeting a less stringent specification because its shell thickness no longer conforms to the marked specification. For example, a 112 type tank car may be down-rated to a 111. The procedure for conducting thickness measurements throughout the tank shell is left to the car owners written maintenance plans.

g. Owners of **linings and coatings** in tank cars must determine the periodic inspection intervals and inspection technique for the lining and the coating, based on the owners knowledge of the material used.

h. Specific requirements for the **inspection of thermal protection systems, tank head puncture resistance systems, coupler vertical restraint systems**, and devices used to protect discontinuities are set out. If, after an inspection, one or more of these systems do not conform to the applicable requirements, renewal or repair of the system is necessary.

i. Each tank car facility is required to establish a **Quality Assurance Program** to detect non-conformities during the manufacturing, repair, or inspection and test process. The

QAP will require the tank car repair facility to develop a means to detect any non-conformity with the regulations.

j. Prior regulations required the shipper to inspect a tank car before releasing it into transportation in order to ensure that closures are in a tool tight secure condition. The final rule created a rebuttable presumption that, if a **loose closure** is discovered, it is presumed that it was not designed properly or it was not tightened properly.

5. HM-169A COMPATIBILITY WITH REGULATIONS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY:⁵⁷

This regulation harmonized the hazardous materials regulations with those of the International Atomic Energy Agency. In general, the final rule required written radiation protection programs, revisions to the definition and packaging for low specific activity radioactive materials, and requires the use of the International System of Units for the measurement of activity in a package of radioactive material.

a. The Environmental Protection Agency has guidelines providing for different limits for radiation exposure for organs and parts of the body. This rule imposes requirements only on the whole body regarding radiation doses received due to exposure to external sources of ionizing radiation.

b. Any radioactive materials transportation activity involving handling packages with a transport index (which identifies exposure limits for those handling radioactive materials) totaling 200 or more in one year is a threshold condition which requires a hazardous materials employer to implement a radiation protection program. There is an exception which allows a qualified radiation protection specialist to evaluate the doses, and if the evaluation shows that no worker would be expected to receive a dose of 500 millirem in one year, then a radiation protection program is not required. Offerors and carriers subject to the radiation protection program are required to develop and implement a written radiation program that prohibits a person from receiving an occupational exposure (dose) of 1.25 rem in any 3 month period or 5 rem in any 12 month period.

c. There is a requirement for education of workers concerning the health risk of exposure to radiation; training in regulatory requirements and procedures to control exposure levels and doses; and management and supervision of radiation protection activities. In addition, the requirements include limits on exposure to pregnant females and persons under the age of 18, plus record keeping.

d. It is made clear that the requirements in the regulation apply to both offerors and carriers of radioactive material.

e. Regarding the low specific activity material and surface contaminated objects, there is a limit on the external radiation level at 3 meters from the unshielded contents of most of

⁵⁷ There are several subsequent rulemakings harmonizing the haz mat regulations with international standards. *See, e.g., HM 215A-D, L and HM 218C & G.*

the packages.

f. For international shipments the International System of Units (SI) shall be used to describe the activity of a package of radioactive materials. For domestic shipments, shipping papers and labels may contain either SI units or the combination of SI and customary units

g. The table which sets the maximum activity of a special form of radioactive material permitted in a certain package was expanded by nearly 100 entries to include all radionuclides.

h. The final rule has established a single set of criteria for all packages of fissile materials.

i. All packages of radioactive materials are required to meet general design requirements. They must be designed for ease of handling and proper restraint during shipment, and be free of protuberances, easily decontaminated, capable of withstanding the effects of vibration during transport, and also meet reduced pressure and temperature requirements.

6. HM-169L EDITORIAL CORRECTIONS AND CLARIFICATIONS:

In general, this rule makes technical corrections and minor regulatory changes. For example, the definition of a Haz Mat employee and employer is revised to include persons who are involved in the manufacturing of hazardous materials packages. Also, one section of the hazardous materials regulations is revised to clarify the process of securing tank cars after unloading by allowing innovative methods to meet the requirements.

7. HM-197 HAZARDOUS MATERIALS IN COFC/TOFC SERVICE:

This rule establishes standards for transporting portable tanks containing hazardous materials in COFC/TOFC service without obtaining prior approval from the FRA.

a. The FRA's methods for approving the transportation of hazardous materials in COFC and TOFC have been adopted, but eliminate any approval process.

b. Transport vehicles and freight containers containing packages of hazardous materials must be designed and loaded so that it would not rupture or become damaged under conditions normally incident to transportation.

c. Portable tanks are not allowed to be placed under or on top of another portable tank or freight container, which would create a double stack configuration. There is an exception which would allow the movement of cargo tanks on flat cars and work trains when necessary to respond to a hazardous materials release.

HAZ MAT ROUTING⁵⁸

In June 2008, PHMSA issued a rule requiring railroads to rigorously analyze and then select the route with the fewest overall safety and security risks. The railroads must identify the best primary and alternate routes based on a 27-point safety and security risk analysis. Security-sensitive hazardous materials include:

- Bulk shipments of Poison Inhalation Hazard (PIH) materials;
- Over 5,000 pounds in a single carload of Division 1.1, 1.2 or 1.3 explosive materials;
- Certain high-level radioactive material shipments.

73 Fed. Reg. 72182

INCIDENT REPORTING REQUIREMENTS

The DOT has clarified the reporting requirements of hazardous materials releases. It allows for electronic as well as telephonic filing. A hazardous materials incident report must be filed within 30 days after a reportable event.

Immediate notice of certain hazardous materials incidents.

(a) **General.** As soon as practical, but no later than 12 hours after the occurrence of any incident described in paragraph (b) of this section, each person in physical possession of the hazardous material must provide notice by telephone to the National Response Center (NRC) on 800-424-8802 (toll free) or 202-267-2675 (toll call). Notice involving an infectious substance (etiologic agent) may be given to the Director, Centers for Disease Control and Prevention, U.S. Public Health Service, Atlanta, GA, 800-232-0124 (toll free), in place of notice to the NRC.

(b) **Reportable incident.** A telephone report is required whenever any of the following occurs during the course of transportation in commerce (including loading, unloading, and temporary storage): (1) As a direct result of a hazardous material— (i) A person is killed; (ii) A person receives an injury requiring admittance to a hospital; (iii) The general public is evacuated for one hour or more; (iv) A major transportation artery or facility is closed or shut down for one hour or more; (2) Fire, breakage, spillage, or suspected radioactive contamination occurs involving a radioactive material (*See also*, § 176.48 of this subchapter); (3) Fire, breakage, spillage, or suspected contamination occurs involving an infectious substance other than a diagnostic specimen or regulated medical waste or (4) A situation exists of such a nature (*e.g.*, a continuing danger to life exists at the scene of the incident) that, in the judgment of the person in possession of the hazardous material, it should be reported to the NRC even though it does not meet the criteria of paragraph (b) (1), (2), (3) or (4) of this section.

⁵⁸ This requirement was amended in 2016, which is discussed elsewhere.

(c) **Written report.** Each person making a report under this section must also make the report required by § 171.16 of this subpart.

Detailed hazardous materials incident reports.

(a) **General.** Each person in physical possession of a hazardous material at the time that any of the following incidents occurs during transportation (including loading, unloading, and temporary storage) must submit a Hazardous Materials Incident Report on DOT Form F 5800.1 (01/2004) within 30 days of discovery of the incident: (1) Any of the circumstances set forth in § 171.15(b); (2) An unintentional release of a hazardous material or the discharge of any quantity of hazardous waste; (3) A specification cargo tank with a capacity of 1,000 gallons or greater containing any hazardous material suffers structural damage to the lading retention system or damage that requires repair to a system intended to protect the lading retention system, even if there is no release of hazardous material; or (4) An undeclared hazardous material is discovered

(b) **Providing and retaining copies of the report.** Each person reporting under this section must— (1) Submit a written Hazardous Materials Incident Report to the Information Systems Manager, DHM-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, DC 20590-0001. (2) Submit an electronic Hazardous Material Incident Report to the Information System Manager, DHM-63, Programs Administration, Department of Transportation, Washington, DC 20590-0001 at <http://hazmat.dot.gov> and.

(c) **Updating the incident report.** A Hazardous Materials Incident Report must be updated within one year of the date of occurrence of the incident whenever: (1) A death results from injury caused by a hazardous material; (2) There was a misidentification of the hazardous material or package information on a prior incident report; (3) Damage, loss or related cost that was not known when the initial incident report was filed becomes known; or (4) Damage, loss, or related cost changes by \$25,000 or more, or 10% of the prior total estimate, whichever is greater.

(d) **Exceptions.** Unless a telephone report is required under the provisions of § 171.15 of this part, the requirements of paragraphs (a), (b), and (c) of this section do not apply to the following incidents: (1) A release of a minimal amount of material from— (i) A vent, for materials for which venting is authorized; (ii) The routine operation of a seal, pump, compressor, or valve; or (iii) Connection or disconnection of loading or unloading lines, provided that the release does not result in property damage. (2) An unintentional release of hazardous material when: (i) The material is properly classed as— (A) ORM-D; or (B) a Packing Group III material in Class or Division 3, 4, 5, 6.1, 8, or 9; (ii) Each package has a capacity of less than 20 liters (5.2 gallons) for liquids or less than 30 kg (66 pounds) for solids; (iii) The total aggregate release is less than 20 liters (5.2 gallons) for liquids or less than 30 kg (66 pounds) for solids; and (iv) The material is not— (A) Offered for transportation or transported by aircraft, (B) A hazardous waste, or (C) An undeclared hazardous material. (3) An undeclared hazardous material discovered in an air passenger's checked or carry-on baggage during the airport screening process. (For discrepancy reporting by carriers, See, § 175.31 of this subchapter.)

Assistance in investigations and special studies.

(a) A shipper, carrier, package owner, package manufacturer or certifier, repair facility, or person reporting an incident under the provisions of § 171.16 must: (1) Make all records and information pertaining to the incident available to an authorized representative or special agent of the Department of Transportation upon request; and (2) Give an authorized representative or special agent of the Department of Transportation reasonable assistance in the investigation of the incident.

(b) If an authorized representative or special agent of the Department of Transportation makes an inquiry of a person required to complete an incident report in connection with a study of incidents, the person shall: (1) Respond to the inquiry within 30 days after its receipt or within such other time as the inquiry may specify; and (2) Provide true and complete answers to any questions included in the inquiry

PENALTIES:

On October 2, 2013, PHMSA amended its penalties. In accordance with the Hazardous Materials Transportation Safety Improvement Act of 2012, the maximum civil penalty for a violation of the regulations were increased to \$75,000 and increased to \$175,000 for a violation which results in death, serious illness, or severe injury, or substantial property damage. The minimum penalty of \$250 was eliminated, except that a minimum penalty of \$450 still applies to a violation related to training. In addition PHMSA increased its individual penalty baselines for inflation. *See*, 78 Fed. Reg. 60726.

RULEMAKING PROCEDURES:

There is a streamlined procedure for issuing hazardous materials regulations. It is known as the Direct Final Rule Procedure. It provides that following a notice and opportunity to comment, a proposed rule will become automatically effective on a specified date without further publication of the text of the rule, if PHMSA does not receive an adverse comment or notice of intent to file opposition to the proposed rule.

AVAILABILITY OF PHMSA DECISIONS:

Since September 14, 1995, PHMSA stated that it would make available decisions on appeal in enforcement cases under the hazardous materials transportation law. Previously, these decisions were not available to the public.

APPLICABILITY OF THE HAZARDOUS MATERIALS REGULATIONS TO LOADING, UNLOADING, AND STORAGE

The regulations address regulated (ie, covered) and non-regulated functions. Regulated functions include: (1) activities related to the design, manufacture, and qualification of packaging represented as qualified for use in the transportation of hazardous materials; (2) pre-transportation functions; and (3) transportation functions (movement of a hazardous material and loading, unloading and storage incidental to the movement). Non-regulated functions include: (1) rail and motor vehicle movements of a haz. mat. Solely within a contiguous facility where public access is

restricted; (2) transportation of a haz. mat. In a transport vehicle operated by a governmental agency; (3) transportation of a haz. mat. by an individual for not-commercial purposes in a private motor vehicle; and (4) any matter subject to the postal laws.

The regulations apply to the following functions: (1) packaging functions; (2) pre-transportation functions; and (3) transportation functions.

(a) **Packagings.** Requirements in the regulation apply to each person who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce, including each person under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce.

(b) **Pre-transportation functions.** Each person who offers a hazardous material for transportation in commerce, causes a hazardous material to be transported in commerce, or transports a hazardous material in commerce and who performs or is responsible for performing a pre-transportation function, including each person performing pre-transportation functions under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government. Pre-transportation functions include, but are not limited to, the following: (1) Determining the hazard class of a hazardous material. (2) Selecting a hazardous materials packaging. (3) Filling a hazardous materials packaging, including a bulk packaging. (4) Trans-loading a hazardous material at an inter-modal transfer facility from one bulk packaging to another bulk packaging for purposes of continuing the movement of the hazardous material in commerce. (5) Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material. (6) Marking a package to indicate that it contains a hazardous material. (7) Labeling a package to indicate that it contains a hazardous material. (8) Preparing a shipping paper. (9) Providing and maintaining emergency response information. (10) Reviewing a shipping paper to verify compliance with the regulation or international equivalents. (11) For each person importing a hazardous material into the United States, providing the shipper with timely and complete information as to the regulation requirements that will apply to the transportation of the material within the United States (12) Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the regulation. (13) Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle. (14) Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo. (15) Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.

(c) **Transportation functions.** Requirements in the regulation apply to transportation of a hazardous material in commerce and to each person who transports a hazardous material in commerce, including each person under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government who transports a hazardous material in commerce. Transportation in commerce begins when a carrier takes

possession of a hazardous material for the purpose of transporting it and continues until the package containing the hazardous material arrives at the destination indicated on a shipping document, package marking, or other medium, or, in the case of a rail car, until the car arrives at a private track or siding. For a private motor carrier, transportation in commerce begins when a motor vehicle driver takes possession of a hazardous material for the purpose of transporting it and continues until the driver relinquishes possession of the package containing the hazardous material at its destination and is no longer responsible for performing functions subject to the regulation with respect to that particular package.

Transportation in commerce includes the following:⁵⁹ (1) ***Movement.*** Movement of a hazardous material by rail car (2) ***Loading incidental to movement of a hazardous material.*** Loading of packaged or containerized hazardous material onto a transport vehicle for the purpose of transporting it, including blocking and bracing a hazardous materials package in a freight container or transport vehicle, and segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo, when performed by carrier personnel or in the presence of carrier personnel. For a bulk packaging, loading incidental to movement is filling the packaging with a hazardous material for the purpose of transporting it when performed by carrier personnel or in the presence of carrier personnel (except as delegated at § 1.46(t) of this title), including transloading. (3) ***Unloading incidental to movement of a hazardous material.*** Removing a packaged or containerized hazardous material from a transport vehicle, aircraft, or vessel, or, for a bulk packaging, emptying a hazardous material from the bulk packaging after the hazardous material has been delivered to the consignee and prior to the delivering carrier's departure from the consignee's facility or premises or, in the case of a private motor carrier, while the driver of the motor vehicle from which the hazardous material is being unloaded immediately after movement is completed is present during the unloading operation; (4) ***Storage incidental to movement of a hazardous material.*** Storage of a transport vehicle, freight container, or package containing a hazardous material by any person between the time that a carrier takes physical possession of the hazardous material for the purpose of transporting it until the package containing the hazardous material is delivered to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a private motor carrier, between the time that a motor vehicle driver takes physical possession of the hazardous material for the purpose of transporting it until the driver relinquishes possession of the package containing the hazardous material at its destination and is no longer responsible for performing

⁵⁹ In 2003, the Research and Special Programs Administration (RSPA), the predecessor agency to PHMSA, clarified its regulatory jurisdiction over the loading, unloading, and storage of hazardous materials. 68 Fed. Reg. 61906 (October 30, 2003). The intent was to clarify where transportation began and ended, and thus, where PHMSA jurisdiction began and ended. In the rail mode, certain aspects of the storage, loading, and unloading of hazardous materials to and from rail tank cars were no longer regulated, and those requirements were removed from the CFR. The thought was that the loading, unloading, and storage were more appropriately workplace issues better addressed by an agency such as OSHA. PHMSA continued to regulate certain "pre-transportation functions" that it believed were clearly tied to transportation safety, such as the securement of closures on rail tank cars after loading but before offering the package to a carrier. It is not intended to change the current regulation of OSHA over workplace safety issues related to loading, unloading, and storage of railroad tank cars.

FRA believes it may be appropriate for PHMSA to re-engage on loading and unloading because there may be aspects of these procedures that directly affect transportation safety, and that it would be appropriate for PHMSA to regulate them.

functions subject to the regulation with respect to that particular package. Storage incidental to movement includes rail cars containing hazardous materials that are stored on track that does not meet the definition of “private track or siding” in § 171.8 of this subchapter, even if those cars have been delivered to the destination shown on the shipping document.

(d) ***Functions not subject to the requirements of the regulation.*** The following are examples of activities to which the regulation does not apply: (1) Storage of a freight container, transport vehicle, or package containing a hazardous material at an offeror facility prior to a carrier taking possession of the hazardous material for movement in transportation in commerce or, for a private motor carrier, prior to a motor vehicle driver taking physical possession of the hazardous material for movement in transportation in commerce. (2) Unloading of a hazardous material from a transport vehicle or a bulk packaging performed by a person employed by or working under contract to the consignee following delivery of the hazardous material by the carrier to its destination and departure from the consignee’s premises of the carrier’s personnel or, in the case of a private carrier, departure of the driver from the unloading area. (3) Storage of a freight container, transport vehicle, or package containing a hazardous material after its delivery by a carrier to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a rail car, storage of a rail car on private track. (4) Rail and motor vehicle movements of a hazardous material exclusively within a contiguous facility boundary where public access is restricted, except to the extent that the movement is on or crosses a public road or is on track that is part of the general railroad system of transportation, unless access to the public road is restricted by signals, lights, gates, or similar controls. (5) Transportation of a hazardous material in a motor vehicle, aircraft, or vessel operated by a Federal, state, or local government employee solely for noncommercial Federal, state, or local government purposes. (6) Transportation of a hazardous material by an individual for non-commercial purposes in a private motor vehicle, including a leased or rented motor vehicle. (7) Any matter subject to the postal laws and regulations of the United States.

(e) ***Requirements of other Federal agencies.*** Each facility at which pre-transportation or transportation functions are performed in accordance with the regulations may be subject to regulations of other Federal agencies such as OSHA and EPA.

(f) ***Requirements of state and local government agencies.*** (1) Each facility at which pre-transportation or transportation functions are performed in accordance with the regulation may be subject to applicable laws and regulations of state and local governments and Indian tribes, except to the extent that such laws and regulations are preempted under 49 U.S.C. §5125.

TANK CAR SAFETY AMENDMENTS ISSUED on AUGUST 15, 2016 **(81 Fed. Reg. 53935)**

As the result of a catastrophic accident in Canada during the summer of 2013, the Pipeline and Hazardous Materials Safety Administration issued regulatory improvements in the construction of type 111 tank cars. These tank cars transport products such as crude oil, ethanol, acetone, isopropyl, and benzene. Also, this included the retirement of the older 111 tank cars.

On February 20, 2014, PHMSA and the rail industry entered into an agreement for voluntary safety improvements for trains with at least 20 carloads of crude oil. This went into effect July 1, 2014. They include 8 measures, including lowering speed limits to 40 mph with at least one older car traveling in high risk urban areas (as determined by 27 factors in a risk-management system), increasing the frequency of track inspections, hot box detectors will be placed every 40 miles, improving the brakes so that crews can apply emergency brakes from both ends of the train, improved training of emergency response personnel.

On February 25, 2014, DOT issued an emergency order requiring all shippers to test the crude oil being shipped from the Bakken region to ensure proper classification, and prohibiting the shipment of crude oil in the lowest-strength packing group. Prior to this order, crude oil was shipped in a Class III Packing Group. Now, such shipments must be designated as Group I or II, thereby requiring the use of a more robust tank car.

On May 9, 2014, DOT issued an Emergency Order requiring each operating train containing more than 1 million gallons of Bakken crude oil (approximately 35 tank cars) in a particular state to provide State Emergency Response Commission notification regarding expected movement of such trains through counties in that state.

On May 1, 2015, PHMSA and FRA issued a final rule for enhanced tank car standards and operational controls for High-Hazard Flammable Trains (HHFT). The provisions include:

A. Scope of Rulemaking

Unless stated otherwise, the rule applies to “High-hazard flammable trains” (HHFT) which means “a continuous block of 20 or more tank cars loaded with a flammable liquid or 35 or more tank cars loaded with a flammable liquid dispersed through a train.

B. Enhanced Braking⁶⁰

Require HHFTs to have in place a functioning two-way end-of-train (EOT) device or a distributive power (DP) braking system.

Require any high-hazard flammable unit train (HHFUT) —a train comprised of 70 or more loaded tank cars containing Class 3 flammable liquids traveling at greater than 30 mph— transporting at least one packing group I flammable liquid be operated with an electronically controlled pneumatic (ECP) braking system by January 1, 2021.

Require all other HHFUTs be operated with an ECP braking system by May 1, 2023.

C. Enhanced Standards for New and Existing Tank Cars Used in HHFTs

New tank cars constructed after October 1, 2015 are required to meet enhanced DOT Specification 117 design or performance criteria for use in an HHFT.

⁶⁰ As part of the FAST Act (Pub. L. 114-94, Sec. 7311), Congress required an independent study and issue an updated Regulatory Impact Analysis. As a result of the studies, the requirement for ECP brakes was rescinded in Dec. 13, 2017. DOT determined that the brake requirements were not economically justified.

Existing tank cars must be retrofitted in accordance with the DOT-prescribed retrofit design or performance standard for use in an HHFT.

Retrofits must be completed based on a prescriptive retrofit schedule. The retrofit timeline focuses on two risk factors, the packing group and differing types of DOT-111 and CPC-1232 tank car.

Retrofit reporting requirement is triggered if consignees owning or leasing tank cars covered under this rulemaking do not meet the initial retrofit milestone.

The specifications require that the tank shells be constructed out of 9/16" steel, with 11-gauge sheet metal jackets, 1/2" thick head shields on the ends of the tanks, and improved valves over previous designs. In order to implement the DOT-117 standard, the FRA and Trans Canada required that all new tank cars constructed after October 1, 2015 be built to the specification. The agencies also imposed a retrofit schedule to bring in-service cars up to DOT-117 standards. Depending on the volatility of the cargo carried, DOT-111 and CPC-1232 cars would be banned in certain services in a series of cut-off dates, with all such cars required to be out of service or rebuilt by May 1, 2025.

D. Reduced Operating Speeds

Restrict all HHFTs to 50-mph in all areas.

Require HHFTs that contain any tank cars not meeting the enhanced tank car standards required by this rule operate at a 40-mph speed restriction in high-threat urban areas defined by the Transportation Security Administration's regulations at 49 C.F.R. 1580.3(i.e., 100,000 population or more).

E. More Accurate Classification of Unrefined Petroleum-Based Products

Document sampling and testing program for all unrefined petroleum-based products, such as crude oil.

Certify that programs are in place, document the testing and sampling program outcomes, and make information available to DOT personnel upon request.

F. Rail routing - Risk Assessment

Railroads operating HHFTs would be required to perform a routing analysis that considers, at a minimum, 27 safety and security factors and select a route based on its findings. These planning requirements are prescribed in 49 C.F.R. § 172.820.

G. Rail routing – Information Access

Ensures that railroads notify State and/or regional fusion centers, and that State, local and tribal officials who contact a railroad to discuss routing decisions are provided appropriate contact

information for the railroad in order to request information related to the routing of hazardous materials through their jurisdictions.

ONE TIME MOVEMENT AUTHORITY

Movement approvals are required for certain types of hazardous material shipments, such as a one time shipment of hazardous material carrying tank cars for repair and other non-conforming packagings designed, marked or otherwise represented for the transportation of hazardous material. On January 31, 2012, FRA issued HMG-127 and implemented a 4-tier approval process for such movements. HMG-127 was revised again in March, 2012, resulting in a 3-tier approval process. The most recent version of HM-127 was issued October 7, 2014 and should be followed when applying for a one-time movement approval in accordance with 49 C.F.R. § 174.50.

A RSAC Working Group was created to address further changes in the OTMA. Various meetings of the working group met during 2016-17m and a consensus has been reached. A formal rulemaking is imminent.

OIL SPILL RESPONSE

On February 28, 2019, DOT issued a final rule requiring railroads to develop a comprehensive oil-spill response plans and share information about high-hazard flammable train operations with state and tribal governments. The rule became effective April 1, 2019. In addition, the rule incorporates by reference ASTM International's D7900, "Standard Test Method for Determination of Light Hydrocarbons in Stabilized Crude Oils by Gas Chromatography" related to initial boiling point for crude oils containing light hydrocarbons as an acceptable testing alternative to existing tests in current regulations. It clarifies that initial boiling point is the temperature at which 0.5 weight percent is eluted.

84 Fed. Reg. 6910

SECUREMENT AND SECURITY OF LOADED HAZARDOUS MATERIALS CARS ON PRIVATE TRACK

Some cuts of loaded hazardous materials cars are being stored on track that is exclusively leased, and meets the definition of private track, but that may not be adjacent to a shipper or consignee facility. The cars are being stored in other locations because there isn't available storage space closer to a consignee facility. If the cars are stored on track that meets the definition of "private track" they are considered to be no longer in transportation, and the hazardous materials regulations do not apply. Nonetheless, FRA strongly recommends the following as best practices that may enhance the safety and security of stored hazardous materials cars.

Companies (party in control of private track as defined in §171.8) should review the private track locations where cuts of hazardous materials cars (20 or more cars) are regularly stored to determine the following:

1. Whether additional attendance, monitoring, or other security measures may be appropriate;
2. Whether an adequate and appropriate number of handbrakes are set on the cuts of cars that will ensure that there is no unintended movement of the cars;
3. Whether all of the hazard communication information (placards, emergency response information) be maintained as they would if the cars were in transportation, and that this information may be available to emergency responders if requested.

On August 7, 2013, FRA issued an Emergency Order covering the storage of hazardous materials. 78 Fed. Reg. 48218. On August 6, 2015, a regulation was issued covering the securement of unattended equipment. FRA amended the brake system safety standards for freight and other non-passenger trains and equipment to strengthen the requirements relating to the securement of unattended equipment. Specifically, FRA codified many of the requirements already included in its Emergency Order 28, Establishing Additional Requirements for Attendance and Securement of Certain Freight Trains and Vehicles on Mainline Track or Mainline Siding Outside of a Yard or Terminal. FRA amended existing regulations to include additional securement requirements for unattended equipment, primarily for trains transporting poisonous by inhalation hazardous materials or large volumes of Division 2.1 (flammable gases), Division 3 (flammable or combustible liquids, including crude oil and ethanol), and Class 1.1 or 1.2 (explosives) hazardous materials. For these trains, FRA also provided additional communication requirements relating to job briefings and securement verification. Finally, FRA required all locomotives left unattended outside of a yard to be equipped with an operative exterior locking mechanism. Attendance on trains is required on equipment not capable of being secured in accordance with the proposed and existing requirements.

TRANSPORTATION OF LNG GAS BY RAIL

On April 10, 2019, President Trump issued an Executive Order requesting the DOT to promulgate regulations allowing the transportation of LNG by rail. The rulemaking is to be initiated within 100 days that would treat LNG the same as other cryogenic liquids and permit LNG to be transported in approved rail tank cars.

Previously, FRA approved waivers by the Florida East Coast and the Alaska Railroad to transport LNG gas.

REGULATIONS COVERING HAZARDOUS MATERIAL TRAINING FOR RAILROAD EMPLOYEES

A railroad may not transport a hazardous material by rail unless each of its hazardous materials employees involved in that transportation is trained as required by these regulations.

Training as used in these regulations means a systematic program that ensures a HazMat employee has familiarity with the general provisions of the regulations; is able to recognize and identify hazardous materials; has knowledge of specific requirements applicable to the functions

performed by the employee; and has knowledge of emergency response information, self protection measures and accident prevention methods and procedures.

The specific training shall include the following:

1. General awareness/familiarization training

Each HazMat employee shall receive general awareness/familiarization training designed to provide familiarity with the requirement of these regulations and enable the employee to recognize and identify hazardous materials.

2. Function-specific training

Each employee shall receive function-specific training concerning requirements of these regulations which are applicable to the functions the employee performs.

3. Safety training

Each employee shall receive safety training concerning --(a) emergency response information; (b) measures to protect the employee from the hazards associated with hazardous materials to which they may be exposed, including specific measures the HazMat employer has implemented to protect employees from exposure; and (c) methods and procedures from avoiding accident.

Training conducted by railroads to comply with hazard communication programs required by OSHA or EPA to the extent that such training addresses the training specified in these regulations, may be used to satisfy the training requirements.

An employee who changes job functions shall complete training in the new job function within 90 days after the change. If the employee performs new hazardous materials job functions prior to the completion of the training required, it must be performed under the supervision of a properly trained and knowledgeable HazMat employee.

A HazMat employee shall receive recurrent training at least once every three years.

The railroad is required to maintain a record of the training of each employee.

49 U.S.C. §§ 5101-5127

49 C.F.R. parts 107, 172 and §§ 174.1-174.840

HAZARDOUS MATERIALS LAWS:

1. Hazardous Materials Transportation Safety Act of 2012

- Requires states or Indian tribes receiving grants to train emergency responders to hazardous material (hazmat) transportation accidents to make certain certifications to the Secretary of Transportation (DOT).
- Authorizes the Secretary to conduct pilot projects (including at least one in a rural area) to evaluate the feasibility of using paperless hazard communications systems.
- Authorizes the Secretary to assess and review the methods used by the PHMSA for collecting, analyzing, and reporting accidents and incidents involving hazmat transportation. Requires the Secretary to develop an action plan and timeline for improving the collection, analysis, reporting, and use of data by PHMSA.
- Directs the Secretary to prescribe regulations establishing uniform procedures among facilities for the safe loading and unloading of hazmat on and off tank cars and cargo tank trucks.
- Authorizes the Secretary to develop and implement a hazmat technical assessment, research and development, and analysis program to: (1) reduce risks associated with hazmat transportation; and (2) identify and evaluate new technologies for safe, secure, and efficient hazmat transportation.
- Directs the Secretary to establish a multimodal hazmat enforcement training program for government hazmat inspectors and investigators.
- Requires a designated officer, employee, or agent of the Secretary to provide reasonable notice to an affected offeror, carrier, packaging manufacturer or tester, or other person responsible for the package containing hazmat of: (1) the decision to exercise inspection and investigation authority, (2) any findings made, and (3) any actions being taken as a result of a finding of noncompliance.
- Requires regulations for inspections and investigations to address: (1) the safe and expeditious resumption of transportation of perishable hazardous material, including radiopharmaceuticals and other medical products, that may require timely delivery due to life-threatening situations; (2) the means by which noncompliant packages presenting an imminent hazard are placed out-of-service until the condition is corrected; (3) the means by which noncompliant packages that do not present a hazard are moved to their final destination; (4) appropriate training and equipment for inspectors; and (5) the proper closure of packaging.
- Increases the civil penalties for: (1) knowing violations of a hazmat transportation regulation, order, special permit, or approval; and (2) violations that result in death, serious illness, or injury or substantial destruction of property.

- Authorizes the Secretary to impose a civil penalty on persons who obstruct or prevent an inspection or investigation regarding hazmat transportation. Prohibits a person who has failed to pay an assessed civil penalty for noncompliance with a hazmat transportation regulation or order from conducting hazmat transportation.
- Revises requirements for the issuance of special permits, approvals, and exclusions.
- Requires states to submit certain information to the Secretary biennially regarding their currently effective hazmat highway route designations.
- Authorizes appropriations to the Secretary for FY2012 and FY2013. Authorizes the Secretary to make certain expenditures from the Hazardous Materials Emergency Preparedness Fund, in particular for hazmat training grants.

2. HAZARDOUS MATERIALS TRANSPORTATION UNIFORM SAFETY ACT OF 1990⁶¹:

In 1990 Congress made significant changes in the hazardous materials laws.⁶² A summary of the sections specifically covering railroad transportation follows.

Section 4 of Act--Federal Regulations Governing Transportation of Hazardous Materials

This section essentially rewrites the existing law concerning regulatory authority of the Secretary. The most notable changes occur in the definition of the Federal scope of regulation. For example, it establishes complete Federal preemption in certain aspects of regulation.

After 2 years no State or political subdivision may establish, maintain, or enforce regulations that are not the same as the Federal regulations in 5 specific regulatory areas listed below.

A State may petition the Secretary for authority to establish, maintain, and enforce a law, regulation, rule, standard, or order concerning any aspect set forth below for which the Secretary has not issued a regulation, rule or standard. The Secretary may grant such authority, if it is determined that it is necessary, to eliminate or reduce an essentially local safety hazard, will contribute to safety, and will not unduly burden interstate commerce.

The five general areas which are preempted by Federal regulation unless a state has a regulation which is the same as the Federal regulation are (1) the designation, description and classification of hazardous materials; (2) the packaging, handling, labeling, marking and placarding of hazardous materials; (3) shipping documents; (4) reporting of release of hazardous materials; (5) the whole process of designing, manufacturing, fabricating, marking, maintaining, reconditioning, repairing and testing of all packages or containers used in the transportation of hazardous materials.

⁶¹ Every section is not summarized. In **HM 207**, DOT implemented HMTUSA of 1990.

⁶² Pub.L. 101-615 (Nov. 16, 1990); 136 Cong. Rec. 517, 265 (Oct. 26, 1990).

Concerning the question of document content and placement in vehicles transporting hazardous materials, the section requires the Secretary to establish requirements specifying the type and the location of the material in the vehicle, and emergency procedures.

Section 5. Misrepresentation and Tampering

Section 5 adds a new section (e) and (f) to section 105 of the HMTA. New subsection (e) prohibits the misrepresentation of the fact that a package or container is safe, certified or in compliance with relevant regulations, or that a hazardous material is present when in fact it is not.

New subsection (f) provides that no one shall alter, remove, deface, destroy or otherwise tamper with any marking, labeling, or description in a document, or any package, container or vehicle used for the transportation of hazardous materials.

Section 6. Disclosure

This section requires that each person who offers a hazardous material for transportation in commerce, shall provide the carrier who is providing such transportation, any shipping paper required by the Secretary for the carrier to maintain on the hazardous materials vehicle. The shipping paper shall be kept in a location specified by the Secretary. The Secretary shall specify the contents of the shipping paper. This section also requires that any person who transports a hazardous material, in the event of an incident, shall immediately disclose the information on the hazardous material being transported to the emergency response authorities.

Section 7. Handling of Hazardous Materials

This section requires the Secretary, within one year, to issue requirements for hazardous materials employers to train their employees involved in all aspects of hazardous materials transportation and emergency preparedness for responding to hazardous materials accidents or incidents.

The training regulations may allow for different training for different classes or categories of hazardous materials and hazardous materials employees.

The Secretary, in issuing the training regulations, is required to consult with the EPA Administrator and the Secretary of Labor, to ensure that the training requirements do not duplicate existing OSHA regulations relating to hazardous waste operations and emergency response and EPA regulations relating to worker protection standards for hazardous waste operations.

Each hazardous materials employer shall certify that his or her hazardous materials employees have knowledge of, and have been tested on appropriate areas of responsibility including one or more of nine areas. The nine are:

- (a) Recognition and understanding of the DOT hazardous materials classification system;

- (b) Use and limitations of the DOT hazardous materials placarding, labeling, and marking systems;
- (c) General handling procedures, loading and unloading techniques, and strategies to reduce the probability of release or damage during or incidental to transportation of hazardous materials;
- (d) Health, safety, and risk factors associated with hazardous materials and their transportation;
- (e) Appropriate emergency response and communication procedures for dealing with accidents and incidents involving hazardous materials transportation;
- (f) Use of the DOT Emergency Response Guidebook and recognition of its limitations or use of equivalent documents and recognition of their limitations;
- (g) Applicable hazardous materials transportation regulations;
- (h) Personal protection techniques; and
- (i) Preparation of shipping documents for transportation of hazardous materials.

Section 8. Hazardous Materials Transportation Registration; Motor Carrier Safety Permits.

This section covers registration. It requires persons engaged in one or more listed activities to file a registration statement with the Secretary. The activities are:

- ...
- (a) Transporting or causing to be transported or shipped in a commerce a hazardous material in bulk or tank having a capacity of 3500 or more water gallons, or more than 468 cubic feet.
- (b) Transporting or causing to be transported or shipped in commerce 5,000 pounds or more of a hazardous material for which placarding is required in accordance with the regulations under this title.

Section 12. Penalties⁶³

This section amends the civil penalty section to extend it to violations of orders issued by the Secretary. The fines are increased from \$10,000 to "up to \$25,000 and not less than \$250".

A person is subject to a fine under the Hazardous Materials Transportation Act only if he/she acts "knowingly". A person is considered to have acted "knowingly" if:

- (a) such person has actual knowledge of the facts giving rise to the violation, or

⁶³ On October 2, 2013, PHMSA amended its penalties for violations of the HM regs.

(b) a reasonable person acting in the circumstances and exercising due care would have such knowledge.

A person who knowingly violates the tampering section or willfully violates other provisions of the Hazardous Materials Transportation Act, or an order or regulation issued under this title, shall be fined under the U.S. Criminal Code or imprisoned for not more than 5 years, or both.

Section 13. Relationship to Other Laws

This section establishes the preemption standards for state laws. This section must be read in connection with sections 4 and 30. Section 4 requires that the states must adopt the same regulation as the federal requirements in the whole process of packaging, shipping documents and reporting of hazardous materials. Section 30 makes it clear that the intent of this law was not to change any of the rights that the States may have under the Federal Railroad Safety Act to adopt laws and regulations covering rail safety.

Any requirement of a State or political subdivision is preempted unless otherwise authorized by laws if (1) compliance with both the requirements of this title and the requirements of the State or political subdivision is not possible, or (2) if application and enforcement of the requirements of the State or political subdivision creates an obstacle to application and enforcement of the requirements of this title or its regulations.

Any person affected by an existing requirement of a State or political subdivision may apply to the Secretary for a determination of whether or not such requirement is preempted.

No person who applies to the Secretary for a preemption determination may seek relief in any court until the Secretary has taken final action or until 180 days after filing with the Secretary, whichever is earlier.

The Secretary shall publish notice of application filings in the Federal Register.

Nothing in this section prevents a person from seeking a preemption determination in a court in lieu of applying to the Secretary.

The Secretary may waive preemption of any requirement which has been determined to be preempted either by the Secretary or in a Court, if (1) the requirement affords equal or greater protection to the public, and (2) does not unreasonably burden commerce. This does not apply to subsection (e).

Any party to an application for determination of preemption or a waiver of preemption determination, who is adversely affected by the Secretary's decision, may file a petition for a judicial review in the appropriate U.S. district court within 60 days after the Secretary's final decision.

Preemption of the uniform subject matters (classification, packaging, handling, marking,

documentation, notification, and highway routing) are not subject to a determination proceeding, or an application for waiver of preemption. This section also applies to the registration requirements in Section 8.

Section 14. Funding

This section authorizes appropriations for FY '91-FY '93. The Secretary may credit money received from public and private entities for expenses incurred by DOT in providing training.

Section 15. Transportation of Certain Highly Radioactive Materials

The Secretary is required to undertake a study comparing the safety of using trains operated exclusively for transporting high-level radioactive waste and spent nuclear fuel with the safety of using other methods of rail transportation for such purposes. The Secretary shall report the results of the study to Congress not later than one year from date of enactment.

Within 24 months after the date of enactment, taking into consideration the findings of the rail study, the Secretary shall amend existing regulations as may be appropriate for the transportation of high-level radioactive waste and spent nuclear fuel.

The Secretary shall, within 12 months after date of enactment, undertake a study to determine which factors, if any, should be taken into consideration by shippers and carriers in order to select routes and modes which would enhance overall public safety related to the transportation of high-level radioactive waste and spent nuclear fuel. The study shall include comparison of the superstructure conditions of the highways, rail beds, and waterways.

Section 16. Inspectors

In FY 1991, the Secretary shall employ an additional 30 hazardous materials safety inspectors above the number authorized for FY '90 in the aggregate for the FRA, FHWA, and . The activities of ten such additional inspectors shall focus on promoting safety and the transportation of radioactive materials.

The inspectors activities shall include the inspection at the point of origin of shipments of high-level radioactive waster or nuclear spent fuel, and the inspection to the extent possible of other radioactive materials.

Of the ten additional inspectors which are authorized to focus on radioactive materials, not less than one shall be allocated to , not less than three to the FRA, and not less than three to the FHWA. The remaining shall be allocated at the discretion of the Secretary.

Section 18. HazMat Employee Training Grant Program

This section establishes a grant program for training private sector hazardous materials employees. The grants under this section shall be administered by the National Institute of Environmental Health Sciences.

The grants shall be awarded to nonprofit organizations which demonstrate expertise in implementing and operating training and education programs for HazMat employees.

Funding shall be available in the amount of \$250,000 per fiscal year for each fiscal years 1993 through 1998.

Section 19. Railroad Tank Cars

This section prohibits any railroad tank car manufactured before January 1, 1971 to be used in commerce for any Class A or B explosives, any hazardous material toxic by inhalation or any other hazardous materials so designated by the Secretary that should be subject to this requirement, unless the air brake equipment support attachments have been retrofitted to comply with 49 C.F.R. § 179.100-16 and § 179.200-19.

No railroad tank car constructed before January 1, 1971 may be used for the transportation in commerce of any hazardous material after July 1, 1991, unless the airbrake equipment support attachments are in compliance.

Section 21. Railroad Tank Car Study

This section requires the Secretary to enter into a contract with a disinterested expert body for a study of:

(a) the railroad tank car design process, including specifications development, design approval, repair process approval, repair accountability, and the process by which designs and repairs are presented, weighted, and evaluated.

(b) railroad tank car design criteria, including whether head shields should be installed on all tank cars which carry hazardous materials.

The contractor shall make recommendations as to whether public safety considerations require greater control by the Secretary with respect to railroad tank car design process, especially in the early stages.

The Secretary shall report the results of the study in recommendations to Congress within one year from date of enactment.

Section 25. Improvements To Hazardous Materials Identification Systems

The Secretary is required to initiate a rulemaking within 30 days after the date of enactment to develop methods of improving the current system of identifying hazardous materials being transported in vehicles in order to safeguard the health and safety of emergency responders and the public in general.

The primary purposes of the rulemaking procedure are to determine methods of improving the current system of placarding vehicles transporting hazardous materials and to determine methods for establishing and operating a central reporting system and computerized

telecommunications data center.

This section further specifies methods to be considered by the Secretary under the rulemaking proceeding on placards and requires the completion of the proceeding within 19 months after date of enactment, and the issuance of a final rule within 30 months after the date of enactment.

The Secretary shall within 30 days after the date of enactment enter into arrangements with the National Academy of Sciences (NAS) to conduct a study of the feasibility and necessity of establishing and operating a central reporting system and computerized telecommunication data center for identifying hazardous materials being transported and for providing information to facilitate responses to accidents and incidents involving the transportation of hazardous materials.

In conducting the study, the Secretary is to request that the NAS, consult with the Federal agencies, shippers and carriers of hazardous materials manufacturers of computerized telecommunications systems, state and local emergency preparedness organizations (including firefighters and police) and appropriate international organizations. The study is to be completed within 19 months after the date of enactment.

There is \$350,000 appropriated for the study.

There are 11 additional purposes listed for both the rulemaking proceeding and the study with respect to the central reporting system and computerized telecommunications data center, including whether such a system should be established, estimated costs, methods for financing, projected safety benefits, etc.

Not later than 25 months after date of enactment the Secretary shall review the report of NAS and the results of the rulemaking proceeding and submit a report to Congress, together with any recommendations concerning the establishment and operation of such a system.

In conducting the review and preparing the report, the Secretary shall give substantial weight to the recommendations of the NAS. If the Secretary does not include in the report a recommendation for implementation of proposals by the NAS, the Secretary shall state the reasons.

Section 26. Continually Monitored Telephone Systems

The Secretary is required to initiate a rulemaking within 90 days on the feasibility, necessity and safety benefits of mandating carriers of hazardous materials to maintain continually monitored telephone systems that provide emergency response information and assistance. The proceeding will decide what, if any, segments of the transportation industry should have such systems. The proceeding shall be finalized in 30 months.

Section 27. Shipper Responsibility Report

This provides for a report by the Secretary on the safety benefits of shared shipper/carrier liabilities where the shipper has utilized a carrier having an unsatisfactory or conditional safety

rating.

Section 28. State Participation in Investigation and Surveillance

This section provides funding for paying state inspectors who perform railroad safety inspections under the Federal Railroad Safety Act. Five million dollars is authorized to be appropriated for carrying out state inspection requirements for each fiscal year FY '91 through '93.

Section 29. Retention of Markings and Placards

Not later than 18 months after the date of enactment, the Secretary of Labor under the OSHA law shall issue standards requiring that all markings, placards and labels on anything containing a hazardous material be retained until the hazardous material has been removed.

Section 30. Relationship To Federal Railroad Safety Act of 1970

Nothing in this act shall be construed to alter, amend, modify or otherwise affect the provisions of the Federal Railroad Safety Act.

NOISE EMISSION STANDARDS⁶⁴

Locomotive Under Stationary Conditions

Locomotives built prior to December 31, 1979, shall not permit sound levels in excess of 93 dba at any throttle setting except idle or in excess of 73 dba at idle when measured 100 feet from the center of the locomotive.

Road locomotives built after December 31, 1979, shall not produce sound levels in excess of 87 dba at any throttle setting except idle, or in excess of 70 dba at idle. Switcher locomotives are subject to the same rule.

Locomotives Under Moving Conditions

Road locomotives manufactured before December 31, 1979, shall not produce sound levels in excess of 96 dba when moving.

Locomotives manufactured after December 31, 1979, may not produce sound levels in excess of 90 dba.

Switcher locomotives built before December 31, 1979, shall not produce sound levels in excess of 90 dba when moving.

Rail Cars

⁶⁴ On April 15, 2019, the FRA eliminated the requirement for certain locomotives display a badge or tag to demonstrate the railroad has certified the locomotives comply with noise emission standards.

Rail cars shall not produce sound levels in excess of 88 dba at speeds up to 45 miles per hour or 93 dba at speeds greater than 45 miles per hour.

Retarders

Retarders shall not exceed a sound level of 83 dba. This applies only to active retarders, not inert retarders.

Coupling Operations

Coupling operations shall not exceed a sound level of 92 dba.

In general, the measurements will be at a distance of 100 feet from the equipment or from the center line of any section of the track having less than a two degree curve (or a radius of curvature greater than 2865 feet). The specific methods of measuring the sound are set forth in the regulations.

General Noise Standards

FRA's noise standard limits cab employee noise exposure to certain levels based on the duration of employee exposure. Railroads are required to conduct noise monitoring and to implement a hearing conservation program, which includes hearing tests (audiograms), training, and monitoring. The rule also establishes design, build, and maintenance standards for new locomotives and maintenance requirements for existing locomotives.

42 U.S.C. § 4916

40 C.F.R. §§ 201.1-201.34 and 49 C.F.R. §§ 210.1-210.33

FEDERAL EMPLOYERS' LIABILITY ACT

FELA provides the exclusive remedy for an injured railroad employee. A railroad is liable as long as there is any negligence by the railroad, however slight. In addition, an employee is not prevented from recovery by the fact that he knew of a hazardous condition and assumed the risk of injury. If an employee is found to be partly responsible for his injury (i.e., contributory negligent) this does not prevent recovery. His damages are simply reduced in proportion to the amount of negligence for which the employee is responsible. For example, if the jury found that the employee was 50% responsible for his injuries, he will be awarded only 50% of what he otherwise would have received. Contributory negligence is not chargeable against an employee if he is injured or killed by reason of a violation of any statute or regulation enacted for the safety of employees.

A lawsuit for recovery of damages against a railroad must be brought within three years from the date of accident. If third-parties are also going to be sued, the applicable state statute of limitation applies to such parties. The burden of proof in a FELA case is whether a railroad's negligence played any part, even the slightest, in producing an injury or death.

A regulation, standard, or requirement in force, or prescribed by the Secretary of Transportation under the railroad safety laws or by a State agency that is participating in investigative and surveillance activities under section 20105 of title 49, is deemed to be a statute for purposes of assumption of risk and contributory negligence. *See*, 45 U.S.C. §54a.

Liens by Railroad Retirement Board

If a FELA settlement includes money for “pay for time lost” and the settlement allocates a portion to pay for time lost for an identifiable period, only the amount allocated will be credited as time lost, provided that a minimum of 10 times the employee’s daily pay rate must be allocated to each month. If a settlement includes pay for time lost but makes no allocation between pay for time lost and other damages, all of the FELA settlement will be considered to be for “pay for time lost.” In the latter case, all money assigned to the months of lost time prior to later of the date of the settlement or the date that employee relinquishes his rights will be considered regular railroad compensation, up to 1/12 of the annual compensation base per month for that year and will result in an overpayment of all annuity payments received for that same time period. However, beginning with the date of the settlement or the date the employee relinquishes his rights, all money received will not be considered railroad compensation and will not impact annuity payments.

Regarding any lien recovery of sickness insurance benefits from the Board, medical expenses incurred by the employee but reimbursed by the employer will not reduce the lien amount and will be deducted from the settlement amount. Litigation expenses are also deducted. *See*, 20 C.F.R. § 341.5.

Medicare Liens

Whenever an employee receives money in settlement of a claim, there is an obligation to reimburse Medicare for any sums that Medicare may have paid in connection with the claim. While there is controversy, Section 10.4 of the Centers for Medicare and Medicaid Services (the agency which administers the Medicare repayment program) manual states "The FELA and similar state acts are considered liability insurance under the MSP liability provisions." As a result, Medicare asserts it has the right to reimbursement from the defendants and their insurers as the result of a FELA claim. The insurers and any self insured railroads are required to report every settlement to Medicare.

There exists an issue regarding a settlement which includes future medical bills. Medicare has published guidelines recommending that the employee set aside funds to cover such bills where there is reasonable expectation of Medicare enrollment in 30 months or less after settlement and the total settlement is greater than \$250,000. However, no formal regulation has been issued as of the date of this book.

45 U.S.C. §§ 51-60.

LOCOMOTIVE SAFETY STANDARDS

The Locomotive Inspection Act makes it unlawful for any carrier to use or permit to be used on its line any locomotive unless the entire locomotive and its appurtenances (1) are in proper condition and safe to operate in the service for which they are put, without unnecessary peril to life or limb and (2) have been inspected and tested as required by the regulations.

When a locomotive has one or more conditions not in compliance, it may be moved only as a light locomotive or a dead locomotive after "a qualified person shall determine that it is safe to move the locomotive and the maximum speed and other restrictions necessary to safe movement." The engineer shall be notified in writing and inform all other crew members of the non-complying locomotive and any restriction. A copy of a tag bearing the words "non-complying locomotive" shall be attached to the control stand.

If a locomotive develops a non-complying condition en route, it may continue to utilize its propelling motors if operated under the restrictions set forth in the above paragraph until the next calendar day inspection or to the nearest repair point.

A non-complying locomotive may be moved light or dead within a yard at speeds not in excess of ten miles per hour if the movement is solely for the purpose of repair.

A dead locomotive may not continue in use following a calendar day inspection as a controlling locomotive or at the head of a train or locomotive consist.

Each locomotive in use shall be inspected at least once during each calendar day. A written report shall be made of each inspection and a description of the non-complying conditions must be stated and the conditions corrected before the locomotive is used. The nature of the repairs that have been made shall be placed in the report and signed by the person making the repair.

In conducting the calendar day locomotive inspection, the FRA has issued a clarification of which specific FRA regulations must be complied with. These are:

Subpart A—GENERAL

§ 229.1 Scope.

This part prescribes minimum Federal safety standards for all locomotives except those propelled by steam power.

§ 229.3 Applicability.

(a) Except as provided in paragraphs (b) through (e) of this section, this part applies to all standard gage railroads.

(b) This part does not apply to:

(1) A railroad that operates only on track inside an installation which is not part of the

general railroad system of transportation; or

(2) Rapid transit operations in an urban area that are not connected with the general railroad system of transportation.

(c) Paragraphs (a) and (b) of § 229.125 do not apply to Tier II passenger equipment as defined in § 238.5 of this chapter (i.e., passenger equipment operating at speeds exceeding 125 mph but not exceeding 150 mph).

(d)-(e). On or after November 8, 1999, paragraphs (a)(1) and (b)(1) of § 229.141 do not apply to “passenger equipment” as defined in § 238.5 of this chapter, or that is placed in service for the first time after September 8, 2000, unless such equipment is excluded from the requirements of §§ 238.203 through 238.219 (i.e., requirements for railroad passenger equipment operating at speeds not exceeding 125 mph.), and § 238.223 of this chapter (i.e., re: fuel tanks) by operation of § 238.201(a)(2) of this chapter.

54 FR 33229, Aug. 14, 1989, as amended at 64 FR 25659, May 12, 1999

Section 229.4 Information collection.

(a)

(b)

§ 229.5 Definitions.

As used in this part—

AAR means the Association of American Railroads.

Acceptable quality level (AQL). The AQL is expressed in terms of percent defective or defects per 100 units. Lots having a quality level equal to a specified AQL will be accepted approximately 95 percent of the time when using the sampling plans prescribed for that AQL.

Alerter means a device or system installed in the locomotive cab to promote continuous, active locomotive engineer attentiveness by monitoring select locomotive engineer-induced control activities. If fluctuation of a monitored locomotive engineer-induced control activity is not detected within a predetermined time, a sequence of audible and visual alarms is activated so as to progressively prompt a response by the locomotive engineer. Failure by the locomotive engineer to institute a change of state in a monitored control, or acknowledge the alerter alarm activity through a manual reset provision, results in a penalty brake application that brings the locomotive or train to a stop.

Anti-climbers means the parts at the ends of adjoining rail vehicles in a train that are designed to engage when subjected to large buff loads to prevent the override of one vehicle by another.

Assignment Address means a unique identifier of the RCL that insures that only the OCU's linked to a specific RCL can command that RCL.

Associate Administrator for Safety means the Associate Administrator for Safety, Federal Railroad Administration, or that person's delegate as designated in writing.

Break means a fracture resulting in complete separation into parts.

Build date means the date on which the completed locomotive is shipped by the manufacturer or remanufacturer to the customer, or if the railroad manufactures or remanufactures the locomotive itself, the date on which the locomotive is released from the manufacture or remanufacture facility.

Cab means that portion of the superstructure designed to be occupied by the crew operating the locomotive.

Carrier means railroad, as that term is in this section.

Collision posts means structural members of the end structures of a rail vehicle that extend vertically from the underframe to which they are securely attached and that provide protection to occupied compartments from an object penetrating the vehicle during a collision.

Controlling locomotive means a locomotive from where the operator controls the traction and braking functions of the locomotive or locomotive consist, normally the lead locomotive.

Corner posts means structural members located at the intersection of the front or rear surface with the side surface of a rail vehicle and which extend vertically from the underframe to the roof.

Commuter service means the type of railroad service described under the heading "Commuter Operations" in 49 C.F.R. part 209, Appendix A.

Commuter work train is a non-revenue service train used in the administration and upkeep service of a commuter railroad.

Control cab locomotive means a locomotive without propelling motors but with one or more control stands.

Controlling remote distributed power locomotive means the locomotive in a distributed power consist that receives the coded signal from the lead locomotive consist of the train whether commanded automatically by the distributed power system or manually by the locomotive engineer.

Crack means a fracture without complete separation into parts, except that castings with shrinkage cracks or hot tears that do not significantly diminish the strength of the member are not considered to be cracked.

Cruise control means a device that controls locomotive power output to obtain a targeted speed. A device that functions only at or below 30 miles per hour is NOT considered a “cruise control” for purposes of this part.

Data element means one or more data point or value reflecting on-board train operations at a particular time. Data may be actual or “passed through” values or may be derived from a combination of values from other sources.

dB(A) means the sound pressure level in decibels measured on the A-weighted scale.

Dead locomotive means—

- (a) A locomotive, other than a control cab locomotive, that does not have any traction device supplying tractive power; or
- (b) A control cab locomotive that has a locked and unoccupied cab.

Decibel (dB) means a unit of measurement of sound pressure levels.

Defective means, for purposes of section 229.129 of this part, a locomotive equipped with an audible warning device that produces a maximum sound level in excess of 110 dB(A) and/or a minimum sound level below 96 dB(A), as measured 100 feet forward of the locomotive in the direction of travel.

Designated service means exclusive operation of a locomotive under the following conditions:

- (a) The locomotive is not used as an independent unit or the controlling unit in a consist of locomotives except when moving for the purposes of servicing or repair within a single yard area;
- (b) The locomotive is not occupied by operating or deadhead crews outside a single yard area; and
- (c) The locomotive is stenciled “Designated Service—DO NOT OCCUPY.”

Design standard means a criterion adopted by an industry or voluntary consensus standards body, which addresses the design of a locomotive with respect to its crashworthiness and crashworthiness features.

Distributed power system means a system that provides control of a number of locomotives dispersed throughout a train from a controlling locomotive located in the lead position. The system provides control of the rearward locomotives by command signals originating at the lead locomotive and transmitted to the remote (rearward) locomotives.

DMU locomotive means a diesel-powered multiple unit operated locomotive with one or more propelling motors designed to carry passenger traffic.

Excessive noise report means a report by a locomotive cab occupant that the locomotive is producing an unusual level of noise that significantly interferes with normal cab communications or that is a concern with respect to hearing conservation.

Electronic air brake means a brake system controlled by a computer which provides the means for control of the locomotive brakes or train brakes or both.

Event recorder means a device, designed to resist tampering, that monitors and records data, as detailed in § 229.135(b), over the most recent 48 hours of operation of the electrical system of the locomotive on which the device is installed. However, a device, designed to resist tampering, that monitors and records the specified data only when the locomotive is in motion meets this definition if the device was installed prior to November 5, 1993 and if it records the specified data for the last eight hours the locomotive was in motion.

Event recorder memory module means that portion of the event recorder used to retain the recorded data as detailed in § 229.135(b).

FRA means the Federal Railroad Administration.

Fuel tank, external means a fuel containment vessel that extends outside the car body structure of a locomotive.

Fuel tank, internal means a fuel containment vessel that does not extend outside the car body structure of a locomotive.

High voltage means an electrical potential of more than 150 volts.

Initial terminal means a location where a train is originally assembled.

In-service event recorder means an event recorder that was successfully tested as prescribed in § 229.27(d) and whose subsequent failure to operate as intended, if any, is not actually known by the railroad operating the locomotive on which it is installed.

Lateral means the horizontal direction perpendicular to the direction of travel.

Lead locomotive means the first locomotive proceeding in the direction of movement.

Lite locomotive means a locomotive or a consist of locomotives not attached to any piece of equipment or attached only to a caboose

Locomotive means a piece of on-track equipment other than hi-rail, specialized maintenance, or other similar equipment—

(a) With one or more propelling motors designed for moving other equipment;

(b) With one or more propelling motors designed to carry freight or passenger traffic or both;

or

(c) Without propelling motors but with one or more control stands.

Locomotive cab means the compartment or space on board a locomotive where the control stand is located and which is normally occupied by the engineer when the locomotive is operated.

Locomotive Control Unit (LCU) means a system onboard an RCL that communicates via a radio link which receives, processes, and confirms commands from the OCU, which directs the locomotive to execute them.

Longitudinal means in a direction parallel to the normal direction of travel.

Lot means a collection of locomotives, equipped with the same horn model, configuration, and location, and the same air pressure and delivery system, which has been manufactured or processed under essentially the same conditions.

Mandatory directive means any movement authority or speed restriction that affects a railroad operation.

Manufacture means the act of constructing a locomotive.

Modesty lock means a latch that can be operated in the normal manner only from within the sanitary compartment, that is designed to prevent entry of another person when the sanitary compartment is in use. A modesty lock may be designed to allow deliberate forced entry in the event of an emergency.

Monocoque design locomotive means a locomotive design where the shell or skin acts as a single unit with the supporting frame to resist and transmit the loads acting on the locomotive.

MU locomotive means a multiple unit operated electric locomotive—

(a) With one or more propelling motors designed to carry freight or passenger traffic or both;
or

(b) Without propelling motors but with one or more control stands and a means of picking-up primary power such as a pantograph or third rail.

Narrow-nose locomotive means a locomotive with a short hood that spans substantially less than the full width of the locomotive.

Occupied service means the operation of a locomotive when the cab is physically occupied by a person.

Operator Control Unit (OCU) means a mobile unit that communicates via a radio link the commands for movement (direction, speed, braking) or for operations (bell, horn, sand) to an RCL.

Other short-haul passenger service means the type of railroad service described under the heading “Other short-haul passenger service” in 49 C.F.R. part 209, appendix A.

Permanent deformation means the undergoing of a permanent change in shape of a structural member of a rail vehicle.

Potable water means water that meets the requirements of 40 C.F.R. part 141, the

Environmental Protection Agency's Primary Drinking Water Regulations, or water that has been approved for drinking and washing purposes by the pertinent state or local authority having jurisdiction. For purposes of this part, commercially available, bottled drinking water is deemed potable water.

Powered axle is an axle equipped with a traction device.

Power car means a rail vehicle that propels a Tier II passenger train or is the lead vehicle in a Tier II passenger train, or both.

Qualified mechanical inspector means a person who has received instruction and training that includes "hands-on" experience (under appropriate supervision or apprenticeship) in one or more of the following functions: troubleshooting, inspection, testing, maintenance or repair of the specific locomotive equipment for which the person is assigned responsibility. This person shall also possess a current understanding of what is required to properly repair and maintain the locomotive equipment for which the person is assigned responsibility. Further, the qualified mechanical inspector shall be a person whose primary responsibility includes work generally consistent with the functions listed in this definition.

Railroad means all forms of non-highway ground transportation that run on rails or electromagnetic guideways, including:

(a) Commuter or other short-haul rail passenger service in a metropolitan or suburban area, and

(b) High speed ground transportation systems that connect metropolitan areas, without regard to whether they use new technologies not associated with traditional railroads. Such term does not include rapid transit operations within an urban area that are not connected to the general railroad system of transportation.

Remanufacture means the act of constructing a remanufactured locomotive.

Remanufactured locomotive means a locomotive rebuilt or refurbished from a previously used or refurbished underframe ("deck"), containing fewer than 25% previously used components (measured by dollar value of the components). For calculation purposes, the percentage of previously used components is determined with equivalent value of new parts and is calculated using dollar values from the same year as the new parts used to remanufacture the locomotive.

Remote Control Locomotive (RCL) means a remote control locomotive that, through use of a radio link can be operated by a person not physically within the confines of the locomotive cab. For purposes of this part, the term RCL does not refer to a locomotive or group of locomotives remotely controlled from the lead locomotive of a train, as in a distributed power arrangement.

Remote Control Operator (RCO) means a person who utilizes an OCU in connection with operations involving a RCL with or without cars.

Remote Control Pullback Protection means a function of a RCL that enforces speeds and stops in the direction of pulling movement.

Roof rail means the longitudinal structural member at the intersection of the side wall and the roof sheathing.

Sand delivery system means a permanently stationed or fixed device designed to deliver sand to locomotive sand boxes that do not require the sand to be manually delivered or loaded. A sand delivery system will be considered permanently stationed if it is at a location at least five days a week for at least eight hours per day.

Sanitary means lacking any condition in which any significant amount of filth, trash, or human waste is present in such a manner that a reasonable person would believe that the condition might constitute a health hazard; or of strong, persistent, chemical or human waste odors sufficient to deter use of the facility, or give rise to a reasonable concern with respect to exposure to hazardous fumes. Such conditions include, but are not limited to, a toilet bowl filled with human waste, soiled toilet paper, or other products used in the toilet compartment, that are present due to a defective toilet facility that will not flush or otherwise remove waste; visible human waste residue on the floor or toilet seat that is present due to a toilet that overflowed; an accumulation of soiled paper towels or soiled toilet paper on the floor, toilet facility, or sink; an accumulation of visible dirt or human waste on the floor, toilet facility, or sink; and strong, persistent chemical or human waste odors in the compartment.

Sanitation compartment means an enclosed compartment on a railroad locomotive that contains a toilet facility for employee use.

Self-monitoring event recorder means an event recorder that has the ability to monitor its own operation and to display an indication to the locomotive operator when any data required to be stored are not stored or when the stored data do not match the data received from sensors or data collection points.

Semi-monocoque design locomotive means a locomotive design where the skin or shell acts, to some extent, as a single unit with the supporting frame to resist and transmit the loads acting on the locomotive.

Semi-permanently coupled means coupled by means of a drawbar or other coupling mechanism that requires tools to perform the uncoupling operation.

Serious injury means an injury that results in the amputation of any appendage, the loss of sight in an eye, the fracture of a bone, or confinement in a hospital for a period of more than 24 consecutive hours.

Short hood means the part of the locomotive above the underframe located between the cab and the nearest end of the locomotive.

Standards body means an industry and/or professional organization or association which conducts research and develops and/or issues policies, criteria, principles, and standards related to the rail industry.

Switching service means the classification of railroad freight and passenger cars according to commodity or destination; assembling cars for train movements; changing the position of cars for purposes of loading, unloading, or weighing; placing locomotives and cars for repair or storage; or moving rail equipment in connection with work service that does not constitute a train movement.

Throttle position means any and all of the discrete output positions indicating the speed/tractive effort characteristic requested by the operator of the locomotive on which the throttle is installed. Together, the discrete output positions shall cover the entire range of possible speed/tractive effort characteristics. If the throttle has continuously variable segments, the event recorder shall capture either:

- (a) The exact level of speed/tractive effort characteristic requested, on a scale of zero (0) to one hundred percent (100%) of the output variable or
- (b) A value converted from a percentage to a comparable 0 to 8 digital signal.

Tier II means operating at speeds exceeding 125 mph but not exceeding 150 mph.

Time means either “time-of-day” or “elapsed time” (from an arbitrarily determined event) as determined by the manufacturer. In either case, the recorder must be able to convert to an accurate time-of-day with the time zone stated unless it is Greenwich mean time (UTC).

Toilet facility means a system that automatically or on command of the user removes human waste to a place where it is treated, eliminated, or retained such that no solid or non-treated liquid waste is thereafter permitted to be released into the bowl, urinal, or room and that prevents harmful discharges of gases or persistent offensive odors.

Transfer service means a freight train that travels between a point of origin and a point of final destination not exceeding 20 miles and that is not performing switching service.

Ultimate strength means the load at which a structural member fractures or ceases to resist any load.

Unsanitary means having any condition in which any significant amount of filth, trash, or human waste is present in such a manner that a reasonable person would believe that the condition might constitute a health hazard; or strong, persistent, chemical or human waste odors sufficient to deter use of the facility, or give rise to a reasonable concern with respect to exposure to hazardous fumes. Such conditions include, but are not limited to, a toilet bowl filled with human waste, soiled toilet paper, or other products used in the toilet compartment, that are present due to a defective toilet facility that will not flush or otherwise remove waste; visible human waste residue on the floor or toilet seat that is present due to a toilet that overflowed; an accumulation of soiled paper towels or soiled toilet paper on the floor, toilet facility, or sink; an accumulation of visible dirt or human waste on the floor, toilet facility, or sink; and strong,

persistent chemical or human waste odors in the compartment.

Upper 99% confidence limit means the noise level below which 99% of all noise level measurements must lie.

Washing system means a system for use by railroad employees to maintain personal cleanliness that includes a secured sink or basin, water, antibacterial soap, and paper towels; or antibacterial waterless soap and paper towels; or antibacterial moist towelettes and paper towels; or any other combination of suitable antibacterial cleansing agents.

Wide-nose locomotive means a locomotive with a short hood that spans the full width of the locomotive.

§229.7 Prohibited acts.

(a) The Locomotive Inspection Act (45 U.S.C. 22-34) makes it unlawful for any carrier to use or permit to be used on its line any locomotive unless the entire locomotive and its appurtenances—

- (1) Are in proper condition and safe to operate in the service to which they are put, without unnecessary peril to life or limb; and
- (2) Have been inspected and tested as required by this part.

(b) Any person (an entity of any type covered under 1 U.S.C. 1, including but not limited to the following: a railroad; a manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track, or facilities; any independent contractor providing goods or services to a railroad; and any employee of such owner, manufacturer, lessor, lessee, or independent contractor) who violates any requirement of this part or of the Locomotive Inspection Act or causes the violation of any such requirement is subject to a civil penalty of at least \$650 and not more than \$25,000 per violation, except that: Penalties may be assessed against individuals only for willful violations, and, where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$100,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. *See, Appendix B* to this part for a statement of agency civil penalty policy.

§229.9 Movement of non-complying locomotives

(a) Except as provided in paragraphs (b), (c), § 229.125(g)[movement with defective auxiliary lights], and § 229.131(b)[inoperative sanders] and (c)(1)[at a location not equipped with a sander delivery service], a locomotive with one or more conditions not in compliance with this part may be moved only as a lite locomotive or a dead locomotive after the carrier has complied with the following:

- (1) A qualified person shall determine—
 - (i) That it is safe to move the locomotive; and
 - (ii) The maximum speed and other restrictions necessary for safely conducting the movement;

(2) (i) The engineer in charge of the movement of the locomotive shall be notified in writing and inform all other crew members in the cab of the presence of the non-complying locomotive and the maximum speed and other restrictions determined under paragraph (a)(1)(ii) of this section.

(ii) A copy of the tag described in paragraph (a)(3) of this section may be used to provide the notification required by paragraph (a)(2)(i) of this section.

(3) A tag bearing the words “non-complying locomotive” and containing the following information, shall be securely attached to the control stand on each MU or control cab locomotive and to the isolation switch or near the engine start switch on every other type of locomotive—

(i) The locomotive number;

(ii) The name of the inspecting carrier;

(iii) The inspection location and date;

(iv) The nature of each defect;

(v) Movement restrictions, if any;

(vi) The destination; and

(vii) The signature of the person making the determinations required by this

paragraph.

(b) A locomotive that develops a non-complying condition enroute may continue to utilize its propelling motors, if the requirements of paragraph (a) are otherwise fully met, until the earlier of—

(1) The next calendar day inspection, or

(2) The nearest forward point where the repairs necessary to bring it into compliance can be made.

(c) A non-complying locomotive may be moved live or dead within a yard, at speeds not in excess of 10 miles per hour, without meeting the requirements of paragraph (a) of this section if the movement is solely for the purpose of repair. The carrier is responsible to insure that the movement may be safely made.

(d) A dead locomotive may not continue in use following a calendar day inspection as a controlling locomotive or at the head of a train or locomotive consist.

(e) A locomotive does not cease to be a locomotive because its propelling motor or motors are inoperative or because its control jumper cables are not connected.

(f) Nothing in this section authorizes the movement of a locomotive subject to a Special Notice for Repair unless the movement is made in accordance with the restrictions contained in the Special Notice.

(g) Paragraphs (a), (b), and (c) of this section shall not apply to sanitation conditions covered by §§ 229.137 and 229.139. These two sections set forth specific requirements for the movement and repair of locomotives with defective sanitation compartments.

45 Fed. Reg. 21109, Mar. 31, 1980, as amended at 61 Fed. Reg. 8887, Mar. 6, 1996; 67 Fed. Reg.

16050, Apr. 4, 2002; 72 Fed. Reg. 59223, Oct. 19, 2007

§229.11 Locomotive identification.

- (a) The letter “F” shall be legibly shown on each side of every locomotive near the end which for identification purposes will be known as the front end.
- (b) The locomotive number shall be displayed in clearly legible numbers on each side of each locomotive.

§229.13 Control of locomotives.

Except when a locomotive is moved in accordance with § 229.9[movement of non-complying locomotive], whenever two or more locomotives are coupled in remote or multiple control, the propulsion system, the sanders, and the power brake system of each locomotive shall respond to control from the cab of the controlling locomotive. If a dynamic brake or regenerative brake system is in use, that portion of the system in use shall respond to control from the cab of the controlling locomotive.

§229.14 Non-MU control cab locomotives.

On each non-MU control cab locomotive, only those components added to the passenger car that enable it to serve as a lead locomotive, control the locomotive actually providing tractive power, and otherwise control the movement of the train, are subject to this part.

**§229.15 Remote Control Locomotives
(RCL is summarized in a separate section in this Book)**

§229.19 Prior waivers

Waivers from any requirement of this part 229, issued after June 8, 2012, shall terminate on the date specified in the letter. If no date is specified, the waiver will automatically terminate on June 8, 2017.

§229.20 Electronic Recordkeeping

Except for the daily inspection record maintained on the locomotive, the cab copy Form F 6180-49-A, the fragmented air brake maintenance record, and the records required by 229.9, a railroad may elect to utilize the recordkeeping provisions of this part by electronic filing. The requirements are set out in 3 categories: design, operational, and availability, and accessibility. If this method is used, the record must be made within 24 hours. Paper copies of electronic records shall be made available within 15 days upon request from FRA.

Subpart B—INSPECTIONS AND TESTS

§229.21 Daily Inspections

Requires that a written report be prepared by the qualified mechanical inspector after the inspection of a locomotive has been completed. The report must contain:

1. The name of the railroad;
2. The initials and number of the locomotive;
3. The place;
4. The date;
5. The time of the inspection;
6. A description of any non-complying conditions of this part disclosed by the inspection; and
7. The signature of the employee making the inspection.

The inspector must also enter on the record maintained in the locomotive cab the date, time, and place of the daily inspection.

All FRA non-complying conditions reported by the inspector must be repaired before the locomotive is used. However, locomotives that do not comply with the sanitary requirements may remain in service beyond the date on which the daily inspection occurs. For example, a railroad may use a locomotive with a defective toilet in switching service for up to 10 days, at which time it must be repaired or used in the trailing position. The repairs may be recorded electronically.

The inspector performing the inspection should also examine any work reports found on a locomotive which may have information entered by previous engineers regarding FRA defective conditions, and these items should also be inspected. Any non-complying safety critical condition, under this part found by an inspector and not included in this list, shall also be reported. Those conditions not covered by this part and reported, i.e., toilet facilities, are not considered non-complying conditions except if excessive strong chemical odors persist in the cab.

In addition to the daily inspection of each locomotive and steam generator, periodic inspections shall be given not to exceed 92 days. Every periodic inspection shall include the following: (a) all gauges used by the engineer for braking shall be tested; (b) all electric devices and visible insulation shall be inspected; (c) all cable connections and jumpers designed to carry 600 volts or more shall be cleaned, inspected and tested for continuity; (d) each steam generator shall be inspected and tested.

Each locomotive shall be inspected and tested annually as follows: (a) the filtering devices or dirt collectors in the main reservoir supply line to the air brake system shall be cleaned, repaired, or replaced; (b) brake cylinder relay valve portions main reservoir safety valves, brake pipe vent valve portions, feed and reducing valve portions in the air brake system shall be drained, repaired and tested; (c) the date and place of cleaning, repairing and testing shall be recorded and signed by the person performing the work and the supervisor.

Load meters shall be tested.

Each steam generator shall be subjected to a hydrostatic pressure at least 25% above the working pressure and the visual return water flow indicator shall be removed and inspected.

Within every two years, all valves, valve portions and MU locomotive cylinders and electric-pneumatic master controllers in the air brake system shall be cleaned, repaired and tested. Those persons performing the work and their supervisors shall sign the form.

Within two years, each main reservoir (other than aluminum reservoir) shall be subjected to a hydrostatic pressure test, and shall be hammer tested over its entire surface while the reservoir is empty.

Each welded main reservoir may be drilled over its entire surface and whenever any such telltale hole shall have penetrated the interior of any reservoir, it shall be permanently withdrawn from service.

All systems and components on a locomotive shall be free of conditions that endanger the safety of the crew, locomotive or train. The regulations set forth specific standards for the brake system, emergency brake valve, main reservoir system, aluminum main reservoir, brake gauges, piston travel, foundation brake gear, leakage, draft systems, suspension system (lateral motion, plain bearings, spring wiggling, trucks, side bearings, clearance above top of rail, wheel sets, wheel and tire defects); electrical system (current collectors, third rail shoes, emergency pole, shoe insulation, insulation or grounding of metal parts, doors and cover plates, hand operated switches, jumpers, cable connections, motors and generators); internal combustion equipment (safety cutoff device, venting, ground fuel tanks, safety hangers, engines); steam generators (safe working pressure, steam generator number, pressure gauge, safety valves, water flow indicator, warning notice); cabs and cab equipment (slip/slide alarms, speed indicators, cabs, floors and passageways, locomotive cab noise, pilots, snow plows, end plates, headlights, cab lights, audible warning device, sanders).

§229.23 Periodic Inspection: General

The Locomotive Inspection and Repair Report F6180.49A, must be displayed in the cab of each locomotive in order to determine that the periodic, annual and biennial inspections are not overdue as indicated by the dates. Also, the event recorders must be inspected for any external damage or indications of tampering.

At least once each 33 days, the daily inspection required in §229.21 shall be performed by a qualified mechanical inspector as defined in §229.5. A record of the inspections that contains the name of the person performing the inspection and the date performed shall be maintained in the locomotive.

The inspection requirements are 184 day inspection interval for all locomotives equipped with microprocessor based control systems with self diagnosis capabilities.

The railroad shall maintain, and provide employees performing inspections a list of the defects and repairs made on each locomotive since the date of the last inspection.

The railroad shall provide employees performing inspections with a document containing all tests conducted since the last periodic inspection, and procedures needed to perform the inspection.

In addition,

At the first periodic inspection in each calendar year, the carrier shall remove from each locomotive Form FRA F 6180-49A covering the previous calendar year. If a locomotive does not receive its first periodic inspection in a calendar year before April 2, or July 3 if it is a locomotive equipped with advanced microprocessor-based on-board electronic condition monitoring controls, because it is out of use, the form shall be promptly replaced. The Form FRA F 6180-49A covering the preceding year for each locomotive, in or out of use, shall be signed by the railroad official responsible for the locomotive and filed as required in Sec. 229.23(f). The date and place of the last periodic inspection and the date and place of the last tests performed under Sec. Sec. 229.27[annual], 229.29[air brake system], and 229.31[main reservoir] shall be transferred to the replacement Form FRA F 6180-49A.

The railroad mechanical officer who is in charge of a locomotive shall maintain in his office a secondary record of the information reported on Form FRA F 6180-49A. The secondary record shall be retained until Form FRA F 6180-49A has been removed from the locomotive and filed in the railroad office of the mechanical officer in charge of the locomotive. If the Form FRA F 6180-49A removed from the locomotive is not clearly legible, the secondary record shall be retained until the Form FRA F 6180-49A for the succeeding year is filed. The Form F 6180-49A removed from a locomotive shall be retained until the Form FRA F 6180-49A for the succeeding year is filed.

The railroad shall maintain, and provide employees performing inspections under this section with, a list of the defects and repairs made on each locomotive over the last ninety-two days;

§229.25 Tests: Every Periodic Inspection

This requires that each periodic inspection include all gauges(except load meters used with auxiliary brake system), all electrical devices and visible insulation, all cable connections designed to carry 600 volts or more, and the event recorder.

Provisions are added to include inspection requirements for remote control locomotives and locomotive alerters during the periodic inspection.

§229.27 Annual Tests

This section requires certain testing of the locomotive each 368 days, primarily to the load meters, testing of the air pressure, and maintenance and testing of a microprocessor-based event

recorder.

§229.29 Air Brake System Calibration, maintenance, and testing.

Except for DMU and MU locomotives covered under 238.309[Periodic brake maintenance], this requires the locomotive brakes to be calibrated, maintained and tested at regular intervals. Recordkeeping is mandated for these actions. Three levels of brake maintenance is established. For example, maintenance intervals for slug units is 4 years. There are different time intervals for filters and dirt collector maintenance than for brake valve maintenance.

Also, FRA has incorporated the locomotive brake maintenance provisions from Part 238 into this section.

§229.31 Main reservoir tests.

(a) Before it is placed in service, each main reservoir other than an aluminum reservoir shall be subjected to a pneumatic or hydrostatic pressure of at least 25 percent more than the maximum working pressure fixed by the chief mechanical officer. The test date, place, and pressure shall be recorded on Form FRA F 6180-49A, block eighteen. Except as provided in paragraph (c) of this section, at intervals that do not exceed 736 calendar days, each main reservoir other than an aluminum reservoir shall be subjected to a hydrostatic pressure of at least 25 percent more than the maximum working pressure fixed by the chief mechanical officer. The test date, place, and pressure shall be recorded on Form FRA F 6180-49A, and the person performing the test and that person's supervisor shall sign the form.

(b)...

(c) Each welded main reservoir originally constructed to withstand at least five times the maximum working pressure fixed by the chief mechanical officer may be drilled over its entire surface with telltale holes that are three-sixteenths of an inch in diameter. The holes shall be spaced not more than 12 inches apart, measured both longitudinally and circumferentially, and drilled from the outer surface to an extreme depth determined by the formula--

$$D = (.6PR/S - 0.6P)$$

Where:

D = extreme depth of telltale holes in inches but in no case less than one-sixteenth inch;

P = certified working pressure in pounds per square inch;

S = one-fifth of the minimum specified tensile strength of the material in pounds per square inch; and

R = inside radius of the reservoir in inches.

One row of holes shall be drilled lengthwise of the reservoir on a line intersecting the drain opening. A reservoir so drilled does not have to meet the requirements of paragraphs (a) and (b) of this section, except the requirement for a pneumatic or hydrostatic test

before it is placed in use. Whenever any such telltale hole shall have penetrated the interior of any reservoir, the reservoir shall be permanently withdrawn from service. A reservoir now in use may be drilled in lieu of the tests provided for by paragraphs (a) and (b) of this section, but shall receive a hydrostatic test before it is returned to use or may receive a pneumatic test if conducted by the manufacturer in an appropriately safe environment.

§229.33 Out-of-use credit.

When a locomotive is out of use for 30 or more consecutive days or is out of use when it is due for any test or inspection required by § 229.23, § 229.25, § 229.27, § 229.29, or § 229.31 [ie., daily, periodic, annual, calibration and maintenance of main reservoir] , an out-of-use notation showing the number of out-of-use days shall be made on an inspection line on Form FRA F 6180-49A. A supervisory employee of the carrier who is responsible for the locomotive shall attest to the notation. If the locomotive is out of use for one or more periods of at least 30 consecutive days each, the interval prescribed for any test or inspection under this part may be extended by the number of days in each period the locomotive is out of use since the last test or inspection in question. A movement made in accordance with § 229.9 [movement of non-complying locomotive] is not a use for purposes of determining the period of the out-of-use credit.

Subpart C—SAFETY REQUIREMENTS

General Requirements

§229.41. Protection against personal injury

Fan openings, exposed gears and pinions, and exposed moving parts must be inspected to determine that no significant safety hazard exists.

§229.43 Exhaust and battery gases

Products of combustion shall be released entirely outside the cab and other compartments. Examples of how such materials can enter the cab include open windows, and breaks, cracks, and leaks in the exhaust manifold system and connections.

Battery containers shall be vented and batteries kept from gassing excessively.

§229.45 General conditions

Any condition that would endanger the safety of the crew, locomotive or train would be considered as non-complying under this section. These conditions include:

1. Insecure attachment of components, including third rail, shoes or beams, traction motors, motor gear cases, and fuel tanks;
2. Fuel, oil, water, and other leaks and accumulations of oil on electrical equipment;

3. Improper functioning of components, including slack adjusters, pantograph operating cylinders, circuit breakers contractors, relays, switches, and fuses;
4. Cracks, breaks or other infirmities, such as quill drives, axles, gears, etc.

§229.46 Brakes, general

Before each trip, the locomotive brake systems must be tested to determine they operate as intended. The test procedure should be established by the railroad and should include operating the independent and automatic brake valves to observe that the brakes apply and release properly. Water and oil must also be drained from the main air reservoir.

When a unit is found with an automatic or independent brake defect, it may be moved to a trailing position, and need not be recorded as needing maintenance. However, the trailing unit must be handled safely, and appropriate records are kept and repairs are made.

§229.47 Emergency brake valve

(a) The emergency brake valve should be inspected. The valve must be properly marked. There is no requirement that the valve be tested when the daily inspection is performed to know if it will initiate an emergency application of the locomotive brakes. To test or not to test is up to the inspector and/or the railroad.

(b) DMU, MU, and control cab locomotives operated in road service shall be equipped with an emergency brake valve that is accessible to another crew member in the passenger compartment or vestibule. The words "Emergency Brake Valve" shall be legibly stenciled or marked near each valve or shall be shown on an adjacent badge plate.

§229.49 Main reservoir system.

(a) (1) The main reservoir system of each locomotive shall be equipped with at least one safety valve that shall prevent an accumulation of pressure of more than 15 pounds per square inch above the maximum working air pressure fixed by the chief mechanical officer of the carrier operating the locomotive.

(2) Except for non-equipped MU locomotives built prior to January 1, 1981, each locomotive that has a pneumatically actuated system of power controls shall be equipped with a separate reservoir of air under pressure to be used for operating those power controls. The reservoir shall be provided with means to automatically prevent the loss of pressure in the event of a failure of main air pressure, have storage capacity for not less than three complete operating cycles of control equipment and be located where it is not exposed to damage.

(b) A governor shall be provided that stops and starts or unloads and loads the air compressor within 5 pounds per square inch above or below the maximum working air pressure fixed by the carrier.

(c) Each compressor governor used in connection with the automatic air brake system shall be adjusted so that the compressor will start when the main reservoir pressure is not less than 15 pounds per square inch above the maximum brake pipe pressure fixed by the carrier and will not stop the compressor until the reservoir pressure has increased at least 10 pounds.

§229.51 Aluminum main reservoirs

(a) Aluminum main reservoirs used on locomotives shall be designed and fabricated as follows:

(1) The heads and shell shall be made of Aluminum Association Alloy No. 5083-0, produced in accordance with American Society of Mechanical Engineers (ASME) Specification SB-209, as defined in the "ASME Boiler and Pressure Vessel Code" (1971 edition), section II, part B, page 123, with a minimum tensile strength of 40,000 p.s.i. (40 k.s.i.).

(2) Each aluminum main reservoir shall be designed and fabricated in accordance with the "ASME Boiler and Pressure Vessel Code," section VIII, Division I (1971 edition), except as otherwise provided in this part.

(3) An aluminum main reservoir shall be constructed to withstand at least five times its maximum working pressure or 800 p.s.i., whichever is greater.

(4) Each aluminum main reservoir shall have at least two inspection openings to permit complete circumferential visual observation of the interior surface. On reservoirs less than 18 inches in diameter, the size of each inspection opening shall be at least that of 1 1/2-inch threaded iron pipe, and on reservoirs 18 or more inches in diameter, the size of each opening shall be at least that of 2-inch threaded iron pipe.

(b) The following publications, which contain the industry standards incorporated by reference in paragraph (a) of this section, may be obtained from the publishers and are also on file in the Office of Safety of the Federal Railroad Administration, Washington, DC 20590. Sections II and VIII of the "ASME Boiler and Pressure Vessel Code" (1971 edition) are published by the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, New York 10017.

§229.53 Brake gauges

All mechanical gauges and all devices providing indication of air pressure electronically that are used by the engineer to aid in the control or braking of the train or locomotive shall be located so that they may be conveniently read from the engineer's usual position during operation of the locomotive. A gauge or device shall not be more than five percent or three pounds per square inch in error, whichever is less.

§229.55 Piston travel

The brake cylinder piston travel must be inspected when the brake is applied. The piston travel must not exceed 1-1/2 inches less than the maximum piston travel (maximum piston travel is entered on the Locomotive Inspection and Repair Report located in the cab). For instance, a maximum brake cylinder piston travel of 8 inches will permit a piston travel of 6-1/2 inches.

Brake piston travel is only in noncompliance when it exceeds the standard, and an entry on an engineer's report of excessive piston travel does not necessarily denote noncompliance, although it may be greater than the railroad's standard. The excuse that piston travel is in noncompliance because the railroad inspector had no ruler is not a valid defense.

§229.57 Foundation brake gear

The brake rigging must be inspected for wear, and that all parts are properly secured. Brake shoes must be in approximate alinement with the wheel tread. A wheel which has a brake shoe wearing over the edge of the rim should be inspected for overheating.

§229.59 Brake pipe

Brake pipe must be tested to determine that the leakage does not exceed 5 pounds per minute. This is accomplished by making a brake application from an automatic brake pipe reduction, placing the brake pipe cut out valve in the off position, and timing the brake pipe pressure drop for one minute. Other leakage rate tests described in this section would be necessary if an air leak could be heard on a locomotive. If the locomotive is equipped with an Air Flow Meter, it must be inspected to determine that it is not damaged.

§229.61 Draft system

Couplers and uncoupling mechanisms must be inspected to determine that they are not cracked or broken and function as intended. The coupler must be inspected to determine that it is free of any cracks, and that the coupler carrier is not broken and secured in position.

A coupler may not have any of the following conditions:

- (1) A distance between the guard arm and the knuckle nose of more than 5 5/16 inches on D&E couplers.
- (2) A crack or break in the side wall or pin bearing bosses or in the pulling face of the knuckle.
- (3) A coupler assembly without anti-creep protection.
- (4) Free slack in the coupler or drawbar not absorbed by friction devices or draft gears that exceeds one-half inches.
- (5) A broken or cracked coupler carrier.
- (6) A broken or cracked yoke.
- (7) A broken draft gear.

A device shall be provided under the lower end of all drawbar pins and articulated connection pins to prevent the pin from falling out of place in case of breakage.

Suspension System

§229.63 Lateral motion.

(a) Except as provided in paragraph (b), the total uncontrolled lateral motion between the hubs of the wheels and boxes, between boxes and pedestals or both, on any pair of wheels may not exceed 1 inch on non-powered axles and friction bearing powered axles, or 3/4 inch on all

other powered axles.

(b) The total uncontrolled lateral motion may not exceed 1 1/4 inches on the center axle of three-axle trucks.

§229.64 Plain bearings.

A plain bearing box shall contain visible free oil and may not be cracked to the extent that it will leak oil.

§229.65 Spring rigging

Truck spring rigging should be inspected to determine that all parts are free of breaks and in proper position. It should be determined that spring safety hangers are in proper position and not fouling the spring mechanism.

§229.67 Trucks

A visual inspection of each truck frame shall be performed to determine that it is not broken or have a crack in a stress area that may affect its structural integrity. The securing arrangement to prevent the truck and locomotive body from separating in case of a derailment must be in place and securely fastened. The truck may not have a loose tie bar or a cracked or broken center casting, motor suspension lug, equalizer, hanger, gib or pin.

§229.69 Side bearings

Side bearings should not be riding in contact, unless so designed. Also, side bearings should be in good condition and not broken or missing.

§229.71 Clearance above top of rail

A visual inspection of the under side of the locomotive must be made from outside the gage of the rail to ascertain that no part of trucks and running gears, with the exception of the wheels and non-metallic sand hoses, are less than 2-1/2 inches above top of rail.

§ 229.73 Wheel sets.

(a) The variation in the circumference of wheels on the same axle may not exceed 1/4 inch (two tape sizes) when applied or turned.

(b) The maximum variation in the diameter between any two wheel sets in a three-powered-axle truck may not exceed 3/4 inch, except that when shims are used at the journal box springs to compensate for wheel diameter variation, the maximum variation may not exceed 1 1/4 inch. The maximum variation in the diameter between any two wheel sets on different trucks on a locomotive that has three-powered-axle trucks may not exceed 1 1/4 inch. The diameter of a

wheel set is the average diameter of the two wheels on an axle.

(c) On standard gauge locomotives, the distance between the inside gauge of the flanges on non-wide flange wheels may not be less than 53 inches or more than 53 1/2 inches. The distance between the inside gauge of the flanges on wide flange wheels may not be less than 53 inches or more than 53 1/4 inches.

(d) The distance back to back of flanges of wheels mounted on the same axle shall not vary more than 1/4 inch.

§229.75 Wheel and tire defects

Ascertain that wheels do not have egregious defects such as broken or cracked rim or flange and flat spots which would present an immediate derailment hazard. Wheel treads with flat spots or flanges which appear to be high should be measured with an approved gauge to determine whether they are in compliance or not.

Electrical System

§229.77 Current collectors.

(a) Pantographs shall be so arranged that they can be operated from the engineer's normal position in the cab. Pantographs that automatically rise when released shall have an automatic locking device to secure them in the down position.

(b) Each pantograph operating on an overhead trolley wire shall have a device for locking and grounding it in the lowest position, that can be applied and released only from a position where the operator has a clear view of the pantograph and roof without mounting the roof.

§229.79 Third rail shoes.

When locomotives are equipped with both third rail and overhead collectors, third-rail shoes shall be de-energized while in yards and at stations when current collection is exclusively from the overhead conductor.

§229.81 Emergency pole; shoe insulation.

(a) Each locomotive equipped with a pantograph operating on an overhead trolley wire shall have an emergency pole suitable for operating the pantograph. Unless the entire pole can be safely handled, the part of the pole which can be safely handled shall be marked to so indicate. This pole shall be protected from moisture when not in use.

(b) Each locomotive equipped with third-rail shoes shall have a device for insulating the current collecting apparatus from the third rail.

§229.83 Insulation or grounding of metal parts.

All unguarded noncurrent-carrying metal parts subject to becoming charged shall be grounded or thoroughly insulated.

§229.85 High voltage markings: Doors, cover plates, or Barriers

A visual inspection of all plates covering high voltage electrical apparatus must be performed to ascertain that they are secured in their proper locations. A conspicuous marking such as "Danger-High-Voltage" or "Danger" on the door or barrier guarding the high voltage equipment is required.

§229.87 Hand operated switches

All hand-operated switches carrying currents with a potential of more than 150 volts that may be operated while under load shall be covered and shall be operative from the outside of the cover. Means shall be provided to show whether the switches are open or closed. Switches that should not be operated while under load shall be legibly marked with the words "must not be operated under load" and the voltage carried.

§229.89 Jumper cable connections

Determine that jumper cables are properly stored (ends of cables should not be hanging free) and do not create a tripping hazard.

§229.91 Motors and generators

Visual inspection of traction motors and generators must be made to ascertain that they are free of excessive accumulations of oil, that all visible cables and cable connections are free from damage and that no traction motor is cut out.

Internal Combustion Equipment

§229.93 Safety cut-off device

The fuel line shall have a safety cut-off device that—

- (a) Is located adjacent to the fuel supply tank or in another safe location;
- (b) Closes automatically when tripped and can be reset without hazard; and
- (c) Can be hand operated from clearly marked locations, one inside the cab and one on each exterior side of the locomotive.

§ 229.95 Venting.

Fuel tank vent pipes may not discharge on the roof nor on or between the rails.

§229.97 Grounding fuel tanks.

Fuel tanks and related piping shall be electrically grounded.

§229.99 Safety hangers.

Drive shafts shall have safety hangers.

§229.101 Engines

- (a) The temperature and pressure alarms, controls and related switches of internal combustion engines shall function properly.
- (b) Whenever an engine has been shut down due to mechanical or other problems, a distinctive warning notice giving reason for the shut-down shall be conspicuously attached near the engine starting control until repairs have been made.
- (c) Wheel slip/slide protection shall be provided on a locomotive with an engine displaying a warning notice whenever required by § 229.115(b)[re: wheel slip/slide protective device].

Steam Generators

§229.103 Safe working pressure; factor of safety.

The safe working pressure for each steam generator shall be fixed by the chief mechanical officer of the carrier. The minimum factor of safety shall be four. The fixed safe working pressure shall be indicated on FRA Form F 6180-49A.

Section 229.105 Steam generator number.

An identification number shall be marked on the steam generator's separator and that number entered on FRA Form F 6180-49A.

§229.107 Pressure gauge.

- (a) Each steam generator shall have an illuminated steam gauge that correctly indicates the pressure. The steam pressure gauge shall be graduated to not less than one and one-half times the allowed working pressure of the steam generator.
- (b) Each steam pressure gauge on a steam generator shall have a siphon that prevents steam from entering the gauge. The pipe connection shall directly enter the separator and shall be steam tight between the separator and the gauge.

§229.109 Safety valves

Every steam generator shall be equipped with at least two safety valves that have a combined capacity to prevent an accumulation of pressure of more than five pounds per square inch above the allowed working pressure. The safety valves shall be independently connected to the separator and located as closely to the separator as possible without discharging inside of the generator compartment. The ends of the safety valve discharge lines shall be located or protected so that discharged steam does not create a hazard.

§229.111 Water-flow indicator

- (a) Steam generators shall be equipped with an illuminated visual return water-flow indicator.
- (b) Steam generators shall be equipped with an operable test valve or other means of determining whether the steam generator is filled with water. The fill test valve may not discharge steam or hot water into the steam generator compartment.

§229.113 Warning notice.

Whenever any steam generator has been shut down because of defects, a distinctive warning notice giving reasons for the shut-down shall be conspicuously attached near the steam generator starting controls until the necessary repairs have been made. The locomotive in which the steam generator displaying a warning notice is located may continue in service until the next periodic inspection.

§229.114 Steam Generator Inspections and Tests

All of the steam generator inspection requirements previously contained in §§229.23, 229.25, and 229.27 have been moved into this section. It provides for periodic steam generator inspection, isolation of steam generator testing and inspection when the water suction pipe to the water pump and the leads to the main switch(steam generated switch) are disconnected, and the train shut-off valve is wired closed or a blind gasket is applied.

Within each 368 days, steam generator tests shall be subjected to a hydrostatic pressure at least 25% above the working pressure.

Cabs and Cab Equipment

§229.115 Slip/slide alarms

- (a) Except for MU locomotives, each locomotive used in road service shall be equipped with a device that provides an audible or visual alarm in the cab of either slipping or sliding wheels on powered axles under power. When two or more locomotives are coupled in multiple or remote control, the wheel slip/slide alarm of each locomotive shall be shown in the cab of the controlling locomotive.

(b) Except as provided in § 229.9[movement of non-complying locomotive], an equipped locomotive may not be dispatched in road service, or continue in road service following a daily inspection, unless the wheel slip/slide protective device of whatever type—

- (1) Is functioning for each powered axle under power; and
- (2) Would function on each powered axle if it were under power.

(c) All new locomotives capable of being used in road service shall be equipped with a device that detects wheel slip/slide for each powered axle when it is under power. The device shall produce an audible or visual alarm in the cab.

§229.117 Speed indicators

Visual inspection of the speed indicator equipment is required to ascertain that the indicator and related apparatus is undamaged. The performance and accuracy of the speed indicator can only be ascertained after departure by means of mileage test sections or equivalent procedures.

§229.119 Cabs, floors, and passageways

Visual inspection should be conducted of passageways, walkways, cab control compartment floors, and engine compartment floors. Accumulations of oil, water, debris and other items should only be reported if the condition presents an immediate hazardous and unsafe condition for any person who would use them, e.g. oil accumulation does not provide secure footing or creating a slipping hazard. A visual inspection of the cab seats and windows must also be made to determine that the seats are properly secured to the floor or sides and that the cab windows provide clear vision and are free of broken areas which could create an injury hazard.

Heating in the cab shall be maintained at 60 degrees Fahrenheit 6 inches above the center of each seat. Also, based upon representations of the railroad industry to the FRA, air conditioning units will be installed in all new locomotives. *See, 77 Fed.Reg. 21312, 21320.*

All new or remanufactured locomotives shall be equipped with a securement device on each exterior cab door that is capable of securing the door from the inside of the cab.

§229.121 Locomotive cab noise.

(a) Performance standards for locomotives.

(1) When tested for static noise in accordance with paragraph (a)(3) of this section, all locomotives of each design or model that are manufactured after October 29, 2007, shall average less than or equal to 85 dB(A), with an upper 99% confidence limit of 87 dB(A). The railroad may rely on certification from the equipment manufacturer for a production run that this standard is met. The manufacturer may determine the average by testing a representative sample of locomotives or an initial series of locomotives, provided that there are suitable manufacturing

quality controls and verification procedures in place to ensure product consistency.

(2) In the maintenance of locomotives that are manufactured in accordance with paragraph (a)(1) of this section, a railroad shall not make any alterations that cause the average sound level for that locomotive design or model to exceed:

(i) 82 dB(A) if the average sound level for a locomotive design or model is less than 82 dB(A); or

(ii) 85 dB(A) if the average sound level for a locomotive design or model is 82 dB(A) to 85 dB(A), inclusive;

(3) The railroad or manufacturer shall follow the static test protocols set forth in appendix H of this part to determine compliance with paragraph (a)(1) of this section; and, to the extent reasonably necessary to evaluate the effect of alterations during maintenance, to determine compliance with paragraph (a)(2) of this section.

(b) Maintenance of locomotives.

(1) If a railroad receives an excessive noise report, and if the condition giving rise to the noise is not required to be immediately corrected under part 229, the railroad shall maintain a record of the report, and repair or replace the item identified as substantially contributing to the noise:

(i) On or before the next periodic inspection required by § 229.23; or

(ii) If the railroad determines that the repair or replacement of the item requires significant shop or material resources that are not readily available, at the time of the next major equipment repair commonly used for the particular type of maintenance needed.

(2) Conditions that may lead a locomotive cab occupant to file an excessive noise report include, but are not limited to: defective cab window seals; defective cab door seals; broken or inoperative windows; deteriorated insulation or insulation that has been removed for other reasons; broken or inoperative doors; and air brakes that vent inside of the cab.

(3) A railroad has an obligation to respond to an excessive noise report that a locomotive cab occupant files. The railroad meets its obligation to respond to an excessive noise report, as set forth in paragraph (b)(1) of this section, if the railroad makes a good faith effort to identify the cause of the reported noise, and where the railroad is successful in determining the cause, if the railroad repairs or replaces the items cause the noise.

(4) Recordkeeping.

(i) A railroad shall maintain a written or electronic record of any excessive noise report, inspection, test, maintenance, replacement, or repair completed pursuant to § 229.121(b) and the date on which that inspection, test, maintenance, replacement, or repair occurred. If a railroad elects to maintain an electronic record, the railroad must satisfy the recordkeeping conditions listed in § 227.121(a)(2)(i) through (v).

(ii) The railroad shall retain these records for 92 days if they are made pursuant to § 229.21[daily inspection], or for one year if they are made pursuant to § 229.23[periodic

inspection].

(iii) The railroad shall establish an internal, auditable, monitorable system that contains these records.

§229.123 Pilots, snowplows, end plates

Each lead locomotive shall be equipped with a pilot, snowplate, or end plate that extends across both rails. The minimum clearance above the rail shall not be less than 3 inches nor more than 6 inches above top of rail.

Locomotives used in hump yard or switching service may have a maximum height of 9 inches. Such locomotives with a clearance above 6 inches shall be prominently stenciled at each end of the locomotive. In switching service, the speed shall not exceed 10 mph over grade crossings.

The locomotive with a clearance above 6 inches shall not be placed in the lead position when being moved under § 229.9.

§229.125 Headlights and auxiliary lights

Each lead locomotive in road service shall have a headlight with the intensity of at least 200,000 candela and produce at least 3,000 candela at an angle of 7.5 degrees, and at least 400 candela at an angle of 20 degrees from centerline. If a locomotive runs backward, it shall have a headlight that meets the same requirements. Each headlight shall be arranged to illuminate a person at least 800 feet ahead and in front of the headlight.

If a locomotive is equipped with a single lamp headlight, it shall produce an intensity of at least 200,000 candela and produce at least 3,000 candela at an angle of 7.5 degrees and at least 400 candela at an angle of 20 degrees.

If the locomotive has a dual lamp headlight, it shall produce an intensity of at least 200,000 candela and produce at least 3,000 candela at 7.5 degrees and at least 400 candela at an angle of 20 degrees

Each auxiliary light shall produce an intensity of at least 200,00 candela or produce at least 3,000 candela at an angle of 7.5 degrees and at least 400 candela at an angle of 20 degrees from the centerline of the locomotive when the light is aimed parallel to the track.

The railroad shall inspect the headlights to ascertain that they operate properly, and that they can be dimmed as required. On locomotives which have two sealed beams as a headlight, one sealed beam burned out does not necessarily indicate a non-complying condition.

Noncompliance with the candela portion of this Section can only be determined with a light meter.

Where there is an en route failure of one lamp, the locomotive may continue in service,

with a few conditions, as the lead locomotive until the next daily inspection is required.

§229.127 Cab lights

Visual inspection of the cab lights must be performed to ascertain that they are operative and provide sufficient illumination. Passageway lights used to illuminate walkways over which railroad personnel walk must be lighted.

§229.129 Audible warning device

The railroad shall operate the horn to ascertain that it functions. The locomotive bell, when equipped, should also be tested for operation.

§229.131 Sanders

Test to determine that each locomotive has sand being delivered to each rail in front of the first power operated wheel set in the direction of movement.

In addition to the above there are design requirements for all MU locomotives.

§ 229.133 Interim Locomotive conspicuity measures—auxiliary external lights.

This authorizes a head end locomotive to be equipped with auxiliary external lights in the front of the locomotive , in addition to the headlight required at §229.125. These lights can include strobe lights and oscillating lights.

§229.135 Event Recorders

1. There shall be an event recorder on all trains operating faster than 30 mph. The event recorder is not required to be located on the lead locomotive, so long as it monitors and records the required data as though it were located in the lead locomotive.
2. A new locomotive shall have a crashworthy event recorder with a ``hardened'' memory module, proven by a requirement that the memory module preserve stored data throughout a sequence of prescribed tests by simplifying standards for inspecting, testing, and maintaining all event recorders;
3. A locomotive that uses magnetic tape as a data storage medium shall be replaced with event recorders with a certified survivable version of its previous event recorder.
4. The event recorder on an existing locomotive is required to record data and monitor data on train speed, direction of motion, time, distance, throttle position, brake applications and operations, and cab signals (if the locomotive is so equipped) over the most recent 48 hours of operation. This requirement is satisfied if, so long as each aspect of the operations can be derived from some other recorded data by calculations.

An event recorder on a new locomotive is required to collect certain additional types of

information, including the following data elements:

- Emergency brake applications initiated by the engineer or by an on-board computer;
- A loss of communications from the EOT (End of train) device;
- Messages related to the ECP (electronic controlled pneumatic) braking system;
- EOT messages relating to "ready status," an emergency brake command, and an emergency brake application, valve failure indication, end-of-train brake pipe pressure, the "in motion" signal, the marker light status, and low battery status;
- The position of the switches for headlights and for the auxiliary lights on the lead locomotive;
- Activation of the horn control;
- The locomotive number;
- The automatic brake valve cut in;
- The locomotive position (lead or trail);
- Tractive effort;
- The activation of the cruise control; and
- Safety-critical train control display elements with which the engineer is required to comply.

5. Event recorders on existing locomotives shall be phased out, over a four-year period.

6. The recorders shall be maintained in accordance with the standard set by the manufacturer, the supplier or the owner of the unit. A written copy of the maintenance instruction shall be kept at the location where the work is being done. A performance standard requires that 90% of the recorders be fully functional when they are given periodic inspections. If the "ready rate" drops below this, the railroads are required to adjust maintenance intervals or operations so that this performance level is achieved.

7. Railroads shall have an in-service event recorder on the lead locomotive.

8. When an event recorder is taken out of service, the locomotive cannot remain as the lead locomotive beyond the next calendar day inspection.

9. A railroad is required to remove an event recorder which it knows is not monitoring or recording accurately, and this shall be noted on the cab card form. The recorder may not remain out-of-service beyond the completion of the next periodic inspection.

10. A railroad whose locomotive is involved in an accident which is required to be reported to FRA shall preserve the recorded data for analysis by FRA or NTSB. That is, the original or a first order accurate copy is retained in secure custody and shall not be utilized for analysis or any other purpose except by direction of FRA or NTSB. This requirement shall expire 30 days after the accident, unless FRA or NTSB notifies the railroad otherwise.

§229.137 Sanitation, general requirements

(a) ***Sanitation compartment.*** Except as provided in paragraph (b) of this section, all lead locomotives in use shall be equipped with a sanitation compartment. Each sanitation compartment shall be:(1) Adequately ventilated;(2) Equipped with a door that:(i) Closes, and(ii) Possesses a

modesty lock by [18 months after publication of the final rule];(3) Equipped with a toilet facility, as defined in this part;(4) Equipped with a washing system, as defined in this part, unless the railroad otherwise provides the washing system to employees upon reporting for duty or occupying the cab for duty, or where the locomotive is equipped with a stationary sink that is located outside of the sanitation compartment;(5) Equipped with toilet paper in sufficient quantity to meet employee needs, unless the railroad otherwise provides toilet paper to employees upon reporting for duty or occupying the cab for duty; and(6) Equipped with a trash receptacle, unless the railroad otherwise provides portable trash receptacles to employees upon reporting for duty or occupying the cab for duty.

(b) **Exceptions.** (1) Paragraph (a) of this section shall not apply to:(i) Locomotives engaged in commuter service or other short-haul passenger service and commuter work trains on which employees have ready access to railroad-provided sanitation facilities outside of the locomotive or elsewhere on the train, that meet otherwise applicable sanitation standards, at frequent intervals during the course of their work shift;(ii) Locomotives engaged in switching service on which employees have ready access to railroad-provided sanitation facilities outside of the locomotive, that meet otherwise applicable sanitation standards, at frequent intervals during the course of their work shift;(iii) Locomotives engaged in transfer service on which employees have ready access to railroad-provided sanitation facilities outside of the locomotive, that meet otherwise applicable sanitation standards, at frequent intervals during the course of their work shift;(iv) Locomotives of Class III railroads engaged in operations other than switching service or transfer service, that are not equipped with a sanitation compartment as of June 3, 2002. Where an unequipped locomotive of a Class III railroad is engaged in operations other than switching or transfer service, employees shall have ready access to railroad-provided sanitation facilities outside of the locomotive that meet otherwise applicable sanitation standards, at frequent intervals during the course of their work shift, or the railroad shall arrange for en route access to such facilities;(v) Locomotives of tourist, scenic, historic, or excursion railroad operations, which are otherwise covered by this part because they are not propelled by steam power and operate on the general railroad system of transportation, but on which employees have ready access to railroad-provided sanitation facilities outside of the locomotive, that meet otherwise applicable sanitation standards, at frequent intervals during the course of their work shift; and(vi) Except as provided in § 229.14 of this part[non-MU control cab locomotives], DMU, MU, and control cab locomotives designed for passenger occupancy and used in intercity push-pull service that are not equipped with sanitation facilities, where employees have ready access to railroad-provided sanitation in other passenger cars on the train at frequent intervals during the course of their work shift.(2) Paragraph (a)(3) of this section shall not apply to:(i) Locomotives of a Class I railroad which, prior to [the effective date of this section], were equipped with a toilet facility in which human waste falls via gravity to a holding tank where it is stored and periodically emptied, which does not conform to the definition of toilet facility set forth in this section. For these locomotives, the requirements of this section pertaining to the type of toilet facilities required shall be effective as these toilets become defective or are replaced with conforming units, whichever occurs first.

(c) **Defective, unsanitary toilet facility; prohibition in lead position.** Except as provided in paragraphs (c)(1) through (5) of this section, if the railroad determines during the daily inspection required by § 229.21 that a locomotive toilet facility is defective or is unsanitary, or both, the railroad shall not use the locomotive in the lead position. The railroad may continue to use a lead

locomotive with a toilet facility that is defective or unsanitary as of the daily inspection only where all of the following conditions are met:

(1) The unsanitary or defective condition is discovered at a location where there are no other suitable locomotives available for use, ie., where it is not possible to switch another locomotive into the lead position, or the location is not equipped to clean the sanitation compartment if unsanitary or repair the toilet facility if defective;

(2) The locomotive, while noncompliant, did not pass through a location where it could have been cleaned if unsanitary, repaired if defective, or switched with another compliant locomotive, since its last daily inspection required by this part;

(3) Upon reasonable request of a locomotive crewmember operating a locomotive with a defective or unsanitary toilet facility, the railroad arranges for access to a toilet facility outside the locomotive that meets otherwise applicable sanitation standards;

(4) If the sanitation compartment is unsanitary, the sanitation compartment door shall be closed and adequate ventilation shall be provided in the cab so that it is habitable; and

(5) The locomotive shall not continue in service in the lead position beyond a location where the defective or unsanitary condition can be corrected or replaced with another compliant locomotive, or the next daily inspection required by this part, whichever occurs first.

(d) ***Defective, unsanitary toilet facility; use in trailing position.*** If the railroad determines during the daily inspection required by § 229.21 that a locomotive toilet facility is defective or is unsanitary, or both, the railroad may use the locomotive in trailing position. If the railroad places the locomotive in trailing position, they shall not haul employees in the unit unless the sanitation compartment is made sanitary prior to occupancy. If the toilet facility is defective and the unit becomes occupied, the railroad shall clearly mark the defective toilet facility as unavailable for use.

(e) ***Defective, sanitary toilet facility; use in switching, transfer service.*** If the railroad determines during the daily inspection required by § 229.21 that a locomotive toilet facility is defective, but sanitary, the railroad may use the locomotive in switching service, as set forth in paragraph (b)(1)(ii) of this section, or in transfer service, as set forth in paragraph (b)(1)(iii) of this section for a period not to exceed 10 days. In this instance, the railroad shall clearly mark the defective toilet facility as unavailable for use. After expiration of the 10-day period, the locomotive shall be repaired or used in the trailing position.

(f) ***Lack of toilet paper, washing system, trash receptacle.*** If the railroad determines during the daily inspection required by § 229.21 that the lead locomotive is not equipped with toilet paper in sufficient quantity to meet employee needs, or a washing system as required by paragraph (a)(4) of this section, or a trash receptacle as required by paragraph (a)(6) of this section, the locomotive shall be equipped with these items prior to departure.

(g) ***Inadequate ventilation.*** If the railroad determines during the daily inspection required by § 229.21 that the sanitation compartment of the lead locomotive in use is not adequately ventilated as required by paragraph (a)(1) of this section, the railroad shall repair the ventilation prior to departure, or place the locomotive in trailing position, in switching service as set forth in paragraph (b)(1)(ii) of this section, or in transfer service as set forth in paragraph (b)(1)(iii) of this section.

(h) **Door closure and modesty lock.** If the railroad determines during the daily inspection required by § 229.21 that the sanitation compartment on the lead locomotive is not equipped with a door that closes, as required by paragraph (a)(2)(i) of this section, the railroad shall repair the door prior to departure, or place the locomotive in trailing position, in switching service as set forth in paragraph (b)(1)(ii) of this section, or in transfer service as set forth in paragraph (b)(1)(iii) of this section. If the railroad determines during the daily inspection required by § 229.21 that the modesty lock required by paragraph (a)(2)(ii) of this section is defective, the modesty lock shall be repaired pursuant to the requirements of § 229.139(e)[ie., shall be repaired on or before the next 92 day inspection] .

(i) **Equipped units; retention and maintenance.** Except where a railroad downgrades a locomotive to service in which it will never be occupied, where a locomotive is equipped with a toilet facility, the railroad shall retain and maintain the toilet facility in the locomotive consistent with the requirements of this part, including locomotives used in switching service pursuant to paragraph (b)(1)(ii) of this section, and in transfer service pursuant to paragraph (b)(1)(iii) of this section.

(j) **Newly manufactured units; in-cab facilities.** All locomotives manufactured after June 3, 2002, except switching units built exclusively for switching service and locomotives built exclusively for commuter service, shall be equipped with a sanitation compartment accessible to cab employees without exiting to the out-of-doors for use. No railroad may use a locomotive built after June 3, 2002, that does not comply with this subsection.

(k) **Potable water.** The railroad shall utilize potable water where the washing system includes the use of water.

§229.139 – Sanitation, servicing requirements.

(a) The sanitation compartment of each lead locomotive in use shall be sanitary.

(b) All components required by § 229.137(a) for the lead locomotive in use shall be present consistent with the requirements of this part, and shall operate as intended such that:

- (1) All mechanical systems shall function;
- (2) Water shall be present in sufficient quantity to permit flushing;
- (3) For those systems that utilize chemicals for treatment, the chemical (chlorine or other comparable oxidizing agent) used to treat waste must be present; and
- (4) No blockage is present that prevents waste from evacuating the bowl.

(c) The sanitation compartment of each occupied locomotive used in switching service pursuant to § 229.137(b)(1)(ii), in transfer service pursuant to § 229.137(b)(1)(iii), or in a trailing position when the locomotive is occupied, shall be sanitary.

(d) Where the railroad uses a locomotive pursuant to § 229.137(e) in switching or transfer service with a defective toilet facility, such use shall not exceed 10 calendar days from the date on

which the defective toilet facility became defective. The date on which the toilet facility becomes defective shall be entered on the daily inspection report.

(e) Where it is determined that the modesty lock required by § 229.137(a)(2) is defective, the railroad shall repair the modesty lock on or before the next 92-day inspection required by this part.

§229.140 Alerters.

(a) Except for locomotives covered by part 238 of this chapter, each of the following locomotives shall be equipped with a functioning alerter as described in paragraphs (b) through (d) of this section:

(1) A locomotive that is placed in service for the first time on or after June 10, 2013, when used as a controlling locomotive and operated at speeds in excess of 25 mph.

(2) All controlling locomotives operated at speeds in excess of 25 mph on or after January 1, 2017.

(b) The alerter on locomotives subject to paragraph (a) of this section shall be equipped with a manual reset and the alerter warning timing cycle shall automatically reset as the result of any of the following operations, and at least three of the following automatic resets shall be functional at any given time:

- (1) Movement of the throttle handle;
- (2) Movement of the dynamic brake control handle;
- (3) Movement of the operator's horn activation handle;
- (4) Movement of the operator's bell activation switch;
- (5) Movement of the automatic brake valve handle; or
- (6) Bailing the independent brake by depressing the independent brake valve handle.

(c) All alerters shall provide an audio alarm upon expiration of the timing cycle interval. An alerter on a locomotive that is placed in service for the first time on or after June 10, 2013, shall display a visual indication to the operator at least five seconds prior to an audio alarm. The visual indication on an alerter so equipped shall be visible to the operator from their normal position in the cab.

(d) Alerter warning timing cycle interval shall be within 10 seconds of the calculated setting utilizing the formula (timing cycle specified in seconds = 2400 / track speed specified in miles per hour). For locomotives operating at speeds below 20 mph, the interval shall be between 110 seconds and 130 seconds.

(e) Any locomotive that is equipped with an alerter shall have the alerter functioning and operating as intended when the locomotive is used as a controlling locomotive.

(f) A controlling locomotive equipped with an alerter shall be tested prior to departure from each initial terminal, or prior to being coupled as the lead locomotive in a locomotive consist by allowing the warning timing cycle to expire that results in an application of the locomotive brakes at a penalty rate.

§229.141 Body structure, MU locomotives.

(a) MU locomotives built new after April 1, 1956 that are operated in trains having a total empty weight of 600,000 pounds or more shall have a body structure designed to meet or exceed the following minimum specifications:

(1) The body structure shall resist a minimum static end load of 800,000 pounds at the rear draft stops ahead of the bolster on the center line of draft, without developing any permanent deformation in any member of the body structure.

(2) An anti-climbing arrangement shall be applied at each end that is designed so that coupled MU locomotives under full compression shall mate in a manner that will resist one locomotive from climbing the other. This arrangement shall resist a vertical load of 100,000 pounds without exceeding the yield point of its various parts or its attachments to the body structure.

(3) The coupler carrier and its connections to the body structure shall be designed to resist a vertical downward thrust from the coupler shank of 100,000 pounds for any horizontal position of the coupler, without exceeding the yield points of the materials used. When yielding type of coupler carrier is used, an auxiliary arrangement shall be provided that complies with these requirements.

(4) The outside end of each locomotive shall be provided with two main vertical members, one at each side of the diaphragm opening; each main member shall have an ultimate shear value of not less than 300,000 pounds at a point even with the top of the underframe member to which it is attached. The attachment of these members at bottom shall be sufficient to develop their full shear value. If reinforcement is used to provide the shear value, the reinforcement shall have full value for a distance of 18 inches up from the underframe connection and then taper to a point approximately 30 inches above the underframe connection.

(5) The strength of the means of locking the truck to the body shall be at least the equivalent of an ultimate shear value of 250,000 pounds.

(6) On or after November 8, 1999, paragraph (a)(1) of this section does not apply to "passenger equipment" as defined in § 238.5 of this chapter, unless such equipment is excluded from the requirements of §§ 238.203 through 238.219, and § 238.223 of this chapter by operation of § 238.201(a)(2) of this chapter. Paragraphs (a)(2) through (a)(4) of this section do not apply to "passenger equipment" as defined in § 238.5 of this chapter that is placed in service for the first time on or after September 8, 2000, unless such equipment is excluded from the requirements of §§ 238.203 through 238.219, and § 238.223 of this chapter by operation of § 238.201(a)(2) of this chapter.

(b) MU locomotives built new after April 1, 1956 that are operated in trains having a total empty weight of less than 600,000 pounds shall have a body structure designed to meet or exceed the following minimum specifications:

(1) The body structure shall resist a minimum static end load of 400,000 pounds at the rear draft stops ahead of the bolster on the center line of draft, without developing any permanent deformation in any member of the body structure.

(2) An anti-climbing arrangement shall be applied at each end that is designed so that coupled locomotives under full compression shall mate in a manner that will resist one locomotive from climbing the other. This arrangement shall resist a vertical load of 75,000

pounds without exceeding the yield point of its various parts or its attachments to the body structure.

(3) The coupler carrier and its connections to the body structure shall be designed to resist a vertical downward thrust from the coupled shank of 75,000 pounds for any horizontal position of the coupler, without exceeding the yield points of the materials used. When a yielding type of coupler carrier is used, an auxiliary arrangement shall be provided that complies with these requirements.

(4) The outside end of each MU locomotive shall be provided with two main vertical members, one at each side of the diaphragm opening; each main member shall have an ultimate shear value of not less than 200,000 pounds at a point even with the top of the underframe member to which it is attached. The attachment of these members at bottom shall be sufficient to develop their full shear value, the reinforcement shall have full value for a distance of 18 inches up from the underframe connection and then taper to a point approximately 30 inches above the underframe connection.

(5) The strength of the means of locking the truck to the body shall be at least the equivalent of an ultimate shear value of 250,000 pounds.

(6) On or after November 8, 1999, paragraph (a)(1) of this section does not apply to “passenger equipment” as defined in § 238.5 of this chapter, unless such equipment is excluded from the requirements of §§ 238.203 through 238.219, and § 238.223 of this chapter by operation of § 238.201(a)(2) of this chapter. Paragraphs (a)(2) through (a)(4) of this section do not apply to “passenger equipment” as defined in § 238.5 of this chapter that is placed in service for the first time on or after September 8, 2000, unless such equipment is excluded from the requirements of §§ 238.203 through 238.219, and § 238.223 of this chapter by operation of § 238.201(a)(2) of this chapter.

[45 FR 21109, Mar. 31, 1980, as amended at 71 FR 36912, June 28, 2006]

Subpart D--CRASHWORTHINESS

§229.201 Purpose and scope.

(a) **Purpose.** The purpose of this subpart is to help protect locomotive cab occupants in the event that a locomotive collides with another locomotive or piece of on-track equipment, a shifted load on a freight car on an adjacent parallel track, or a highway vehicle at a highway-rail grade crossing.

(b) This subpart prescribes minimum crashworthiness standards for locomotives. It also establishes the requirements for obtaining FRA approval of: new locomotive crashworthiness design standards; changes to FRA-approved locomotive crashworthiness design standards; and alternative locomotive crashworthiness designs.

§229.203 Applicability.

(a) Except as provided in paragraphs(b) and (c) of this section, this subpart applies to all locomotives manufactured or remanufactured on or after January 1, 2009.

(b) ***Cab cars and power cars.*** The requirements of this subpart do not apply to cab control cars, MU locomotives, DMU locomotives, and semi-permanently coupled power cars that are subject to the design requirements for such locomotives set forth in part 238 of this chapter.

(c) ***Locomotives used in designated service.*** Locomotives used in designated service are exempt from the requirements of this subpart, with the exception of § 229.233 (minimum requirements for fuel tank design), which remains applicable to such locomotives.

§229.205 General requirements.

(a) Each wide-nose locomotive used in occupied service must meet the minimum crashworthiness performance requirements set forth in **Appendix E** of this part. Compliance with those performance criteria must be established by:

(1) Meeting an FRA-approved crashworthiness design standard (including AAR S-580, Locomotive Crashworthiness Requirements).

(2) Meeting new design standards and changes to existing design standards approved by FRA pursuant to § 229.207; or

(3) Meeting an alternative crashworthiness design approved by FRA pursuant to § 229.209.

(b) A monocoque or semi-monocoque design locomotive must be designed in accordance with the provisions of AAR S-580, applicable to those types of locomotives, in accordance with §§ 238.405(a)[underframe], 238.409[forward end structure] and 238.411[rear end structure] of this chapter, or in accordance with a standard or design approved by FRA as providing at least equivalent safety.

(c) A narrow-nose locomotive must be designed in accordance with the provisions of AAR S-580, applicable to that type of locomotive(notwithstanding any limitation of scope contained in that standard) or in accordance with a standard or design approved by FRA as providing at least equivalent safety.

§229.206 Design requirements.

Each locomotive used in occupied service must meet the minimum anti-climber, emergency egress, emergency interior lighting, and interior configuration design requirements set forth in AAR S-580

§229.207 New locomotive crashworthiness design standards and changes to existing FRA-approved locomotive crashworthiness design standards.

(a) *General.* The following procedures govern consideration and action upon requests for FRA approval of new locomotive crashworthiness design standards and changes to existing FRA approved locomotive crashworthiness design standards, including AAR S-580.

Only a standards body which has adopted an FRA-approved locomotive crashworthiness design standard may initiate these procedures for FRA approval of changes to the standard.

(b) This sets forth the procedures for Petitions for FRA approval of new locomotive crashworthiness design standards.

(c) This sets forth procedures for Petitions for FRA approval of substantive changes to an FRA approved locomotive crashworthiness design standard.

(d) This sets forth procedures for Petitions for FRA approval of non substantive changes to the existing FRA approved crashworthiness design standards.

§229.209 Alternative locomotive crashworthiness designs.

(a) *General.* The following procedures govern consideration and action upon requests for FRA approval of locomotive crashworthiness designs which are not consistent with any FRA-approved locomotive crashworthiness design standard.

(b) This sets forth procedures for Petitions for FRA approval of alternative locomotive crashworthiness designs.

§229.211 Processing of petitions.

(a) *Federal Register Notice.* FRA will publish in the Federal Register notice of receipt of each petition submitted under §§ 229.207(b), 229.207(c), or 229.209.

(b) *Comment.* A person is given 60 days from the date of publication of the notice in the Federal Register to comment on the petition.

(c) *Disposition of petitions.* This sets forth the criteria FRA will use to determine whether to grant the petition.

Subpart E--LOCOMOTIVE ELECTRONICS

§229.301 Purpose and scope

This Subpart promotes safe design, operation, and maintenance of safety critical electronic control systems. Such systems that comingle with safety critical processor based signal and train control systems regulated under part 236 subparts H and I.

§ 229.303

§229.305....

§229.307 Safety analysis

A railroad shall develop a Safety Analysis for each safety critical electronic control system, subsystem, or component prior to the initial use. (A Safety Analysis refers to a formal set of documentation which describes in detail all of the safety aspects of the product, as well as analysis supporting its safety claims.). The SA shall document the minimum requirements based upon good engineering practice and be consistent with the guidance in Appendix F in order to assure a high degree of confidence in a fail safe manner.

§229.309 Safety-critical changes and failures

This requires a railroad to identify, and create a configuration tracking system that will allow for the identification and reporting of hardware and software issues, as well as promptly implementing changes to the systems. There shall be immediate notification to a railroad of safety hazards identified by private car suppliers and owners. The private car owner's configuration/revision control measures should be accepted by the railroad using the car and implementing the system.

§229.311 Review of SAs

Prior to initial planned use of an electronic control system, subsystem, or component, a railroad shall inform the FRA's Associate Administrator of Safety. FRA may review or audit the information within 60 days of receipt of the notification. The railroad shall maintain upon FRA's request all railroad or vendor documentation used to demonstrate that the electronics meet the safety requirements of the SA.

§229.313 Product testing results and records

This requires that the results of testing shall be recorded or stored electronically. Electronic recordkeeping or automated tracking systems may be utilized to store and maintain any testing or training record. Results of product testing conducted by a vendor or private equipment owner shall be provided to the railroad as part of the SA.

§229.315 Operation maintenance manual

This section requires that each railroad have a manual covering the requirements for the installation, periodic maintenance and testing, modification and repair of safety critical locomotive control systems.

§229.317 Training and qualification program

This sets out specific parameters for training railroad employees and contractor employees. The employees performing all tasks shall be identified, and the employer shall develop a written task analysis. All persons subject to the training requirements and their supervisors shall complete the training curriculum and pass an examination. There shall also be refresher training. There is a requirement to evaluate the effectiveness of the training.

§229.319 Operating personnel training

This section contains the minimum training requirements for locomotive engineers and conductors who interact with the locomotive control systems.

USE OF REMOTE CONTROL LOCOMOTIVES

In April, 2012, the FRA promulgated regulations covering the use of remote control locomotives. It is contained in 49 C.F.R. §229.15, which is set forth below.

Some history of FRA's consideration of remote control locomotives is noteworthy. In 2001, it issued a Safety Advisory, which explained that: "although compliance with this Safety Advisory is voluntary, nothing in the Safety Advisory is meant to relieve a railroad from compliance with all existing railroad safety regulations. This included the calendar day inspection required by section 229.21, system components that interface with the mechanical devices of the locomotive (e.g., air pressure monitoring devices, pressure switches, speed sensors, etc.) must be inspected and calibrated as often as necessary, but not less than the locomotive's periodic (92-day) inspection. Also, each person operating an RCL must be certified and qualified in accordance with part 240.

In May 2006, FRA issued a report entitled "Remote Control Locomotive Operations: Results of Focus Groups with Remote Control Operators in the United States and Canada." The focus groups in the study identified some of the safety related issues, lessons learned, and best practices, and obtained suggestions on how to improve RCL operations.

In addition, FRA sponsored 2 additional studies: a comparative risk assessment of RCL and conventional yard switching operations; and a root cause analysis of RCL-involved train accidents/incidents.

And in 2012, the regulations were issued.

49 C.F.R. § 229.15 Remote Control Locomotives.

(a) Design and operation.

(1) Each locomotive equipped with a locomotive control unit (LCU) shall respond only to the operator control units (OCUs) assigned to that receiver.

(2) If one or more OCUs are assigned to a LCU, the LCU shall respond only to the OCU that is in primary command. If a subsequent OCU is assigned to a LCU, the previous assignment will be automatically cancelled.

(3) If more than one OCU is assigned to a LCU, the secondary OCUs' man down feature, bell, horn, and emergency brake application functions shall remain active. The remote control

system shall be designed so that if the signal from the OCU to the RCL is interrupted for a set period not to exceed five seconds, the remote control system shall cause:

- (i) A full service application of the locomotive and train brakes; and
- (ii) The elimination of locomotive tractive effort.

(4) Each OCU shall be designed to control only one RCL at a time. OCU's having the capability to control more than one RCL shall have a means to lock in one RCL "assignment address" to prevent simultaneous control over more than one locomotive.

(5) If an OCU is equipped with an "on" and "off" switch, when the switch is moved from the "on" to the "off" position, the remote control system shall cause:

- (i) A full service application of the locomotive train brakes; and
- (ii) The elimination of locomotive tractive effort.

(6) Each RCL shall have a distinct and unambiguous audible or visual warning device that indicates to nearby personnel that the locomotive is under active remote control operation.

(7) When the main reservoir pressure drops below 90 psi while the RCL is moving, the RCL shall initiate a full service application of the locomotive and train brakes, and eliminate locomotive tractive effort.

(8) When the air valves and the electrical selector switch on the RCL are moved from manual to remote control mode or from remote control to manual mode, an emergency application of the locomotive and train brakes shall be initiated.

(9) Operating control handles located in the RCL cab shall be removed, pinned in place, protected electronically, or otherwise rendered inoperable as necessary to prevent movement caused by the RCL's cab controls while the RCL is being operated by remote control.

(10) The RCL system (both the OCU and LCU), shall be designed to perform a self diagnostic test of the electronic components of the system. The system shall be designed to immediately effect a full service application of the locomotive and train brakes and the elimination of locomotive tractive effort in the event a failure is detected.

(11) Each RCL shall be tagged at the locomotive control stand throttle indicating the locomotive is being used in a remote control mode. The tag shall be removed when the locomotive is placed back in manual mode.

(12) Each OCU shall have the following controls and switches and shall be capable of performing the following functions:

- (i) Directional control;

- (ii) Throttle or speed control;
- (iii) Locomotive independent air brake application and release;
- (iv) Automatic train air brake application and release control;
- (v) Audible warning device control (horn);
- (vi) Audible bell control, if equipped;
- (vii) Sand control (unless automatic);
- (viii) Bi-directional headlight control;
- (ix) Emergency air brake application switch;
- (x) Generator field switch or equivalent to eliminate tractive effort to the locomotive;
- (xi) Audio/visual indication of wheel slip, only if an audio/visual indication is not provided by the RCL;
- (xii) Audio indication of movement of the RCL; and
- (xiii) Require at least two separate actions by the RCO to begin movement of the RCL.

(13) Each OCU shall be equipped with the following features:

- (i) A harness with a breakaway safety feature;
- (ii) An operator alertness device that requires manual resetting or its equivalent. The alertness device shall incorporate a timing sequence not to exceed 60 seconds. Failure to reset the switch within the timing sequence shall cause a service application of the locomotive and train brakes, and the elimination of locomotive tractive effort; and,
- (iii) A tilt feature that, when tilted to a predetermined angle, shall cause:
 - (A) An emergency application of the locomotive and train brakes, and the elimination of locomotive tractive effort; and
 - (B) If the OCU is equipped with a tilt bypass system that permits the tilt protection feature to be temporarily disabled, this bypass feature shall deactivate within 60 seconds on the primary OCU and within 60 seconds for all secondary OCUs, unless reactivated by the RCO.

(14) Each OCU shall be equipped with one of the following control systems:

(i) An automatic speed control system with a maximum 15 mph speed limiter; or

(ii) A graduated throttle and brake. A graduated throttle and brake control system built after September 6, 2012, shall be equipped with a speed limiter to a maximum of 15 mph.

(15) RCL systems built after September 6, 2012, shall be equipped to automatically notify the railroad in the event the RCO becomes incapacitated or OCU tilt feature is activated.

(16) RCL systems built prior to September 6, 2012, not equipped with automatic notification of operator incapacitated feature may not be utilized in one-person operation.

(b) *Inspection, testing, and repair.*

(1) Each time an OCU is linked to a RCL, and at the start of each shift, a railroad shall test:

(i) The air brakes and the OCU's safety features, including the tilt switch and alerter device; and

(ii) The man down/tilt feature automatic notification.

(2) An OCU shall not continue in use with any defective safety feature identified in paragraph (b)(1) of this section.

(3) A defective OCU shall be tracked under its own identification number assigned by the railroad. Records of repairs shall be maintained by the railroad and made available to FRA upon request.

(4) Each time an RCL is placed in service and at the start of each shift locomotives that utilize a positive train stop system shall perform a conditioning run over tracks that the positive train stop system is being utilized on to ensure that the system functions as intended.

LOCOMOTIVE VISIBILITY STANDARDS

(a) Each lead locomotive operated at speeds greater than 20 miles per hour over a public highway-rail crossing shall be equipped with auxiliary lights, in addition to a headlight.

(b) ...

(c) **Auxiliary lights** shall be composed as follows:

(1) Two white auxiliary lights shall be placed at the front of the locomotive to form a triangle with the headlight and shall be at least 36 inches above the top of the rail (except on MU locomotives and control cab locomotives where the placement would be impractical or would compromise the integrity of the car body). On MU locomotives and controlled cab locomotives

the auxiliary lights shall be at least 24 inches above the top of the rail. The lights shall be placed at least 36 inches apart. If the vertical distance from the headlight to the horizontal axis of the auxiliary lights is 60 inches or more, they shall be spaced at least 60 inches apart if the vertical distance from the headlight to the horizontal axis of the auxiliary lights is less than 60 inches.

- (2) Each auxiliary light shall produce at least 200,000 candela.
- (3) The auxiliary light shall be focused horizontally within 15 degrees of the longitudinal centerline of the locomotive.
- (4) The lights may be arranged to burn steadily or flash on approach to a crossing. If flashing lights are used, they shall flash alternately at a rate of at least 40 flashes per minute and at most 180 flashes per minute. The railroads operating rules shall set a standard procedure for the use of flashing lights at crossings, and the flashing feature may be automatic, but shall be capable of manual activation and deactivation by the locomotive engineer.
- (5) The lights shall be continuously illuminated immediately prior to, and during movement of the locomotive, except as provided by railroad operating rules, time table or special instructions, unless such exception is disapproved by the FRA.
- (6) If an auxiliary light becomes defective, the lead locomotive with only one failed auxiliary light must be repaired or switched to a trailing position before departure where an initial terminal inspection is required. If a failure occurs after departure from an initial terminal, it must be repaired not later than the next locomotive calendar inspection. If a lead has two failed auxiliary lights, it may only proceed to the next place where repairs can be made.
- (7) Historic equipment (i.e., built before December 31, 1948) that is not used regularly in commuter or intercity passenger service is exempt from the requirements.

The following lead locomotives are considered to be in compliance with this rule if equipped with: (1) oscillating lights that were ordered for installation prior to January 1, 1966, is considered in compliance; (2) strobe lights and operated at speeds no greater than 40 miles per hour (until the locomotive is rebuilt); and (3) two white auxiliary lights spaced at least 44 inches apart on at least one axis which was equipped before May 30, 1994.

Appendix A- Form FRA 6180-49A (*See*, 45 Fed. Reg. 21118 for a copy)

Appendix B- Penalty Schedule

Appendix C-Code of Defects(*See*, 45 Fed. Reg. 21121 for a copy)

Appendix D-Criteria for Certification of Crashworthy Event Recorder Memory Module

Appendix E- Performance Criteria for Locomotive Crashworthiness

Appendix F-Recommended Practices for Design and Safety Analysis

49 U.S.C. §§ 20143, 20701-20703, 21302, 21304

REAR END MARKING DEVICES

All passenger, commuter and freight trains which operate on main track shall be equipped with marking devices located on the trailing end of the rear car of a train.

The marking devices shall be displayed during the hours between one hour before sunset and one hour after sunrise, and during all other hours when weather conditions restrict visibility so that the rear car can be seen from a half-mile on tangent track by persons having 20/20 vision.

The center of the device must be located at a minimum of 48 inches above the top of the rail.

The intensity of the marker must be not less than 100 candella or more than 1,000 candella.

The color shall be in the red-orange-amber color range.

If a flashing light is used, it shall flash at a rate of not less than once every 1.3 second nor more than once every .7 seconds.

Where a locomotive is operated singly, or at the rear of a train, it shall be equipped with a marking device than complies with the above requirements, or use the rear headlight illuminated at low beam.

Inspection Requirements of Rear End Marking Devices

1. Rear marker devices shall be inspected at initial terminals and at each crew change location.
2. If a train is equipped with a radio telemetry device, the marker may be inspected by observing the read out information displayed in the cab of the controlling locomotive which demonstrates that the light is functioning as required. This is permitted in lieu of conducting a visual observation at the rear of the train.
3. The rear marker device may be inspected by a train crew or some other qualified person who has received adequate training concerning the specific task each employee is required to perform. If a non-train crewmember performs the examination, that person shall communicate his/her findings to the engineer of the new crew.
4. Where a railroad uses a marking device with a photoelectric cell mechanism, it shall illuminate or flash the device continuously when there is less than 1.0 candela per square meter of ambient light. This sets a standard for such photoelectric cell use for periods prior to sunset and immediately after sunrise.

5. Whenever a person other than a member of the operating crew inspects the rear end device, he or she is entitled to certain safety protection. Prior to operating the activation switch or covering the photoelectric cell when conducting the test of the device, the railroad must provide either (i) full blue flag protection, or (ii) the train to be inspected must be standing on a main track; the inspection must be limited to ascertaining that the marker is in the proper operating condition; and prior to performing inspection, the inspector shall personally contact the engineer or the hostler and be told that they are occupying the cab of the controlling locomotive and that the train will remain secure against movement until the inspection has been completed.

6. A train with a failed marker may not continue to move to a repair location if that would entail passing a location where a replacement marker could be installed. The railroad must not move the train further than the next location where the marker can be replaced. Such replacement locations include the first terminal, yard, or station that the train with the defective device reaches where markers are available. This includes locations where markers are stored or kept available for use on local trains. Therefore, the railroad cannot move the train with the defective marker to only those locations where heavy repair facilities are available.

Appendix A- Procedures for Approval of Rear End Marking Devices

Appendix B- Approved Rear End Marking Devices

49 U.S.C. § 20132

49 C.F.R. §§ 221.1-221.17

RADIO COMMUNICATIONS

Communications Equipment Requirements:

Trains

Railroads must equip each train with both a working radio in the occupied controlling locomotive and a means of working wireless communications. The radio equipment must be capable of reaching the railroads control center or a portable radio to monitor local transmissions from trains. There are two exceptions to the requirement for radio coverage of all territories: (a) tunnels or other localized places of extreme topography; and (b) temporary lapses of coverage due to atmospheric or topographic conditions.

As of July 1, 2000, small railroads (those with fewer than 400,000 annual employee hours) are required to have:

- a working radio in the occupied controlling locomotive and a means of working wireless communications on any train that carries passengers; or
- a working radio in the occupied controlling locomotive on any train that:
 - operates at greater than 25 miles per hour (mph), engages in joint operations on track where the maximum authorized speed for freight trains exceeds 25 mph, or engages in joint operations on track adjacent to (within 30 feet) of another track on which the maximum authorized speed for passenger trains exceeds 40 mph; or
 - a means of working wireless communications in the occupied controlling locomotive on any train that engages in joint operations where the maximum

authorized speed of the track is 25 mph or less, or transports hazardous material.

Roadway workers

Railroads must provide a working radio for at least one unit of maintenance-of-way (MOW) equipment operating without locomotive assistance between work locations when multiple MOW units are traveling under the same movement authority, and intra-group communications capability for each MOW group upon arrival at the work site.

Railroads must equip each employee designated by the employer to provide on-track safety for a roadway work group(s), and each lone worker with immediate access to a working radio; or (for small railroads only), immediate access to working wireless communications.

The communication equipment requirements for roadway workers do not apply to small railroads that do not operate trains in excess of 25 mph; or work locations which are physically inaccessible to trains, or have no through traffic or traffic on adjacent rails when roadway workers will be present.

Railroad employees are required to test radio and wireless communications equipment as soon as practicable (to ensure that the equipment functions as intended before beginning their work assignment), remove inoperative equipment as soon as practicable, and report emergencies (e.g., derailments, collisions, storms) using the quickest means of communication available. An initial emergency radio transmission shall be preceded by the word “emergency” three times.

Ending a transmission with “Over” or “Out” is not required for yard switching operations, but it is for all other operations.

The rule has provisions addressing the testing and failure of non-radio wireless communications equipment.

Any radio or wireless device not functioning properly, when tested shall be removed from service and the dispatcher or other railroad designated employee notified as soon as practicable. If the radio or wireless device on the controlling locomotive fails en route, the train may continue until the earlier of the next calendar day inspection, or the nearest forward point where it can be repaired.

Operational Requirements:

Each railroad shall designate its territory where radio base stations are installed, where a wayside station can be contacted, and designate appropriate radio channels by publishing them in a timetable or special instructions.

Each employee authorized to use a radio shall be provided with a copy of the railroad's operating rule governing the use of radio communication and instructed in the proper use of radio communication. The rules set forth methods of identification of the wayside, base or yard station and the method for initiating a transmission or receiving one.

When radio communication is used instead of hand signals in switching, backing or pushing, the employee shall give complete instructions for keeping continuous radio contact with the other employees. When backing or switching a train, the distance of the movement must be specified and the movement must be stopped in one-half the remaining distance unless additional instructions are received. If instructions are not understood or continuous radio contact is not maintained, the movement shall be stopped immediately until contact has been restored.

No information may be given by radio to a train or engine crew about the position or aspect displayed by a fixed signal, except to communicate to other members of the same crew.

The procedures for transmitting train directives by radio are as follows:

- (a) The dispatcher or operator shall call the addressees of the train order and state his intentions to transmit the directive;
- (b) Before the order is transmitted, the employee to receive and copy the train order shall identify himself, his location, and readiness to receive and copy. Train orders may not be received and copied by an employee operating the controls on an engine of a moving train. Train orders may not be transmitted to the crew if they cannot be received and copied without impairing the safe operation of the train. After the train order has been received and copied, it shall be immediately repeated in its entirety. After verifying the accuracy, the dispatcher shall then state the time and name of the employee designated by the railroad who is authorized to issue mandatory directives;
- (c) Before a train order is acted upon, the conductor and engineer each must have a written copy of the train order and make certain that it is read and understood by the other crew members, copying and retention of all mandatory directives until the end of the work assignment is required for engineers, conductors and employees responsible for on-track safety;
- (d) A train order which is not complete and which does not comply with the railroad's operating rules may not be acted upon.

49 C.F.R. §§ 220.1-220.61

49 C.F.R. parts 214 and 217

PASSENGER TRAIN EMERGENCY PREPAREDNESS

Emergency Preparedness Plans

Subpart A—General

§ 239.1 Purpose and scope.

- (a) The purpose of this part is to reduce the magnitude and severity of casualties in railroad operations by ensuring that railroads involved in passenger train operations can effectively and efficiently manage passenger train emergencies.
- (b) This part prescribes minimum Federal safety standards for the preparation, adoption, and implementation of emergency preparedness plans by railroads connected with the operation of passenger trains, and requires each affected railroad to instruct its employees on the provisions of its plan. This part does not restrict railroads from adopting and enforcing additional or more stringent requirements not inconsistent with this part.

§ 239.3 Application.

- (a) Except as provided in paragraph (b) of this section, this part applies to all:
- (1) Railroads that operate intercity or commuter passenger train service on standard gage track which is part of the general railroad system of transportation;
 - (2) Railroads that provide commuter or other short-haul rail passenger train service in a metropolitan or suburban area (as described by 49 U.S.C. 20102(1)), including public authorities operating passenger train service; and
 - (3) Passenger or freight railroads hosting the operation of passenger train service described in paragraph (a)(1) or (a)(2) of this section.
- (b) This part does not apply to:
- (1) Rapid transit operations in an urban area that are not connected with the general railroad system of transportation;
 - (2) Operation of private cars, including business/office cars and circus trains; or
 - (3) Tourist, scenic, historic, or excursion operations, whether on or off the general railroad system.

§ 239.5 Reserved.

§ 239.7 Definitions.

As used in this part—

Adjacent rail modes of transportation means other railroads, trolleys, light rail, heavy transit, and other vehicles operating on rails or electromagnetic guideways which are expressly identified in a railroad's emergency preparedness plan.

Control center means a central location on a railroad with responsibility for directing the safe movement of trains.

Crewmember means a person, other than a passenger, who is assigned to perform either:

- (1) On-board functions connected with the movement of the train (i.e., an employee of a railroad, or of a contractor to a railroad, who is assigned to perform service subject to the Federal hours of service laws during a tour of duty) or
- (2) On-board functions in a sleeping car or coach assigned to intercity service, other than food, beverage, or security service.

Division headquarters means the location designated by the railroad where a high-level operating manager (e.g., a superintendent, division manager, or equivalent), who has jurisdiction over a portion of the railroad, has an office.

Emergency or emergency situation means an unexpected event related to the operation of passenger train service involving a significant threat to the safety or health of one or more persons requiring immediate action, including:

- (1) A derailment;
- (2) A fatality at a grade crossing;
- (3) A passenger or employee fatality, or a serious illness or injury to one or more passengers or crewmembers requiring admission to a hospital;
- (4) An evacuation of a passenger train; and
- (5) A security situation (e.g., a bomb threat).

Emergency preparedness plan means one or more documents focusing on preparedness and response in dealing with a passenger train emergency.

Emergency responder, on-line emergency responder, or outside emergency responder means a member of a police or fire department, or other organization involved with public safety charged with providing or coordinating emergency services, who responds to a passenger train emergency.

Emergency Response Communications Center means a central location, or a group of persons, designated by a railroad having the responsibility to establish, coordinate, or maintain communication with outside emergency responders, representatives of adjacent railroads, or railroad officials during a passenger train emergency.

Emergency window means that segment of a side facing glazing location which has been designed to permit rapid and easy removal in an emergency situation.

Joint operations means rail operations conducted by more than one railroad on the same track, except as necessary for the purpose of interchange, regardless of whether such operations are the result of:

- (1) Contractual arrangements between the railroads;
- (2) Order of a governmental agency or a court of law; or
- (3) Any other legally binding directive.

Passenger train service means the transportation of persons (other than employees, contractors, or persons riding equipment to observe or monitor railroad operations) by railroad in intercity passenger service or commuter or other short-haul passenger service in a metropolitan or suburban area.

Person includes all categories of entities covered under 1 U.S.C. 1, including, but not limited to, a railroad; any manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track, or facilities; any passenger; any trespasser or non-trespasser; any independent contractor providing goods or services to a railroad; any volunteer providing goods or services to a railroad; and any employee of such owner, manufacturer, lessor, lessee, or independent contractor.

Private car means a rail passenger car used to transport non-revenue passengers on an occasional contractual basis, and includes business or office cars and circus trains.

Qualified means a status attained by an employee who has successfully completed any required training for, has demonstrated proficiency in, and has been authorized by the employer to perform the duties of a particular position or function involving emergency preparedness.

Railroad means:

(1) Any form of non-highway ground transportation that runs on rails or electromagnetic guideways, including—

(i) Commuter or other short-haul rail passenger service in a metropolitan or suburban area and commuter railroad service that was operated by the Consolidated Rail Corporation on January 1, 1979, and

(ii) High speed ground transportation systems that connect metropolitan areas, without regard to whether those systems use new technologies not associated with traditional railroads, but does not include rapid transit operations in an urban area that are not connected to the general railroad system of transportation and

(2) A person that provides railroad transportation, whether directly or by contracting out operation of the railroad to another person.

Railroad officer means any supervisory employee of a railroad.

System headquarters means the location designated by the railroad as the general office for the railroad system.

§ 239.9 Responsibility for Compliance.

Although the requirements of this part are stated in terms of the duty of a railroad, when any person, including a contractor to a railroad, performs any function required by this part, that person (whether or not a railroad) shall perform that function in accordance with this part.

§ 239.11 Penalties.

At least \$650 and not more than \$25,000 per violation; Where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$100,000 per violation may be assessed.

§ 239.13 Waivers.

Any person subject to a requirement of this part may petition the Administrator for a waiver of compliance with such requirement.

Subpart B—Specific Requirements

§ 239.101 Emergency Preparedness Plan.

(a) Each railroad to which this part applies shall adopt and comply with a written emergency preparedness plan approved by FRA under the procedures of § 239.201. The **plan shall include** the following elements and procedures for implementing each plan element.

(1) Communication—

(i) Initial and on-board notification. An on-board crewmember shall quickly and accurately assess the passenger train emergency situation and then notify the control center as soon as practicable by the quickest available means. As appropriate, an on-board crewmember shall inform the passengers about the nature of the emergency and indicate what corrective countermeasures are in progress.

(ii) Notifications by control center. The control center or the emergency response communications center shall promptly notify outside emergency responders, adjacent rail modes of transportation, and appropriate railroad officials that a passenger train emergency has occurred. Each railroad shall designate an employee responsible for maintaining current emergency telephone numbers for use in making such notifications.

(2) Employee training and qualification—

(i) On-board personnel. The railroad's emergency preparedness plan shall address individual employee responsibilities and provide for initial training, as well as periodic training at least once every two calendar years thereafter, on the applicable plan provisions. As a minimum, the initial and periodic training shall include:

- (A) Rail equipment familiarization;
- (B) Situational awareness;
- (C) Passenger evacuation;
- (D) Coordination of functions; and
- (E) “Hands-on” instruction concerning the location, function, and

operation of on-board emergency equipment.

(ii) Control center and emergency response communications center personnel. The railroad's emergency preparedness plan shall require initial training of responsible control center personnel and any emergency response communications center personnel employed by the railroad, under a contract or subcontract with the railroad, or employed by a contractor or subcontractor to the railroad, as well as

periodic training at least once every two calendar years thereafter, on appropriate courses of action for each potential emergency situation under the plan. At a minimum, the initial and periodic training shall include the following:

(A) Territory familiarization (*e.g.*, access points for emergency responders along the railroad's right-of-way; special circumstances (*e.g.*, tunnels); parallel operations; and other operating conditions (*e.g.*, elevated structures, bridges, and electrified territory) including areas along the railroad's right-of-way that are remote and that would likely present challenges for individuals responding to a passenger train emergency);

(B) Procedures to retrieve and communicate information to aid emergency personnel in responding to an emergency situation;

(C) Protocols governing internal communications between appropriate control center and emergency response communications center personnel whenever an imminent potential or actual emergency situation exists, as applicable under the plan; and

(D) Protocols for establishing and maintaining external communications between the railroad's control center or emergency response communications center, or both, and emergency responders and adjacent modes of transportation, as applicable under the plan.

(iii) Initial training schedule for current personnel. The railroad's emergency preparedness plan shall provide for the completion of initial training of all on-board and responsible control center personnel, as well as any emergency response communications center personnel, who are employed by the railroad, under a contract or subcontract with the railroad, or employed by a contractor or subcontractor to the railroad on the date the plan is conditionally approved.

(iv) Initial training schedule for new employees. The railroad's emergency preparedness plan shall provide for the completion of initial training of all on-board and control center employees who are hired by the railroad after the date on which the plan is conditionally approved under § 239.201(b)(1). Each employee shall receive initial training within 90 days after the employee's initial date of service.

(v) Testing of on-board, control center, and emergency response communications center personnel. A railroad shall have procedures for testing a person being evaluated for qualification under the emergency preparedness plan who is employed by the railroad, under a contract or subcontract with the railroad, or employed by a contractor or subcontractor to the railroad. The types of testing selected by the railroad shall be:

(A) Designed to accurately measure an individual employee's knowledge of his or her responsibilities under the plan;

(B) Objective in nature;

(C) Administered in written form; and

(D) Conducted without reference by the person being tested to open reference books or other materials, except to the degree the person is being tested on his or her ability to use such reference books or materials.

(vi) On-board staffing. (A) Except as provided in paragraph (a)(2)(vi)(B), all crewmembers on board a passenger train shall be qualified to perform the functions for which they are responsible under the provisions of the applicable emergency preparedness plan.

(B) A freight train crew relieving an expired passenger train crew en route is not required to be qualified under the emergency preparedness plan, provided that at least one member of the expired passenger train crew remains on board and is available to perform excess service under the Federal hours of service laws in the event of an emergency.

(3) Joint operations.

(i) Each railroad hosting passenger train service shall address its specific responsibilities consistent with this part.

(ii) In order to achieve an optimum level of emergency preparedness, each railroad hosting passenger train service shall communicate with each railroad that provides or operates such service and coordinate applicable portions of the emergency preparedness plan. All of the railroads involved in hosting, providing, and operating a passenger train service operation shall jointly adopt one emergency preparedness plan that addresses each entity's specific responsibilities consistent with this part. Nothing in this paragraph shall restrict the ability of the railroads to provide for an appropriate assignment of responsibility for compliance with this part among those railroads through a joint operating agreement or other binding contract. However, the assignor shall not be relieved of responsibility for compliance with this part.

(4) Special circumstances—

(i) Tunnels. When applicable, the railroad's emergency preparedness plan shall reflect readiness procedures designed to ensure passenger safety in an emergency situation occurring in a tunnel of 1,000 feet or more in length. The railroad's emergency preparedness plan shall address, as a minimum, availability of emergency lighting, access to emergency evacuation exits, bench wall readiness, ladders for detrainning, effective radio or other communication between on-board crewmembers and the control center, and options for assistance from other trains.

(ii) Other operating considerations. When applicable, the railroad's emergency preparedness plan shall address passenger train emergency procedures involving operations on elevated structures, including drawbridges, and in electrified territory.

(iii) Parallel operations. When applicable, the railroad's emergency preparedness plan shall require reasonable and prudent action to coordinate emergency efforts where adjacent rail modes of transportation run parallel to either the passenger railroad or the railroad hosting passenger operations.

(5) Liaison with emergency responders. Each railroad to which this part applies shall establish and maintain a working relationship with the on-line emergency responders by, as a minimum:

(i) Developing and making available a training program for all on-line emergency responders who could reasonably be expected to respond during an emergency situation. The training program shall include an emphasis on access to railroad equipment, location of railroad facilities, and communications interface, and provide information to emergency responders who may not have the opportunity to participate in an emergency simulation. Each affected railroad

shall either offer the training directly or provide the program information and materials to state training institutes, firefighter organizations, or police academies;

(ii) Inviting emergency responders to participate in emergency simulations; and

(iii) Distributing applicable portions of its current emergency preparedness plan at least once every three years, or whenever the railroad materially changes its plan in a manner that could reasonably be expected to affect the railroad's interface with the on-line emergency responders, whichever occurs earlier, including documentation concerning the railroad's equipment and the physical characteristics of its line, necessary maps, and the position titles and telephone numbers of relevant railroad officers to contact.

(6) On-board emergency equipment—

(i) General. Each railroad's emergency preparedness plan shall state the types of emergency equipment to be kept on board and indicate their location(s) on each passenger car that is in service. Effective May 4, 1999, or not more than 120 days after commencing passenger operations, whichever is later, this equipment shall include, at a minimum:

(A) One fire extinguisher per passenger car;

(B) One pry bar per passenger car; and

(C) One flashlight per on-board crewmember.

(ii) Effective May 4, 1999, or not more than 120 days after commencing passenger operations, whichever is later, each railroad that provides intercity passenger train service shall also equip each passenger train that is in service with at least one first-aid kit accessible to crewmembers that contains, at a minimum:

(A) Two small gauze pads (at least 4×4 inches);

(B) Two large gauze pads (at least 8×10 inches);

(C) Two adhesive bandages;

(D) Two triangular bandages;

(E) One package of gauge roller bandage that is at least two inches wide;

(F) Wound cleaning agent, such as sealed moistened towelettes;

(G) One pair of scissors;

(H) One set of tweezers;

(I) One roll of adhesive tape;

(J) Two pairs of latex gloves; and

(K) One resuscitation mask.

(iii) On-board emergency lighting. Consistent with the requirements of part 238 of this chapter, auxiliary portable lighting (e.g., a handheld flashlight) must be accessible and provide, at a minimum:

(A) Brilliant illumination during the first 15 minutes after the onset of an emergency situation; and

(B) Continuous or intermittent illumination during the next 60 minutes after the onset of an emergency situation.

(iv) Maintenance. Each railroad's emergency preparedness plan shall provide for scheduled maintenance and replacement of first-aid kits, on-board emergency equipment, and on-board emergency lighting.

(7) **Passenger safety information**—

(i) **General.** Each railroad's emergency preparedness plan shall provide for passenger awareness of emergency procedures, to enable passengers to respond properly during an emergency.

(ii) **Passenger awareness program activities.** Each railroad shall conspicuously and legibly post emergency instructions inside all passenger cars (e.g., on car bulkhead signs, seatback decals, or seat cards) and shall utilize one or more additional methods to provide safety awareness information including, but not limited to, one of the following:

- (A) On-board announcements;
- (B) Laminated wallet cards;
- (C) Ticket envelopes;
- (D) Timetables;
- (E) Station signs or video monitors;
- (F) Public service announcements; or
- (G) Seat drops.

(8) **Procedures regarding passengers with disabilities.** The railroad's emergency preparedness plan shall include procedures to promote the safety of passengers with disabilities under all conditions identified in its emergency preparedness plan, such as during a train evacuation. These procedures shall include, but not be limited to, a process for notifying emergency responders in an emergency situation about the presence and general location of each such passenger when the railroad has knowledge that the passenger is on board the train. The railroad does not have knowledge that such passenger has a disability unless a crewmember has actual knowledge of the disability, such as where a passenger (or his or her companion or fellow passenger) has expressly informed a crewmember on the train of the disability or where the disability is readily apparent. Nothing in this part requires the railroad to maintain any list of train passengers.

§ 239.103 Passenger train emergency simulations.

(a) **General.** Each railroad operating passenger train service shall conduct full-scale emergency simulations, in order to determine its capability to execute the emergency preparedness plan under the variety of scenarios that could reasonably be expected to occur on its operation, and ensure coordination with all emergency responders who voluntarily agree to participate in the emergency simulations.

(b) **Frequency of the emergency simulations.** Except as provided in paragraph (c) of this section:

(1) Each railroad that provides commuter or other short-haul passenger train service and whose operations include less than 150 route miles and less than 200 million passenger miles annually, shall conduct a minimum of one full-scale emergency simulation during every two calendar years.

(2) Each railroad that provides commuter or other short-haul passenger train service and whose operations include at least 150 route miles or at least 200 million passenger miles annually, shall conduct a minimum of one full-scale emergency simulation during each calendar year.

(3) Each railroad that provides intercity passenger train service, shall conduct a minimum of one full-scale emergency simulation during each calendar year, regardless of the number of route miles or passenger miles.

(c) Actual emergency situations. Neither a tabletop exercise nor the activation of its emergency preparedness plan during an actual emergency situation may be credited toward the minimum number of full-scale emergency simulations required under paragraph (b) of this section. However, a railroad that has activated its emergency preparedness plan in response to a major emergency may elect to postpone a scheduled full-scale simulation for up to 180 calendar days beyond the applicable calendar year completion date in order to evaluate the effectiveness of its plan during that major emergency and, as appropriate, modify the rescheduled simulation.

(d) Definition. As used in this section, *major emergency* means an unexpected event related to the operation of passenger train service that results in serious injury or death to one or more persons and property damage greater than the current reporting threshold of part 225 of this chapter to railroad on-track equipment, signals, tracks, track structures, or roadbeds, including labor costs and the costs for acquiring new equipment and material.

§ 239.105 Debriefing and critique.

(a) General. Except as provided in paragraph (b) of this section, each railroad operating passenger train service shall conduct a debriefing and critique session after each passenger train emergency situation or full-scale simulation to determine the effectiveness of its emergency preparedness plan, and shall improve or amend its plan, or both, as appropriate, in accordance with the information developed. The debriefing and critique session shall be conducted within 60 days of the date of the passenger train emergency situation or full-scale simulation.

(b) Exceptions. (1) No debriefing and critique session shall be required in the case of an emergency situation involving only a collision between passenger railroad rolling stock and: a pedestrian; a trespasser; or a motor vehicle or other highway conveyance at a highway-rail grade crossing, provided that the collision does not result in: a passenger or employee fatality, or an injury to one or more crewmembers or passengers requiring admission to a hospital; or the evacuation of a passenger train. (2) For purposes of this section, highway-rail grade crossing means a location where a public highway, road, street, or private roadway, including associated sidewalks and pathways, crosses one or more railroad tracks at grade, and trespasser means a person who is on that part of railroad property used in railroad operation and whose presence is prohibited, forbidden, or unlawful.

(c) Purpose of debriefing and critique. The debriefing and critique session shall be designed to determine, at a minimum:

- (1) Whether the on-board communications equipment functioned properly;
- (2) How much time elapsed between the occurrence of the emergency situation or full-scale simulation and notification to the emergency responders involved;
- (3) Whether the control center or the emergency response communications center promptly initiated the required notifications;

(4) How quickly and effectively the emergency responders responded after notification; and
(5) How efficiently the passengers exited from the car through the emergency exits, including any passengers with a disability or injury (when the railroad has knowledge of any such passengers).

(d) Records. (1) Each railroad shall maintain records of its debriefing and critique sessions at its system headquarters and applicable division headquarters for two calendar years after the end of the calendar year to which they relate, including the following information:

(i) Date and location of the passenger train emergency situation or full-scale simulation;

(ii) Date and location of the debriefing and critique session; and

(iii) Names of all participants in the debriefing and critique session.

(2) These records shall be made available to representatives of FRA and States participating under part 212 of this chapter [State safety participation regulations] for inspection and copying during normal business hours.

§ 239.107 Emergency exits.

(For additional requirements related to emergency window exits, *See* part 223 of this chapter).

(a) Marking. Each railroad operating passenger train service shall determine for each passenger car that is in service, except for self-propelled cars designed to carry baggage, mail, or express:

(1) That all door exits intended for emergency egress are either lighted or conspicuously and legibly marked with luminescent material on the inside of the car and that clear and understandable instructions are posted at or near such exits.

(2) That all door exits intended for emergency access by emergency responders for extrication of passengers are marked with retroreflective material and that clear and understandable instructions are posted at each such door.

(b) Inspection, maintenance, and repair. Consistent with the requirements of part 223 of this chapter, each railroad operating passenger train service shall:

(1) Provide for scheduled inspection, maintenance, and repair of emergency window and door exits;

(2) Test a representative sample of emergency window exits on its cars at least once every 180 days to verify that they are operating properly; and

(3) Repair each inoperative emergency window and door exit on a car before returning the car to service.

(c) Records. Each railroad operating passenger service shall maintain records of its inspection, maintenance, and repair of emergency window and door exits at its system headquarters and applicable division headquarters for two calendar years after the end of the calendar year to which they relate. These records shall be made available to representatives of FRA and States participating under part 212 of this chapter for inspection and copying during normal business hours.

(d) Electronic recordkeeping. Each railroad to which this part applies is authorized to retain by electronic recordkeeping the information prescribed in paragraph (b) of this section, provided that all of the following conditions are met:

- (1) The railroad adequately limits and controls accessibility to such information retained in its database system and identifies those individuals who have such access;
- (2) The railroad has a terminal at the system headquarters and at each division headquarters;
- (3) Each such terminal has a desk-top computer (i.e., monitor, central processing unit, and keyboard) and either a facsimile machine or a printer connected to the computer to retrieve and produce information in a usable format for immediate review by representatives of FRA and States participating under part 212 of this chapter;
- (4) The railroad has a designated representative who is authorized to authenticate retrieved information from the electronic system as true and accurate copies of the electronically kept records; and
- (5) The railroad provides representatives of FRA and States participating under part 212 of this chapter with immediate access to these records for inspection and copying during normal business hours and provides printouts of such records upon request.

Subpart C—Review, Approval, and Retention of Emergency Preparedness Plans

§ 239.201 Emergency preparedness plan; filing and approval.

(a) Filing of Plan and Amendments—

(1). Filing of plan. Each passenger railroad to which this part applies and all railroads hosting its passenger train service (if applicable) shall jointly adopt a single emergency preparedness plan for that service and the passenger railroad shall file one copy of that plan with the FRA's Associate Administrator for Safety, not less than 60 days prior to commencing passenger operations. Any railroad that has such a plan approved by FRA as of July 29, 2014, is considered to have timely filed. The emergency preparedness plan shall include the name, title, address, and telephone number of the primary person on each affected railroad to be contacted with regard to review of the plan, and shall include a summary of each railroad's analysis supporting each plan element and describing how every condition on the railroad's property that is likely to affect emergency response is addressed in the plan. Each subsequent amendment to a railroad's emergency preparedness plan.

(2) Filing of amendments to the plan.

(i) Except as provided in paragraph (a)(2)(ii) of this section, each subsequent amendment to a railroad's emergency preparedness plan shall be filed with FRA by the passenger railroad not less than 60 days prior to the proposed effective date of the amendment. When filing an amendment, the railroad must include a written summary of the proposed changes to the previously approved plan and, as applicable, a current and new employees and others within the scope of the training requirement at § 239.101(a)(2)[re: emergency preparedness] would be trained on any amendment.

(ii) If the proposed amendment is limited to adding or changing the name, title, street address, email address, or telephone number of the primary person to be contacted on each affected railroad with regard to the review of the plan, approval is not required under the

process in paragraph (b)(3)(i) of this section. These proposed amendments may be implemented by the railroad upon filing with FRA's Associate Administrator for Railroad Safety and Chief Safety Officer. All other proposed amendments must comply with the formal approval process in paragraph (b)(3)(i).

(b) Approval—

(1) Preliminary review.

(i) Within 90 days of receipt of each proposed emergency preparedness plan, and within 45 days of receipt of each plan for passenger operations to be commenced after the initial deadline for plan submissions, FRA will conduct a preliminary review of the proposed plan to determine if the elements prescribed in § 239.101 are sufficiently addressed and discussed in the railroad's plan submission. FRA will then notify the primary contact person of each affected railroad in writing of the results of the review, whether the proposed plan has been conditionally approved by FRA, and if not conditionally approved, the specific points in which the plan is deficient.

(ii) If a proposed emergency preparedness plan is not conditionally approved by FRA, the affected railroad or railroads shall amend the proposed plan to correct all deficiencies identified by FRA (and provide FRA with a corrected copy) not later than 30 days following receipt of FRA's written notice that the proposed plan was not conditionally approved.

(2) Final review.

(i) Within 18 months of receipt of each proposed plan, and within 180 days of receipt of each proposed plan for passenger operations to be commenced after the initial deadline for plan submissions, FRA will conduct a comprehensive review of the conditionally approved plan to evaluate implementation of the elements included. This review will include ongoing dialogues with rail management and labor representatives, and field analysis and verification. FRA will then notify the primary contact person of each affected railroad in writing of the results of the review, whether the conditionally approved plan has been finally approved by FRA, and if not approved, the specific points in which the plan is deficient.

(ii) If an emergency preparedness plan of a railroad or railroads is not finally approved by FRA, the affected railroad or railroads shall amend the plan to correct all deficiencies (and provide FRA with a corrected copy) not later than 30 days following receipt of FRA's written notice that the plan was not finally approved.

(3) Review of amendments.

(i) Except as provided in paragraph (a)(2)(ii) of this section, FRA will normally review each proposed plan amendment within 45 days of receipt. FRA will then notify the primary contact person of each affected railroad of the results of the review, whether the proposed amendment has been approved by FRA, and if not approved, the specific points in which the proposed amendment is deficient.

(ii) If the amendment is not approved, the railroad shall correct any deficiencies identified by FRA and file the corrected amendment prior to implementing the amendment.

(4) Re-opened review. Following initial approval of a plan, or amendment, FRA may reopen consideration of the plan, or amendment, for cause stated.

§ 239.203 Retention of emergency preparedness plan.

Each passenger railroad to which this part applies, and all railroads hosting its passenger train service (if applicable), shall each retain one copy of the emergency preparedness plan required by § 239.201 and one copy of each subsequent amendment to that plan at the system and division headquarters of each, and shall make such records available to representatives of FRA and States participating under part 212 of this chapter for inspection and copying during normal business hours.

Subpart D—Operational (Efficiency) Tests; Inspection of Records and Recordkeeping

§ 239.301 Operational tests and inspections.

(a) Requirement to conduct operational tests and inspections. Each railroad to which this part applies shall periodically conduct operational tests and inspections of on-board personnel, responsible control center personnel, and, as applicable, emergency response communications center personnel employed by the railroad, under a contract or subcontract with the railroad, or employed by a contractor or subcontractor to the railroad, to determine the extent of compliance with its emergency preparedness plan.

(1) Program of operational tests and inspections. Operational tests and inspections shall be conducted in accordance with the railroad's program. A new railroad shall adopt such a program within 30 days of commencing rail operations. The program shall—

(i) Provide for operational testing and inspection on appropriate courses of action in response to various potential emergency situations and on the responsibilities of an employee of the railroad, of an individual who is a contractor or subcontractor to the railroad, or an employee of a contractor or subcontractor to the railroad, as they relate to the railroad's emergency preparedness plan.

(ii) Describe each type of operational test and inspection required, including the means and procedures used to carry it out.

(iii) State the purpose of each type of operational test and inspection.

(iv) State, according to operating divisions where applicable, the frequency with which each type of operational test and inspection is to be conducted.

(v) Identify the officer(s) by name, job title, and division or system, who shall be responsible for ensuring that the program of operational tests and inspections is properly implemented. A railroad with operating divisions shall identify at least one officer at the system headquarters who is responsible for overseeing the entire program and the implementation by each division.

(vi) Require that each railroad officer who conducts operational tests and inspections be trained on those aspects of the railroad's emergency preparedness plan that are relevant to the operational tests and inspections that the officer conducts, and that the officer be qualified on the procedures for conducting such operational tests and inspections in accordance with the railroad's program of operational tests and inspections and the requirements of this section.

(2) The program of operational tests and inspections required by paragraph (a)(1) of this section may be combined with the written program of operational tests and inspections required by §217.9(c) of this chapter.

(b) Maintaining records of operational tests and inspections. Each railroad to which this part applies shall maintain a record of the date, time, place, and result of each operational test and inspection that was performed in accordance with paragraph (a) of this section. Each record shall also specify the name of the railroad officer who administered the test or inspection, the name of each employee tested, and sufficient information to identify the relevant facts relied on for evaluation purposes.

(c) Retaining operational test and inspection records. Each record required by paragraph (b) of this section shall be retained at the system headquarters of the railroad and, as applicable, at the division headquarters for the division where the test or inspection was conducted, for one calendar year after the end of the calendar year to which the test or inspection relates. Each such record shall be retained either in hard copy or electronically, if pursuant to § 239.303, and shall be made available to representatives of FRA and States participating under part 212 of this chapter for inspection and copying during normal business hours.

(d) Retaining records of program of operational tests and inspections. Each railroad shall retain one copy of its current operational testing and inspection program required by paragraph (a) of this section and one copy of each subsequent amendment to such program. These records shall be retained at the system headquarters, and, as applicable, at each division headquarters where the operational tests and inspections are conducted, for three calendar years after the end of the calendar year to which they relate. These records shall be retained either in hard copy or electronically, if pursuant to § 239.303, and shall be made available to representatives of FRA and States participating under part 212 of this chapter for inspection and copying during normal business hours.

(e) Six-month review of tests and inspections and adjustments to the program of operational tests and inspections. Not less than once every six months, the officer(s) responsible for overseeing the entire program of operational tests and inspections under this section and the implementation of the program by each division, if any, or the system, as designated pursuant to paragraph (a)(1)(v) of this section, shall conduct periodic reviews and analyses as provided in this paragraph, prepare records of reviews as provided in this paragraph, and retain one copy of these records at the system headquarters, and, as applicable, at each division headquarters. Each such review and record shall be completed within 30 days of the close of the period being reviewed. The record of each such review shall be retained (in hard copy or electronically, if pursuant to § 239.303) for a period of one year after the end of the calendar year to which the review relates, and be made available to representatives of FRA for inspection and copying during normal business hours. In particular, each designated officer's review and record shall include the following:

(1) The operational testing and inspection data for each division, if any, or the system to determine compliance by the railroad testing officers with its program of operational tests and inspections required by paragraph (a)(1) of this section. At a minimum, this review shall include the name of each railroad testing officer, the number of tests and inspections conducted by each

officer, and whether the officer conducted the minimum number of each type of test or inspection required by the railroad's program;

(2) Accident/incident data, the results of prior operational tests and inspections under this section, and other pertinent safety data for each division, if any, or the system to identify the relevant operating rules related to those accidents/incidents that occurred during the period. Based upon the results of that review of the data for each division, if any, or the system, the designated officer(s) shall make any necessary adjustments to the tests and inspections required of railroad officers for the subsequent period(s); and

(3) Implementation of the program of operational tests and inspections under this section from a system perspective, to ensure that the program is being utilized as intended, that the other reviews provided for in this paragraph have been properly completed, that appropriate adjustments have been made to the distribution of tests and inspections required, and that the railroad testing officers are appropriately directing their efforts.

(f) Annual summary of operational tests and inspections. Before March 1 of each calendar year, each railroad to which this part applies shall prepare and retain at the system headquarters of the railroad and, as applicable, at each of its division headquarters, one copy of a summary of the following with respect to its previous calendar year activities: The number, type, and result of each operational test and inspection, stated according to operating divisions as applicable, that was conducted as required by paragraph (a) of this section. A record of each such summary shall be retained (in hard copy or electronically, if pursuant to § 239.303) for three calendar years after the end of the calendar year to which the record relates and shall be made available to representatives of FRA and States participating under part 212 of this chapter for inspection and copying

§ 239.303 Electronic recordkeeping.

Each railroad to which this part applies is authorized to retain by electronic recordkeeping the information prescribed in § 239.301, provided that all of the following conditions are met:

(a) The railroad adequately limits and controls accessibility to such information retained in its database system and identifies those individuals who have such access;

(b) The railroad has a terminal at the system headquarters and at each division headquarters;

(c) Each such terminal has a desk-top computer (i.e., monitor, central processing unit, and keyboard) and either a facsimile machine or a printer connected to the computer to retrieve and produce information in a usable format for immediate review by representatives of FRA and States participating under part 212 of this chapter;

(d) The railroad has a designated representative who is authorized to authenticate retrieved information from the electronic system as true and accurate copies of the electronically kept records; and

(e) The railroad provides representatives of FRA and States participating under part 212 of this chapter with immediate access to these records for inspection and copying during normal business hours and provides printouts of such records upon request.

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PASSENGER EQUIPMENT SAFETY STANDARDS

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Subpart A--General

§ 238.1 -- Purpose and scope.

The purpose of this part is to prevent collisions, derailments, and other occurrences involving railroad passenger equipment that cause injury or death to railroad employees, railroad passengers, or the general public; and to mitigate the consequences of such occurrences to the extent they cannot be prevented.

§ 238.3 -- Applicability.

- (a) Except as provided in paragraph (c) of this section, this part applies to all:
 - (1) Railroads that operate intercity or commuter passenger train service on standard gage track which is part of the general railroad system of transportation; and
 - (2) Railroads that provide commuter or other short-haul rail passenger train service in a metropolitan or suburban area as described by 49 U.S.C. 20102(1), including public authorities operating passenger train service.
- (b) Railroads that permit to be used or hauled on their lines passenger equipment subject to this part, in violation of a power brake provision of this part or a safety appliance provision of this part, are subject to the power brake and safety appliance provisions of this part with respect to such operations.

- (c) This part does not apply to:
- (1) Rapid transit operations in an urban area that are not connected to the general railroad system of transportation;
 - (2) A railroad that operates only on track inside an installation that is not part of the general railroad system of transportation;
 - (3) Tourist, scenic, historic, or excursion operations, whether on or off the general railroad system of transportation; or
 - (4) Circus trains.

§ 238.5 -- Definitions.

As used in this part-

AAR means the Association of American Railroads.

APTA means the American Public Transit Association.

Actuator means a self-contained brake system component that generates the force to apply the brake shoe or brake pad to the wheel or disc. An actuator typically consists of a cylinder, piston, and piston rod.

Administrator means the Administrator of the Federal Railroad Administration or the Administrator's delegate.

Alerter means a device or system installed in the locomotive cab to promote continuous, active locomotive engineer attentiveness by monitoring select locomotive engineer-induced control activities. If fluctuation of a monitored locomotive engineer-induced control activity is not detected within a predetermined time, a sequence of audible and visual alarms is activated so as to progressively prompt a response by the locomotive engineer. Failure by the locomotive engineer to institute a change of state in a monitored control, or acknowledge the alerter alarm activity through a manual reset provision, results in a penalty brake application that brings the locomotive or train to a stop.

Anti-climbing mechanism means the parts at the ends of adjoining vehicles in a train that are designed to engage when subjected to large buff loads to prevent the override of one vehicle by another.

Bind means restrict the intended movement of one or more brake system components by obstruction, increased friction, or reduced clearance.

Block of cars means one car or multiple cars in a solid unit coupled together for the purpose of being added to, or removed from, a train as a solid unit.

Brake, air or power brake means a combination of devices operated by compressed air, arranged in a system, and controlled manually, electrically, or pneumatically, by means of which the motion of a rail car or locomotive is retarded or arrested.

Brake, disc means a retardation system used on some rail vehicles, primarily passenger equipment, that utilizes flat metal discs as the braking surface instead of the wheel tread.

Brake, dynamic means a train braking system whereby the kinetic energy of a moving train is used to generate electric current at the locomotive traction motors, which is then dissipated through banks of resistor grids or back into the catenary or third rail system.

Brake, effective means a brake that is capable of producing its required designed retarding force on the train. A brake is not effective if its piston travel is in excess of the maximum prescribed limits. On vehicles equipped with nominal 12-inch stroke brake cylinders, the brake is not effective if its piston travel exceeds 10 1/2 inches.

Brake indicator means a device, actuated by brake cylinder pressure, which indicates whether brakes are applied or released.

Brake, inoperative means a primary brake that, for any reason, no longer applies or releases as intended or is otherwise ineffective.

Brake, on-tread friction means a braking system that uses a brake shoe that acts on the tread of the wheel to retard the vehicle.

Brake, parking or hand brake means a brake that can be applied and released by hand to prevent movement of a stationary rail car or locomotive.

Brake pipe means the system of piping (including branch pipes, angle cocks, cutout cocks, dirt collectors, hoses, and hose couplings) used for connecting locomotives and all rail cars for the passage of air to control the locomotive and car brakes.

Brake, power means "air brake" as that term is defined in this section.

Brake, primary means those components of the train brake system necessary to stop the train within the signal spacing distance without thermal damage to friction braking surfaces.

Brake, secondary means those components of the train brake system which develop supplemental brake retarding force that is not needed to stop the train within signal spacing distances or to prevent thermal damage to friction braking surfaces.

Brake shoes or pads lined with tread or disc means that the surface of the brake shoe or pad, respectively, engages the surface of the wheel tread or disc, respectively, to prevent localized thermal stress.

Braking system, blended means a braking system where the primary brake and one or more secondary brakes are automatically combined to stop the train. If the secondary brakes are unavailable, the blended brake uses the primary brake alone to stop the train.

Calendar day means a time period running from one midnight to the next midnight on a given date.

Class I brake test means a complete passenger train brake system test and inspection (as further specified in § 238.313) performed by a qualified maintenance person to ensure that the air brake system is 100 percent effective.

Class IA brake test means a test and inspection (as further specified in § 238.315) performed by a qualified person of the air brake system on each car in a passenger train to ensure that the brakes apply and release on each car in the train in response to train line commands.

Class II brake test means a test and inspection (as further specified in § 238.317) performed by a qualified person of brake pipe integrity and continuity from the controlling locomotive to the rear unit of a passenger train.

Collision posts means structural members of the end structures of a vehicle that extend vertically from the underframe to which they are securely attached and that provide protection to occupied compartments from an object penetrating the vehicle during a collision.

Control valves means that part of the air brake equipment on each rail car or locomotive that controls the charging, application, and release of the air brakes, in response to train line commands.

Corner posts means structural members located at the intersection of the front or rear surface with the side surface of a rail vehicle and which extend vertically from the underframe to the roof. Corner posts may be combined with collision posts to become part of the end structure.

Crack means a fracture without complete separation into parts, except that, in a casting, a shrinkage crack or hot tear that does not significantly diminish the strength of the member is not a crack.

Crash energy management means an approach to the design of rail passenger equipment which controls the dissipation of energy during a collision to protect the occupied volumes from crushing and to limit the decelerations on passengers and crewmembers in those volumes. This may be accomplished by designing energy-absorbing structures of low strength in the unoccupied volumes of a rail vehicle or passenger train to collapse in a controlled manner, while providing higher structural strength in the occupied volumes. Energy deflection can also be part of a crash energy management approach. Crash energy management can be used to help provide anti-climbing resistance and to reduce the risk of train buckling during a collision.

Crash refuge means a volume with structural strength designed to maximize the survivability of crewmembers stationed in the locomotive cab during a collision.

Crewmember means a railroad employee called to perform service covered by the Federal hours of service laws at 49 U.S.C. 21103 and subject to the railroad's operating rules and program of operational tests and inspections required in § 217.9 and § 217.11 of this chapter.

Critical buckling stress means the minimum stress necessary to initiate buckling of a structural member.

Emergency brake application means an irretrievable brake application resulting in the maximum retarding force available from the train brake system.

Emergency window means that segment of a side-facing glazing panel which has been designed to permit rapid and easy removal in an emergency situation.

End structure means the main support structure projecting upward from the underframe of a locomotive, passenger car, or other rail vehicle. The end structure is securely attached to the underframe at each end of a rail vehicle.

50th -percentile adult male means a person weighing 164 pounds (plus or minus 3 pounds) and possessing the following dimensions: erect sitting height: 35.7 inches (plus or minus 0.1 inch); hip breadth (sitting): 14.7 inches (plus or minus 0.7 inch); hip circumference (sitting): 42 inches; waist circumference (sitting): 32 inches (plus or minus 0.6 inch); chest depth: 9.3 inches (plus or minus 0.2 inch); and chest circumference: 37.4 inches (plus or minus 0.6 inch).

Foul means restrict the intended movement of one or more brake system components because the component is snagged, entangled, or twisted.

FRA means the Federal Railroad Administration.

Fuel tank, external means a fuel containment volume that extends outside the car body structure of a locomotive.

Fuel tank, internal means a fuel containment volume that does not extend outside the car body structure of a locomotive.

Full-height collision post, corner post, or side frame post means any vertical framing member in the rail car body structure that spans the distance between the underframe and the roof at the car body section where the post is located. For collision posts located at the approximate third points laterally of an end frame, the term "full-height" applies to posts that extend and connect to supporting structural members in the roof at the location of the posts, or to a beam connected to the top of the end-frame and supported by the roof rails (or anti-telescoping plate), or to both.

Full service application means a brake application which results in a brake cylinder pressure at the service limiting valve setting or equivalent.

Glazing, end-facing means a glazing panel located where a line perpendicular to the exterior surface of the panel makes an angle of 50 degrees or less with the longitudinal center line of the rail vehicle in which the panel is installed. A glazing panel that curves so as to meet the definition for both side-facing and end-facing glazing is considered end-facing glazing.

Glazing, exterior means a glazing panel that is an integral part of the exterior skin of a rail vehicle and has a surface exposed to the outside environment.

Glazing, side-facing means a glazing panel located where a line perpendicular to the exterior surface of the panel makes an angle of more than 50 degrees with the longitudinal center line of the rail vehicle in which the panel is installed.

Handrails means safety appliances installed on either side of a rail vehicle's exterior doors to assist passengers and crewmembers to safely board and depart the vehicle.

Head end power means power generated on board the locomotive of a passenger train used for purposes other than propelling the train, such as cooking, heating, illumination, ventilation and air conditioning.

In passenger service/in revenue service means a train or passenger equipment that is carrying, or available to carry, passengers. Passengers need not have paid a fare in order for the equipment to be considered in passenger or in revenue service.

In service, when used in connection with passenger equipment, means:

- (1) Passenger equipment subject to this part that is in passenger or revenue service in the U.S.; and
- (2) All other passenger equipment subject to this part, unless the passenger equipment:
 - (i) Is being handled in accordance with §§ 238.15[movement of power brake defects], 238.17[movement of other brake defects], 238.305(d)[next interior calendar day inspection] or 238.503(f)[movement with other than a power brake defect], as applicable;
 - (ii) Is in a repair shop or on a repair track;
 - (iii) Is on a storage track and is not carrying passengers; or
 - (iv) Has been delivered in interchange but has not been accepted by the receiving railroad.

Interior fitting means any component in the passenger compartment which is mounted to the floor, ceiling, sidewalls, or end walls and projects into the passenger compartment more than 25 mm (1 in.) from the surface or surfaces to which it is mounted. Interior fittings do not include side and end walls, floors, door pockets, or ceiling lining materials, for example.

Lateral means the horizontal direction perpendicular to the direction of travel.

Locomotive means a piece of on-track rail equipment, other than hi-rail, specialized maintenance, or other similar equipment, which may consist of one or more units operated from a single control stand with one or more propelling motors designed for moving other passenger equipment; with one or more propelling motors designed to transport freight or passenger traffic, or both; or without propelling motors but with one or more control stands. This term does not include a locomotive propelled by steam power unless it is used to haul an intercity or commuter passenger train. Nor does this term include a freight locomotive when used to haul a passenger train due to failure of a passenger locomotive.

Locomotive cab means the compartment or space on board a locomotive where the control stand is located and which is normally occupied by the engineer when the locomotive is operated.

Locomotive, cab car means rail rolling equipment intended to provide transportation for members of the general public that is without propelling motors but equipped with one or more control stands.

Locomotive, controlling means the locomotive from which the locomotive engineer exercises control over the train.

Locomotive, MU means rail rolling equipment self-propelled by any power source and intended to provide transportation for members of the general public; however, this term does not include

an MU locomotive propelled by steam power unless it is used to haul an intercity or commuter passenger train.

Longitudinal means in a direction parallel to the normal direction of travel.

Luminescent material means material that absorbs light energy when ambient levels of light are high and emits this stored energy when ambient levels of light are low, making the material appear to glow in the dark.

L/V ratio means the ratio of the lateral force that any wheel exerts on an individual rail to the vertical force exerted by the same wheel on the rail.

MIL-STD-882C means a military standard issued by the United States Department of Defense to provide uniform requirements for developing and implementing a system safety plan and program to identify and then eliminate the hazards of a system or reduce the associated risk to an acceptable level.

Monocoque means a type of rail vehicle construction where the shell or skin acts as a single unit with the supporting frame to resist and transmit the loads acting on the rail vehicle.

Mph means miles per hour.

95th -percentile adult male means, except as used in § 238.447(f)(2)[designed to accommodate a 5% adult female to 95% adult male] , a person weighing 215 pounds and possessing the following dimensions: erect sitting height: 38 inches; hip breadth (sitting): 16.5 inches; hip circumference (sitting): 47.2 inches; waist circumference (sitting): 42.5 inches; chest depth: 10.5 inches; and chest circumference 44.5 inches.

Occupied volume means the volume of a rail vehicle or passenger train where passengers or crewmembers are normally located during service operation, such as the operating cab and passenger seating and sleeping areas. The entire width of a vehicle's end compartment that contains a control stand is an occupied volume. A vestibule is typically not considered occupied, except when it contains a control stand for use as a control cab.

Ordered, as applied to acquisition of equipment, means that the acquiring entity has given a notice to proceed to manufacture the equipment that represents a firm financial commitment to compensate the manufacturer for the contract price of the equipment or for damages if the order is nullified. Equipment is not ordered if future exercise of a contract option is required to place the remanufacturing process in motion.

Override means to climb over the normal coupling or side buffers and linking mechanism and impact the end of the adjoining rail vehicle or unit above the underframe.

Passenger car means rail rolling equipment intended to provide transportation for members of the general public and includes a self-propelled car designed to carry passengers, baggage, mail, or express. This term includes a passenger coach, cab car, and an MU locomotive. In the context of articulated equipment, "passenger car" means that segment of the rail rolling equipment located between two trucks. This term does not include a private car.

Passenger coach means rail rolling equipment intended to provide transportation for members of the general public that is without propelling motors and without a control stand.

Passenger equipment -means

(1) All powered and unpowered passenger cars, locomotives used to haul a passenger car, and any other rail rolling equipment used in a train with one or more passenger cars. Passenger equipment includes-

- (i) A passenger coach,
- (ii) A cab car,
- (iii) A MU locomotive,

(iv) A locomotive not intended to provide transportation for a member of the general public that is used to power a passenger train, and

(v) Any non-self-propelled vehicle used in a passenger train, including an express car, baggage car, mail car, freight car, or a private car.

(2) In the context of articulated equipment, "passenger equipment" means a segment of rail rolling equipment located between two trucks that is used in a train with one or more passenger cars. This term does not include a freight locomotive when used to haul a passenger train due to failure of a passenger locomotive.

Passenger station means a location designated in a railroad's timetable where passengers are regularly scheduled to get on or off any train.

Permanent deformation means the undergoing of a permanent change in shape of a structural member of a rail vehicle.

Person means an entity of any type covered under 1 U.S.C. §1, including but not limited to the following: a railroad; a manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track, or facilities; any independent contractor providing goods or services to a railroad; and any employee of such owner, manufacturer, lessor, lessee, or independent contractor.

Piston travel means the amount of linear movement of the air brake hollow rod (or equivalent) or piston rod when forced outward by movement of the piston in the brake cylinder or actuator and limited by the brake shoes being forced against the wheel or disc.

Piston travel indicator means a device directly activated by the movement of the brake cylinder piston, the disc brake actuator, or the tread brake unit cylinder piston that provides an indication of the piston travel.

Power car means a rail vehicle that propels a Tier II passenger train or is the lead vehicle in a Tier II passenger train, or both.

Pre-revenue service acceptance testing plan means a document, as further specified in § 238.111, prepared by a railroad that explains in detail how pre-revenue service tests of passenger equipment demonstrate that the equipment meets Federal safety standards and the railroad's own safety requirements.

Private car means rail rolling equipment that is used only for excursion, recreational, or private transportation purposes. A private car is not a passenger car.

Primary responsibility means the task that a person performs during at least 50 percent of the time that the person is working. The totality of the circumstances will be considered on a case-by-case basis in circumstances where an individual does not spend 50 percent of his or her workday engaged in any one readily identifiable type of activity. Time spent supervising employees engaged in the functions of troubleshooting, inspection, testing, maintenance, or repair of train brake and mechanical components and systems covered by this part shall be considered work which is generally consistent with the function of troubleshooting of such systems and components for the purpose of the definition of this term and the definition of "Qualified Maintenance Person."

Public highway-rail grade crossing means a location where a public highway, road or street, including associated sidewalks or pathways, crosses one or more active railroad tracks at grade.

Qualified maintenance person means a qualified person who has received, as a part of the training, qualification, and designation program required under § 238.109, instruction and training that includes "hands-on" experience (under appropriate supervision or apprenticeship) in one or more of the following functions: troubleshooting, inspection, testing, maintenance, or repair of the

specific train brake and other components and systems for which the person is assigned responsibility. This person shall also possess a current understanding of what is required to properly repair and maintain the safety-critical brake or mechanical components for which the person is assigned responsibility. Further, the qualified maintenance person shall be a person whose primary responsibility includes work generally consistent with the above-referenced functions and is designated to:

- (1) Conduct Class I brake tests under this part;
- (2) Conduct exterior calendar day mechanical inspections on MU locomotives or other passenger cars and unpowered vehicles under this part; or
- (3) Determine whether equipment not in compliance with this part may be moved as required by § 238.17.

Qualified person means a person who has received, as a part of the training, qualification, and designation program required under § 238.109, instruction and training necessary to perform one or more functions required under this part. The railroad is responsible for determining that the person has the knowledge and skills necessary to perform the required function for which the person is assigned responsibility. The railroad determines the qualifications and competencies for employees designated to perform various functions in the manner set forth in this part. Although the rule uses the term "qualified person" to describe a person responsible for performing various functions required under this part, a person may be deemed qualified to perform some functions but not qualified to perform other functions. For example, although a person may be deemed qualified to perform the Class II brake test required by this part, that same person may or may not be qualified to perform the Class IA brake test or authorize the movement of defective equipment under this part. The railroad will determine the required functions for which an individual will be deemed a "qualified person" based upon the instruction and training the individual has received pursuant to § 238.109 on a particular function.

Repair point means a location designated by a railroad where repairs of the type necessary occur on a regular basis. A repair point has, or should have, the facilities, tools, and personnel qualified to make the necessary repairs. A repair point need not be staffed continuously.

Respond as intended means to produce the result that a device or system is designed to produce.

Rollover strength means the strength provided to protect the structural integrity of a rail vehicle in the event the vehicle leaves the track and impacts the ground on its side or roof.

Roof rail means the longitudinal structural member at the intersection of the side wall and the roof sheathing.

Running brake test means a test (as further specified in § 238.319) performed by a qualified person of a train system or component while the train is in motion to verify that the system or component functions as intended.

Running gear defect means any condition not in compliance with this part which involves a truck component, a propulsion system component, a draft system component, a wheel, or a wheel component.

Safety appliance means an appliance required under 49 U.S.C. chapter 203, excluding power brakes. The term includes automatic couplers, hand brakes, sill steps, handholds, handrails, or ladder treads made of steel or a material of equal or greater mechanical strength used by the traveling public or railroad employees that provide a means for safely coupling, uncoupling, or ascending or descending passenger equipment.

Safety-critical means a component, system, or task that, if not available, defective, not functioning, not functioning correctly, not performed, or not performed correctly, increases the risk of damage to passenger equipment or injury to a passenger, crewmember, or other person

Semi-monocoque means a type of rail vehicle construction where the shell or skin acts a single unit with the supporting frame to resist and transmit the loads acting on the rail vehicle.

Semi-permanently coupled means coupled by means of a drawbar or other coupling mechanism that requires tools to perform the uncoupling operation. Coupling and uncoupling of each semi-permanently coupled unit in a train can be performed safely only while at a maintenance or shop location where personnel can safely get under a unit or between units.

Shear strength means the ability of a structural member to resist forces or components of forces acting perpendicular to compression or tension forces, or both, in the member.

Shock absorbent material means material designed to prevent or mitigate injuries due to impact by yielding and absorbing much of the energy of impact.

Side posts means main vertical structural elements in the sides of a rail vehicle.

Side sill means that portion of the underframe or side at the bottom of the rail vehicle side wall.

Single car test means a comprehensive test (as further specified in § 238.311) of the functioning of all critical brake system components installed on an individual passenger car or unpowered vehicle, other than a self-propelled passenger car, used or allowed to be used in a passenger train.

Single car test device means a device capable of controlling the application and release of the brakes on an individual passenger car or an unpowered vehicle, other than a self-propelled passenger car, through pneumatic or electrical means.

Skin means the outer covering of a fuel tank and a rail vehicle. The skin may be covered with another coating of material such as fiberglass.

Spall, glazing means small pieces of glazing that fly off the back surface of the glazing when an object strikes the front surface.

Switching service means the classification of freight cars according to commodity or destination; assembling of cars for train movements; changing the position of cars for purposes of loading, unloading, or weighing; placing of locomotives and cars for repair or storage; or moving of rail equipment in connection with work service that does not constitute a train movement.

Telescope means override an adjoining rail vehicle or unit and penetrate into the interior of that adjoining vehicle or unit because of compressive forces.

Terminal means a starting point or ending point of a single scheduled trip for a train, where passengers may get on or off a train. Normally, this location is a point where the train would reverse direction or change destinations.

Tier I means operating at speeds not exceeding 125 mph.

Tier II means operating at speeds exceeding 125 mph but not exceeding 150 mph.

Tourist, scenic, historic, or excursion operations means railroad operations that carry passengers, often using antiquated equipment, with the conveyance of the passengers to a particular destination not being the principal purpose. Train movements of new passenger equipment for demonstration purposes are not tourist, scenic, historic, or excursion operations.

Trailer car means a rail vehicle that neither propels a Tier II passenger train nor is the leading unit in a Tier II passenger train. A trailer car is normally without a control stand and is normally occupied by passengers.

Train means a locomotive unit or locomotive units coupled, with or without cars. For the purposes of the provisions of this part related to power brakes, the term "train" does not include such equipment when being used in switching service.

Train brake communication line means the communication link between the locomotive and passenger equipment in a train by which the brake commands are transmitted. This may be a pneumatic pipe, electrical line, or radio signal.

Train, commuter means a passenger train providing commuter service within an urban, suburban, or metropolitan area. The term includes a passenger train provided by an instrumentality of a State or a political subdivision of a State.

Train, long-distance intercity passenger means a passenger train that provides service between large cities more than 125 miles apart and is not operated exclusively in the National Railroad Passenger Corporation's Northeast Corridor.

Train, passenger means a train that transports or is available to transport members of the general public. If a train is composed of a mixture of passenger and freight equipment, that train is a passenger train for purposes of this part.

Train, short-distance intercity passenger means a passenger train that provides service exclusively on the National Railroad Passenger Corporation's Northeast Corridor or between cities that are not more than 125 miles apart.

Train, Tier II passenger means a short-distance or long-distance intercity passenger train providing service at speeds that include those exceeding 125 mph but not exceeding 150 mph.

Trainset, passenger means a passenger train.

Transverse means in a direction perpendicular to the normal direction of travel.

Ultimate strength means the load at which a structural member fractures or ceases to resist any load.

Uncoupling mechanism means the arrangement for operating the coupler by any means.

Under frame means the lower horizontal support structure of a rail vehicle.

Unit means passenger equipment of any type, except a freight locomotive when used to haul a passenger train due to failure of a passenger locomotive.

Unoccupied volume means the volume of a rail vehicle or passenger train which does not contain seating and is not normally occupied by passengers or crewmembers.

Vehicle, rail means passenger equipment of any type and includes a car, trailer car, locomotive, power car, tender, or similar vehicle. This term does not include a freight locomotive when used to haul a passenger train due to failure of a passenger locomotive.

Vestibule means an area of a passenger car that normally does not contain seating and is used in passing from the seating area to the side exit doors.

Witness plate means a thin foil placed behind a piece of glazing undergoing an impact test. Any material spalled or broken from the back side of the glazing will dent or mark the witness plate.

Yard means a system of tracks within defined limits provided for the making up of trains, storing of cars, or other purposes.

Yard air test means a train brake system test conducted using a source of compressed air other than a locomotive.

Yield strength means the ability of a structural member to resist a change in length caused by a heavy load. Exceeding the yield strength may cause permanent deformation of the member.

§ 238.7 -- Waivers.

(a) A person subject to a requirement of this part may petition the Administrator for a waiver of compliance with such requirement. The filing of such a petition does not affect the person's responsibility for compliance with that requirement while the petition is being considered.

(b) Each petition for waiver under this section shall be filed in the manner and contain the information required by part 211 of this chapter.

(c) If the Administrator finds that a waiver of compliance is in the public interest and is consistent with railroad safety, the Administrator may grant the waiver subject to any conditions the Administrator deems necessary.

§ 238.9 -- Responsibility for compliance.

(a) A railroad subject to this part shall not-

(1) Use, haul, permit to be used or hauled on its line, offer in interchange, or accept in interchange any train or passenger equipment, while in service,

(i) That has one or more conditions not in compliance with a safety appliance or power brake provision of this part; or

(ii) That has not been inspected and tested as required by a safety appliance or power brake provision of this part; or

(2) Use, haul, offer in interchange, or accept in interchange any train or passenger equipment, while in service,

(i) That has one or more conditions not in compliance with a provision of this part, other than the safety appliance and power brake provisions of this part, if the railroad has actual knowledge of the facts giving rise to the violation, or a reasonable person acting in the circumstances and exercising reasonable care would have that knowledge; or

(ii) That has not been inspected and tested as required by a provision of this part, other than the safety appliance and power brake provisions of this part, if the railroad has actual knowledge of the facts giving rise to the violation, or a reasonable person acting in the circumstances and exercising reasonable care would have that knowledge; or

(3) Violate any other provision of this part.

(b) For purposes of this part, passenger equipment will be considered in use prior to departure but after it has received, or should have received, the inspection required under this part for movement and is deemed ready for passenger service.

(c) Although the duties imposed by this part are generally stated in terms of the duty of a railroad, any person as defined in § 238.5, including a contractor for a railroad, who performs any function covered by this part must perform that function in accordance with this part.

§ 238.11 -- Penalties.

(a) Any person, as defined in § 238.5, who violates any requirement of this part or causes the violation of any such requirement is subject to a civil penalty of at least \$ 500 and not more than \$ 11,000 per violation, except that: Penalties may be assessed against individuals only for willful violations, and, where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$ 22,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. *See*, Appendix A to this part for a statement of agency civil penalty policy.

(b) Any person who knowingly and willfully falsifies a record or report required by this part may be subject to fines and/or imprisonment up to 2 years under 49 U.S.C. 21311.

§ 238.13 -- Preemptive effect.

Under 49 U.S.C. 20106, issuance of the regulations in this part preempts any State law, regulation, or order covering the same subject matter, except an additional or more stringent law, regulation, or order that is necessary to eliminate or reduce an essentially local safety hazard; that is not incompatible with a law, regulation, or order of the United States Government; and that does not unreasonably burden interstate commerce.

§ 238.15 -- Movement of passenger equipment with power brake defects.

Beginning January 1, 2002 the following provisions of this section apply to railroads operating Tier I passenger equipment covered by this part. A railroad may request earlier application of these requirements upon written notification to FRA's Associate Administrator for Safety as provided in § 238.1(c) of this part.

(a) **General.** This section contains the requirements for moving passenger equipment with a power brake defect without liability for a civil penalty under this part. Railroads remain liable for the movement of passenger equipment under 49 U.S.C. § 20303(c). For purposes of this section, § 238.17, and § 238.503, a "power brake defect" is a condition of a power brake component, or other primary brake component, that does not conform with this part. (Passenger cars and other passenger equipment classified as locomotives under part 229 of this chapter are also covered by the movement restrictions contained in § 229.9 of this chapter for those defective conditions covered by part 229 of this chapter.)

(b) **Limitations on movement of passenger equipment containing a power brake defect found during a Class I or IA brake test.** Except as provided in paragraph (c) of this section (which addresses brakes that become defective en route after a Class I or IA brake test was performed), a commuter or passenger train that has in its consist passenger equipment containing a power brake defect found during a Class I or IA brake test (or, for Tier II trains, the equivalent) is performed may only be moved, without civil penalty liability under this part-

(1) If all of the following conditions are met:

(i) The train is moved for purposes of repair, without passengers;

(ii) The applicable operating restrictions in paragraphs (d) and (e) of this section are observed; and

(iii) The passenger equipment is tagged, or information is recorded, as prescribed in paragraph (c)(2) of this section; or

(2) If the train is moved for purposes of scrapping or sale of the passenger equipment that has the power brake defect and all of the following conditions are met:

(i) The train is moved without passengers;

(ii) The movement is at a speed of 15 mph or less; and

(iii) The movement conforms with the railroad's air brake or power brake instructions.

(c) **Limitations on movement of passenger equipment in passenger service that becomes defective en route after a Class I or IA brake test.** Passenger equipment hauled or used in service in a commuter or passenger train that develops an inoperative or ineffective power brakes or any brake defect while en route to another location after receiving a Class I or IA brake test (or, for Tier II trains, the equivalent) may be hauled or used by a railroad for repair, without civil penalty liability under this part, if the applicable operating restrictions set forth in paragraphs (d) and (e) of this section are complied with and all of the following requisites are satisfied:

(1) **En route defect.** At the time of the train's Class I or IA brake test, the passenger equipment in the train was properly equipped with power brakes that comply with this part. The power brakes on the passenger equipment become defective while it is en route to another location.

(2) **Record.** A tag or card is placed on both sides of the defective passenger equipment, or an automated tracking system is provided, with the following information about the defective passenger equipment:

- (i) The reporting mark and car or locomotive number;
- (ii) The name of the inspecting railroad;
- (iii) The name of the inspector;
- (iv) The inspection location and date;
- (v) The nature of each defect;
- (vi) The destination of the equipment where it will be repaired; and
- (vii) The signature, if possible, and job title of the person reporting the defective condition.

(3) **Automated tracking system.** Automated tracking systems used to meet the tagging requirements contained in paragraph (c)(2) of this section may be reviewed and monitored by FRA at any time to ensure the integrity of the system. FRA's Associate Administrator for Safety may prohibit or revoke a railroad's ability to utilize an automated tracking system in lieu of tagging if FRA finds that the automated tracking system is not properly secure, is inaccessible to FRA or a railroad's employees, or fails to adequately track or monitor the movement of defective equipment. Such a determination will be made in writing and will state the basis for such action.

(4) **Conditional requirement.** In addition, if an en route failure causes power brakes to be cut out or renders the brake inoperative on passenger equipment, the railroad shall:

- (i) Determine the percentage of operative power brakes in the train based on the number of brakes known to be cut out or otherwise inoperative, using the formula specified in paragraph (d)(1) of this section;
- (ii) Notify the person responsible for the movement of trains of the percent of operative brakes and movement restrictions on the train imposed by paragraph (d) of this section;
- (iii) Notify the mechanical department of the failure; and
- (iv) Confirm the percentage of operative brakes by a walking inspection at the next location where the railroad reasonably judges that it is safe to do so.

(d) **Operating restrictions based on percent operative power brakes in train.**

(1) **Computation of percent operative power brakes.**

(i) Except as specified in paragraphs (d)(1)(ii) and (iii) of this section, the percentage of operative power brakes in a train shall be determined by dividing the number of axles in the train with operative power brakes by the total number of axles in the train.

(ii) For trains equipped with tread brake units (TBUs), the percentage of operative power brakes shall be determined by dividing the number of operative TBUs by the total number of TBUs in the train..

(iii) Each cut-out axle on a locomotive that weighs more than 200,000 pounds shall be counted as two cut-out axles for the purposes of calculating the percentage of operative brakes. Unless otherwise specified by the railroad, the friction braking effort over all other axles shall be considered uniform.

(iv) The following brake conditions not in compliance with this part are not considered inoperative power brakes for purposes of this section:

(A) Failure or cutting out of secondary brake systems

(B) Inoperative or otherwise defective handbrakes or parking brakes;

(C) Piston travel that is in excess of the Class I brake test limits required in § 238.313 but that does not exceed the maximum prescribed limits for considering the brakes to be effective; and

(D) Power brakes overdue for inspection, testing, maintenance, or stenciling under this part.

(2) ***All passenger trains developing 50-74 percent operative power brakes.*** A passenger train that develops inoperative power brake equipment resulting in at least 50 percent but less than 75 percent operative power brakes may be used only as follows:

(i) The train may be moved in passenger service only to the next forward passenger station;

(ii) The speed of the train shall be restricted to 20 mph or less; and

(iii) After all passengers are discharged, the defective equipment shall be moved to the nearest location where the necessary repairs can be made.

(3) ***Commuter, short-distance intercity, and short-distance Tier II passenger trains developing 75-99 percent operative power brakes.***

(i) ***75-84 percent operative brakes.*** Commuter, short-distance intercity, and short-distance Tier II passenger trains which develop inoperative power brake equipment resulting in at least 75 percent but less than 85 percent operative brakes may be used only as follows:

(A) The train may be moved in passenger service only to the next forward location where the necessary repairs can be made; however, if the next forward location where the necessary repairs can be made does not have the facilities to handle the safe unloading of passengers, the train may be moved past the repair location in service only to the next forward passenger station in order to facilitate the unloading of passengers; and

(B) The speed of the train shall be restricted to 50 percent of the train's maximum allowable speed or 40 mph, whichever is less; and

(C) After all passengers are discharged, the defective equipment shall be moved to the nearest location where the necessary repairs can be made.

(ii) *85-99 percent operative brakes.* Commuter, short-distance intercity, and short-distance Tier II passenger trains which develop inoperative power brake equipment resulting in at least 85 percent but less than 100 percent operative brakes may only be used as follows:

(A) The train may be moved in passenger service only to the next forward location where the necessary repairs can be made; however, if the next forward location where the necessary repairs can be made does not have the facilities to handle the safe unloading of passengers, the train may be moved past the repair location in service only to the next forward passenger station in order to facilitate the unloading of passengers; and

(B) After all passengers are discharged, the defective equipment shall be moved to the nearest location where the necessary repairs can be made.

(4) ***Long-distance intercity and long-distance Tier II passenger trains developing 75-99 operative power brakes.***

(i) *75-84 percent operative brakes.* Long-distance intercity and long-distance Tier II passenger trains which develop inoperative power brake equipment resulting in at least 75 percent but less than 85 percent operative brakes may be used only if all of the following restrictions are observed:

(A) The train may be moved in passenger service only to the next forward repair location identified for repair of that equipment by the railroad operating the equipment in the list required by § 238.19(d); however, if the next forward repair location does not have the facilities to handle the safe unloading of passengers, the train may be moved past the designated repair location in service only to the next forward passenger station in order to facilitate the unloading of passengers; and

(B) The speed of the train shall be restricted to 50 percent of the train's maximum allowable speed or 40 mph, whichever is less; and

(C) After all passengers are discharged, the defective equipment shall be moved to the nearest location where the necessary repairs can be made.

(ii) *85-99 percent operative brakes.* Long-distance intercity and long-distance Tier II passenger trains which develop inoperative power brake equipment resulting in at least 85 percent but less than 100 percent operative brakes may be used only if all of the following restrictions are observed:

(A) The train may be moved in passenger service only to the next forward repair location identified for repair of that equipment by the railroad operating the equipment in the list required by § 238.19(d); however, if the next forward repair location does not have the facilities to handle the safe unloading of passengers, the train may be moved past the designated repair location in service only to the next forward passenger station in order to facilitate the unloading of passengers; and

(B) After all passengers are discharged, the defective equipment shall be moved to the nearest location where the necessary repairs can be made.

(e) ***Operating restrictions on passenger trains with inoperative power brakes on the front or rear unit.*** If the power brakes on the front or rear unit in any passenger train are completely inoperative the following shall apply:

(1) If the handbrake is located inside the interior of the car:

- (i) A qualified person shall be stationed at the handbrake on the unit;
- (ii) The car shall be locked-out and empty except for the railroad employee manning the handbrake; and
- (iii) Appropriate speed restrictions shall be placed on the train by a qualified person;

(2) If the handbrake is located outside the interior of the car or is inaccessible to a qualified person:

- (i) The car shall be locked-out and empty;
- (ii) The speed of the train shall be restricted speed to exceed 20 mph or less; and
- (iii) The car shall be removed from the train or repositioned in the train at the first location where it is possible to do so.

(f) ***Special Notice for Repair.*** Nothing in this section authorizes the movement of passenger equipment subject to a Special Notice for Repair under part 216 of this chapter unless the movement is made in accordance with the restrictions contained in the Special Notice.

§ 238.17 -- Movement of passenger equipment with other than power brake defects.

As of January 1, 2002, the following provisions of this section apply to railroads operating Tier I passenger equipment covered by this part. A railroad may request earlier application of these requirements upon written notification to FRA's Associate Administrator for Safety as provided in § 238.1(c) of this part.

(a) ***General.*** This section contains the requirements for moving passenger equipment with other than a power brake defect. (Passenger cars and other passenger equipment classified as locomotives under part 229 of this chapter are also covered by the movement restrictions contained in § 229.9 of this chapter for those defective conditions covered by part 229 of this chapter.)

(b) ***Limitations on movement of passenger equipment containing defects found at time of calendar day inspection.*** Except as provided in §§ 238.303(e)(15) and (e)(17), 238.305(c) and (d), and 238.307(c)(1) passenger equipment containing a condition not in conformity with this part at the time of its calendar day mechanical inspection may be moved from that location for repair if all of the following conditions are satisfied:

(1) If the condition involves a running gear defect, the defective equipment is not used in passenger service and is moved in a non-revenue train;

(2) If the condition involves a non-running gear defect, the defective equipment may be used in passenger service in a revenue train provided that a qualified maintenance person determines that it is safe to do so, and if so, the car is locked out and empty, and all movement restrictions are observed except that the car may be occupied by a member of the train crew or a railroad employee to the extent necessary to safely operate the train;

(3) The requirements of paragraphs (c)(3) and (c)(4) of this section are met; and

(4) The special requirements of paragraph (e) of this section, if applicable, are met.

(c) ***Usual limitations on movement of passenger equipment that develops defects en route.*** Except as provided in §§ 238.303(e)(15) and 238.503(f), passenger equipment that develops en

route to its destination, after its calendar day mechanical inspection was performed and before its next calendar day mechanical inspection is performed, any defect not in compliance with this part, other than a power brake defect, may be moved only if the railroad complies with all of the following requirements and, if applicable, the special requirements in paragraph (e) of this section:

(1) Prior to movement of equipment with a potential running gear defect, a qualified maintenance person shall determine if it is safe to move the equipment in passenger service and, if so, the maximum speed and other restrictions necessary for safely conducting the movement. If appropriate, these determinations may be made based upon a description of the defective condition provided by a crewmember. If the determinations required by this paragraph are made by an off-site qualified maintenance person based on a description of the defective condition by on-site personnel, then a qualified maintenance person shall perform a physical inspection of the defective equipment, at the first location possible, to verify the description of the defect provided by the on-site personnel.

(2) Prior to movement of equipment with a non-running gear defect, a qualified person or a qualified maintenance person shall determine if it is safe to move the equipment in passenger service and, if so, the maximum speed and other restrictions necessary for safely conducting the movement. If appropriate, these determinations may be made based upon a description of the defective condition provided by the on-site personnel.

(3) Prior to movement of any defective equipment, the qualified person or qualified maintenance person shall notify the crewmember in charge of the movement of the defective equipment, who in turn shall inform all other crewmembers of the presence of the defective condition(s) and the maximum speed and other restrictions determined under paragraph (c)(1) or (c)(2) of this section. The movement shall be made in conformance with such restrictions.

(4) The railroad shall maintain a record of all defects reported and their subsequent repair in the defect tracking system required in § 238.19. In addition, prior to movement of the defective equipment, a tag or card placed on both sides of the defective equipment, or an automated tracking system, shall record the following information about the defective equipment:

- (i) The reporting mark and car or locomotive number;
- (ii) The name of the inspecting railroad;
- (iii) The name of the inspector, inspection location, and date;
- (iv) The nature of each defect;
- (v) Movement restrictions and safety restrictions, if any;
- (vi) The destination of the equipment where it will be repaired; and
- (vii) The signature, if possible, as well as the job title and location of the person making the determinations required by this section.

(5) **Automated tracking system.** Automated tracking systems used to meet the tagging requirements contained in paragraph (c)(4) of this section may be reviewed and monitored by FRA at any time to ensure the integrity of the system. FRA's Associate Administrator for Safety may prohibit or revoke a railroad's ability to utilize an automated tracking system in lieu of tagging if FRA finds that the automated tracking system is not properly secure, is inaccessible to FRA or a railroad's employees, or fails to adequately track or monitor the movement of defective equipment. Such a determination will be made in writing and will state the basis for such action.

(6) After a qualified maintenance person or a qualified person verifies that the defective equipment is safe to remain in service as required in paragraphs (c)(1) and (c)(2) of this section, the defective equipment that develops a condition not in compliance with this part while en route

may continue in passenger service not later than the next calendar day mechanical inspection, if the requirements of this paragraph are otherwise fully met.

(d) ***Inspection of roller bearings on equipment involved in a derailment.***

(1) A railroad shall not continue passenger equipment in service that has a roller bearing whose truck was involved in a derailment unless the bearing has been inspected and tested in accordance with the railroad's procedures for handling defective equipment.

(2) The roller bearing shall be disassembled from the axle and inspected internally if:

- (i) It shows any external sign of damage;
- (ii) It makes any unusual noise when its wheel set is spun freely (an on-track rolling test is acceptable) or when the bearing is manually rotated;
- (iii) Its truck was involved in a derailment at a speed of more than 10 miles per hour; or
- (iv) Its truck was dragged on the ground for more than 100 feet.

(e) ***Special requisites for movement of passenger equipment with safety appliance defects.***

Consistent with 49 U.S.C. 20303, passenger equipment with a safety appliance not in compliance with this part or with part 231 of this chapter, if applicable, may be moved-

(1) If necessary to effect repair of the safety appliance;

(2) From the point where the safety appliance defect was first discovered by the railroad to the nearest available location on the railroad where the necessary repairs required to bring the passenger equipment into compliance can be made or, at the option of the receiving railroad, the equipment may be received and hauled for repair to a point on the receiving railroad's line that is no farther than the point on the delivering railroad's line where the repair of the defect could have been made;

(3) If a tag placed on both sides of the passenger equipment or an automated tracking system contains the information required under paragraph (c)(4) of this section; and

(4) After notification of the crewmember in charge of the movement of the defective equipment, who in turn shall inform all other crewmembers of the presence of the defective condition(s).

(f) ***Special Notice for Repair.*** Nothing in this section authorizes the movement of equipment subject to a Special Notice for Repair under part 216 of this chapter unless the movement is made in accordance with the restrictions contained in the Special Notice.

§ 238.19 -- Reporting and tracking repairs to defective passenger equipment.

(a) ***General.*** Beginning January 1, 2002 each railroad shall have in place a reporting and tracking system for passenger equipment with a defect not in conformance with this part. A railroad may request earlier application of these requirements upon written notification to FRA's Associate Administrator for Safety as provided in § 238.1(c) of this part. The reporting and tracking system shall record the following information:

- (1) The identification number of the defective equipment;
- (2) The date the defect was discovered;
- (3) The nature of the defect;

(4) The determination made by a qualified person or qualified maintenance person on whether the equipment is safe to run;

(5) The name of the qualified person or qualified maintenance person making such a determination;

(6) Any operating restrictions placed on the equipment; and

(7) Repairs made and the date that they were made.

(b) **Retention of records.** At a minimum, each railroad shall keep the records described in paragraph (a) of this section for one periodic maintenance interval for each specific type of equipment as described in the railroad's inspection, testing, and maintenance plan required by § 238.107. FRA strongly encourages railroads to keep these records for longer periods of time because they form the basis for future reliability-based decisions concerning test and maintenance intervals that may be developed pursuant to § 238.307(b).

(c) **Availability of records.** Railroads shall make defect reporting and tracking records available to FRA upon request.

(d) **List of power brake repair points.** Railroads operating long-distance intercity and long-distance Tier II passenger equipment shall designate locations, in writing, where repairs to passenger equipment with a power brake defect will be made and shall provide the list to FRA's Associate Administrator for Safety and make it available to FRA for inspection and copying upon request. Railroads operating these trains shall designate a sufficient number of repair locations to ensure the safe and timely repair of passenger equipment. These designations shall not be changed without at least 30 days' advance written notice to FRA's Associate Administrator for Safety.

§ 238.21 -- Special approval procedure.

(a) **General.** The following procedures govern consideration and action upon requests for special approval of alternative standards under §§ 238.103, 238.223, 238.229, 238.309, 238.311, 238.405, or 238.427; for approval of alternative compliance under § 238.201, 238.229, or 238.230 and for special approval of pre-revenue service acceptance testing plans as required by § 238.111. (Requests for approval of programs for the inspection, testing, and maintenance of Tier II passenger equipment are governed by § 238.505).

(b) **Petitions for special approval of alternative standard.** Each petition for special approval of an alternative standard shall contain-

(1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition;

(2) The alternative proposed, in detail, to be substituted for the particular requirements of this part;

(3) Appropriate data or analysis, or both, establishing that the alternative will provide at least an equivalent level of safety; and

(4) A statement affirming that the railroad has served a copy of the petition on designated representatives of its employees, together with a list of the names and addresses of the persons served.

(c) ***Petitions for special approval of alternative compliance.*** Each petition for special approval of alternative compliance shall contain-

- (1) The name, title, address, and telephone number of the primary person to be contacted with regard to the petition;
- (2) The elements prescribed in § 238.201(b), 238.229(j)(2), and 238.230(d); and
- (3) A statement affirming that the railroad has served a copy of the petition on designated representatives of its employees, together with a list of the names and addresses of the persons served.

(d) ***Petitions for special approval of pre-revenue service acceptance testing plan.***

(1) Each petition for special approval of a pre-revenue service acceptance testing plan shall contain-

- (i) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition; and
 - (ii) The elements prescribed in § 238.111.
- (2) Three copies of each petition for special approval of the pre-revenue service acceptance testing plan shall be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., S.E., Washington, D.C. 20590.

(e) ***Federal Register notice.*** FRA will publish a notice in the Federal Register concerning each petition under paragraphs (b) and (c) of this section.

(f) ***Comment.*** Not later than 30 days from the date of publication of the notice in the Federal Register concerning a petition under paragraphs (b) or (c) of this section, any person may comment on the petition.

(1) Each comment shall set forth specifically the basis upon which it is made, and contain a concise statement of the interest of the commenter in the proceeding.

(2) Three copies of each comment shall be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1120 Vermont Ave., Mail Stop 25, Washington, D. C. 20590.

(3) The commenter shall certify that a copy of the comment was served on each petitioner.

(g) ***Disposition of petitions.***

(1) FRA will conduct a hearing on a petition in accordance with the procedures provided in § 211.25 of this chapter.

(2) If FRA finds that the petition complies with the requirements of this section or that the proposed plan is acceptable or changes are justified, or both, the petition will be granted, normally within 90 days of its receipt. If the petition is neither granted nor denied within 90 days, the petition remains pending for decision. FRA may attach special conditions to the approval of the petition. Following the approval of a petition, FRA may reopen consideration of the petition for cause stated.

(3) If FRA finds that the petition does not comply with the requirements of this section, or that the proposed plan is not acceptable or that the proposed changes are not justified, or both, the petition will be denied, normally within 90 days of its receipt.

(4) When FRA grants or denies a petition, or reopens consideration of the petition, written notice is sent to the petitioner and other interested parties.

§ 238.23 -- Information collection.

(a) The information collection requirements of this part were reviewed by the Office of Management and Budget pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) and are assigned OMB control number 2130-0544.

(b) The information collection requirements are found in the following sections: §§ 238.1, 238.7, 238.11, 238.15, 238.17, 238.19, 238.21, 238.103, 238.105, 238.107, 238.109, 238.111, 238.201, 238.203, 238.211, 238.223, 238.231, 238.237, 238.301, 238.303, 238.305, 238.307, 238.309, 238.311, 238.313, 238.315, 238.317, 238.403, 238.405, 238.421, 238.423, 238.427, 238.431, 238.437, 238.441, 238.445, 238.447, 238.503, 238.505, and 238.603.

Subpart B--Safety Planning and General Requirements

§ 238.101 -- Scope.

This subpart contains safety planning and general safety requirements for all railroad passenger equipment subject to this part.

§ 238.103 -- Fire safety.

(a) *Materials.*

(1) Materials used in constructing a passenger car or a cab of a locomotive ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002, shall meet the test performance criteria for flammability and smoke emission characteristics as specified in Appendix B to this part, or alternative standards issued or recognized by an expert consensus organization after special approval of FRA under § 238.21.

(2) After November 8, 1999, materials introduced in a passenger car or a locomotive cab, as part of any kind of rebuild, refurbishment, or overhaul of the car or cab, shall meet the test performance criteria for flammability and smoke emission characteristics as specified in Appendix B to this part, or alternative standards issued or recognized by an expert consensus organization after special approval of FRA under § 238.21.

(b) ***Certification.*** A railroad shall require certification that a representative sample of combustible materials to be-

(1) Used in constructing a passenger car or a locomotive cab, or

(2) Introduced in a passenger car or a locomotive cab, as part of any kind of rebuild, refurbishment, or overhaul of the car or cab, has been tested by a recognized independent testing laboratory and that the results show the representative sample complies with the requirements of paragraph (a) of this section at the time it was tested.

(c) ***Fire safety analysis for procuring new passenger equipment.*** In procuring new passenger equipment, each railroad shall ensure that fire safety considerations and features in the design of the equipment reduce the risk of personal injury and equipment damage caused by fire to an

acceptable level using MIL-STD-882C as a guide or an alternative, formal safety methodology. To this end, each railroad shall complete a written fire safety analysis for the passenger equipment being procured. In conducting the analysis, the railroad shall-

(1) Take effective steps to design the equipment to be sufficiently fire resistant so that fire detection devices permit evacuation of all passengers and crewmembers before fire, smoke, or toxic fumes cause injury to any passenger or crewmember.

(2) Identify, analyze, and prioritize the fire hazards inherent in the design of the equipment.

(3) Reasonably ensure that a ventilation system in the equipment does not contribute to the lethality of a fire.

(4) Identify in writing any train component that is a risk of initiating fire and which requires overheat protection. An overheat detector shall be installed in any component when the analysis determines that an overheat detector is necessary.

(5) Identify in writing any unoccupied train compartment that contains equipment or material that poses a fire hazard, and analyze the benefit provided by including a fire or smoke detection system in each compartment so identified. A fire or smoke detector shall be installed in any unoccupied compartment when the analysis determines that such equipment is necessary to ensure sufficient time for the safe evacuation of passengers and crewmembers from the train. For purposes of this section, an unoccupied train compartment means any part of the equipment structure that is not normally occupied during operation of the train, including a closet, baggage compartment, food pantry, etc.

(6) Determine whether any occupied or unoccupied space requires a portable fire extinguisher and, if so, the proper type and size of the fire extinguisher for each location. As required by § 239.101 of this chapter, each passenger car is required to have a minimum of one portable fire extinguisher. If the analysis performed indicates that one or more additional portable fire extinguishers are needed, such shall be installed.

(7) On a case-by-case basis, the railroad shall analyze the benefit provided by including a fixed, automatic fire-suppression system in any unoccupied train compartment that contains equipment or material that poses a fire hazard, and determine the proper type and size of the automatic fire-suppression system for each location. A fixed, automatic fire suppression system shall be installed in any unoccupied compartment when the analysis determines that such equipment is practical and necessary to ensure sufficient time for the safe evacuation of passengers and crewmembers from the train.

(8) Describe the analysis and testing necessary to-

(i) Demonstrate that the fire protection approach taken in the design of the equipment will meet the fire protection requirements of this part, and

(ii) Select materials which help provide sufficient fire resistance to reasonably ensure adequate time to detect a fire and safely evacuate the passengers and crewmembers.

(9) Explain how safety issues are resolved in relation to cost and performance issues in the design of the equipment to reduce the risk of each fire hazard.

(d) ***Fire safety analysis for existing passenger equipment.***

Each such railroad shall-

(i) Complete a final fire safety analysis for any category of existing passenger equipment and service evaluated during the preliminary fire safety analysis as likely presenting an unacceptable risk of personal injury. In conducting the analysis, the railroad

shall consider the extent to which materials comply with the test performance criteria for flammability and smoke emission characteristics as specified in Appendix B to this part or alternative standards approved by FRA under this part.

(ii) Take remedial action to reduce the risk of personal injuries to an acceptable level in any such category, if the railroad finds the risk to be unacceptable. In considering remedial action, a railroad is not required to replace material found not to comply with the test performance criteria for flammability and smoke emission characteristics required by this part, if:

(A) The risk of personal injuries from the material is negligible based on the railroad's operating environment and the material's size, or location, or both; or

(B) The railroad takes alternative action which reduces the risk of personal injuries to an acceptable level.

(3) Each such railroad shall-

(i) Complete a fire safety analysis for all categories of equipment and service. In completing this analysis, the railroad shall, as far as practicable, determine the extent to which remaining materials comply with the test performance criteria for flammability and smoke emission characteristics as specified in Appendix B to this part or alternative standards approved by FRA under this part.

(ii) Take remedial action to reduce the risk of personal injuries to an acceptable level in any such category, if the railroad finds the risk to be unacceptable. In considering remedial action, a railroad is not required to replace material found not to comply with the test performance criteria for flammability and smoke emission characteristics required by this part, if:

(A) The risk of personal injuries from the material is negligible based on the railroad's operating environment and the material's size, or location, or both; or

(B) The railroad takes alternative action which reduces the risk of personal injuries to an acceptable level.

(4) Where possible prior to transferring existing equipment to a new category of service, but in no case more than 90 days following such a transfer, the passenger railroad shall complete a new fire safety analysis taking into consideration the change in railroad operations and shall effect prompt action to reduce any identified risk to an acceptable level.

(5) As used in this paragraph, "category of rail equipment and current rail service" shall be determined by the railroad based on relevant fire safety risks, including available ignition sources, presence or absence of heat/smoke detection systems, known variations from the required material test performance criteria or alternative standards approved by FRA, and availability of rapid and safe egress to the exterior of the vehicle under conditions secure from fire, smoke, and other hazards.

(e) ***Inspection, testing, and maintenance.*** Each railroad shall develop and adopt written procedures for the inspection, testing, and maintenance of all fire safety systems and fire safety equipment on the passenger equipment it operates. The railroad shall comply with those procedures that it designates as mandatory for the safety of the equipment and its occupants.

§ 238.105 -- Train electronic hardware and software safety.

The requirements of this section apply to electronic hardware and software used to control

or monitor safety functions in passenger equipment ordered on or after September 8, 2000, and such components implemented or materially modified in new or existing passenger equipment on or after September 9, 2002.

(a) The railroad shall develop and maintain a written hardware and software safety program to guide the design, development, testing, integration, and verification of software and hardware that controls or monitors equipment safety functions.

(b) The hardware and software safety program shall be based on a formal safety methodology that includes a Failure Modes, Effects, Criticality Analysis (FMECA); verification and validation testing for all hardware and software components and their interfaces; and comprehensive hardware and software integration testing to ensure that the software functions as intended.

(c) The hardware and software safety program shall include a description of how the following will be accomplished, achieved, carried out, or implemented to ensure safety and reliability:

- (1) The hardware and software design process;
- (2) The hardware and software design documentation;
- (3) The hardware and software hazard analysis;
- (4) Hardware and software safety reviews;
- (5) Hardware and software hazard monitoring and tracking;
- (6) Hardware and software integration safety testing; and
- (7) Demonstration of overall hardware and software system safety as part of the pre-revenue service testing of the equipment.

(d) (1) Hardware and software that controls or monitors a train's primary braking system shall either:

(i) Fail safely by initiating a full service brake application in the event of a hardware or software failure that could impair the ability of the engineer to apply or release the brakes; or

(ii) Access to direct manual control of the primary braking system (both service and emergency braking) shall be provided to the engineer.

(2) Hardware and software that controls or monitors the ability to shut down a train's main power and fuel intake system shall either:

(i) Fail safely by shutting down the main power and cutting off the intake of fuel in the event of a hardware or software failure that could impair the ability of the train crew to command that electronic function; or

(ii) The ability to shut down the main power and fuel intake by non-electronic means shall be provided to the train crew.

(e) The railroad shall comply with the elements of its hardware and software safety program that affect the safety of the passenger equipment.

§ 238.107 -- Inspection, testing, and maintenance plan.

(a) **General.** The following provisions of this section apply to railroads operating Tier I passenger equipment covered by this part. A railroad may request earlier application of these requirements upon written notification to FRA's Associate Administrator for Safety as provided in § 238.1(c).

(b) Each railroad shall develop, and provide to FRA upon request, a detailed inspection, testing, and maintenance plan consistent with the requirements of this part. This plan shall include a detailed description of the following:

- (1) Inspection procedures, intervals, and criteria;
- (2) Test procedures and intervals;
- (3) Scheduled preventive maintenance intervals;
- (4) Maintenance procedures; and
- (5) Special testing equipment or measuring devices required to perform inspections and tests.

(c) The inspection, testing, and maintenance plan required by this section is not intended to address and should not include procedures to address employee working conditions that arise in the course of conducting the inspections, tests, and maintenance set forth in the plan. When requesting a copy of the railroad's plan, FRA does not intend to review any portion of the plan that relates to employee working conditions.

(d) The inspection, testing, and maintenance plan required by this section shall be reviewed by the railroad annually.

§ 238.109 -- Training, qualification, and designation program.

(a) Each railroad shall have adopted a training, qualification, and designation program for employees and contractors that perform safety-related inspections, tests, or maintenance of passenger equipment, and trained such employees and contractors in accordance with the program. A railroad may request earlier application of these requirements upon written notification to FRA's Associate Administrator for Safety as provided in § 238.1(c). For purposes of this section, a "contractor" is defined as a person under contract with the railroad or an employee of a person under contract with the railroad to perform any of the tasks required by this part.

(b) As part of this program, the railroad shall, at a minimum:

- (1) Identify the tasks related to the inspection, testing, and maintenance required by this part that must be performed on each type of equipment that the railroad operates;
- (2) Develop written procedures for the performance of the tasks identified in paragraph (b)(1) of this section;
- (3) Identify the skills and knowledge necessary to perform each task identified in paragraph (b)(1) of this section;
- (4) Adopt a training curriculum that includes classroom and "hands-on" lessons designed to impart the skills and knowledge identified as necessary to perform each task identified in paragraph (b)(1) of this section. The training curriculum shall specifically address the Federal

regulatory requirements contained in this part that are related to the performance of the tasks identified;

(5) Require all employees and contractors to successfully complete the training course that covers the equipment and tasks for which they are responsible that are required by this part as well as the specific Federal regulatory requirements contained in this part related to equipment and tasks for which they are responsible;

(6) Require all employees and contractors to pass either a written or an oral examination covering the equipment and tasks for which they are responsible that are required by this part as well as the specific Federal regulatory requirements contained in this part related to equipment and tasks for which they are responsible;

(7) Require all employees and contractors to individually demonstrate "hands-on" capability to successfully perform the tasks required by this part that must be performed as part of their duties on the type equipment to which they are assigned;

(8) Require supervisors to complete the program that covers the employees whom they supervise, including refresher training;

(9) Require supervisors to exercise oversight to ensure that all the identified tasks are performed in accordance with the railroad's written procedures;

(10) Designate in writing that each employee and contractor has the knowledge and skills necessary to perform the safety-related tasks that are part of his or her job;

(11) Require periodic refresher training, at an interval not to exceed three years, that includes classroom and "hands-on" training, as well as testing;

(12) Add new equipment to the qualification and designation program prior to its introduction to revenue service; and

(13) Maintain records adequate to demonstrate that each employee and contractor performing safety-related tasks on passenger equipment is currently qualified to do so. These records shall be adequate to distinguish the qualifications of the employee or contractor as a qualified person or as a qualified maintenance person.

§ 238.111 -- Pre-revenue service acceptance testing plan.

(a) ***Passenger equipment that has previously been used in revenue service in the United States.*** For passenger equipment that has previously been used in revenue service in the United States, each railroad shall test the equipment on its system prior to placing such equipment in revenue service for the first time on its railroad to ensure the compatibility of the equipment with the railroad's operating system (including the track, and signal system). A description of such testing shall be retained by the railroad and made available to FRA for inspection and copying upon request. For purposes of this paragraph, passenger equipment that has previously been used in revenue service in the United States means:

- (1) The actual equipment used in such service;
- (2) Equipment manufactured identically to that actual equipment; and
- (3) Equipment manufactured similarly to that actual equipment with no material differences in safety-critical components or systems.

(b) ***Passenger equipment that has not been used in revenue service in the United States.*** Before using passenger equipment for the first time on its system that has not been used in revenue service in the United States, each railroad shall:

(1) Prepare a pre-revenue service acceptance testing plan for the equipment which contains the following elements:

- (i) An identification of any waivers of FRA or other Federal safety regulations required for the testing or for revenue service operation of the equipment;
- (ii) A clear statement of the test objectives. One of the principal test objectives shall be to demonstrate that the equipment meets the safety requirements specified in this part when operated in the environment in which it is to be used;
- (iii) A planned schedule for conducting the testing;
- (iv) A description of the railroad property or facilities to be used to conduct the testing;
- (v) A detailed description of how the testing is to be conducted, including a description of the criteria to be used to evaluate the equipment's performance;
- (vi) A description of how the test results are to be recorded;
- (vii) A description of any special instrumentation to be used during the tests;
- (viii) A description of the information or data to be obtained;
- (ix) A description of how the information or data obtained is to be analyzed or used;
- (x) A description of any criteria to be used as safety limits during the testing;
- (xi) A description of the criteria to be used to measure or determine the success or failure of the tests. If acceptance is to be based on extrapolation of less than full-level testing results, the analysis to be done to justify the validity of the extrapolation shall be described;
- (xii) Quality control procedures to ensure that the inspection, testing, and maintenance procedures are followed;
- (xiii) Criteria to be used for the revenue service operation of the equipment; and
- (xiv) A description of any testing of the equipment that has previously been performed.

(2) Submit a copy of the plan to FRA at least 30 days prior to testing the equipment and include with that submission notification of the times and places of the pre-revenue service tests to permit FRA observation of such tests. For Tier II passenger equipment, the railroad shall obtain FRA approval of the plan under the procedures specified in § 238.21.

(3) Comply with the plan, including fully executing the tests required by the plan.

(4) Document in writing the results of the tests. For Tier II passenger equipment, the railroad shall report the results of the tests to the FRA Associate Administrator for Safety at least 90 days prior to its intended operation of the equipment in revenue service.

(5) Correct any safety deficiencies identified in the design of the equipment or in the inspection, testing, and maintenance procedures, uncovered during the testing. If safety deficiencies cannot be corrected by design changes, the railroad shall impose operational limitations on the revenue service operation of the equipment that are designed to ensure that the equipment can operate safely. For Tier II passenger equipment, the railroad shall comply with any operational limitations imposed by the FRA Associate Administrator for Safety on the revenue service operation of the equipment for cause stated following FRA review of the results of the test program. This section does not restrict a railroad from petitioning FRA for a waiver of a safety regulation under the procedures specified in part 211 of this chapter.

(6) Make the plan and documentation kept pursuant to that plan available for inspection and copying by FRA upon request.

(7) For Tier II passenger equipment, obtain approval from the FRA Associate Administrator for Safety prior to placing the equipment in revenue service. The Associate Administrator grants such approval upon a showing of the railroad's compliance with the applicable requirements of this part.

(c) If a railroad plans a major upgrade or introduction of new technology on Tier II passenger equipment that has been used in revenue service in the United States and that affects a safety system on such equipment, the railroad shall follow the procedures specified in paragraph (b) of this section prior to placing the equipment in revenue service with such a major upgrade or introduction of new technology.

§ 238.113 -- Emergency window exits.

(a) (1) Each passenger car shall have a minimum of four emergency window exits, either in a staggered configuration where practical or with one exit located in each end of each side of the passenger car. If the passenger car has multiple levels, each main level shall have a minimum of four emergency window exits, either in a staggered configuration where practical or with one exit located in each end of each side on each level.

(2) Each sleeping car, and any similarly designed car having a number of separate compartments intended to be occupied by passengers or train crewmembers, shall have at least one emergency window exit in each compartment.

(3) Each emergency window exit shall be designed to permit rapid and easy removal from the inside of the car during an emergency situation without requiring the use of a tool or other implement.

(b) Each emergency window exit in a passenger car, including a sleeper car, ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002, shall have an unobstructed opening with minimum dimensions of 26 inches horizontally by 24 inches vertically. A seat back is not an obstruction if it can be moved away from the window opening without requiring the use of a tool or other implement.

(c) Emergency window exits shall be marked, and instructions provided for their use, as required by § 223.9(d) of this chapter.

§ 238.115 -- Emergency lighting.

(a) This section applies to each level of a multi-level passenger car.

(b) Emergency lighting shall be provided in each passenger car and shall include the following:

(1) A minimum, average illumination level of 1 foot-candle measured at floor level adjacent to each exterior door and each interior door providing access to an exterior door (such as a door opening into a vestibule);

(2) A minimum, average illumination level of 1 foot-candle measured 25 inches above floor level along the center of each aisle and passageway;

- (3) A minimum illumination level of 0.1 foot-candle measured 25 inches above floor level at any point along the center of each aisle and passageway; and
- (4) A back-up power system capable of:
 - (i) Operating in all equipment orientations within 45 degrees of vertical;
 - (ii) Operating after the initial shock of a collision or derailment resulting in the following individually applied accelerations:
 - (A) Longitudinal: 8g;
 - (B) Lateral: 4g; and
 - (C) Vertical: 4g; and
 - (iii) Operating all emergency lighting for a period of at least 90 minutes without a loss of more than 40% of the minimum illumination levels specified in this paragraph (b).

§ 238.117 -- Protection against personal injury.

All moving parts, high voltage equipment, electrical conductors and switches, and pipes carrying hot fluids or gases on all passenger equipment shall be appropriately equipped with interlocks or guards to minimize the risk of personal injury. This section does not apply to the interior of a private car.

§ 238.119 -- Rim-stamped straight-plate wheels.

(a) (1) Except as provided in paragraph (a)(2) of this section, no railroad shall place or continue in service any vehicle, other than a private car, that is equipped with a rim-stamped straight-plate wheel if a brake shoe acts on the tread of the wheel for the purpose of slowing the vehicle.

(2) A commuter railroad may continue in service a vehicle equipped with a Class A, rim-stamped straight-plate wheel mounted on an inboard-bearing axle until the railroad exhausts its replacement stock of wheels., provided the railroad does not modify the operation of the vehicle in any way that would result in increased thermal input to the wheel during braking.

(b) A rim-stamped straight-plate wheel shall not be used as a replacement wheel on a private car that operates in a passenger train if a brake shoe acts on the tread of the wheel for the purpose of slowing the car.

(d) The requirements of this section do not apply to a wheel that is periodically tread-braked for a short duration by automatic circuitry for the sole purpose of cleaning the wheel tread surface.

(e)

§ 238.121 Emergency communication.

(a) PA system (public address system).

(1) Existing Tier I passenger cars. On or after January 1, 2012, each Tier I passenger car shall be equipped with a PA system that provides a means for a train crewmember to communicate by voice to passengers of his or her train in an emergency situation.

(2) New Tier I and all Tier II passenger cars. Each Tier I passenger car ordered on or after April 1, 2008, or placed in service for the first time on or after April 1, 2010, and all Tier II passenger cars shall be equipped with a PA system that provides a means for a train crewmember to communicate by voice to passengers of his or her train in an emergency situation. The PA system shall also provide a means for a train crewmember to communicate by voice in an emergency situation to persons in the immediate vicinity of his or her train (e.g., persons on the station platform). The PA system may be part of the same system as the intercom system.

(b) Intercom system.

(1) New Tier I and all Tier II passenger cars. Each Tier I passenger car ordered on or after April 1, 2008, or placed in service for the first time on or after April 1, 2010, and all Tier II passenger cars shall be equipped with an intercom system that provides a means for passengers and crewmembers to communicate by voice with each other in an emergency situation. Except as further specified, at least one intercom that is accessible to passengers without using a tool or other implement shall be located in each end (half) of each car. If any passenger car does not exceed 45 feet in length, or if a Tier II passenger car was ordered prior to May 12, 1999, only one such intercom is required. The intercom system may be part of the same system as the PA system.

(2) Marking and instructions. The following requirements apply to each passenger car:

(i) Prior to January 28, 2016, the location of each intercom intended for passenger use shall be conspicuously marked with luminescent material and legible and understandable operating instructions shall be posted at or near each such intercom.

(ii) On or after January 28, 2016, each intercom intended for passenger use shall be marked in accordance with section 5.4.2 of APTA PR-PS-S-002-98, Rev. 3, "Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment," Authorized October 7, 2007, or an alternative standard providing at least an equivalent level of safety, if approved by FRA pursuant to § 238.21. Legible and understandable operating instructions shall be posted at or near each such intercom. The incorporation by reference of this APTA standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 1 C.F.R. part 51. You may obtain a copy of the incorporated document from the American Public Transportation Association, 1666 K Street NW., Washington, DC 20006, www.aptastandards.com. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue SE., Washington, DC or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(c) Back-up power. PA and intercom systems in Tier I passenger cars ordered on or after April 1, 2008, or placed in service for the first time on or after April 1, 2010, and in all Tier II passenger cars shall have a back-up power system capable of -

(1) Operating in all equipment orientations within 45 degrees of vertical;

(2) Operating after the initial shock of a collision or derailment resulting in the following individually applied accelerations:

(i) Longitudinal: 8g;

(ii) Lateral: 4g; and

(iii) Vertical: 4g; and

(3) Powering each system to allow intermittent emergency communication for a minimum period of 90 minutes. Intermittent communication shall be considered equivalent to continuous communication during the last 15 minutes of the 90-minute minimum period.

§ 238.123 Emergency roof access.

Except as provided in § 238.441 of this chapter—
Number and dimensions. Each passenger car ordered on or after April 1, 2009, or placed in service for the first time on or after April 1, 2011, shall have a minimum of two emergency roof access locations, each with a minimum opening of 26 inches longitudinally (i.e., parallel to the longitudinal axis of the car) by 24 inches laterally.

(b) Means of access. Emergency roof access shall be provided by means of a hatch, or a conspicuously marked structural weak point in the roof for access by properly equipped emergency response personnel.

(c) Location. Emergency roof access locations shall be situated as practical so that when a car is on its side—

(1) One emergency access location is wholly within each half of the roof as divided top from bottom; and

(2) One emergency access location is wholly within each half of the roof as divided left from right. (See Figure 3 to this subpart.)

(d) Obstructions. The ceiling space below each emergency roof access location shall be free from wire, cabling, conduit, and piping. This space shall also be free of any rigid secondary structure (e.g., a diffuser or diffuser support, lighting back fixture, mounted PA equipment, or luggage rack) where practicable. If emergency roof access is provided by means of a hatch, it shall be possible to push interior panels or liners out of their retention devices and into the interior of the vehicle after removing the hatch. If emergency roof access is provided by means of a structural weak point, it shall be permissible to cut through interior panels, liners, or other non-rigid secondary structures after making the cutout hole in the roof, provided any such additional cutting necessary to access the interior of the vehicle permits a minimum opening of the dimensions specified in paragraph (a) to be maintained.

(e) Marking and instructions. Each emergency roof access location shall be conspicuously marked with retroreflective material of contrasting color. As further specified, legible and

understandable instructions shall be posted at or near each such location. If emergency roof access is provided by means of a structural weak point—

(1) The retroreflective material shall conspicuously mark the line along which the roof skin shall be cut; and

(2) A sign plate with a retroreflective border shall also state as follows:

CAUTION—DO NOT USE FLAME CUTTING DEVICES
CAUTION—WARN PASSENGERS BEFORE CUTTING
CUT ALONG DASHED LINE TO GAIN ACCESS
ROOF CONSTRUCTION—[STATE RELEVANT DETAILS]

§ 238.125 - Marking and instructions for emergency egress and rescue access.

On or after January 28, 2015, emergency signage and markings shall be provided for each passenger car in accordance with the minimum requirements specified in APTA PR-PS-S-002-98, Rev. 3, “Standard for Emergency Signage for Egress/Access of Passenger Rail Equipment,” Authorized October 7, 2007, or an alternative standard providing at least an equivalent level of safety, if approved by FRA pursuant to § 238.21. The incorporation by reference of this APTA standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated document from the American Public Transportation Association, 1666 K Street NW., Washington, DC 20006, www.aptastandards.com. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue SE., Washington, DC or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

§ 238.127 - Low-location emergency exit path marking.

On or after January 28, 2015, low-location emergency exit path marking shall be provided in each passenger car in accordance with the minimum requirements specified in APTA PR-PS-S-004-99, Rev. 2, “Standard for Low-Location Exit Path Marking,” Authorized October 7, 2007, or an alternative standard providing at least an equivalent level of safety, if approved by FRA pursuant to § 238.21. The incorporation by reference of this APTA standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated document from the American Public Transportation Association, 1666 K Street NW., Washington, DC 20006, www.aptastandards.com. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue SE., Washington, DC or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html

§ 238.131 - Exterior side door safety systems - new passenger cars and locomotives used in passenger service.

(a) *Safety systems for powered exterior side doors.* All powered exterior side door safety systems in passenger cars, and connected door safety systems in locomotives used in passenger service, that are ordered on or after April 5, 2016, or placed in service for the first time on or after February 5, 2018, shall:

(1) Be built in accordance with APTA standard PR-M-S-18-10, "Standard for Powered Exterior Side Door System Design for New Passenger Cars," approved February 11, 2011. In particular, locomotives used in passenger service shall be connected or interlocked with the door summary circuit to prohibit the train from developing tractive power if an exterior side door in a passenger car is not closed, unless the door is under the direct physical control of a crewmember for his or her exclusive use. The incorporation by reference of this APTA standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated document from the American Public Transportation Association, 1666 K Street NW., Suite 1100, Washington, DC 20006 (telephone 202-496-4800; www.apta.com). You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue SE., Washington, DC or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html;

(2) Be designed based on a Failure Modes, Effects, Criticality Analysis (FMECA);

(3) Contain an obstruction detection system sufficient to detect and react to both small and large obstructions and allow the obstruction to be released when detected;

(4) Be designed so that activation of a door by-pass feature does not affect the operation of the obstruction detection system;

(5) Require a door control panel key or other secure device to activate a door control panel;

(6) Not be operated from a door control panel when the door control panel key or other secure device is removed; and

(7) Not be affected by the movement or position of the locomotive throttle. A train's throttle position shall neither open nor close the exterior side doors on the train.

(b) *Safety system for manual and powered exterior side doors.* All manual and powered exterior side door systems in passenger cars, and connected door safety systems in locomotives

used in passenger service, that are ordered on or after April 5, 2016, or placed in service for the first time on or after February 5, 2018 shall be:

(1) Designed with a door summary circuit and so connected or interlocked as to prohibit the train from developing tractive power if an exterior side door in a passenger car is not closed, unless the door is under the direct physical control of a crewmember for his or her exclusive use;

(2) Connected to interior and exterior side door status indicators;

(3) Connected to a door summary status indicator that is readily viewable to the engineer from his or her normal position in the operating cab; and

(4) If equipped with a door by-pass device, designed so that the by-pass device functions only when activated from the operating cab of the train.

(c) *Additional requirements.* In addition to the requirements of this section, requirements related to exterior side door safety on passenger trains are provided in §§ 238.112, 238.133, 238.135, 238.137, and 238.439.

80 Fed. Reg. 76147, Dec. 7, 2015

§ 238.133 - Exterior side door safety systems - all passenger cars and locomotives used in a passenger service.

(a) *By-pass device verification –*

(1) *Visual inspection.* Except as provided in paragraphs (a)(2) and (3) of this section, a member of the crew of each passenger train must verify by observation that all door by-pass devices that can affect the safe operation of the train are sealed in the normal (non-by-pass) position when taking control of the train.

(2) *Functional test.* Instead of a visual inspection of the door by-pass devices, the railroad may develop a plan to perform a functional test to determine that the door summary status indicator is functioning as intended. The functional test plan shall be made available for inspection by FRA.

(3) *Face-to-face relief.* Crewmembers taking control of a train do not need to perform either a visual inspection or a functional test of the door by-pass devices in cases of face-to-face relief of another train crew and notification by that crew as to the functioning of the door by-pass devices.

(b) *Unsealed door by-pass device.* A crewmember must notify the railroad's designated authority pursuant to the railroad's defect reporting system if a door by-pass device that could affect the safe operation of the train is found unsealed during the train's daily operation. If the train crew can test the door safety system and determine that the door summary status indicator is functioning as intended, the train may travel in service until the next forward repair point where a

seal can be applied by a qualified maintenance person (QMP) or until its next calendar day inspection, whichever occurs first; if not, the train crew must follow the procedures outlined in paragraph (c) of this section.

(c) *En route failure.* If it becomes necessary to activate a door by-pass device, the train may continue to its destination terminal, provided that the train crew conducts a safety briefing that includes a description of the location(s) where crewmembers will position themselves on the train in order to observe the boarding and alighting of passengers, notifies the railroad's designated authority that the train's door by-pass device has been activated, and adheres to the operating rules required by § 238.135. After the train has reached its destination terminal, the train may continue in passenger service until its arrival at the next forward repair point or its next calendar day inspection, whichever occurs first, provided that prior to movement of equipment with a door by-pass device activated:

(1) An on-site QMP shall determine that repairs cannot be made at the time and it is safe to move the equipment in passenger service. If a QMP is not available on site, these determinations may be made based upon a description of the condition provided by an on-site qualified person (QP) to a QMP offsite; and

(2) The QP or QMP shall notify the crewmember in charge of the movement of the train that the door by-pass device has been activated. The train crew must then hold a safety briefing that includes information such as the locations where each crewmember will position himself or herself on the train to ensure that passengers board and alight from the train safely.

(d) *Records.* The railroad shall maintain a record of each door by-pass activation and each unintended opening of a powered exterior side door, including any repair(s) made, in the defect tracking system as required by § 238.19.

(e) *Door control panels.* Exterior side doors shall not be capable of operation from a door control panel when the key or other similar device is removed.

(f) *End-of-train circuit.* End-of-train circuit integrity shall be maintained. When switches are used to establish the end-of-train circuit, the switches shall be secured in a manner to prevent access by unauthorized personnel.

(g) *Exterior side door safety system override devices.*

(1) Exterior side door safety system override devices that can adversely affect the train's door safety system must be inactive and sealed in all passenger cars and locomotives in the train consist, including cab cars and MU locomotives, if they are so equipped.

(2) As part of the equipment's calendar day inspection, all exterior side door safety system override devices must be inactive and sealed in all passenger cars and all locomotives in the train consist, including cab cars and MU locomotives, if they are so equipped.

§ 238.135 Operating practices for exterior side door safety systems.

- (a) At the beginning of his or her duty assignment prior to the train's departure, each crewmember must participate in a safety briefing that identifies each crewmember's responsibilities relating to the safe operation of the train's exterior side doors, including responsibilities for the safe operation of the exterior side doors when arriving at or departing a station.
- (b) After April 5, 2016, all passenger train exterior side doors and trap doors must be closed when a train is in motion between stations except when:
- (1) The train is departing or arriving at a station if:
 - (i) A crewmember needs to observe the station platform; and
 - (ii) The open door is attended by the crewmember; or
 - (2) A crewmember must perform on-ground functions, such as, but not limited to, lining switches, making up or splitting the train, providing crossing protection, or inspecting the train.
- (c) (1) Except as provided in paragraph (b) of this section, passenger railroads must receive special approval from FRA's Associate Administrator for Railroad Safety/Chief Safety Officer to operate passenger trains with exterior side doors or trap doors, or both, open between stations.
- (2) Any request for special approval must include:
- (i) A written justification explaining the need to operate a passenger train with its exterior side doors or trap doors, or both, open between stations; and
 - (ii) A detailed hazard analysis, including a description of specific measures to mitigate any added risk.
- (3) The request must be signed by the chief executive officer (CEO), or equivalent, of the organization(s) making the request.
- (4) FRA may request that the passenger railroad submit additional information to support its request before FRA approves the request.
- (d) No later than December 6, 2018, each railroad shall adopt and comply with operating rules on how to safely override a door summary circuit or no-motion system, or both, in the event of an en route exterior side door failure or malfunction on a passenger train. Railroads shall provide these written rules to their crewmembers and control center personnel and make them available for inspection by FRA. These written rules shall include:

(1) Instructions to crewmembers and control center personnel, describing what conditions must be present in order to override the door summary circuit or no-motion system, or both; and

(2) Steps crewmembers and control center personnel must take after the door summary circuit or no-motion system, or both, have been overridden to help provide for continued passenger safety.

(e) No later than December 6, 2018, each passenger train crewmember must be trained on:

(1) The requirements of this section; and

(2) How to identify and isolate equipment with a malfunctioning exterior powered or manual side door.

(f) No later than December 6, 2018, each railroad shall adopt and comply with operating rules requiring train crewmembers to determine the status of their train's exterior side doors so that their train may safely depart a station. These rules shall require crewmembers to determine that there are no obstructions in their train's exterior side doors before the train departs.

(g) Beginning December 6, 2018, each railroad shall periodically conduct operational (efficiency) tests and observations of its operating crewmembers and control center personnel as appropriate to their roles, to determine each individual's knowledge of the railroad's powered and manual exterior side door safety procedures for its passenger trains.

80 Fed. Reg. 76148, Dec. 7, 2015

Subpart C--Specific Requirements for Tier I Passenger Equipment

§ 238.201 -- Scope/alternative compliance.

(a) (1) This subpart contains requirements for railroad passenger equipment operating at speeds not exceeding 49 U.S.C. chapter 203 125 miles per hour. As stated in § 238.229, all such passenger equipment remains subject to the safety appliance requirements contained in Federal statute at and in FRA regulations at part 231 and § 232.2 of this chapter. Unless otherwise specified, these requirements only apply to passenger equipment ordered on or after September 8, 2000 or placed in service for the first time on or after September 9, 2002.

(2) The structural standards of this subpart (§ 238.203-static end strength; § 238.205-anti-climbing mechanism; § 238.207-link between coupling mechanism and car body; § 238.209-forward-facing end structure of locomotives; § 238.211-collision posts; § 238.213-corner posts; § 238.215-rollover strength; § 238.217-side structure; § 238.219-truck-to-car-body attachment; and § 238.223-locomotive fuel tanks) do not apply to passenger equipment if used exclusively on a rail line:

- (i) With no public highway-rail grade crossings;
- (ii) On which no freight operations occur at any time;
- (iii) On which only passenger equipment of compatible design is utilized; and
- (iv) On which trains operate at speeds not exceeding 79 mph.

(b) **Alternative compliance.** Passenger equipment of special design shall be deemed to comply with this subpart, other than § 238.203, for the service environment in which the petitioner proposes to operate the equipment if the FRA Associate Administrator for Safety determines under paragraph (c) of this section that the equipment provides at least an equivalent level of safety in such environment with respect to the protection of its occupants from serious injury in the case of a derailment or collision. In making a determination under paragraph (c) the Associate Administrator shall consider, as a whole, all of those elements of casualty prevention or mitigation relevant to the integrity of the equipment that are addressed by the requirements of this subpart.

(c) (1) The Associate Administrator may only make a finding of equivalent safety and compliance with this subpart, other than § 238.203, based upon a submission of data and analysis sufficient to support that determination. The petition shall include:

(i) The information required by § 238.21(c);

(ii) Information, including detailed drawings and materials specifications, sufficient to describe the actual construction of the equipment of special design;

(iii) Engineering analysis sufficient to describe the likely performance of the equipment in derailment and collision scenarios pertinent to the safety requirements for which compliance is required and for which the equipment does not conform to the specific requirements of this subpart; and

(iv) A quantitative risk assessment, incorporating the design information and engineering analysis described in this paragraph, demonstrating that the equipment, as utilized in the service environment for which recognition is sought, presents no greater hazard of serious personal injury than equipment that conforms to the specific requirements of this subpart.

(2) Any petition made under this paragraph is subject to the procedures set forth in § 238.21, and will be disposed of in accordance with § 238.21(g).

§ 238.203 -- Static end strength.

(a) (1) Except as further specified in this paragraph or in paragraph (d), all passenger equipment shall resist a minimum static end load of 800,000 pounds applied on the line of draft without permanent deformation of the body structure.

(2) For a passenger car or a locomotive, the static end strength of unoccupied volumes may be less than 800,000 pounds if:

(i) Energy absorbing structures are used as part of a crash energy management design of the passenger car or locomotive, and

(ii) The passenger car or locomotive resists a minimum static end load of 800,000 pounds applied on the line of draft at the ends of its occupied volume without permanent deformation of the body structure.

(3) For a locomotive placed in service prior to November 8, 1999, as an alternative to resisting a minimum static end load of 800,000 pounds applied on the line of draft without permanent deformation of the body structure, the locomotive shall resist a horizontal load of 1,000,000 pounds applied along the longitudinal center line of the locomotive at a point on the buffer beam construction 12 inches above the center line of draft without permanent deformation

of the body structure. The application of this load shall not be distributed over an area greater than 6 inches by 24 inches. The alternative specified in this paragraph is not applicable to a cab car or an MU locomotive.

(4) The requirements of this paragraph do not apply to:

(i) A private car; or

(ii) Unoccupied passenger equipment operating at the rear of a passenger train.

(b) Passenger equipment placed in service before November 8, 1999 is presumed to comply with the requirements of paragraph (a)(1) of this section, unless the railroad operating the equipment has knowledge, or FRA makes a showing, that such passenger equipment was not built to the requirements specified in paragraph (a)(1).

(c) When overloaded in compression, the body structure of passenger equipment shall be designed, to the maximum extent possible, to fail by buckling or crushing, or both, of structural members rather than by fracture of structural members or failure of structural connections.

(d) ***Grandfathering of non-compliant equipment for use on a specified rail line or lines.***

(1) ***Grandfathering approval is equipment and line specific.*** Grandfathering approval of non-compliant equipment under this paragraph is limited to usage of the equipment on a particular rail line or lines. Before grandfathered equipment can be used on another rail line, a railroad must file and secure approval of a grandfathering petition under paragraph (d)(3) of this section.

(2) ***Temporary usage of non-compliant equipment.*** Any passenger equipment placed in service on a rail line or lines before November 8, 1999 that does not comply with the requirements of paragraph (a)(1) may continue to be operated on that particular line or (those particular lines) if the operator of the equipment files a petition seeking grandfathering approval under paragraph (d)(3) before November 8, 1999. Such usage may continue while the petition is being processed, but in no event later than May 8, 2000, unless the petition is approved.

(3) ***Petitions for grandfathering.*** Petitions for grandfathering shall include:

(i) The name, title, address, and telephone number of the primary person to be contacted with respect to the petition;

(ii) Information, including detailed drawings and material specifications, sufficient to describe the actual construction of the equipment;

(iii) Engineering analysis sufficient to describe the likely performance of the static end strength of the equipment and the likely performance of the equipment in derailment and collision scenarios pertinent to the equipment's static end strength;

(iv) A description of risk mitigation measures that will be employed in connection with the usage of the equipment on a specified rail line or lines to decrease the likelihood of accidents involving the use of the equipment; and

(v) A quantitative risk assessment, incorporating the design information, engineering analysis, and risk mitigation measures described in this paragraph, demonstrating that the use of the equipment, as utilized in the service environment for which recognition is sought, is in the public interest and is consistent with railroad safety.

(e) **Service.** Three copies of each petition shall be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., S.E., Washington, D.C. 20590.

(f) **Federal Register notice.** FRA will publish a notice in the Federal Register concerning each petition under paragraph (d) of this section.

(g) **Comment.** Not later than 30 days from the date of publication of the notice in the Federal Register concerning a petition under paragraph (d) of this section, any person may comment on the petition.

(1) Each comment shall set forth specifically the basis upon which it is made, and contain a concise statement of the interest of the commenter in the proceeding.

(2) Three copies of each comment shall be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., SE, Mail Stop 25, Washington, D. C. 20590.

(3) The commenter shall certify that a copy of the comment was served on each petitioner.

(h) **Disposition of petitions.**

(1) If the Administrator finds it necessary or desirable, FRA will conduct a hearing on a petition in accordance with the procedures provided in § 211.25 of this chapter.

(2) If FRA finds that the petition complies with the requirements of this section and that the proposed usage is in the public interest and consistent with railroad safety, the petition will be granted, normally within 90 days of its receipt. If the petition is neither granted nor denied within 90 days, the petition remains pending for decision. FRA may attach special conditions to the approval of the petition. Following the approval of a petition, FRA may reopen consideration of the petition for cause stated.

(3) If FRA finds that the petition does not comply with the requirements of this section or that the proposed usage is not in the public interest and consistent with railroad safety, the petition will be denied, normally within 90 days of its receipt.

(4) When FRA grants or denies a petition, or reopens consideration of the petition, written notice is sent to the petitioner and other interested parties.

§ 238.205 -- Anti-climbing mechanism.

(a) Except as provided in paragraph (b) of this section, all passenger equipment placed in service for the first time after September 8, 2000 shall have at both the forward and rear ends an anti-climbing mechanism capable of resisting an upward or downward vertical force of 100,000 pounds without failure. When coupled together in any combination to join two vehicles, AAR Type H and Type F tight-lock couplers satisfy this requirement.

(b) Except for a cab car or an MU locomotive, each locomotive ordered on or after September 8, 2000, or placed in service for the first time after September 9, 2002, shall have an anti-climbing mechanism at its forward end capable of resisting an upward or downward vertical force of 200,000 pounds without failure.

§ 238.207 -- Link between coupling mechanism and car body.

All passenger equipment placed in service for the first time on or after September 8, 2000 shall have a coupler carrier at each end designed to resist a vertical downward thrust from the coupler shank of 100,000 pounds for any normal horizontal position of the coupler, without permanent deformation. For passenger equipment that is connected by articulated joints that comply with the requirements of § 238.205(a), such passenger equipment also complies with the requirements of this section.

§ 238.209 -- Forward-facing end structure of locomotives.

The skin covering the forward-facing end of each locomotive shall be:

- (a) Equivalent to a 1/2 inch steel plate with a 25,000 pounds-per-square-inch yield strength-material of a higher yield strength may be used to decrease the required thickness of the material provided at least an equivalent level of strength is maintained;
- (b) Designed to inhibit the entry of fluids into the occupied cab area of the equipment;
- (c) Affixed to the collision posts or other main vertical structural members of the forward end structure so as to add to the strength of the end structure; and
- (d) As used in this section, the term "skin" does not include forward-facing windows and doors.

§ 238.211 -- Collision posts.

- (a) Except as further specified in this paragraph and paragraphs (b) and (c) of this section-
 - (1) All passenger equipment placed in service for the first time after September 8, 2000 shall have either:
 - (i) Two full-height collision posts, located at approximately the one-third points laterally, at each end. Each collision post shall have an ultimate longitudinal shear strength of not less than 300,000 pounds at a point even with the top of the underframe member to which it is attached. If reinforcement is used to provide the shear value, the reinforcement shall have full value for a distance of 18 inches up from the underframe connection and then taper to a point approximately 30 inches above the underframe connection; or
 - (ii) An equivalent end structure that can withstand the sum of forces that each collision post in paragraph (a)(1)(i) of this section is required to withstand. For analysis purposes, the required forces may be assumed to be evenly distributed at the end structure at the underframe joint.
 - (2) The requirements of this paragraph do not apply to unoccupied passenger equipment operating in a passenger train, or to the rear end of a locomotive if the end is unoccupied by design.
- (b) Each locomotive, including a cab car and an MU locomotive, ordered after September 8, 2000, or placed in service for the first time after September 9, 2002, shall have at its forward end, in lieu of the structural protection described in paragraph (a) of this section, either:

- (1) Two forward collision posts, located at approximately the one-third points laterally, each capable of withstanding:
- (i) A 500,000-pound longitudinal force at the point even with the top of the underframe, without exceeding the ultimate strength of the joint; and
 - (ii) A 200,000-pound longitudinal force exerted 30 inches above the joint of the post to the underframe, without exceeding the ultimate strength; or
- (2) An equivalent end structure that can withstand the sum of the forces that each collision post in paragraph (b)(1)(i) of this section is required to withstand.

(c) The end structure requirements in paragraphs (a) and (b) of this section apply only to the ends of a semi-permanently coupled consist of articulated units, provided that:

(1) The railroad submits to the FRA Associate Administrator for Safety under the procedures specified in § 238.21 a documented engineering analysis establishing that the articulated connection is capable of preventing disengagement and telescoping to the same extent as equipment satisfying the anti-climbing and collision post requirements contained in this subpart; and

(2) FRA finds the analysis persuasive.

§ 238.213 -- Corner posts.

(a) Each passenger car shall have at each end of the car, placed ahead of the occupied volume, two full-height corner posts capable of resisting:

(1) A horizontal load of 150,000 pounds at the point of attachment to the underframe without failure;

(2) A horizontal load of 20,000 pounds at the point of attachment to the roof structure without failure; and

(3) A horizontal load of 30,000 pounds applied 18 inches above the top of the floor without permanent deformation.

(b) For purposes of this section, the orientation of the applied horizontal loads shall range from longitudinal inward to transverse inward.

§ 238.215 -- Rollover strength.

(a) Each passenger car shall be designed to rest on its side and be uniformly supported at the top ("roof rail"), the bottom cords ("side sill") of the side frame, and, if bi-level, the intermediate floor rail. The allowable stress in the structural members of the occupied volumes for this condition shall be one-half yield or one-half the critical buckling stress, whichever is less. Local yielding to the outer skin of the passenger car is allowed provided that the resulting deformations in no way intrude upon the occupied volume of the car.

(b) Each passenger car shall also be designed to rest on its roof so that any damage in occupied areas is limited to roof sheathing and framing. Other than roof sheathing and framing, the allowable stress in the structural members of the occupied volumes for this condition shall be one-half yield or one-half the critical buckling stress, whichever is less. Deformation to the roof

sheathing and framing is allowed to the extent necessary to permit the vehicle to be supported directly on the top chords of the side frames and end frames.

§ 238.217 -- Side structure.

Each passenger car shall comply with the following:

(a) ***Side posts and corner braces.***

(1) For modified girder, semi-monocoque, or truss construction, the sum of the section moduli in inches³ -about a longitudinal axis, taken at the weakest horizontal section between the side sill and side plate-of all posts and braces on each side of the car located between the body corner posts shall be not less than 0.30 multiplied by the distance in feet between the centers of end panels.

(2) For modified girder or semi-monocoque construction only, the sum of the section moduli in inches³ -about a transverse axis, taken at the weakest horizontal section between the side sill and side plate-of all posts, braces and pier panels, to the extent available, on each side of the car located between body corner posts shall be not less than 0.20 multiplied by the distance in feet between the centers of end panels.

(3) The center of an end panel is the point midway between the center of the body corner post and the center of the adjacent side post.

(4) The minimum section moduli or thicknesses specified in paragraph (a) of this section may be adjusted in proportion to the ratio of the yield strength of the material used to that of mild open-hearth steel for a car whose structural members are made of a higher strength steel.

(b) ***Sheathing.***

(1) Outside sheathing of mild, open-hearth steel when used flat, without reinforcement (other than side posts) in a side frame of modified girder or semi-monocoque construction shall not be less than 1/8 inch nominal thickness. Other metals may be used of a thickness in inverse proportion to their yield strengths.

(2) Outside metal sheathing of less than 1/8 inch thickness may be used only if it is reinforced so as to produce at least an equivalent sectional area at a right angle to reinforcements as that of the flat sheathing specified in paragraph (b)(1) of this section.

(3) When the sheathing used for truss construction serves no load-carrying function, the minimum thickness of that sheathing shall be not less than 40 percent of that specified in paragraph (b)(1) of this section.

§ 238.219 -- Truck-to-car-body attachment.

Passenger equipment shall have a truck-to-car-body attachment with an ultimate strength sufficient to resist without failure the following individually applied loads: 2g vertically on the mass of the truck; and 250,000 pounds in any horizontal direction on the truck, along with the resulting vertical reaction to this load. For purposes of this section, the mass of the truck includes axles, wheels, bearings, the truck-mounted brake system, suspension system components, and any other component attached to the truck by design.

§ 238.221 -- Glazing.

- (a) Passenger equipment shall comply with the applicable Safety Glazing Standards contained in part 223 of this chapter, if required by that part.
- (b) Each exterior window on a locomotive cab and a passenger car shall remain in place when subjected to:
 - (1) The forces described in part 223 of this chapter; and
 - (2) The forces due to air pressure differences caused when two trains pass at the minimum separation for two adjacent tracks, while traveling in opposite directions, each train traveling at the maximum authorized speed.

§ 238.223 -- Locomotive fuel tanks.

Locomotive fuel tanks shall comply with either the following or an industry standard providing at least an equivalent level of safety if approved by FRA under § 238.21:

- (a) **External fuel tanks.** External locomotive fuel tanks shall comply with the requirements contained in Appendix D to this part.
- (b) **Internal fuel tanks.**
 - (1) Internal locomotive fuel tanks shall be positioned in a manner to reduce the likelihood of accidental penetration from roadway debris or collision.
 - (2) Internal fuel tank vent systems shall be designed so they do not become a path of fuel loss in any tank orientation due to a locomotive overturning.
 - (3) Internal fuel tank bulkheads and skin shall at a minimum be equivalent to a 5/16-inch thick steel plate with a yield strength of 25,000 pounds-per-square-inch. Material of a higher yield strength may be used to decrease the required thickness of the material provided at least an equivalent level of strength is maintained. Skid plates are not required.

§ 238.225 -- Electrical system.

All passenger equipment shall comply with the following:

- (a) **Conductors.** Conductor sizes shall be selected on the basis of current-carrying capacity, mechanical strength, temperature, flexibility requirements, and maximum allowable voltage drop. Current-carrying capacity shall be de-rated for grouping and for operating temperature.
- (b) **Main battery system.**
 - (1) The main battery compartment shall be isolated from the cab and passenger seating areas by a non-combustible barrier.
 - (2) Battery chargers shall be designed to protect against overcharging.
 - (3) If batteries are of the type to potentially vent explosive gases, the battery compartment shall be adequately ventilated to prevent the accumulation of explosive concentrations of these gases.
- (c) **Power dissipation resistors.**

(1) Power dissipating resistors shall be adequately ventilated to prevent overheating under worst-case operating conditions as determined by the railroad.

(2) Power dissipation grids shall be designed and installed with sufficient isolation to prevent combustion.

(3) Resistor elements shall be electrically insulated from resistor frames, and the frames shall be electrically insulated from the supports that hold them.

(d) ***Electromagnetic interference and compatibility.***

(1) The operating railroad shall ensure electromagnetic compatibility of the safety-critical equipment systems with their environment. Electromagnetic compatibility may be achieved through equipment design or changes to the operating environment.

(2) The electronic equipment shall not produce electrical noise that affects the safe performance of train line control and communications or wayside signaling systems.

(3) To contain electromagnetic interference emissions, suppression of transients shall be at the source wherever possible.

(4) All electronic equipment shall be self-protected from damage or improper operation, or both, due to high voltage transients and long-term over-voltage or under-voltage conditions. This includes protection from both power frequency and harmonic effects as well as protection from radio frequency signals into the microwave frequency range.

§ 238.227 -- Suspension system.

(a) All passenger equipment shall exhibit freedom from hunting oscillations at all operating speeds. If hunting oscillations do occur, a railroad shall immediately take appropriate action to prevent derailment. For purposes of this paragraph, hunting oscillations shall be considered lateral oscillations of trucks that could lead to a dangerous instability.

(b) All passenger equipment intended for service above 110 mph shall demonstrate stable operation during pre-revenue service qualification tests at all operating speeds up to 5 mph in excess of the maximum intended operating speed under worst-case conditions-including component wear-as determined by the operating railroad.

(c) Nothing in this section shall affect the requirements of part 213 of this chapter as they apply to passenger equipment as provided in that part.

Sec. 238.229 Safety appliances--general.

(a) Except as provided in this part, all passenger equipment continues to be subject to the safety appliance requirements contained in Federal statute at 49 U.S.C. chapter 203 and in Federal regulations at part 231 of this chapter

(b) Except as provided in this part, FRA interprets the provisions in part 231 of this chapter that expressly mandate that the manner of application of a safety appliance be a bolt, rivet, or screw to mean that the safety appliance and any related bracket or support used to attach that safety appliance to the equipment shall be so affixed to the equipment. Specifically, FRA

prohibits the use of welding as a method of attachment of any such safety appliance or related bracket or support. A "safety appliance bracket or support" means a component or part attached to the equipment for the sole purpose of securing or attaching of the safety appliance. FRA does allow the welded attachment of a brace or stiffener used in connection with a mechanically fastened safety appliance. In order to be considered a "brace" or "stiffener," the component or part shall not be necessary for the attachment of the safety appliance to the equipment and is used solely to provide extra strength or steadiness to the safety appliance.

(c) Welded Safety Appliances.

(1) Passenger equipment placed in service prior to January 1, 2007, that is equipped with a safety appliance, required by the "manner of application" provisions in part 231 of this chapter to be attached by a mechanical fastener (i.e., bolts, rivets, or screws), and the safety appliance is mechanically fastened to a bracket or support that is attached to the equipment by welding may continue to be used in service provided all of the requirements in paragraphs (e) through (k) of this section are met. The welded safety appliance bracket or support only needs to receive the initial visual inspection required under paragraph (g)(1) of this section if all of the following conditions are met:

(i) The welded safety appliance bracket or support meets all of the conditions contained in Sec. 238.230(b)(1) for being considered part of the car body;

(ii) The weld on the safety appliance bracket or support does not contain any defect as defined in paragraph (d) of this section; and

(iii) The railroad submits a written list to FRA identifying each piece of passenger equipment equipped with a welded safety appliance bracket or support as described in paragraph (c)(1)(i) and (c)(1)(ii) of this section and provides a description of the specific safety appliance bracket or support.

(2) Passenger equipment placed in service prior to January 1, 2007, that is equipped with a safety appliance that is directly attached to the equipment by welding (i.e., no mechanical fastening of any kind) shall be considered defective and immediately handled for repair pursuant to the requirements contained in Sec. 238.17(e) unless the railroad meets the following:

(i) The railroad submits a written list to FRA that identifies each piece of passenger equipment equipped with a welded safety appliance as described in paragraph (c)(2) of this section and provides a description of the specific safety appliance; and

(ii) The involved safety appliance(s) on such equipment are inspected and handled pursuant to the requirements contained in paragraphs (g) through (k) of this section.

(d) Defective welded safety appliance or welded safety appliance bracket or support.

Passenger equipment with a welded safety appliance or a welded safety appliance bracket or support will be considered defective and shall be handled in accordance with Sec. 238.17(e) if any part or portion of the weld contains a defect. Any repairs made to such equipment shall be in accordance with the inspection plan required in paragraph (g) of this section and the remedial

actions identified in paragraph (j) of this section. A defect for the purposes of this section means a crack or fracture of any visibly discernible length or width. When appropriate, civil penalties for improperly using or hauling a piece of equipment with a defective welded safety appliance or safety appliance bracket or support addressed in this section will be assessed as an improperly applied safety appliance pursuant to the penalty schedule contained in Appendix A to part 231 of this chapter under the appropriate defect code contained therein.

(e) **Identification of equipment.** The railroad shall submit a written list to FRA that identifies each piece of passenger equipment equipped with a welded safety appliance bracket or support. Passenger equipment placed in service prior to January 1, 2007, but not discovered until after January 1, 2007, shall be immediately added to the railroad's written list and shall be immediately inspected in accordance with paragraph (g) through (k) of this section. The written list submitted by the railroad shall contain the following:

- (1) The equipment number;
- (2) The equipment type;
- (3) The safety appliance bracket(s) or support(s) affected;
- (4) Any equipment and any specific safety appliance bracket(s) or supports(s) on the equipment that will not be subject to the inspection plan required in paragraph (g) of this section;
- (5) A detailed explanation for any such exclusion recommended in paragraph (e)(4) of this section;

(f) FRA's Associate Administrator for Safety reserves the right to disapprove any exclusion recommended by the railroad in paragraphs (c)(2)(i) and (d)(4) of this section and will provide written notification to the railroad of any such determination.

(g) **Inspection Plans.**

The railroad shall adopt and comply with and submit to FRA upon request a written safety appliance inspection plan.

At a minimum, the plan shall include the following:

(1) Except as provided in paragraph (c)(1) of this section, an initial visual inspection (within 1 year of date of publication) and periodic re-inspections (at intervals not to exceed 6 years) of each welded safety appliance bracket or support identified in paragraph (e) of this section. If significant disassembly of a car is necessary to visually inspect the involved safety appliance bracket or support, the initial visual inspection may be conducted at the equipment's first periodic brake equipment maintenance interval pursuant to Sec. 238.309.

(2) Identify the personnel that will conduct the initial and periodic inspections and any training those individuals are required to receive in accordance with the criteria contained in paragraph (h) of this section.

(3) Identify the specific procedures and criteria for conducting the initial and periodic safety appliance inspections in accordance with the requirements and criteria contained in paragraph (i) of this section.

(4) Identify when and what type of potential repairs or potential remedial action will be required for any defective welded safety appliance bracket or support discovered during the initial or periodic safety appliance inspection in accordance with paragraph (j) of this section.

(5) Identify the records that will be maintained that are related to the initial and periodic safety appliance inspections in accordance with the requirements contained in paragraph (k) of this section.

(h) **Inspection Personnel.** The initial and periodic safety appliance inspections shall be performed by individuals properly trained and qualified to identify defective weld conditions. At a minimum, these personnel include the following:

(1) A qualified maintenance person (QMP) with at least 4 hours of training specific to the identification of weld defects and the railroad's weld inspection procedures;

(2) A current certified welding inspector (CWI) pursuant to American Welding Society Standard--AWS QC-1, Standard for AWS Certification of Welding Inspectors (1996) or its current revised equivalent;

(3) A person possessing a current Canadian Welding Bureau (CWB) certification pursuant to the Canadian Standards Association Standard W59 (2003) or its current revised equivalent;

(4) A person possessing a current level II or level III visual inspector certification from the American Society for Non-destructive Testing pursuant to Recommended Practice SNT-TC-1A--Personnel Qualification and Certification in Nondestructive Testing (2001) or its current revised equivalent; or

(5) A person possessing a current certification under any other nationally or internationally recognized welding qualification standard that is equivalent to those identified in paragraphs (h)(2) through (h)(4) of this section.

(i) **Inspection Procedures.** The initial and periodic safety appliance inspections shall be conducted in accordance with the procedures and criteria established in the railroad's inspection plan.

At a minimum, these procedures and criteria shall include:

(1) A complete visual inspection of the entire welded surface of any safety appliance bracket or support identified in paragraph (e) of this section.

(2) The visual inspection shall occur after the complete removal of any dirt, grease, rust, or any other foreign matter from the welded portion of the involved safety appliance bracket or support. Removal of paint is not required.

(3) The railroad shall disassemble any equipment necessary to permit full visual inspection of the involved weld.

(4) Any materials necessary to conduct a complete inspection must be made available to the inspection personnel throughout the inspection process. These include but are not limited to such items as mirrors, magnifying glasses, or other location specific inspection aids. Remote viewing aids possessing equivalent sensitivity are permissible for restricted areas.

(5) Any weld found with a defect as defined in paragraph (d) of this section during the initial or periodic safety appliance inspection shall be inspected by either a certified weld inspector identified in paragraphs (h)(2) through (h)(5) of this section or a welding or materials engineer possessing a professional engineer's license for a final determination. No car with a defect in the weld of a safety appliance or its attachment may continue in use until a final determination as to the existence of a defect is made by the personnel identified in this paragraph.

(6) A weld finally determined to contain a defect shall be handled for repair in accordance with Sec. 238.17(e) and repaired in accordance with the remedial action criteria contained in paragraph (j) of this section.

(j) **Remedial Action.** Unless a defect in a weld is known to have been caused by crash damage, the railroad shall conduct a failure and engineering analysis of any weld identified in paragraph (e) of this section determined to have a break or crack either during the initial or periodic safety appliance inspection or while otherwise in service to determine if the break or crack is the result of crash damage, improper construction, or inadequate design. Based on the results of the analysis, the repair of the involved safety appliance bracket or support shall be handled as follows:

(1) A defect in a weld due to crash damage (i.e., impact of the safety appliance by an outside force during service or an accident) or improper construction (i.e., the weld did not conform to the engineered design) shall be reattached by either mechanically fastening the safety appliance or the safety appliance bracket or support to the equipment or welding the safety appliance bracket or support to the equipment in a manner that is at least as strong as the original design or at least twice the strength of a bolted mechanical attachment, whichever is greater. If welding is used to repair the damaged appliance, bracket, or support the following requirements shall be met:

(i) The repair shall be conducted in accordance with the welding procedures contained in APTA Standard SS-C&S-020-03--Standard for Passenger Rail Vehicle Structural Repair (September 2003); or an alternative procedure approved by FRA pursuant to §238.21. The Director of the Federal Register approves incorporation by reference of the APTA Standard SS-C&S-020-03 (September 2003), Standard for Passenger Rail Vehicle Structural Repair," in this section in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated standard from the American Public Transportation Association, 1666 K Street, Washington, DC 20006. You may inspect a copy of the incorporated standard at the Federal Railroad Administration, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html;

(ii) A qualified individual under paragraph (h) of this section shall inspect the weld to ensure it is free of any cracks or fractures prior to the equipment being placed in-service;

(iii) The welded safety appliance bracket or support shall receive a periodic safety appliance inspection pursuant to the requirements contained in paragraphs (g) through (i) of this section; and

(iv) A record of the welded repair pursuant to the requirements of paragraph (k) of this section shall be maintained by the railroad.

(2) A defect in the weld that is due to inadequate design (i.e., unanticipated stresses or loads during service) shall be handled in accordance with the following:

(i) The railroad must immediately notify FRA's Associate Administrator for Safety in writing of its discovery of a defective weld that is due to inadequate design;

(ii) The involved safety appliance or the safety appliance bracket or support shall be reattached to the equipment by mechanically fastening the safety appliance or the safety appliance bracket or

support to the equipment unless such mechanical fastening is impractical due to the design of the equipment;

(iii) The railroad shall develop and comply with a written plan submitted to and approved by FRA's Associate Administrator for Safety detailing a schedule for all passenger equipment in that series of cars with a similar welded safety appliance bracket or support to have the involved safety appliance or the safety appliance bracket or support mechanically fastened to the equipment; and

(iv) If a railroad determines that the design of the equipment makes it impractical to mechanically fasten the safety appliance or the safety appliance bracket or support to the equipment, then the railroad shall submit a request to FRA for special approval of alternative compliance pursuant to § 238.21. Such a request shall explain the necessity for any relief sought and shall contain appropriate data and analysis supporting its determination that any alternative method of attachment provides at least an equivalent level of safety

(k) **Records.** Railroads shall maintain written or electronic records of the inspection and repair of the welded safety appliance brackets or supports on any equipment identified in paragraph (e) of this section.

The records shall be made available to FRA upon request. At a minimum, these records shall include all of the following:

(1) Training or certification records for any person performing any of the inspections or repairs required in this section.

(2) The date, time, location, and identification of the person performing the initial and periodic safety appliance inspections for each piece of equipment identified in paragraph (e) of this section. This includes the identification of the person making any final determination as to the existence of a defect under paragraph (i)(5) of this section.

(3) A record of all passenger equipment found with a safety appliance weldment that is defective either during the initial or periodic safety appliance inspection or while the equipment is in-service. This record shall also identify the cause of the crack or fracture.

(4) The date, time, location, identification of the person making the repair, and the nature of the repair to any welded safety appliance bracket or support identified in paragraph (e) of this section.

Sec. 238.230 Safety appliances--new equipment.

(a) **Applicability.** This section applies to passenger equipment placed in service on or after January 1, 2007.

(b) **Welded Safety Appliances.** Except as provided in this section, all passenger equipment placed into service on or after January 1, 2007, that is equipped with a safety appliance, required by the "manner of application" provisions in part 231 of this chapter to be attached by a mechanical fastener (i.e., bolts, rivets, or screws), shall have the safety appliance and any bracket or support necessary to attach the safety appliance to the piece of equipment mechanically fastened to the piece of equipment.

(1) Safety appliance brackets or supports considered part of the car body. Safety appliance brackets or supports will be considered part of the car body and will not be required to be mechanically fastened to the piece of passenger equipment if all of the following are met:

(i) The bracket or support is welded to a surface of the equipment's body that is at a minimum 3/16-inch sheet steel or structurally reinforced to provide the equivalent strength and rigidity of 3/16-inch sheet steel;

(ii) The area of the weld is sufficient to ensure a minimum weld strength, based on yield, of three times the strength of the number of SAE grade 2, 1/2 inch diameter bolts that would be required for each attachment;

(iii) Except for any access required for attachment of the safety appliance, the weld is continuous around the perimeter of the surface of the bracket or support;

(iv) The attachment is made with fillet welds at least 3/16-inch in size;

(v) The weld is designed for infinite fatigue life in the application that it will be placed;

(vi) The weld is performed in accordance with the welding process and the quality control procedures contained in the current American Welding Society (AWS) Standard, the Canadian Welding Bureau (CWB) Standard, or an equivalent nationally or internationally recognized welding standard;

(vii) The weld is performed by an individual possessing the qualifications to be certified under the current AWS Standard, CWB Standard, or any equivalent nationally or internationally recognized welding qualification standard;

(viii) The weld is inspected by an individual qualified to determine that all of the conditions identified in paragraph (b)(1)(i) through (b)(1)(vii) of this section are met prior to the equipment being placed in service; and

(ix) A written or electronic record of the inspection required in paragraph (b)(1)(viii) of this section shall be retained railroad operating the equipment and shall be provided to FRA upon request. At a minimum, this record shall include the date, time, location, identification of the person performing the inspection, and the qualifications of the person performing the inspection.

(2) Directly welded safety appliances. Passenger equipment that is equipped with a safety appliance that is directly attached to the equipment by welding (i.e., no mechanical fastening of any kind) may be placed in service only if the railroad meets the following:

(i) The railroad submits a written list to FRA that identifies each piece of new passenger equipment equipped with a welded safety appliance as described in paragraph (b)(2) of this section and provides a description of the specific safety appliance;

(ii) The railroad provides a detailed basis as to why the design of the vehicle or placement of the safety appliance requires that the safety appliance be directly welded to the equipment; and

(iii) The involved safety appliance(s) on such equipment are inspected and handled pursuant to the requirements contained in Sec. 238.229(g) through (k).

(3) Other welded safety appliances and safety appliance brackets and supports. Except for safety appliance brackets and supports identified in paragraph (b)(1) of this section, safety appliance brackets and supports on passenger equipment shall not be welded to the car body unless the design of the equipment makes it impractical to mechanically fasten the safety appliance and it is impossible to meet the conditions for considering the bracket or support part of the car body contained in paragraph (b)(1) of this section. Prior to placing a piece of passenger

equipment in service with a welded safety appliance bracket or support as described in this paragraph, the railroad shall submit documentation to FRA, for FRA's review and approval, obtaining all of the following information:

- (i) Identification of the equipment by number, type, series, operating railroad, and other pertinent data;
- (ii) Identification of the safety appliance bracket(s) or support(s) not mechanically fastened to the equipment and not considered part of the car body under paragraph (b)(1) of this section;
- (iii) A detailed analysis describing the necessity to attach the safety appliance bracket or support to the equipment by a means other than mechanical fastening;
- (iv) A detailed analysis describing the inability to make the bracket or support part of the car body as provided for in paragraph (b)(1) of this section; and
- (v) A copy and description of the consensus or other appropriate industry standard used to ensure the effectiveness and strength of the attachment;

(c) **Inspection and repair.** Passenger equipment with a welded safety appliance or a welded safety appliance bracket or support will be considered defective and shall be handled in accordance with Sec. 238.17(e) if any part or portion of the weld is defective as defined in Sec. 238.229(d). When appropriate, civil penalties for improperly using or hauling a piece of equipment with a defective welded safety appliance or safety appliance bracket or support addressed in this section will be assessed pursuant to the penalty schedule contained in Appendix A to part 231 of this chapter under the appropriate defect code contained therein.

(1) Any safety appliance bracket or support approved by FRA pursuant to paragraph (b)(3) of this section shall be inspected and handled in accordance with the requirements contained in Sec. 238.229(g) through (k).

(2) Any repair to a safety appliance bracket or support considered to be part of the car body under paragraph (b)(1) of this section shall be conducted in accordance with APTA Standard SS-C&S-020-03--Standard for Passenger Rail Vehicle Structural Repair (September 2003), or an alternative procedure approved by FRA pursuant to Sec. 238.21, and shall ensure that the repair meets the requirements contained in paragraphs (b)(1)(i) through (b)(1)(vii) of this section. The Director of the Federal Register approves incorporation by reference of the APTA Standard SS-C&S-020-03 (September 2003), "Standard for Passenger Rail Vehicle Structural Repair," in this section in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated standard from the American Public Transportation Association, 1666 K Street, Washington, DC 20006. You may inspect a copy of the incorporated standard at the Federal Railroad Administration, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(d) **Passenger Cars of Special Construction.** A railroad or a railroad's recognized representative may submit a request for special approval of alternative compliance pursuant to Sec. 238.21 relating to the safety appliance arrangements on any passenger car considered a car of special construction under Sec. 231.18 of this chapter. Any such

petition shall be in the form of an industry-wide standard and at a minimum shall:

- (1) Identify the type(s) of car to which the standard would be applicable;
- (2) As nearly as possible, based upon the design of the equipment, ensure that the standard provides for the same complement of handholds, sill steps, ladders, hand or parking brakes, running boards, and other safety appliances as are required for a piece of equipment of the nearest approximate type already identified in part 231 of this chapter;
- (3) Comply with all statutory requirements relating to safety appliances contained at 49 U.S.C. §§20301 and 20302;
- (4) Specifically address the number, dimension, location, and manner of application of each safety appliance contained in the standard;
- (5) Provide specific analysis regarding why and how the standard was developed and specifically discuss the need or benefit of the safety appliance arrangement contained in the standard;
- (6) Include drawings, sketches, or other visual aids that provide detailed information relating to the design, location, placement, and attachment of the safety appliances; and
- (7) Demonstrate the ergonomic suitability of the proposed arrangements in normal use.

(e) Any industry standard approved pursuant to §238.21 will be enforced against any person who violates any provision of the approved standard or causes the violation of any such provision. Civil penalties will be assessed under part 231 of this chapter by using the applicable defect code contained in Appendix A to part 231 of this chapter.

§ 238.231 -- Brake system.

Except as otherwise provided in this section, after September 9, 1999 the following requirements apply to all passenger equipment and passenger trains:

- (a) A passenger train's primary brake system shall be capable of stopping the train with a service application from its maximum authorized operating speed within the signal spacing existing on the track over which the train is operating.
- (b) Where practicable, the design of passenger equipment ordered on or after September 8, 2000, or placed in service for the first time on or after September 9, 2002, shall not require an inspector to place himself or herself on, under, or between components of the equipment to observe brake actuation or release. Passenger equipment not designed in this manner shall be equipped and handled in accordance with one of the following:
 - (1) Equipped with piston travel indicators as defined in Sec. 238.5 or devices of similar design and inspected pursuant to the requirements contained in Sec. 238.313 (j); or
 - (2) Equipped with brake indicators as defined in Sec. 238.5, designed so that the pressure sensor is placed in a location so that nothing may interfere with the air flow to brake cylinder and inspected pursuant to the requirements contained in Sec. 238.313 (j).
- (c) Passenger equipment shall be provided with an emergency brake application feature that produces an irretrievable stop, using a brake rate consistent with prevailing adhesion, passenger safety, and brake system thermal capacity. An emergency brake application shall be available at any time, and shall be initiated by an unintentional parting of the train.

(d) A passenger train brake system shall respond as intended to signals from a train brake control line or lines. Control lines shall be designed so that failure or breakage of a control line will cause the brakes to apply or will result in a default to control lines that meet this requirement.

(e) Introduction of alcohol or other chemicals into the air brake system of passenger equipment is prohibited.

(f) The operating railroad shall require that the design and operation of the brake system results in wheels that are free of condemnable cracks.

(g) Disc brakes shall be designed and operated to produce a surface temperature no greater than the safe operating temperature recommended by the disc manufacturer and verified by testing or previous service.

(h) (1) Except for a locomotive that is ordered before September 8, 2000 or placed in service for the first time before September 9, 2002, and except for MU locomotives, all locomotives shall be equipped with a hand or parking brake that can:

- (i) Be applied or activated by hand;
- (ii) Be released by hand; and
- (iii) Hold the loaded unit on the maximum grade anticipated by the operating railroad.

(2) Except for a private car and locomotives addressed in paragraph (h)(1) of this section, all other passenger equipment, including MU locomotives, shall be equipped with a hand brake that meets the requirements for hand brakes contained in part 231 of this chapter and that can:

- (i) Be applied or activated by hand;
- (ii) Be released by hand; and
- (iii) Hold the loaded unit on the maximum grade anticipated by the operating railroad.

(3) Except for MU locomotives, on locomotives so equipped, the hand or parking brake as well as its parts and connections shall be inspected, and necessary repairs made, as often as service requires but no less frequently than every 368 days. The date of the last inspection shall be either entered on Form FRA F 6180-49A, suitably stenciled or tagged on the equipment, or maintained electronically provided FRA has access to the record upon request.

(4) A train's air brake shall not be depended upon to hold unattended equipment (including a locomotive, a car, or a train whether or not locomotive is attached). For purposes of this section, "unattended equipment" means equipment left standing and unmanned in such a manner that the brake system of the equipment cannot be readily controlled by a qualified person. Unattended equipment shall be secured in accordance with the following requirements:

(i) A sufficient number of hand or parking brakes shall be applied to hold the equipment. Railroads shall develop and implement a process or procedure to verify that the applied hand or parking brakes will sufficiently hold the equipment with the air brakes released;

(ii) Except for equipment connected to a source of compressed air (e.g., locomotive or ground air source), prior to leaving equipment unattended, the brake pipe shall be reduced to zero at a rate that is no less than a service rate reduction;

(iii) At a minimum, the hand or parking brake shall be fully applied on at least one locomotive or vehicle in an unattended locomotive consist or train;

(iv) A railroad shall develop, adopt, and comply with procedures for securing any unattended locomotive required to have a hand or parking brake applied when the locomotive is not equipped with an operative hand or parking brake;

(v) A railroad shall adopt and comply with instructions to address throttle position, status of the reverser lever, position of the generator field switch, status of the independent brakes, position of the isolation switch, and position of the automatic brake valve, or the functional equivalent of these items, on all unattended locomotives. The procedures and instruction shall take into account weather conditions as they relate to throttle position and reverser handle; and

(vi) Any hand or parking brakes applied to hold unattended equipment shall not be released until it is known that the air brake system is properly charged.

(i) Passenger cars shall be equipped with a means to apply the emergency brake that is accessible to passengers and located in the vestibule or passenger compartment. The emergency brake shall be clearly identified and marked.

(j) Locomotives ordered after September 8, 2000, or placed in service for the first time after September 9, 2002, that are equipped with blended brakes shall be designed so that

(1) The blending of friction and dynamic brake to obtain the correct retarding force is automatic;

(2) Loss of power or failure of the dynamic brake does not result in exceeding the allowable stopping distance;

(3) The friction brake alone is adequate to safely stop the train under all operating conditions; and

(4) Operation of the friction brake alone does not result in thermal damage to wheels or disc rotor surface temperatures exceeding the manufacturer's recommendation.

(k) For new designs of braking systems, the design process shall include computer modeling or dynamometer simulation of train braking that shows compliance with paragraphs (f) and (g) of this section over the range of equipment operating speeds. A new simulation is required prior to implementing a change in operating parameters.

(l) Locomotives ordered after September 8, 2000 or placed in service for the first time after September 9, 2002, shall be equipped with effective air coolers or dryers that provide air to the main reservoir with a dew point at least 10 degrees F. below ambient temperature.

(m) When a passenger train is operated in either direct or graduated release-- (1) all the cars in the train consist shall be set up in the same operating mode or (2) up to two cars may be operated in direct release mode when the rest of the cars in the train are operated in graduated release mode, provided that the cars operated in direct release mode are hauled at the rear of the train consist.

(n) Before adjusting piston travel or working on brake rigging, the cutout cock in the brake pipe branch must be closed and the air reservoirs must be voided of all compressed air. When cutout cocks are provided in brake cylinder pipes, these cutout cocks may be closed, and air reservoirs need not be voided of all compressed air.

(o) All passenger trains to which this part applies shall comply with the requirements covering the use of two-way end-of-train devices contained in part 232 of this chapter.

§ 238.233 -- Interior fittings and surfaces.

(a) Each seat in a passenger car shall-

(1) Be securely fastened to the car body so as to withstand an individually applied acceleration of 4g acting in the lateral direction and 4g acting in the upward vertical direction on the deadweight of the seat or seats, if held in tandem; and

(2) Have an attachment to the car body of an ultimate strength capable of resisting simultaneously:

(i) The longitudinal inertial force of 8g acting on the mass of the seat; and

(ii) The load associated with the impact into the seatback of an unrestrained 95th-percentile adult male initially seated behind the seat, when the floor to which the seat is attached decelerates with a triangular crash pulse having a peak of 8g and a duration of 250 milliseconds.

(b) Overhead storage racks in a passenger car shall provide longitudinal and lateral restraint for stowed articles. Overhead storage racks shall be attached to the car body with sufficient strength to resist loads due to the following individually applied accelerations acting on the mass of the luggage stowed as determined by the railroad:

(1) Longitudinal: 8g;

(2) Vertical: 4g; and

(3) Lateral: 4g.

(c) Other interior fittings within a passenger car shall be attached to the car body with sufficient strength to withstand the following individually applied accelerations acting on the mass of the fitting:

(1) Longitudinal: 8g;

(2) Vertical: 4g; and

(3) Lateral: 4g.

(d) To the extent possible, all interior fittings in a passenger car, except seats, shall be recessed or flush-mounted.

(e) Sharp edges and corners in a locomotive cab and a passenger car shall be either avoided or padded to mitigate the consequences of an impact with such surfaces.

(f) Each seat provided for a crewmember regularly assigned to occupy the cab of a locomotive and each floor-mounted seat in the cab shall be secured to the car body with an

attachment having an ultimate strength capable of withstanding the loads due to the following individually applied accelerations acting on the combined mass of the seat and a 95th-percentile adult male occupying it:

- (1) Longitudinal: 8g;
- (2) Lateral: 4g; and
- (3) Vertical: 4g.

(g) If, for purposes of showing compliance with the requirements of this section, the strength of a seat attachment is to be demonstrated through sled testing, the seat structure and seat attachment to the sled that is used in such testing must be representative of the actual seat structure in, and seat attachment to, the rail vehicle subject to the requirements of this section. If the attachment strength of any other interior fitting is to be demonstrated through sled testing, for purposes of showing compliance with the requirements of this section, such testing shall be conducted in a similar manner.

§ 238.235 -- Doors.

(a) Each powered, exterior side door in a vestibule that is partitioned from the passenger compartment of a passenger car shall have a manual override device that is:

- (1) Capable of releasing the door to permit it to be opened without power from inside the car;
- (2) Located adjacent to the door which it controls; and
- (3) Designed and maintained so that a person may readily access and operate the override device from inside the car without requiring the use of a tool or other implement. If the door is dual-leafed, only one of the door leafs is required to respond to the manual override device.

(b) Each passenger car ordered after September 8, 2000, or placed in service for the first time after September 9, 2002 shall have a minimum of two exterior side doors, each door providing a minimum clear opening with dimensions of 30 inches horizontally by 74 inches vertically.
Note: The Americans with Disabilities Act (ADA) Accessibility Specifications for Transportation Vehicles also contain requirements for doorway clearance (*See*, 49 C.F.R. part 38).

Each powered, exterior side door on each such passenger car shall have a manual override device that is:

- (1) Capable of releasing the door to permit it to be opened without power from both inside and outside the car;
- (2) Located adjacent to the door which it controls; and
- (3) Designed and maintained so that a person may access the override device from both inside and outside the car without requiring the use of a tool or other implement.

(c) A railroad may protect a manual override device used to open a powered, exterior door with a cover or a screen capable of removal without requiring the use of a tool or other implement.

(d) Door exits shall be marked, and instructions provided for their use, as required by § 239.107(a) of this chapter.

§ 238.237 -- Automated monitoring.

- (a) Except as further specified in this paragraph, a working alerter or deadman control shall be provided in the controlling locomotive of each passenger train operating in other than cab signal, automatic train control, or automatic train stop territory.
- (b) Alerter or deadman control timing shall be set by the operating railroad taking into consideration maximum train speed and capabilities of the signal system. The railroad shall document the basis for setting alerter or deadman control timing and make this documentation available to FRA upon request.
- (c) If the train operator does not respond to the alerter or maintain proper contact with the deadman control, it shall initiate a penalty brake application.
- (d) The following procedures apply if the alerter or deadman control fails en route and causes the locomotive to be in non-compliance with paragraph (a):
 - (1) (i) A second person qualified on the signal system and trained to apply the emergency brake shall be stationed in the locomotive cab; or
 - (ii) The engineer shall be in constant communication with a second crewmember until the train reaches the next terminal.
 - (2) (i) A tag shall be prominently displayed in the locomotive cab to indicate that the alerter or deadman control is defective, until such device is repaired; and
 - (ii) When the train reaches its next terminal or the locomotive undergoes its next calendar day inspection, whichever occurs first, the alerter or deadman control shall be repaired or the locomotive shall be removed as the controlling locomotive in the train.

Subpart D--Inspection, Testing, and Maintenance Requirements for Tier I Passenger Equipment

§ 238.301 -- Scope.

- (a) This subpart contains requirements pertaining to the inspection, testing, and maintenance of passenger equipment operating at speeds not exceeding 125 miles per hour. The requirements in this subpart address the inspection, testing, and maintenance of the brake system as well as other mechanical and electrical components covered by this part.
- (b) The requirements contained in this subpart shall apply to railroads operating Tier I passenger equipment covered by this part. A railroad may request earlier application of the requirements contained in this subpart upon written notification to FRA's Associate Administrator for Safety as provided in § 238.1(c).

§ 238.303 -- Exterior calendar day mechanical inspection of passenger equipment.

- (a) *General.*

(1) Except as provided in paragraph (f) of this section, each passenger car and each unpowered vehicle used in a passenger train shall receive an exterior mechanical inspection at least once each calendar day that the equipment is placed in service.

(2) Except as provided in paragraph (f) of this section, all passenger equipment shall be inspected as required in this section at least once each calendar day that the equipment is placed in service to ensure that the equipment conforms with the requirement contained in paragraph (e)(15) of this section.

(3) If a passenger care is also classified as a locomotive under part 229 of this chapter, the passenger car shall also receive a daily inspection pursuant to the requirements of § 229.21 of this chapter.

(b) Each passenger car and each unpowered vehicle added to a passenger train shall receive an exterior calendar day mechanical inspection in accordance with the following:

(1) Except as provided in paragraph (b)(2) of this section, each passenger car and each unpowered vehicle added to a passenger train shall receive an exterior calendar day mechanical inspection at the time it is added to the train unless notice is provided to the train crew that an exterior mechanical inspection was performed on the car or vehicle on the last day it was used in passenger service. The notice required by this section shall contain the date, time, and location of the last exterior mechanical inspection;

(2) Each express car, freight car, and each unit of intermodal equipment (*e.g.*, RoadRailers (*R*)) added to a passenger train shall receive an exterior calendar day mechanical inspection at the time it is added to the train, unless notice is provided to the train crew that an exterior mechanical inspection was performed on the car within the previous calendar day. The notice required by this section shall contain the date, time, and location of the last exterior mechanical inspection.

(c) The exterior calendar day mechanical inspection shall be performed by a qualified maintenance person.

(d) The exterior calendar day mechanical inspection required by this section shall be conducted to the extent possible without uncoupling the trainset and without placing the equipment over a pit or on an elevated track.

(e) As part of the exterior calendar day mechanical inspection, the railroad shall verify conformity with the following conditions, and nonconformity with any such condition renders the passenger car or unpowered vehicle used in a passenger train defective whenever discovered in service:

(1) Products of combustion are released entirely outside the cab and other compartments.

(2) Each battery container is vented and each battery is kept from gassing excessively.

(3) Each coupler is in the following condition:

(i) Sidewall or pin bearing bosses and the pulling face of the knuckles are not broken or cracked;

(ii) The coupler assembly is equipped with anti-creep protection;

(iii) The coupler carrier is not broken or cracked; and

(iv) The yoke is not broken or cracked.

(4) A device is provided under the lower end of all drawbar pins and articulated connection pins to prevent the pin from falling out of place in case of breakage.

(5) The suspension system, including the spring rigging, is in the following condition:

- (i) Protective construction or safety hangers are provided to prevent spring planks, spring seats, or bolsters from dropping to the track structure in event of a hanger or spring failure;
- (ii) The top (long) leaf or any of the other three leaves of the elliptical spring is not broken, except when a spring is part of a nest of three or more springs and none of the other springs in the nest has its top leaf or any of the other three leaves broken;
- (iii) The outer coil spring or saddle is not broken;
- (iv) The equalizers, hangers, bolts, gibs, or pins are not cracked or broken;
- (v) The coil spring is not fully compressed when the car is at rest;
- (vi) The shock absorber is not broken or leaking oil or other fluid; and
- (vii) Each air bag or other pneumatic suspension system component inflates or deflates, as applicable, correctly and otherwise operates as intended.

(6) Each truck is in the following condition:

- (i) Each tie bar is not loose;
- (ii) Each motor suspension lug, equalizer, hanger, gib, or pin is not cracked or broken; and
- (iii) The truck frame is not broken and is not cracked in a stress area that may affect its structural integrity.

(7) Each side bearing is in the following condition:

- (i) Each friction side bearing with springs designed to carry weight does not have more than 25 percent of the springs in any one nest broken;
- (ii) Each friction side bearing does not run in contact unless designed to operate in that manner; and
- (iii) The maximum clearance of each side bearing does not exceed the manufacturer's recommendation.

(8) Each wheel does not have any of the following conditions:

- (i) A single flat spot that is 2 1/2 inches or more in length, or two adjoining spots that are each two or more inches in length;
- (ii) A gouge or chip in the flange that is more than 1 1/2 inches in length and 1/2 inch in width;
- (iii) A broken rim, if the tread, measured from the flange at a point 5/8 of an inch above the tread, is less than 3 3/4 inches in width;
- (iv) A shelled-out spot 2 1/2 inches or more in length, or two adjoining spots that are each two or more inches in length;
- (v) A seam running lengthwise that is within 3 3/4 inches of the flange;
- (vi) A flange worn to a 7/8 inch thickness or less, gauged at a point 3/8 of an inch above the tread;
- (vii) A tread worn hollow 5/16 of an inch or more;

- (viii) A flange height of 1 1/2 inches or more measured from the tread to the top of the flange;
- (ix) A rim less than 1 inch thick;
- (x) Except as provided in paragraph (e)(8)(iii) of this section, a crack or break in the flange, tread, rim, plate, or hub;
- (xi) A loose wheel; or
- (xii) A weld.

(9) No part or appliance of a passenger coach, except the wheels, is less than 2 1/2 inches above the top of the rail.

(10) Each unguarded, noncurrent-carrying metal part subject to becoming charged is grounded or thoroughly insulated.

(11) Each jumper and cable connection is in the following condition:

- (i) Each jumpers and cable connection between coaches, between locomotives, or between a locomotive and a coach is located and guarded in a manner that provides sufficient vertical clearance. Jumpers and cable connections may not hang with one end free;
- (ii) The insulation is not broken or badly chafed;
- (iii) No plug, receptacle, or terminal is broken; and
- (iv) No strand of wire is broken or protruding.

(12) Each door and cover plate guarding high voltage equipment is marked "Danger-High Voltage" or with the word "Danger" and the normal voltage carried by the parts so protected.

(13) Each buffer plate is in place.

(14) Each diaphragm, if any, is in place and properly alined.

(15) Each secondary braking system is in operating mode and does not have any known defective condition which prevents its proper operation. If the dynamic brakes on a locomotive are found not to be in operating mode or are known to have a defective condition which prevents their proper operation at the time that the exterior mechanical inspection is performed or at any other time while the locomotive is in service, the following requirements shall be met in order to continue the locomotive in service:

(i) MU locomotives equipped with dynamic brakes found not to be in operating mode or containing a defective condition which prevents the proper operation of the dynamic brakes shall be handled in accordance with the following requirements:

(A) A tag bearing the words "inoperative dynamic brakes" shall be securely displayed in a conspicuous location in the cab of the locomotive and contain the locomotive number, the date and location where the condition was discovered, and the signature of the individual who discovered the condition;

(B) The locomotive engineer shall be informed in writing that the dynamic brakes on the locomotive are inoperative at the location where the locomotive engineer first takes charge of the train; and

(C) The inoperative or defective dynamic brakes shall be repaired or removed from service by or at the locomotive's next exterior calendar day mechanical inspection.

(ii) Conventional locomotives equipped with dynamic brakes found not to be in operating mode or containing a defective condition which prevents the proper operation of the dynamic brakes shall be handled in accordance with the following:

(A) A tag bearing the words "inoperative dynamic brakes" shall be securely displayed in a conspicuous location in the cab of the locomotive and contain the locomotive number, the date and location where the condition was discovered, and the signature of the person discovering the condition;

(B) The locomotive engineer shall be informed in writing that the dynamic brakes on the locomotive are inoperative at the location where the locomotive engineer first takes charge of the train; and

(C) The inoperative or defective dynamic brakes shall be repaired within 3 calendar days of being found in defective condition or at the locomotive's next periodic inspection pursuant to § 229.23 of this chapter, whichever occurs first.

(16) All roller bearings do not have any of the following conditions:

(i) A sign of having been overheated as evidenced by discoloration or other telltale sign of overheating, such as damage to the seal or distortion of any bearing component;

(ii) A loose or missing cap screw;

(iii) A broken, missing, or improperly applied cap screw lock; or

(iv) A seal that is loose or damaged or permits leakage of lubricant in clearly formed droplets.

(17) Each air compressor, on passenger equipment so equipped, shall be in effective and operative condition. MU passenger equipment found with an inoperative or ineffective air compressor at the time of its exterior calendar day mechanical inspection may remain in passenger service until the equipment's next exterior calendar day mechanical inspection where it must be repaired or removed from passenger service; provided, all of the following requirements are met:

(i) The equipment has an inherent redundancy of air compressors, due to either the make-up of the train consist or the design of the equipment;

(ii) The railroad demonstrates through verifiable data, analysis, or actual testing that the safety and integrity of a train is not compromised in any manner by the inoperative or ineffective air compressor. The data, analysis, or test shall establish the maximum number of air compressors that may be inoperative based on size of the train consist, the type of passenger equipment in the train, and the number of service and emergency brake applications typically expected in the run profile for the involved train;

(iii) The involved train does not exceed the maximum number of inoperative or ineffective air compressors established in accordance with paragraph (e)(17)(ii) of this section;

(iv) A qualified maintenance person determines and verifies that the inoperative or ineffective air compressor does not compromise the safety or integrity of the train and that it is safe to move the equipment in passenger service;

(v) The train crew is informed in writing of the number of units in the train consist with inoperative or ineffective air compressors at the location where the train crew first takes charge of the train;

(vi) A record is maintained of the inoperative or ineffective air compressor pursuant to the requirements contained in Sec. 238.17(c)(4); and

(vii) Prior to operating equipment under the provisions contained in this paragraph, the railroad shall provide in writing to FRA's Associate Administrator for Safety the maximum number of inoperative or ineffective air compressors identified in accordance with paragraph (e)(17)(ii) of this section.

(viii) The data, analysis, or testing developed and conducted under paragraph (e)(17)(ii) of this section shall be made available to FRA upon request. FRA's Associate Administrator for Safety may revoke a railroad's ability to utilize the flexibility provided in this paragraph if the railroad fails to comply with the maximum limits established under paragraph (e)(17)(ii) or if such maximum limits are not supported by credible data or do not provide adequate safety assurances.

(f) *Exception.* A long-distance intercity passenger train that misses a scheduled exterior calendar day mechanical inspection due to a delay en route may continue in service to the location where the inspection was scheduled to be performed. At that point, an exterior calendar day mechanical inspection shall be performed prior to returning the equipment to service. This flexibility applies only to the exterior mechanical safety inspections required by this section, and does not relieve the railroad of the responsibility to perform a calendar day inspection on a unit classified as a "locomotive" under part 229 of this chapter as required by § 229.21 of this chapter.

(g) *Records.* A record shall be maintained of each exterior calendar day mechanical inspection performed.

(1) This record may be maintained in writing or electronically provided FRA has access to the record upon request

(2) The written or electronic record must contain the following information:

(i) The identification number of the unit;

(ii) The place, date, and time of the inspection;

(iii) Any non-complying conditions found; and

(iv) The signature or electronic identification of the inspector.

(3) This record may be part of a single master report covering an entire group of cars and equipment.

(5) This record shall be maintained at the place where the inspection is conducted or at one central location and shall be retained for at least 92 days.

(h) Cars requiring a single car test in accordance with § 238.311 that are being moved in service to a location where the single car test can be performed shall have the single car test completed prior to, or as a part of, the exterior calendar day mechanical inspection.

§ 238.305 -- Interior calendar day mechanical inspection of passenger cars.

- (a) Except as provided in paragraph (d) of this section, each passenger car shall receive an interior mechanical inspection at least once each calendar day that it is placed in service.
- (b) The interior calendar day mechanical inspection shall be performed by a qualified person or a qualified maintenance person.
- (c) As part of the interior calendar day mechanical inspection, the railroad shall verify conformity with the following conditions, and nonconformity with any such condition renders the car defective whenever discovered in service, except as provided in paragraphs (c)(5) through (c)(10), and paragraph (d) of this section:
- (1) All fan openings, exposed gears and pinions, exposed moving parts of mechanisms, pipes carrying hot gases and high-voltage equipment, switches, circuit breakers, contactors, relays, grid resistors, and fuses are installed in non-hazardous locations or equipped with guards to prevent personal injury.
 - (2) Floors of passageways and compartments are free from oil, water, waste, or any obstruction that creates a slipping, tripping, or fire hazard, and floors are properly treated to provide secure footing.
 - (3) All D rings, pull handles, or other means to access manual door releases are in place based on a visual inspection.
 - (4) All emergency equipment, including a fire extinguisher, pry bar, auxiliary portable lighting, and first aid kits, as applicable, are in place.
 - (5) The words "Emergency Brake Valve" are legibly stenciled or marked near each brake pipe valve or shown on an adjacent badge plate.
 - (6) All doors and cover plates guarding high voltage equipment are marked "Danger-High Voltage" or with the word "Danger" and the normal voltage carried by the parts so protected.
 - (7) All safety-related signage is in place and legible.
 - (8) All trap doors safely operate and securely latch in place in both the up and down position. A non-complying car may continue in passenger service pursuant to paragraph (d) of this section, if the trap door can be secured by locking out the door for which it is used.
 - (9) All vestibule steps are illuminated. A non-complying car may continue in passenger service pursuant to paragraph (d) of this section, if the car will be used solely in high-platform service.
 - (10) All end doors and side doors operate safely and as intended. A non-complying car may continue in passenger service pursuant to paragraph (d) of this section, if at least one operative and accessible door is available on each side of the car; and a notice is prominently displayed directly on the defective door indicating that the door is defective.
- (d) Any passenger car found not to be in compliance with the requirements contained in paragraphs (c)(5) through (c)(10) of this section at the time of its interior calendar day mechanical inspection may remain in passenger service until the car's next interior calendar day mechanical inspection where it must be repaired or removed from passenger service; provided, all of the specific conditions contained in paragraphs (c)(8) through (c)(10) of this section are met and all of the following requirements are met:

(1) A qualified person or a qualified maintenance person determines that the repairs necessary to bring the car into compliance cannot be performed at the time that the current day's interior mechanical inspection is conducted;

(2) A qualified person or a qualified maintenance person determines that it is safe to move the equipment in passenger service; and

(3) A record is maintained of the non-complying condition with the date and time that the condition was first discovered.

(e) A long-distance intercity passenger train that misses a scheduled calendar day interior mechanical inspection due to a delay en route may continue in service to the location where the inspection was scheduled to be performed. At that point, an interior calendar day mechanical inspection shall be performed prior to returning the equipment to service.

(f) *Records.* A record shall be maintained of each interior calendar day mechanical inspection performed.

(1) This record may be maintained in writing or electronically provided FRA has access to the record upon request.

(2) The written or electronic record must contain the following information:

(i) The identification number of the unit;

(ii) The place, date, and time of the inspection;

(iii) Any non-complying conditions found; and

(iv) The signature or electronic identification of the inspector.

(3) This record may be part of a single master report covering an entire group of cars and equipment.

(4) This record shall be maintained at the place where the inspection is conducted or at one central location and shall be retained for at least 92 days.

§ 238.307 -- Periodic mechanical inspection of passenger cars and unpowered vehicles used in passenger trains.

(a) *General.*

(1) Railroads shall conduct periodic mechanical inspections of all passenger cars and all unpowered vehicles used in a passenger train as required by this section or as warranted and justified by data developed pursuant to paragraph (a)(2) of this section. A periodic inspection conducted under part 229 of this chapter satisfies the requirement of this section with respect to the features inspected.

(2) A railroad may, upon written notification to FRA's Associate Administrator for Safety, adopt and comply with alternative periodic mechanical inspection intervals for specific components or equipment in lieu of the requirements of this section. Any alternative interval must be based upon a documented reliability assessment conducted under a system safety plan subject to periodic peer audit. (*See*, Appendix E to this part for a discussion of the general principles of reliability-based maintenance programs.) The periodic inspection intervals provided in this section may be changed only when justified by accumulated, verifiable data that provides a high level of confidence that the component(s) will not fail in a manner resulting in harm to persons. FRA may monitor and review a railroad's implementation and compliance with any alternative interval adopted. FRA's Associate Administrator for Safety may prohibit or revoke a railroad's

ability to utilize an alternative inspection interval if FRA determines that the adopted interval is not supported by credible data or does not provide adequate safety assurances. Such a determination will be made in writing and will state the basis for such action.

(b) Each periodic mechanical inspection required by this section shall be performed by a qualified maintenance person.

(c) The periodic mechanical inspection shall specifically include the following interior and exterior mechanical components, which shall be inspected not less frequently than every 184 days. At a minimum, this inspection shall determine that:

(1) Seats and seat attachments are not broken or loose. If a car is found with a seat that is not in compliance with this requirement while being used between periodic mechanical inspections, the equipment may continue to be used in passenger service until the performance of an interior calendar day mechanical inspection pursuant to § 238.305 on the day following the discovery of the defective condition provided the seat is rendered unusable, a notice is prominently displayed on the seat, and a record is maintained with the date and time that the non-complying condition was discovered.

(2) Luggage racks are not broken or loose.

(3) All beds and bunks are not broken or loose, and all restraints or safety latches and straps are in place and function as intended.

(4) A representative sample of emergency window exits on the railroad's passenger cars properly operate, in accordance with the requirements of § 239.107 of this chapter.

(5) Emergency lighting systems are operational.

(6) With regard to switches:

(i) All hand-operated switches carrying currents with a potential of more than 150 volts that may be operated while under load are covered and are operative from the outside of the cover;

(ii) A means is provided to display whether the switches are open or closed; and

(iii) Switches not designed to be operated safely while under load are legibly marked with the voltage carried and the words "must not be operated under load".

(7) Each coupler is in the following condition:

(i) The distance between the guard arm and the knuckle nose is not more than 5 1/8 inches on standard type couplers (MCB contour 1904), or not more than 5 5/16 inches on D&E couplers;

(ii) The free slack in the coupler or drawbar not absorbed by friction devices or draft gears is not more than 1/2 inch; and

(iii) The draft gear is not broken, to the extent possible without dropping cover plates.

(8) All trucks are equipped with a device or securing arrangement to prevent the truck and car body from separating in case of derailment.

(9) All center castings on trucks are not cracked or broken, to the extent possible without jacking the car and rolling out the trucks. However, an extensive inspection of all center castings shall be conducted by jacking the equipment and rolling out the trucks at each COT&S cycle provided in § 238.309 for the equipment.

(10) All mechanical systems and components of the equipment are free of all the following general conditions that endanger the safety of the crew, passengers, or equipment:

- (i) A continuous accumulation of oil or grease;
- (ii) Improper functioning of a component;
- (iii) A crack, break, excessive wear, structural defect, or weakness of a component;
- (iv) A leak;
- (v) Use of a component or system under a condition that exceeds that for which the component or system is designed to operate; and
- (vi) Insecure attachment of a component.

(11) All of the items identified in the exterior calendar day mechanical inspection contained at § 238.303 are in conformity with the conditions prescribed in that section.

(12) All of the items identified in the interior calendar day mechanical inspection contained at § 238.305 are in conformity with the conditions prescribed in that section.

(13) The hand or parking brake shall be applied and released to determine that it functions as intended.

(d) At intervals not to exceed 368 days, the periodic mechanical inspection shall specifically include the following:

(1) Inspection of the manual door releases to determine that all manual door releases operate as intended; and

(2) Inspection of the hand or parking brake as well as its parts and connections to determine that they are in proper condition and operate as intended. The date of the last inspection shall be either entered on Form FRA F 6180-49A, suitably stenciled or tagged on the equipment, or maintained electronically provided FRA has access to the record upon request.

(e) *Records.*

(1) A record shall be maintained of each periodic mechanical inspection required to be performed by this section. This record may be maintained in writing or electronically, provided FRA has access to the record upon request. The record shall be maintained either in the railroad's files, the cab of the locomotive, or a designated location in the passenger car. The record shall be retained until the next periodic mechanical inspection of the same type is performed and shall contain the following information:

- (i) The date of the inspection;
- (ii) The location where the inspection was performed;
- (iii) The signature or electronic identification of the inspector; and
- (iv) The signature or electronic identification of the inspector's supervisor.

(2) Detailed documentation of any reliability assessments depended upon for implementing an alternative inspection interval under paragraph (a)(2) of this section, including underlying data, shall be retained during the period that the alternative inspection interval is in effect. Data documenting inspections, tests, component replacement and renewals, and failures shall be retained for not less than three (3) inspection intervals.

(f) Nonconformity with any of the conditions set forth in this section renders the car or vehicle defective whenever discovered in service.

§ 238.309 -- Periodic brake equipment maintenance.

(a) *General.*

(1) This section contains the minimum intervals at which the brake equipment on various types of passenger equipment shall be periodically cleaned, repaired, and tested. This maintenance procedure requires that all of the equipment's brake system pneumatic components that contain moving parts and are sealed against air leaks be removed from the equipment, disassembled, cleaned, and lubricated and that the parts that can deteriorate with age be replaced.

(2) A railroad may petition FRA's Associate Administrator for Safety to approve alternative maintenance procedures providing equivalent safety, in lieu of the requirements of this section. The petition shall be filed as provided in § 238.21.

(b) *MU locomotives.* The brake equipment of each MU locomotive shall be cleaned, repaired, and tested at intervals in accordance with the following schedule:

(1) Every 736 days if the MU locomotive is part of a fleet that is not 100 percent equipped with air dryers;

(2) Every 1,104 days if the MU locomotive is part of a fleet that is 100 percent equipped with air dryers and is equipped with PS-68, 26-C, 26-L, PS-90, CS-1, RT-2, RT-5A, GRB-1, CS-2, or 26-R brake systems. (This listing of brake system types is intended to subsume all brake systems using 26 type, ABD, or ABDW control valves and PS68, PS-90, 26B-1, 26C, 26CE, 26-B1, 30CDW, or 30ECDW engineer's brake valves.); and

(3) Every 736 days for all other MU locomotives.

(c) *Conventional locomotives.* The brake equipment of each conventional locomotive shall be cleaned, repaired, and tested at intervals in accordance with the following schedule:

(1) Every 1,104 days for a locomotive equipped with a 26-L or equivalent brake system; and

(2) Every 736 days for a locomotive equipped with other than a 26-L or equivalent brake system.

(d) *Passenger coaches and other unpowered vehicles.* The brake equipment on each passenger coach and each unpowered vehicle used in a passenger train shall be cleaned, repaired, and tested at intervals in accordance with following schedule:

(1) Every 2,208 days for a coach or vehicle equipped with an AB-type brake system.

(2) Every 1,476 days for a coach or vehicle equipped with a 26-C or equivalent brake system; and

(3) Every 1,104 days for a coach or vehicle equipped with other than an AB, ABD, ABDX, 26-C, or equivalent brake system.

(e) *Cab cars.* The brake equipment of each cab car shall be cleaned, repaired, and tested at intervals in accordance with the following schedule:

(1) Every 1,476 days for that portion of the cab car brake system using brake valves that are identical to the passenger coach 26-C brake system;

(2) Every 1,104 days for that portion of the cab car brake system using brake valves that are identical to the locomotive 26-L brake system; and

(3) Every 736 days for all other types of cab car brake valves.

(f) ***Records of periodic maintenance.***

(1) The date and place of the cleaning, repairing, and testing required by this section shall be recorded on Form FRA 6180-49A or a similar form developed by the railroad containing the same information, and the person performing the work and that person's supervisor shall sign the form, if possible. Alternatively, the railroad may stencil the vehicle with the date and place of the cleaning, repairing, and testing and maintain an electronic record of the person performing the work and that person's supervisor.

(2) A record of the parts of the air brake system that are cleaned, repaired, and tested shall be kept in the railroad's files, the cab of the locomotive, or a designated location in the passenger car until the next such periodic test is performed.

§ 238.311 -- Single car test.

(a) Except for self-propelled passenger cars, single car tests of all passenger cars and all unpowered vehicles used in passenger trains shall be performed in accordance with either APTA Standard SS-M-005-98, "Code of Tests for Passenger Car Equipment Using Single Car Testing Device," published March, 1998; or an alternative procedure approved by FRA pursuant to § 238.21. The incorporation by reference of this APTA standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated document from the American Public Transit Association, 1201 New York Avenue, N.W., Washington, D.C. 20005. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Ave., S.E., Washington, D.C. or at the Office of the Federal Register, 800 North Capitol Street, N.W., Suite 700, Washington, D.C.

(b) Each single car test required by this section shall be performed by a qualified maintenance person.

(c) A railroad shall perform a single car test of the brake system of a car or vehicle described in paragraph (a) of this section if the car or vehicle is found with one or more of the following wheel defects:

- (1) Built-up tread;
- (2) Slid flat wheel;
- (3) Thermal crack;
- (4) Overheated wheel; or
- (5) Shelling.

(d) A railroad need not perform the single car test required in paragraph (c) of this section, if the railroad can establish that the wheel defect is other than built-up tread and is due to a cause other than a defective brake system on the car.

(e) Except as provided in paragraph (f) of this section, a railroad shall perform a single car test of the brake system of a car or vehicle described in paragraph (a) of this section when:

(1) Except for private cars, the car or vehicle is placed in service after having been out of service for 30 days or more; or

(2) One or more of the following conventional air brake equipment items is removed, repaired, or replaced:

- (i) Relay valve;
- (ii) Service portion;
- (iii) Emergency portion; or
- (iv) Pipe bracket.

(f) *Exception.* If the single car test cannot be made at the point where repairs are made, the car may be moved in passenger service to the next forward location where the test can be made. A railroad may move a car in this fashion only after visually verifying an application and release of the brakes on both sides of the car that was repaired, and provided that the car is appropriately tagged to indicate the need to perform a single car test. The single car test shall be completed prior to, or as a part of, the car's next calendar day mechanical inspection.

(g) If one or more of the following conventional air brake equipment items is removed, repaired, or replaced only that portion which is renewed or replaced must be tested to satisfy the provisions of this section:

- (1) Brake reservoir;
- (2) Brake cylinder;
- (3) Piston assembly;
- (4) Vent valve;
- (5) Quick service valve;
- (6) Brake cylinder release valve;
- (7) Modulating valve or slack adjuster; or
- (8) Angle cock or cutout cock.

§ 238.313 -- Class I brake test.

(a) Each commuter and short-distance intercity passenger train shall receive a Class I brake test once each calendar day that the train is placed or continues in passenger service.

(b) Except as provided in paragraph (i) of this section, each long-distance intercity passenger train shall receive a Class I brake test:

- (1) Prior to the train's departure from an originating terminal; and
- (2) Every 1,500 miles or once each additional calendar day, whichever occurs first, that the train remains in continuous passenger service.

(c) Each passenger car and each unpowered vehicle added to a passenger train shall receive a Class I or Class IA brake test at the time it is added to the train unless notice is provided to the train crew that a Class I brake test was performed on the car within the previous calendar day and the car has not been disconnected from a source of compressed air for more than four hours prior to being added to the train. The notice required by this section shall contain the date, time, and location of the last Class I brake test.

- (d) Each Class I brake test shall be performed by a qualified maintenance person.
- (e) Each Class I brake test may be performed either separately or in conjunction with the exterior calendar day mechanical inspection required under § 238.303.
- (f) Except as provided in § 238.15(b), a railroad shall not use or haul a passenger train in passenger service from a location where a Class I brake test has been performed, or was required by this part to have been performed, with less than 100 percent operative brakes.
- (g) A Class I brake test shall be performed at the air pressure at which the train's air brakes will be operated, but not less than 90 psi, and shall be made to determine and ensure that:
- (1) The friction brakes apply and remain applied on each car in the train until a release of the brakes has been initiated on each car in response to train line electric, pneumatic, or other signals. This test shall include a verification that each side of each car's brake system responds properly to application and release signals;
 - (2) The brake shoes or pads are firmly seated against the wheel or disc with the brakes applied;
 - (3) Piston travel is within prescribed limits, either by direct observation, observation of a piston travel indicator, or in the case of tread or disc brakes by determining that the brake shoe or pad provides pressure to the wheel. For vehicles equipped with 8 1/2-inch or 10-inch diameter brake cylinders, piston travel shall be within 7 to 9 inches. If piston travel is found to be less than 7 inches or more than 9 inches, it must be adjusted to nominally 7 1/2 inches. Proper release of the brakes can be determined by observation of the clearance between the brake shoe and the wheel or between the brake pad and the brake disc.
 - (4) The communicating signal system is tested and known to be operating as intended; a tested and operating two-way radio system meets;
 - (5) Each brake shoe or pad is securely fastened and correctly aligned in relation to the wheel or to the disc;
 - (6) The engineer's brake valve or controller will cause the proper train line commands for each position or brake level setting;
 - (7) Brake pipe leakage does not exceed 5 pounds per square inch per minute if leakage will affect service performance;
 - (8) The emergency brake application and deadman pedal or other emergency control devices function as intended;
 - (9) Each brake shoe or pad is not below the minimum thickness established by the railroad. This thickness shall not be less than the minimum thickness necessary to safely travel the maximum distance allowed between Class I brake tests;
 - (10) Each angle cock and cutout cock is properly positioned;
 - (11) The brake rigging or the system mounted on the car for the transmission of the braking force operates as intended and does not bind or foul so as to impede the force delivered to a brake shoe, impede the release of a brake shoe, or otherwise adversely affect the operation of the brake system;

(12) If the train is equipped with electro-pneumatic brakes, an electro-pneumatic application of the brakes is made and the train is walked to determine that the brakes on each car in the train properly apply;

(13) Each brake disc is free of any crack in accordance with the manufacturer's specifications or, if no specifications exist, free of any crack to the extent that the design permits;

(14) If the equipment is provided with a brake indicator, the brake indicator operates as intended; and

(15) The communication of brake pipe pressure changes at the rear of the train is verified, which may be accomplished by observation of an application and release of the brakes on the last car in the train.

(h) *Records.* A record shall be maintained of each Class I brake test performed.

(1) This record may be maintained in writing or electronically, provided FRA has access to the record upon request.

(2) The written or electronic record must contain the following information:

(i) The date and time that the Class I brake test was performed;

(ii) The location where the test was performed;

(iii) The identification number of the controlling locomotive of the train;

(iv) The total number of cars inspected during the test; and

(v) The signature or electronic identification of the inspector.

(3) This record shall be maintained at the place where the inspection is conducted or at one central location and shall be retained for at least 92 days.

(i) A long-distance, intercity passenger train that misses a scheduled calendar day Class I brake test due to a delay en route may proceed to the point where the Class I brake test was scheduled to be performed. A Class I brake test shall be completed at that point prior to placing the train back in service.

(j) In addition to complying with all the Class I brake test requirements performed by a qualified maintenance person as contained in paragraphs (a) through (i) of this section, railroads operating passenger equipment that is not designed to permit the visual observation of the brake actuation and release without the inspector going on, under, or between the equipment in accordance with Sec. 238.231(b) shall perform an additional inspection. At a minimum, the additional inspection requirement for such equipment shall include all of the following:

(1) An additional inspection by a qualified maintenance person of all items and components contained in paragraphs (g)(1) through (g)(15) of this section;

(2) The additional inspection shall be conducted at an interval not to exceed five (5) in-service days and shall be conducted while the equipment is over an inspection pit or on a raised inspection track; and

(3) A record of the additional inspection shall be maintained pursuant to the requirements contained in paragraph (h) of this section. This record can be combined with the Class I brake test record.

§ 238.315 -- Class IA brake test.

(a) Except as provided in paragraph (b) of this section, either a Class I or a Class IA brake test shall be performed:

(1) Prior to the first morning departure of each commuter or short-distance intercity passenger train, unless all of the following conditions are satisfied:

(i) A Class I brake test was performed within the previous twelve (12) hours;

(ii) The train has not been used in passenger service since the performance of the Class I brake test; and

(iii) The train has not been disconnected from a source of compressed air for more than four hours since the performance of the Class I brake test; and

(2) Prior to placing a train in service that has been off a source of compressed air for more than four hours.

(b) A commuter or short-distance intercity passenger train that provides continuing late night service that began prior to midnight may complete its daily operating cycle after midnight without performing another Class I or Class IA brake test. A Class I or Class IA brake test shall be performed on such a train before it starts a new daily operating cycle.

(c) A Class IA brake test may be performed at a shop or yard site and need not be repeated at the first passenger terminal if the train remains on a source of compressed air and (1) the train remains in the custody of the train crew; or (2) the train crew receives notice that the Class IA brake test has been performed.

(d) The Class IA brake test shall be performed by either a qualified person or a qualified maintenance person.

(e) Except as provided in § 238.15(b), a railroad shall not use or haul a passenger train in passenger service from a location where a Class IA brake test has been performed, or was required by this part to have been performed, with less than 100 percent operative brakes.

(f) A Class IA brake test shall be performed at the air pressure at which the train's air brakes will be operated and shall determine and ensure that:

(1) Brake pipe leakage does not exceed 5 pounds per square inch per minute if brake pipe leakage will affect service performance;

(2) Each brake sets and releases by inspecting in the manner described in paragraph (g) of this section;

(3) For MU locomotives that utilize an electric signal to communicate a service brake application and only a pneumatic signal to propagate an emergency brake application, the emergency brake application functions as intended.

(4) Each angle cock and cutout cock is properly set;

(5) The communication of brake pipe pressure changes at the rear of the train is verified, which may be accomplished by observation of an application and release of the brakes on the last car in the train; and

(6) The communicating signal system is tested and known to be operating as intended; a tested and operating two-way radio system meets this requirement.

(g) In determining whether each brake sets and releases-

(1) The inspection of the set and release of the brakes shall be completed by walking the train to directly observe the set and release of each brake, if the railroad determines that such a procedure is safe.

(2) If the railroad determines that operating conditions pose a safety hazard to an inspector walking the brakes, brake indicators may be used to verify the set and release on cars so equipped. However, the observation of the brake indicators shall not be made from the cab of the locomotive. The inspector shall walk the train in order to position himself or herself to accurately observe each indicator.

§ 238.317 -- Class II brake test.

(a) A Class II brake test shall be performed on a passenger train when any of the following events occurs:

(1) Whenever the control stand used to control the train is changed; except if the control stand is changed to facilitate the movement of a passenger train from one track to another within a terminal complex while not in passenger service. In these circumstances, a Class II brake test shall be performed prior to the train's departure from the terminal complex with passengers;

(2) Prior to the first morning departure of each commuter or short-distance intercity passenger train where a Class I brake test remains valid as provided in § 238.315(a)(1);

(3) When previously tested units (i.e., cars that received a Class I brake test within the previous calendar day and have not been disconnected from a source of compressed air for more than four hours) are added to the train;

(4) When cars or equipment are removed from the train; and

(5) When an operator first takes charge of the train, except for face-to-face relief.

(b) A Class II brake test shall be performed by a qualified person or a qualified maintenance person.

(c) Except as provided in § 238.15, a railroad shall not use or haul a passenger train in passenger service from a terminal or yard where a Class II brake test has been performed, or was required by this part to have been performed, with any of the brakes cut-out, inoperative, or defective.

(d) In performing a Class II brake test on a train, a railroad shall determine that:

(1) The brakes on the rear unit of the train apply and release in response to a signal from the engineer's brake valve or controller of the leading or controlling unit, or a gauge or similar device located at the rear of the train or in the cab of the rear unit indicates that brake pipe pressure changes are properly communicated at the rear of the train;

(2) For MU locomotives that utilize an electric signal to communicate a service brake application and only a pneumatic signal to propagate an emergency brake application, the emergency brake application functions as intended.

(3) The communicating signal system is tested and known to be operating as intended; a tested and operating two-way radio system meets this requirement.

§ 238.319 -- Running brake test.

- (a) As soon as conditions safely permit, a running brake test shall be performed on each passenger train after the train has received, or was required under this part to have received, either a Class I, Class IA, or Class II brake test.
- (b) A running brake test shall be performed whenever the control stand used to control the train is changed to facilitate the movement of a passenger train from one track to another within a terminal complex while not in passenger service.
- (c) The running brake test shall be conducted in accordance with the railroad's established operating rules, and shall be made by applying brakes in a manner that allows the engineer to ascertain whether the brakes are operating properly.
- (d) If the engineer determines that the brakes are not operating properly, the engineer shall stop the train and follow the procedures provided in § 238.15.

Sec. 238.321 Out-of-service credit.

When a passenger car is out of service for 30 or more consecutive days or is out of service when it is due for any test or inspection required by § 238.307 or § 238.309 an out of use notation showing the number of out of service days shall be made in the records required under §238.307(e) and § 238.309(f). If the passenger car is out of service for one or more periods of at least 30 consecutive days, the interval prescribed for any test or inspection required by §§ 238.307 and 238.309 may be extended by the number of days in each period the passenger car is out of service since the last test or inspection in question. A movement made in accordance with § 229.9 of this chapter or § 238.17 is not considered service for the purposes of determining the out-of-service credit.

Subpart E--Specific Requirements for Tier II Passenger Equipment

§ 238.401 -- Scope.

This subpart contains specific requirements for railroad passenger equipment operating at speeds exceeding 125 mph but not exceeding 150 mph. As stated in §238.433(b), all such passenger equipment remains subject to the requirements concerning couplers and uncoupling devices contained in Federal statute at 49 U.S.C. chapter 203 and in FRA regulations at part 231 and § 232.2 of this chapter.

§ 238.403 -- Crash energy management.

- (a) Each power car and trailer car shall be designed with a crash energy management system to dissipate kinetic energy during a collision. The crash energy management system shall provide a controlled deformation and collapse of designated sections within the unoccupied volumes to absorb collision energy and to reduce the decelerations on passengers and crewmembers resulting from dynamic forces transmitted to occupied volumes.

(b) The design of each unit shall consist of an occupied volume located between two normally unoccupied volumes. Where practical, sections within the unoccupied volumes shall be designed to be structurally weaker than the occupied volume. During a collision, the designated sections within the unoccupied volumes shall start to deform and eventually collapse in a controlled fashion to dissipate energy before any structural damage occurs to the occupied volume.

(c) At a minimum, each Tier II passenger train shall be designed to meet the following requirements:

(1) Thirteen megajoules (MJ) shall be absorbed at each end of the train through the controlled crushing of unoccupied volumes, and of this amount a minimum of 5 MJ shall be absorbed ahead of the operator's cab in each power car;

(2) A minimum of an additional 3 MJ shall be absorbed by the power car structure between the operator's cab and the first trailer car; and

(3) The end of the first trailer car adjacent to each power car shall absorb a minimum of 5 MJ through controlled crushing.

(d) For a 30-mph collision of a Tier II passenger train on tangent, level track with an identical stationary train:

(1) When seated anywhere in a trailer car, the velocity at which a 50th-percentile adult male contacts the seat back ahead of him shall not exceed 25 mph; and

(2) The deceleration of the occupied volumes of each trailer car shall not exceed 8g. For the purpose of demonstrating compliance with this paragraph, deceleration measurements may be processed through a low-pass filter having a bandwidth of 50 Hz.

(e) Compliance with paragraphs (a) through (d) of this section shall be demonstrated by analysis using a dynamic collision computer model. For the purpose of demonstrating compliance, the following assumptions shall be made:

(1) The train remains upright, in line, and with all wheels on the track throughout the collision; and

(2) Resistance to structural crushing follows the force-versus-displacement relationship determined during the structural analysis required as part of the design of the train.

(f) Passenger seating shall not be permitted in the leading unit of a Tier II passenger train.

§ 238.405 -- Longitudinal static compressive strength.

(a) To form an effective crash refuge for crewmembers occupying the cab of a power car, the underframe of the cab of a power car shall resist a minimum longitudinal static compressive force of 2,100,000 pounds without permanent deformation to the cab, unless equivalent protection to crewmembers is provided under an alternate design approach, validated through analysis and testing, and approved by FRA under the provisions of §238.21.

(b) The underframe of the occupied volume of each trailer car shall resist a minimum longitudinal static compressive force of 800,000 pounds without permanent deformation to the car. To demonstrate compliance with this requirement, the 800,000-pound load shall be applied to

the underframe of the occupied volume as it would be transmitted to the underframe by the full structure of the vehicle.

(c) Unoccupied volumes of a power car or a trailer car designed to crush as part of the crash energy management design are not subject to the requirements of this section.

§ 238.407 -- Anti-climbing mechanism.

(a) Each power car shall have an anti-climbing mechanism at its forward end capable of resisting an ultimate upward or downward static vertical force of 200,000 pounds. A power car constructed with a crash energy management design is permitted to crush in a controlled manner before the anti-climbing mechanism fully engages.

(b) Interior train coupling points between units, including between units of articulated cars or other permanently joined units of cars, shall have an anti-climbing mechanism capable of resisting an upward or downward vertical force of 100,000 pounds without yielding.

(c) The forward coupler of a power car shall be attached to the car body to resist a vertical downward force of 100,000 pounds for any horizontal position of the coupler without yielding.

§ 238.409 -- Forward end structures of power car cabs.

This section contains requirements for the forward end structure of the cab of a power car. (A conceptual implementation of this end structure is provided in Figure 1 to this subpart.)

(a) **Center collision post.** The forward end structure shall have a full-height center collision post, or its structural equivalent, capable of withstanding the following:

(1) A shear load of 500,000 pounds at its joint with the underframe without exceeding the ultimate strength of the joint;

(2) A shear load of 150,000 pounds at its joint with the roof without exceeding the ultimate strength of the joint; and

(3) A horizontal, longitudinal force of 300,000 pounds, applied at a point on level with the bottom of the windshield, without exceeding its ultimate strength.

(b) **Side collision posts.** The forward end structure shall have two side collision posts, or their structural equivalent, located at approximately the one-third points laterally, each capable of withstanding the following:

(1) A shear load of 500,000 pounds at its joint with the underframe without exceeding the ultimate strength of the joint; and

(2) A horizontal, longitudinal force of 300,000 pounds, applied at a point on level with the bottom of the windshield, without exceeding its ultimate strength.

(c) **Corner posts.** The forward end structure shall have two full-height corner posts, or their structural equivalent, each capable of withstanding the following:

(1) A horizontal, longitudinal or lateral shear load of 300,000 pounds at its joint with the underframe, without exceeding the ultimate strength of the joint;

(2) A horizontal, lateral force of 100,000 pounds applied at a point 30 inches up from the underframe attachment, without exceeding the yield or the critical buckling stress; and

(3) A horizontal, longitudinal or lateral shear load of 80,000 pounds at its joint with the roof, without exceeding the ultimate strength of the joint.

(d) **Skin.** The skin covering the forward-facing end of each power car shall be:

(1) Equivalent to a 1/2-inch steel plate with a 25,000 pounds-per-square-inch yield strength-material of a higher yield strength may be used to decrease the required thickness of the material provided at least an equivalent level of strength is maintained;

(2) Securely attached to the end structure; and

(3) Sealed to prevent the entry of fluids into the occupied cab area of the equipment. As used in paragraph (d), the term "skin" does not include forward-facing windows and doors.

§ 238.411 -- Rear end structures of power car cabs.

The rear end structure of the cab of a power car shall be designed to include the following elements, or their structural equivalent. (A conceptual implementation of this end structure is provided in Figure 2 to this subpart.)

(a) **Corner posts.** The rear end structure shall have two full-height corner posts, or their structural equivalent, each capable of withstanding the following:

(1) A horizontal, longitudinal or lateral shear load of 300,000 pounds at its joint with the underframe without exceeding the ultimate strength of the joint; and

(2) A horizontal, longitudinal or lateral shear load of 80,000 pounds at its joint with the roof without exceeding the ultimate strength of the joint.

(b) **Collision posts.** The rear end structure shall have two full-height collision posts, or their structural equivalent, each capable of withstanding the following:

(1) A horizontal, longitudinal shear load of 500,000 pounds at its joint with the underframe without exceeding the ultimate strength of the joint; and

(2) A horizontal, longitudinal shear load of 75,000 pounds at its joint with the roof without exceeding the ultimate strength of the joint.

§ 238.413 -- End structures of trailer cars.

(a) Except as provided in paragraph (b) of this section, the end structure of a trailer car shall be designed to include the following elements, or their structural equivalent. (A conceptual implementation of this end structure is provided in Figure 3 to this subpart.)

(1) **Corner posts.** Two full-height corner posts, each capable of withstanding the following:

(i) A horizontal, longitudinal shear load of 150,000 pounds at its joint with the underframe without exceeding the ultimate strength of the joint;

(ii) A horizontal, longitudinal or lateral force of 30,000 pounds applied at a point 18 inches up from the underframe attachment without exceeding the yield or the critical buckling stress; and

(iii) A horizontal, longitudinal or lateral shear load of 20,000 pounds at its joint with the roof without exceeding the ultimate strength of the joint.

(2) **Collision posts.** Two full-height collision posts each capable of withstanding the following:

(i) A horizontal, longitudinal shear load of 300,000 pounds at its joint with the underframe without exceeding the ultimate strength of the joint; and

(ii) A horizontal, longitudinal shear load of 60,000 pounds at its joint with the roof without exceeding the ultimate strength of the joint.

(b) If the trailer car is designed with an end vestibule, the end structure inboard of the vestibule shall have two full-height corner posts, or their structural equivalent, each capable of withstanding the following (A conceptual implementation of this end structure is provided in Figure 4 to this subpart):

(1) A horizontal, longitudinal shear load of 200,000 pounds at its joint with the underframe without exceeding the ultimate strength of the joint;

(2) A horizontal, lateral force of 30,000 pounds applied at a point 18 inches up from the underframe attachment without exceeding the yield or the critical buckling stress;

(3) A horizontal, longitudinal force of 50,000 pounds applied at a point 18 inches up from the underframe attachment without exceeding the yield or the critical buckling stress; and

(4) A horizontal, longitudinal or lateral shear load of 20,000 pounds at its joint with the roof without exceeding the ultimate strength of the joint.

§ 238.415 -- Rollover strength.

(a) Each passenger car and power car shall be designed to rest on its side and be uniformly supported at the top ("roof rail") and the bottom chords ("side sill") of the side frame. The allowable stress in the structural members of the occupied volumes for this condition shall be one-half yield or one-half the critical buckling stress, whichever is less. Minor localized deformations to the outer side skin of the passenger car or power car is allowed provided such deformations in no way intrude upon the occupied volume of each car.

(b) Each passenger car and power car shall also be designed to rest on its roof so that any damage in occupied areas is limited to roof sheathing and framing. The allowable stress in the structural members of the occupied volumes for this condition shall be one-half yield or one-half the critical buckling stress, whichever is less. Deformation to the roof sheathing and framing is allowed to the extent necessary to permit the vehicle to be supported directly on the top chords of the side frames and end frames.

§ 238.417 -- Side loads.

(a) Each passenger car body structure shall be designed to resist an inward transverse load of 80,000 pounds of force applied to the side sill and 10,000 pounds of force applied to the belt rail (horizontal members at the bottom of the window opening in the side frame).

(b) These loads shall be considered to be applied separately over the full vertical dimension of the specified member for any distance of 8 feet in the direction of the length of the car.

(c) The allowable stress shall be the lesser of the yield stress, except as otherwise allowed by this paragraph, or the critical buckling stress. In calculating the stress to show compliance with this requirement, local yielding of the side skin adjacent to the side sill and belt rail, and local yielding of the side sill bend radii at the cross-bearer and floor-beam connections is allowed. For purposes of this paragraph, local yielding is allowed provided the resulting deformations in no way intrude upon the occupied volume of the car.

(d) The connections of the side frame to the roof and underframe shall support the loads specified in this section.

§ 238.419 -- Truck-to-car-body and truck component attachment.

(a) The ultimate strength of the truck-to-car-body attachment for each unit in a train shall be sufficient to resist without failure the following individually applied loads: a vertical force equivalent to 2g acting on the mass of the truck; and a force of 250,000 pounds acting in any horizontal direction on the truck, along with the resulting vertical reaction to this load.

(b) Each component of a truck (which include axles, wheels, bearings, the truck-mounted brake system, suspension system components, and any other components attached to the truck by design) shall remain attached to the truck when a force equivalent to 2g acting on the mass of the component is exerted in any direction on that component.

§ 238.421 -- Glazing.

(a) **General.** Except as provided in paragraphs (b) and (c) of this section, each exterior window on a passenger car and a power car cab shall comply with the requirements contained in part 223 of this chapter.

(b) **Particular end-facing exterior glazing requirements.** Each end-facing exterior window in a passenger car and a power car cab shall also, in the orientation in which it is installed in the car:

- (1) Resist the impact of a 12-pound solid steel sphere traveling at
 - (i) the maximum speed at which the car will operate at
 - (ii) an impact angle no less severe than horizontal to the car, with no penetration or spall. An impact angle that is perpendicular (90 degrees) to the window's surface shall be considered the most severe impact angle for purposes of this requirement; and
- (2) Demonstrate anti-spalling performance by the use of a 0.001 inch thick aluminum witness plate, placed 12 inches from the window's surface during all impact tests. The witness plate shall contain no marks from spalled glazing particles after any impact test; and
- (3) Be permanently marked, prior to installation, in such a manner that the marking is clearly visible after the material has been installed. The marking shall include:
 - (i) The words "FRA TYPE IHP" to indicate that the material has successfully passed the testing requirements specified in this paragraph;
 - (ii) The name of the manufacturer; and
 - (iii) The type or brand identification of the material.

(c) **Passenger equipment ordered prior to May 12, 1999.** Each exterior window in passenger equipment ordered prior to May 12, 1999, may comply with the following glazing requirements in lieu of the requirements specified in paragraphs (a) and (b) of this section:

(1) Each end-facing exterior window shall, in the orientation in which it is installed in the vehicle, resist the impact of a 12-pound solid steel sphere traveling (i) at the maximum speed at which the vehicle will operate (ii) at an impact angle no less severe than horizontal to the vehicle, with no penetration or spall. An impact angle that is perpendicular to the window's surface shall be considered the most severe impact angle for purposes of this requirement.

(2) Each side-facing exterior window shall resist the impact of a:

(i) 12-pound solid steel sphere at 15 mph, at an angle of 90 degrees to the window's surface, with no penetration or spall; and

(ii) A granite ballast stone weighing a minimum of 0.5 pounds, traveling at 75 mph and impacting at a 90-degree angle to the window's surface, with no penetration or spall.

(3) All exterior windows shall:

(i) Resist a single impact of a 9-mm, 147-grain bullet traveling at an impact velocity of 900 feet per second, with no bullet penetration or spall; and

(ii) Demonstrate anti-spalling performance by the use of a 0.002 inch thick aluminum witness plate, placed 12 inches from the window's surface during all impact tests. The witness plate shall contain no marks from spalled glazing particles after any impact test.

(iii) Be permanently marked, prior to installation, in such a manner that the marking is clearly visible after the material has been installed. The marking shall include:

(A) The words "FRA TYPE IH" for end-facing glazing or "FRA TYPE IIIH" for side-facing glazing, to indicate that the material has successfully passed the testing requirements of this section;

(B) The name of the manufacturer; and

(C) The type or brand identification of the material.

(d) **Glazing securement.** Each exterior window on a passenger car and a power car cab shall remain in place when subjected to:

(1) The forces due to air pressure differences caused when two trains pass at the minimum separation for two adjacent tracks, while traveling in opposite directions, each train traveling at the maximum authorized speed; and

(2) The impact forces that the glazed window is required to resist as specified in this section.

(e) **Stenciling.** Each car that is fully equipped with glazing materials that meet the requirements of this section shall be stenciled on an interior wall as follows: "Fully Equipped with FRA Part 238 Glazing" or similar words conveying that meaning, in letters at least 3/8 of an inch high.

§ 238.423 -- Fuel tanks.

(a) **External fuel tanks.** Each type of external fuel tank must be approved by FRA's Associate Administrator for Safety upon a showing that the fuel tank provides a level of safety at

least equivalent to a fuel tank that complies with the external fuel tank requirements in § 238.223(a).

(b) ***Internal fuel tanks.*** Internal fuel tanks shall comply with the requirements specified in § 238.223(b).

§ 238.425 -- Electrical system.

(a) ***Circuit protection.***

(1) The main propulsion power line shall be protected with a lightning arrestor, automatic circuit breaker, and overload relay. The lightning arrestor shall be run by the most direct path possible to ground with a connection to ground of not less than No. 6 AWG. These overload protection devices shall be housed in an enclosure designed specifically for that purpose with the arc chute vented directly to outside air.

(2) Head end power, including trainline power distribution, shall be provided with both overload and ground fault protection.

(3) Circuits used for purposes other than propelling the equipment shall be connected to their power source through circuit breakers or equivalent current-limiting devices.

(4) Each auxiliary circuit shall be provided with a circuit breaker located as near as practical to the point of connection to the source of power for that circuit; however, such protection may be omitted from circuits controlling safety-critical devices.

(b) ***Main battery system.***

(1) The main batteries shall be isolated from the cab and passenger seating areas by a non-combustible barrier.

(2) Battery chargers shall be designed to protect against overcharging.

(3) Battery circuits shall include an emergency battery cut-off switch to completely disconnect the energy stored in the batteries from the load.

(4) If batteries are of the type to potentially vent explosive gases, the batteries shall be adequately ventilated to prevent accumulation of explosive concentrations of these gases.

(c) ***Power dissipation resistors.***

(1) Power dissipating resistors shall be adequately ventilated to prevent overheating under worst-case operating conditions.

(2) Power dissipation grids shall be designed and installed with sufficient isolation to prevent combustion between resistor elements and combustible material.

(3) Power dissipation resistor circuits shall incorporate warning or protective devices for low ventilation air flow, over-temperature, and short circuit failures.

(4) Resistor elements shall be electrically insulated from resistor frames, and the frames shall be electrically insulated from the supports that hold them.

(d) ***Electromagnetic interference and compatibility.***

(1) The operating railroad shall ensure electromagnetic compatibility of the safety-critical equipment systems with their environment. Electromagnetic compatibility can be achieved through equipment design or changes to the operating environment.

(2) The electronic equipment shall not produce electrical noise that interferes with trainline control and communications or with wayside signaling systems.

(3) To contain electromagnetic interference emissions, suppression of transients shall be at the source wherever possible.

(4) Electrical and electronic systems of equipment shall be capable of operation in the presence of external electromagnetic noise sources.

(5) All electronic equipment shall be self-protected from damage or improper operation, or both, due to high voltage transients and long-term over-voltage or under-voltage conditions.

§ 238.427 -- Suspension system

(a) *General requirements.*

(1) Suspension systems shall be designed to reasonably prevent wheel climb, wheel unloading, rail rollover, rail shift, and a vehicle from overturning to ensure safe, stable performance and ride quality. These requirements shall be met:

(i) In all operating environments, and under all track conditions and loading conditions as determined by the operating railroad; and

(ii) At all track speeds and over all track qualities consistent with the Track Safety Standards in part 213 of this chapter, up to the maximum operating speed and maximum cant deficiency of the equipment.

(2) Passenger equipment shall meet the safety performance standards for suspension systems contained in Appendix C to this part, or alternative standards providing at least equivalent safety if approved by FRA under the provisions of § 238.21.

(b) *Car body accelerations.*

(1) A passenger car shall not operate under conditions that result in a steady-state lateral acceleration greater than 0.12g as measured parallel to the car floor inside the passenger compartment. During pre-revenue service acceptance testing of the equipment under § 238.111 and § 213.345 of this chapter, a passenger car shall demonstrate that steady-state lateral acceleration does not exceed 0.1g at the maximum intended cant deficiency.

(2) While traveling at the maximum operating speed over the intended route, the train suspension system shall be designed to:

(i) Limit the vertical acceleration, as measured by a vertical accelerometer mounted on the car floor, to no greater than 0.55g single event, peak-to-peak over a one second period;

(ii) Limit lateral acceleration, as measured by a lateral accelerometer mounted on the car floor, to no greater than 0.3g single event, peak-to-peak over a one second period; and

(iii) Limit the combination of lateral acceleration (a_L) and vertical acceleration (a_V) occurring over a one second period as expressed by the square root of ($a_L^2 + a_V^2$) to no greater than 0.6g, where a_L may not exceed 0.3g and a_V may not exceed 0.55g. Compliance with the requirements of paragraph (b)(2) shall be demonstrated during the pre-revenue service acceptance testing of the equipment required under § 238.111 and § 213.345 of this chapter.

(3) For purposes of this paragraph:

(i) Car body acceleration measurements shall be processed through a filter having a cut-off frequency of 10 Hz; and

(ii) Steady-state lateral acceleration shall be computed as the mathematical average of the accelerations in the body of a curve, between the spiral/curve points. In a compound curve, steady-state lateral acceleration shall be measured separately for each curve.

(c) **Truck hunting acceleration.** Each truck shall be equipped with a permanently installed lateral accelerometer mounted on the truck frame. The accelerometer output signals shall be processed through a filter having a band pass of 0.5 to 10 Hz to determine if hunting oscillations of the truck are occurring. If hunting oscillations are detected, the train monitoring system shall provide an alarm to the operator, and the train shall be slowed to a speed at least 5 mph less than the speed at which the hunting oscillations stopped. For purposes of this paragraph, hunting oscillations are considered a sustained cyclic oscillation of the truck which is evidenced by lateral accelerations in excess of 0.4g root mean square (mean-removed) for 2 seconds.

(d) **Overheat sensors.** Overheat sensors for each wheelset journal bearing shall be provided. The sensors may be placed either onboard the equipment or at reasonable intervals along the railroad's right-of-way.

§ 238.429 -- Safety appliances.

(a) **Couplers.**

(1) The leading and the trailing ends of a semi-permanently coupled trainset shall each be equipped with an automatic coupler that couples on impact and uncouples by either activation of a traditional uncoupling lever or some other type of uncoupling mechanism that does not require a person to go between the equipment units.

(2) The automatic coupler and uncoupling device on the leading and trailing ends of a semi-permanently coupled trainset may be stored within a removable shrouded housing.

(3) If the units in a train are not semi-permanently coupled, both ends of each unit shall be equipped with an automatic coupler that couples on impact and uncouples by either activation of a traditional uncoupling lever or some other type of uncoupling mechanism that does not require a person to go between the equipment units.

(b) **Hand brakes.** Except as provided in paragraph (f) of this section, Tier II trains shall be equipped with a parking or hand brake that can be applied and released manually and that is capable of holding the train on a 3-percent grade.

(c) **Safety appliance mechanical strength and fasteners.**

(1) All handrails, handholds, and sill steps shall be made of 1-inch diameter steel pipe, 5/8-inch thickness steel, or a material of equal or greater mechanical strength.

(2) All safety appliances shall be securely fastened to the car body structure with mechanical fasteners that have mechanical strength greater than or equal to that of a 1/2-inch diameter SAE grade steel bolt mechanical fastener.

(i) Safety appliance mechanical fasteners shall have mechanical strength and fatigue resistance equal to or greater than a 1/2-inch diameter SAE steel bolt.

(ii) Mechanical fasteners shall be installed with a positive means to prevent unauthorized removal. Self-locking threaded fasteners do not meet this requirement.

(iii) Mechanical fasteners shall be installed to facilitate inspection.

(d) **Handrails and handholds.** Except as provided in paragraph (f) of this section:

(1) Handrails shall be provided for passengers on both sides of all steps used to board or depart the train.

(2) Exits on a power vehicle shall be equipped with handrails and handholds so that crewmembers can get on and off the vehicle safely.

(3) Throughout their entire length, handrails and handholds shall be a color that contrasts with the color of the vehicle body to which they are fastened.

(4) The maximum distance above the top of the rail to the bottom of vertical handrails and handholds shall be 51 inches, and the minimum distance shall be 21 inches.

(5) Vertical handrails and handholds shall be installed to continue to a point at least equal to the height of the top edge of the control cab door.

(6) The minimum hand clearance distance between a vertical handrail or handhold and the vehicle body shall be 2 1/2 inches for the entire length.

(7) All vertical handrails and handholds shall be securely fastened to the vehicle body.

(8) If the length of the handrail exceeds 60 inches, it shall be securely fastened to the power vehicle body with two fasteners at each end.

(e) **Sill steps.** Except as provided in paragraph (f) of this section, each power vehicle shall be equipped with a sill step below each exterior door as follows:

(1) The sill step shall have a minimum cross-sectional area of 1/2 by 3 inches;

(2) The sill step shall be made of steel or a material of equal or greater strength and fatigue resistance;

(3) The minimum tread length of the sill step shall be 10 inches;

(4) The minimum clear depth of the sill step shall be 8 inches;

(5) The outside edge of the tread of the sill step shall be flush with the side of the car body structure;

(6) Sill steps shall not have a vertical rise between treads exceeding 18 inches;

(7) The lowest sill step tread shall be not more than 24, preferably not more than 22, inches above the top of the track rail;

(8) Sill steps shall be a color that contrasts with the color of the power vehicle body to which they are fastened;

(9) Sill steps shall be securely fastened;

(10) At least 50 percent of the tread surface area of each sill step shall be open space; and

(11) The portion of the tread surface area of each sill step which is not open space and is normally contacted by the foot shall be treated with an anti-skid material.

(f) **Exceptions.**

(1) If the units of the equipment are semi-permanently coupled, with uncoupling done only at maintenance facilities, the equipment units that are not required by paragraph (a) of this section to be equipped with automatic couplers need not be equipped with sill steps or end or side handholds that would normally be used to safely perform coupling and uncoupling operations.

(2) If the units of the equipment are not semi-permanently coupled, the units shall be equipped with hand brakes, sill steps, end handholds, and side handholds that meet the requirements contained in § 231.14 of this chapter.

(3) If two trainsets are coupled to form a single train that is not semi-permanently coupled (i.e., that is coupled by an automatic coupler), the automatically coupled ends shall be equipped with an end handhold that is located and installed so that an individual can safely couple and uncouple the trainsets. The end handhold shall be not more than 16 inches from each side of the car and shall extend the remaining length of the end of the car. (If the equipment is designed with a tapered nose, the side of the car shall be determined based on the outer dimension of the tapered nose where the end handhold is attached.) The end handhold shall also meet the mechanical strength and design requirements contained in paragraphs (c), (d)(3), and (d)(6) of this section. If the trainsets are semi-permanently coupled, this safety appliance is not required.

(g) ***Optional safety appliances.*** Safety appliances installed at the option of the railroad shall be firmly attached with mechanical fasteners and shall meet the design and installation requirements provided in this section.

§ 238.431 -- Brake system.

(a) A passenger train's brake system shall be capable of stopping the train from its maximum operating speed within the signal spacing existing on the track over which the train is operating under worst-case adhesion conditions.

(b) The brake system shall be designed to allow an inspector to determine that the brake system is functioning properly without having to place himself or herself in a dangerous position on, under, or between the equipment.

(c) Passenger equipment shall be provided with an emergency brake application feature that produces an irretrievable stop, using a brake rate consistent with prevailing adhesion, passenger safety, and brake system thermal capacity. An emergency brake application shall be available at any time, and shall be initiated by an unintentional parting of the train. A means to initiate an emergency brake application shall be provided at two locations in each unit of the train; however, where a unit of the train is 45 feet or less in length a means to initiate an emergency brake application need only be provided at one location in the unit.

(d) The brake system shall be designed to prevent thermal damage to wheels and brake discs. The operating railroad shall demonstrate through analysis and testing that no thermal damage results to the wheels or brake discs under conditions resulting in maximum braking effort being exerted on the wheels or discs.

(e) The following requirements apply to blended braking systems:

(1) Loss of power or failure of the dynamic brake does not result in exceeding the allowable stopping distance;

(2) The friction brake alone is adequate to safely stop the train under all operating conditions;

(3) The operational status of the electric portion of the brake system shall be displayed for the train operator in the control cab; and

(4) The operating railroad shall demonstrate through analysis and testing the maximum operating speed for safe operation of the train using only the friction brake portion of the blended brake with no thermal damage to wheels or discs.

(f) The brake system design shall allow a disabled train's pneumatic brakes to be controlled by a conventional locomotive, during a rescue operation, through brake pipe control alone.

(g) An independent failure-detection system shall compare brake commands with brake system output to determine if a failure has occurred. The failure detection system shall report brake system failures to the automated train monitoring system.

(h) Passenger equipment shall be equipped with an adhesion control system designed to automatically adjust the braking force on each wheel to prevent sliding during braking. In the event of a failure of this system to prevent wheel slide within preset parameters, a wheel slide alarm that is visual or audible, or both, shall alert the train operator in the cab of the controlling power car to wheel-slide conditions on any axle of the train.

§ 238.433 -- Draft system.

(a) Leading and trailing automatic couplers of trains shall be compatible with standard AAR couplers with no special adapters used.

(b) All passenger equipment continues to be subject to the requirements concerning couplers and uncoupling devices contained in Federal Statute at 49 U.S.C. chapter 203 and in FRA regulations at part 231 and § 232.2 of this chapter.

§ 238.435 -- Interior fittings and surfaces.

(a) Each seat back and seat attachment in a passenger car shall be designed to withstand, with deflection but without total failure, the load associated with the impact into the seat back of an unrestrained 95th-percentile adult male initially seated behind the seat back, when the floor to which the seat is attached decelerates with a triangular crash pulse having a peak of 8g and a duration of 250 milliseconds.

(b) Each seat back in a passenger car shall include shock-absorbent material to cushion the impact of occupants with the seat ahead of them.

(c) The ultimate strength of each seat attachment to a passenger car body shall be sufficient to withstand the following individually applied accelerations acting on the mass of the seat plus the mass of a seat occupant who is a 95th-percentile adult male:

- (1) Lateral: 4g; and
- (2) Vertical: 4g.

(d) (1) Other interior fittings shall be attached to the passenger car body with sufficient strength to withstand the following individually applied accelerations acting on the mass of the fitting:

- (i) Longitudinal: 8g;
- (ii) Lateral: 4g; and
- (iii) Vertical: 4g.

(2) Fittings that can be expected to be impacted by a person during a collision, such as tables between facing seats, shall be designed for the mass of the fitting plus the mass of the number of occupants who are 95th-percentile adult males that could be expected to strike the fitting, when the floor of the passenger car decelerates with a triangular crash pulse having a peak of 8g and a duration of 250 milliseconds.

(e) The ultimate strength of the interior fittings and equipment in power car control cabs shall be sufficient to resist without failure loads due to the following individually applied accelerations acting on the mass of the fitting or equipment:

- (1) Longitudinal: 12g;
- (2) Lateral: 4g; and
- (3) Vertical: 4g.

(f) To the extent possible, interior fittings, except seats, shall be recessed or flush-mounted. Corners and sharp edges shall be avoided or otherwise padded.

(g) Energy-absorbent material shall be used to pad surfaces likely to be impacted by occupants during collisions or derailments.

(h) Luggage stowage compartments shall be enclosed, and have an ultimate strength sufficient to resist loads due to the following individually applied accelerations acting on the mass of the luggage that the compartments are designed to accommodate:

- (1) Longitudinal: 8g;
- (2) Lateral: 4g; and
- (3) Vertical: 4g.

(i) If, for purposes of showing compliance with the requirements of this section, the strength of a seat attachment is to be demonstrated through sled testing, the seat structure and seat attachment to the sled that are used in such testing must be representative of the actual seat structure in, and seat attachment to, the rail vehicle subject to the requirements of this section. If the attachment strength of any other interior fitting is to be demonstrated through sled testing, for purposes of showing compliance with the requirements of this section, such testing shall be conducted in a similar manner.

§ 238.437 -- Emergency communication.

A means of emergency communication throughout a train shall be provided and shall include the following:

(a) Except as further specified, transmission locations at each end of each passenger car, adjacent to the car's end doors, and accessible to both passengers and crewmembers without requiring the use of a tool or other implement. If the passenger car does not exceed 45 feet in

length, or if the passenger car was ordered prior to May 12, 1999, only one transmission location is required;

- (b) Transmission locations that are clearly marked with luminescent material;
- (c) Clear and understandable operating instructions at or near each transmission location; and
- (d) Back-up power for a minimum period of 90 minutes.

§ 238.439 -- Doors.

(a) Each passenger car shall have a minimum of two exterior side doors, each door providing a minimum clear opening with dimensions of 30 inches horizontally by 74 inches vertically.
Note: The Americans with Disabilities Act (ADA) Accessibility Specifications for Transportation Vehicles also contain requirements for doorway clearance (*See*, 49 C.F.R. part 38).

(b) Each passenger car shall be equipped with a manual override feature for each powered, exterior side door. Each manual override must be:

- (1) Capable of releasing the door to permit it to be opened, without power, from both inside and outside the car;
- (2) Located adjacent to the door which it controls; and
- (3) Designed and maintained so that a person may readily access and operate the override device from both inside and outside the car without the use of any tool or other implement.

(c) The status of each powered, exterior side door in a passenger car shall be displayed to the crew in the operating cab. If door interlocks are used, the sensors used to detect train motion shall be nominally set to operate at 3 mph.

(d) Each powered, exterior side door in a passenger car shall be connected to an emergency back-up power system.

(e) A railroad may protect a manual override device used to open a powered, exterior door with a cover or a screen capable of removal without requiring the use of a tool or other implement.

(f) A passenger compartment end door (other than a door providing access to the exterior of the trainset) shall be equipped with a kick-out panel, pop-out window, or other similar means of egress in the event the door will not open, or shall be so designed as to pose a negligible probability of becoming inoperable in the event of car body distortion following a collision or derailment.

(g) Door exits shall be marked, and instructions provided for their use, as required by § 239.107(a) of this chapter.

§ 238.441 -- Emergency roof entrance location.

(a) Each passenger car and power car cab shall have a minimum of one roof hatch emergency entrance location with a minimum opening of 18 inches by 24 inches, or at least one clearly marked structural weak point in the roof having a minimum opening of the same dimensions to provide quick access for properly equipped emergency response personnel.

(b) *Marking and instructions.* [Reserved]

§ 238.443 -- Headlights.

(a) Each power car shall be equipped with at least two headlights. Each headlight shall produce no less than 200,000 candela. One headlight shall be arranged to illuminate a person standing between the rails 800 feet ahead of the power car under clear weather conditions. The other headlight shall be arranged to illuminate a person standing between the rails 1,500 feet ahead of the power car under clear weather conditions.

(b) A power car with a headlight not in compliance with the requirements of paragraph (a) of this section shall be moved in accordance with the following:

(1) If one of the headlights is defective, the defect shall be considered a non-running gear defect subject to the provisions contained in § 238.17 of this part.

(2) If both headlights are defective, the power car shall be inspected and tagged in accordance with the requirements contained in § 238.17(c) relating to non-running gear defects. The power car may continue to be used in passenger service only to the nearest forward location where the repairs necessary to bring the power car into compliance can be made or to the power car's next calendar day mechanical inspection, whichever occurs first.

§ 238.445 -- Automated monitoring.

(a) Each passenger train shall be equipped to monitor the performance of the following systems or components:

- (1) Reception of cab signals and train control signals;
- (2) Truck hunting;
- (3) Dynamic brake status;
- (4) Friction brake status;
- (5) Fire detection systems;
- (6) Head end power status;
- (7) Alerter or deadman control;
- (8) Horn and bell;
- (9) Wheel slide;
- (10) Tilt system, if so equipped; and
- (11) On-board bearing-temperature sensors, if so equipped.

(b) When any such system or component is operating outside of its predetermined safety parameters:

- (1) The train operator shall be alerted; and
- (2) Immediate corrective action shall be taken, if the system or component defect impairs the train operator's ability to safely operate the train. Immediate corrective action includes

limiting that the monitoring capability is functioning correctly and alerts the train operator when a system failure occurs.

§ 238.447 -- Train operator's controls and power car cab layout.

- (a) Train operator controls in the power car cab shall be arranged so as to minimize the chance of human error, and be comfortably within view and within easy reach when the operator is seated in the normal train control position.
- (b) The train operator's control panel buttons, switches, levers, knobs, and the like shall be distinguishable by sight and by touch.
- (c) An alerter shall be provided in the power car cab. If not acknowledged, the alerter shall cause a brake application to stop the train.
- (d) Power car cab information displays shall be designed with the following characteristics:
 - (1) Simplicity and standardization shall be the driving criteria for design of formats for the display of information in the cab;
 - (2) Essential, safety-critical information shall be displayed as a default condition;
 - (3) Operator selection shall be required to display other than default information;
 - (4) Cab or train control signals shall be displayed for the operator; and
 - (5) Displays shall be readable from the operator's normal position under all lighting conditions.
- (e) The power car cab shall be designed so as to permit the crew to have an effective field of view in the forward direction, as well as to the right and left of the direction of travel to observe objects approaching the train from either side. Field-of-view obstructions due to required structural members shall be minimized.
- (f) Each seat provided for an employee regularly assigned to occupy a power car cab and any floor-mounted seat in the cab shall be:
 - (1) Secured to the car body with an attachment having an ultimate strength capable of withstanding the loads due to the following individually applied accelerations acting on the combined mass of the seat and the mass of a seat occupant who is a 95th-percentile adult male:
 - (i) Longitudinal: 12g;
 - (ii) Lateral: 4g; and
 - (iii) Vertical: 4g.
 - (2) Designed so that all adjustments have the range necessary to accommodate a person ranging from a 5th-percentile adult female to a 95th-percentile adult male, as persons possessing such characteristics are specified, correcting for clothing as appropriate, in any recognized survey after 1958 of weight, height, and other body dimensions of U.S. adults;
 - (3) Equipped with lumbar support that is adjustable from the seated position;
 - (4) Equipped with force-assisted, vertical-height adjustment, operated from the seated position;
 - (5) Equipped with a manually reclining seat back, adjustable from the seated position;
 - (6) Equipped with an adjustable headrest; and

(7) Equipped with folding, padded armrests.

(g) Sharp edges and corners shall be eliminated from the interior of the power car cab, and interior surfaces of the cab likely to be impacted by an employee during a collision or derailment shall be padded with shock-absorbent material.

See, Figures 1-4 -- to Subpart.E.

Subpart F--Inspection, Testing, and Maintenance Requirements for Tier II Passenger Equipment.

§ 238.501 -- Scope.

This subpart contains inspection, testing, and maintenance requirements for railroad passenger equipment that operates at speeds exceeding 125 mph but not exceeding 150 mph.

§ 238.503 -- Inspection, testing, and maintenance requirements.

(a) **General.** Under the procedures provided in § 238.505, each railroad shall obtain FRA approval of a written inspection, testing, and maintenance program for Tier II passenger equipment prior to implementation of that program and prior to commencing passenger operations using that equipment. As further specified in this section, the program shall describe in detail the procedures, equipment, and other means necessary for the safe operation of the passenger equipment, including:

- (1) Inspection procedures, intervals, and criteria;
- (2) Testing procedures and intervals;
- (3) Scheduled preventive-maintenance intervals;
- (4) Maintenance procedures;
- (5) Special testing equipment or measuring devices required to perform inspections, tests, and maintenance; and
- (6) The training, qualification, and designation of employees and contractors to perform inspections, tests, and maintenance.

(b) **Compliance.** After the railroad's inspection, testing, and maintenance program is approved by FRA under § 238.505, the railroad shall adopt the program and shall perform-

- (1) The inspections and tests of power brakes and other primary brakes as described in the program;
- (2) The other inspections and tests described in the program in accordance with the procedures and criteria that the railroad identified as safety-critical; and
- (3) The maintenance tasks described in the program in accordance with the procedures and intervals that the railroad identified as safety-critical.

(c) **General safety inspection, testing, and maintenance procedures.** The inspection, testing, and maintenance program under paragraph (a) of this section shall contain the railroad's written procedures to ensure that all systems and components of in service passenger equipment are free

of any general condition that endangers the safety of the crew, passengers, or equipment. These procedures shall protect against:

- (1) A continuous accumulation of oil or grease;
- (2) Improper functioning of a component;
- (3) A crack, break, excessive wear, structural defect, or weakness of a component;
- (4) A leak;
- (5) Use of a component or system under a condition that exceeds that for which the component or system is designed to operate; and
- (6) Insecure attachment of a component.

(d) ***Specific inspections.*** The program under paragraph (a) of this section shall specify that all Tier II passenger equipment shall receive thorough inspections in accordance with the following standards:

(1) Except as provided in paragraph (d)(3) of this section, the equivalent of a Class I brake test contained in § 238.313 shall be conducted prior to a train's departure from an originating terminal and every 1,500 miles or once each calendar day, whichever comes first, that the train remains in continuous service.

(i) Class I equivalent brake tests shall be performed by a qualified maintenance person.

(ii) Except as provided in § 238.15(b), a railroad shall not use or haul a Tier II passenger train in passenger service from a location where a Class I equivalent brake test has been performed, or was required by this part to have been performed, with less than 100 percent operative brakes.

(2) Except as provided in paragraph (d)(3) of this section, a complete exterior and interior mechanical inspection, in accordance with the railroad's inspection program, shall be conducted by a qualified maintenance person at least once during each calendar day the equipment is used in service.

(3) Trains that miss a scheduled Class I brake test or mechanical inspection due to a delay en route may proceed to the point where the Class I brake test or mechanical inspection was scheduled to be performed.

(e) ***Movement of trains with power brake defects.*** Movement of trains with a power brake defect as defined in § 238.15 (any primary brake defect) shall be governed by § 238.15.

(f) ***Movement of trains with other defects.*** The movement of a train with a defect other than a power brake defect shall be conducted in accordance with § 238.17, with the following exceptions:

(1) The movement of a Tier II power car with a non-complying headlight shall be conducted in accordance with § 238.443(b) of this part; and

(2) When a failure of a secondary brake on a Tier II passenger train occurs en route, that train may remain in service until its next scheduled calendar day Class I brake test equivalent at a speed no greater than the maximum safe operating speed demonstrated through analysis and testing for braking with the friction brake alone. The brake system shall be restored to 100 percent operation before the train departs that inspection location.

(g) **Maintenance intervals.** The program under paragraph (a) of this section shall include the railroad's initial scheduled maintenance intervals for Tier II equipment based on an analysis completed pursuant to the railroad's safety plan. The maintenance interval of a safety-critical component shall be changed only when justified by accumulated, verifiable operating data and approved by FRA under § 238.505 before the change takes effect.

(h) **Training, qualification, and designation program.** The program under paragraph (a) of this section shall describe the training, qualification, and designation program, as defined in the training program plan under § 238.109, established by the railroad to qualify individuals to inspect, test, and maintain the equipment.

(1) If the railroad deems it safety-critical, then only qualified individuals shall inspect, test, and maintain the equipment.

(2) Knowledge of the procedures described in paragraph (a) of this section shall be required to qualify an employee or contractor to perform an inspection, testing, or maintenance task under this part.

(i) **Standard procedures.** The program under paragraph (a) of this section shall include the railroad's written standard procedures for performing all safety-critical equipment inspection, testing, maintenance, and repair tasks necessary to ensure the safe and proper operation of the equipment. The inspection, testing, and maintenance program required by this section is not intended to address and should not include procedures to address employee working conditions that arise in the course of conducting the inspections, tests, and maintenance set forth in the program. When reviewing the railroad's program, FRA does not intend to review any portion of the program that relates to employee working conditions.

(j) **Annual review.** The inspection, testing, and maintenance program required by this section shall be reviewed by the railroad annually.

(k) **Quality control program.** Each railroad shall establish an inspection, testing, and maintenance quality control program enforced by railroad or contractor supervisors to reasonably ensure that inspections, tests, and maintenance are performed in accordance with Federal safety standards and the procedures established by the railroad.

(l) **Identification of safety-critical items.** In the program under paragraph (a) of this section, the railroad shall identify all inspection and testing procedures and criteria as well as all maintenance intervals that the railroad deems to be safety-critical.

§ 238.505 -- Program approval procedure.

(a) **Submission.** Not less than 90 days prior to commencing passenger operations using Tier II passenger equipment, each railroad to which this subpart applies shall submit for approval an inspection, testing, and maintenance program for that equipment meeting the requirements of this subpart with the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., S.E., Mail Stop 25, Washington, D.C. 20590. If a railroad seeks to amend an approved program, the railroad shall file with FRA's Associate Administrator for Safety a petition for approval of such amendment not less than 60 days prior to the proposed effective date of the

amendment. A program responsive to the requirements of this subpart or any amendment to the program shall not be implemented prior to FRA approval.

(1) Each program or amendment under § 238.503 shall contain:

- (i) The information prescribed in § 238.503 for such program or amendment;
- (ii) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the program or amendment; and
- (iii) A statement affirming that the railroad has served a copy of the program or amendment on designated representatives of railroad employees, together with a list of the names and addresses of persons served.

(2) Each railroad shall serve a copy of each submission to FRA on designated representatives of railroad employees responsible for the equipment's operation, inspection, testing, and maintenance under this subpart.

(b) **Comment.** Not later than 45 days from the date of filing the program or amendment, any person may comment on the program or amendment.

(1) Each comment shall set forth specifically the basis upon which it is made, and contain a concise statement of the interest of the commenter in the proceeding.

(2) Three copies of each comment shall be submitted to the Associate Administrator for Safety, Federal Railroad Administration, 1120 Vermont Ave., SE, Mail Stop 25, Washington, D.C. 20590.

(3) The commenter shall certify that a copy of the comment was served on the railroad.

(c) **Approval.**

(1) Within 60 days of receipt of each initial inspection, testing, and maintenance program, FRA will conduct a formal review of the program. FRA will then notify the primary railroad contact person and the designated employee representatives in writing whether the inspection, testing, and maintenance program is approved and, if not approved, the specific points in which the program is deficient. If a program is not approved by FRA, the railroad shall amend its program to correct all deficiencies and resubmit its program with the required revisions not later than 45 days prior to commencing passenger operations.

(2) FRA will review each proposed amendment to the program within 45 days of receipt. FRA will then notify the primary railroad contact person and the designated employee representatives in writing whether the proposed amendment has been approved by FRA and, if not approved, the specific points in which the proposed amendment is deficient. The railroad shall correct any deficiencies and file the corrected amendment prior to implementing the amendment.

(3) Following initial approval of a program or amendment, FRA may reopen consideration of the program or amendment for cause stated.

Subpart G--Specific Safety Planning Requirements for Tier II Passenger Equipment

§ 238.601 – Scope.

This subpart contains specific safety planning requirements for the operation of Tier II passenger equipment, procurement of Tier II passenger equipment, and the introduction or major

upgrade of new technology in existing Tier II passenger equipment that affects a safety system on such equipment.

§ 238.603 – Safety planning requirements.

(a) Prior to commencing revenue service operation of Tier II passenger equipment, each railroad shall prepare and execute a written plan for the safe operation of such equipment. The plan may be combined with any other plan required under this part. The plan shall be updated at least every 365 days. At a minimum, the plan shall describe the approaches and processes to:

- (1) Identify all requirements necessary for the safe operation of the equipment in its operating environment;
- (2) Identify all known or potential hazards to the safe operation of the equipment;
- (3) Eliminate or reduce the risk posed by each hazard identified to an acceptable level using a normal safety methodology such as MIL-STD-882C; and
- (4) Impose operational limitations, as necessary, on the operation of the equipment if the equipment cannot meet safety requirements.

(b) For the procurement of Tier II passenger equipment, and for each major upgrade or introduction of new technology in existing Tier II passenger equipment that affects a safety system on such equipment, each railroad shall prepare and execute a written safety plan. The plan may be combined with any other plan required under this part. The plan shall describe the approaches and processes to:

- (1) Identify all safety requirements governing the design of the passenger equipment and its supporting systems;
- (2) Evaluate the total system, including hardware, software, testing, and support activities, to identify known or potential safety hazards over the life cycle of the equipment;
- (3) Identify safety issues during design reviews;
- (4) Eliminate or reduce the risk posed by each hazard identified to an acceptable level using a formal safety methodology such as MIL-STD-882;
- (5) Monitor the progress in resolving safety issues, reducing hazards, and meeting safety requirements;
- (6) (6) Develop a program of testing or analysis, or both, to demonstrate that safety requirements have been met; and
- (7) Impose operational limitations, as necessary, on the operation of the equipment if the equipment cannot meet safety requirements.

(c) Each railroad shall maintain sufficient documentation to demonstrate how the operation and design of its Tier II passenger equipment complies with safety requirements or, as appropriate, addresses safety requirements under paragraphs (a)(4) and (b)(7) of this section. Each railroad shall maintain sufficient documentation to track how safety issues are raised and resolved.

(d) Each railroad shall make available to FRA for inspection and copying upon request each safety plan required by this section and any documentation required pursuant to such plan.

Appendix A—Schedule of Civil Penalties

Appendix B—Test Methods and Performance Criteria for the Flammability and Smoke Emission Characteristics of Materials Used in Passenger Cars and Locomotive Cabs
Appendix C—Suspension System Safety Performance Standards
Appendix D—Requirements for External Fuel Tanks on Tier I Locomotives
Appendix E—General Principles of Reliability-Based Maintenance Programs

49 C.F.R. part 238

SLEEPING QUARTERS

It is unlawful for a railroad to construct or reconstruct sleeping quarters within one-half mile of any area where switching or humping operations are performed.

If a railroad proposes to house employees closer than one-half mile, it must petition FRA for an exemption. The exemption will not be granted unless (1) there is no feasible alternate site available; (2) there are barriers to shield the building from an explosion; and (3) the noise inside the building will permit proper rest.

All railroads are required to furnish sleeping quarters to employees that provide an opportunity for rest which must be *clean, safe, and sanitary*, and free from interruptions caused by *noise* under the control of the railroad. These requirements apply to operating personnel and to maintenance of way crews.

Appendix A-Statement of Agency Policy and Interpretation

Appendix B- Penalty Schedule

Appendix C-Guidelines For Clean, Safe, and Sanitary Railroad Provided Camp Cars

49 U.S.C. § 21106

49 C.F.R. §§ 228.101-228.107

CRITICAL INCIDENT STRESS PLAN

§272.1-Purpose.

The purpose of this rule is to require the railroads covered to provide appropriate support service, including relief, to directly-involved employees following a critical incident. A railroad can provide additional provisions beyond those in this rule.

§272.3-Application.

This rule applies to Class I railroads, AMTRAK, intercity passenger railroad, and commuter railroad.

§272.5- General Duty.

A railroad shall adopt a written **critical incident stress plan(CISP)** to be approved by FRA.

§272.7- Coverage of a CISP.

A CISP shall cover all hours of service covered employees; employees who inspect, install, repair, or maintain right-of-way or structures; and employees who inspect, repair, or maintain locomotives, passenger cars, or freight cars.

§272.9-Definitions.

Critical Incident means either 1) an ac/incident reportable to FRA under 49 C.F.R. part 225 that results in a fatality, loss of limb, or a similarly serious bodily injury; or 2) a catastrophic ac/incident reportable to FRA under part 225 that could be reasonably expected to impair a directly-involved employee's ability to perform his/her job duties safely.

Directly-involved employee means a railroad employee covered under § 272.7—

- (1) Whose actions are closely connected to the critical incident;
- (2) Who witnesses the critical incident in person as it occurs or who witnesses the immediate effects of the critical incident in person; or
- (3) Who is charged to directly intervene in, or respond to, the critical incident (excluding railroad police officers or investigators who routinely respond to and are specially trained to handle emergencies).

§272.11-Penalties.

\$650 up to \$25,000, except if grossly negligent or a pattern of repeated violations has created an imminent hazard of death or injury, or has caused death or injury, a penalty may be assessed up to \$105,000.

§272.101.Content of Critical Incident Stress Plan.

Each CISP shall include, at a minimum, provisions for—

- (a) Informing each directly-involved employee as soon as practicable of the relief options available in accordance with the railroad's critical incident stress plan;
- (b) Offering timely relief from the balance of the duty tour for each directly-involved employee, after the employee has performed any actions necessary for the safety of persons and contemporaneous documentation of the incident;
- (c) Offering timely transportation to each directly-involved employee's home terminal, if necessary;
- (d) Offering counseling, guidance, and other appropriate support services to each directly-involved employee;
- (e) Permitting relief from the duty tour(s) subsequent to the critical incident, for an amount of time to be determined by each railroad, if requested by a directly-involved employee as may be necessary and reasonable;

- (f) Permitting each directly-involved employee such additional leave from normal duty as may be necessary and reasonable to receive preventive services or treatment related to the incident or both, provided the employee's clinical diagnosis supports the need for additional time off or the employee is in consultation with a health care professional related to the incident and such health care professional supports the need for additional time off in order for the employee to receive preventive services or treatment related to the incident, or both; and
- (g) Addressing how the railroad's employees operating or otherwise working on track owned by or operated over by a different railroad will be afforded the protections of the plan.

§272.103. Submission of CISP for Approval by the FRA

(a) Each railroad subject to this part shall submit to the FRA for approval, the railroad's CISP no later than 12 months after June 23, 2014.

(b) Each railroad subject to this part shall—

(1) Simultaneously with its filing with FRA, serve, either by hard copy or electronically, a copy of the submission filed pursuant to paragraph (a) of this section or a material modification filed pursuant to paragraph (e) of this section on the international/national president of any non-profit employee labor organization representing a class or craft of the railroad's employees subject to this part; and

(2) Include in its submission filed pursuant to paragraph (a) of this section or a material modification filed pursuant to paragraph (e) of this section a statement affirming that the railroad has complied with the requirements of paragraph (b)(1) of this section, together with a list of the names and addresses of the persons served.

(c) Not later than 90 days after the date of filing a submission pursuant to paragraph (a) of this section or a material modification pursuant to paragraph (e) of this section, a labor organization representing a class or craft of the railroad's employees subject to this part, may file a comment on the submission or material modification.

(1) Each comment shall be submitted to the Associate Administrator for Railroad Safety and Chief Safety Officer, FRA; and

(2) The commenter shall certify that a copy of the comment was served on the railroad.

(d) A critical incident stress plan is considered approved for purposes of this part if and when FRA notifies the railroad in writing that the CISP is approved, or 120 days after FRA has received the railroad's CISP, whichever occurs first.

(e) After FRA's initial approval of a railroad's CISP, if the railroad makes a material modification of the CISP, the railroad shall submit to FRA for approval a copy of the CISP as it has been revised to reflect the material modification within 30 days of making the material modification.

(f) Upon FRA approval of a railroad's CISP and any material modification of the CISP, the railroad must make a copy of the railroad's plan and the material modification available to the railroad's employees identified in § 272.7.

§272.105 Requirement to File CISP Electronically.

Each CISP must be filed electronically with the FRA.

TRACK STANDARDS⁶⁵

Subpart A – General

§213.1 This regulation prescribes minimum track standards and, in general, applies to specific track conditions existing in isolation. However, a combination of conditions may require remedial action. Subparts A through F apply to Classes 1 through 5 track, and Subpart G applies to track over which trains operate over the Class 5 speeds.⁶⁶

§ 213.3 Application

Track standards apply to all standard gauge track in the general railroad system except (a) track located inside an installation which is not part of the general railroad system or (b) used exclusively for rapid transit.

§ 213.4 Excepted Track

A track owner may except a designated segment of track from coverage under the regulation if

- (a) it is identified in the timetable, special instruction, general order or other records;
- (b) it is not located within 30 feet of an adjacent track over which speeds may be in excess of 10 miles per hour;
- (c) it is inspected at the same frequency as for Class 1 track;
- (d) it is not located on a bridge or 100 feet on either side of a bridge, or located on a public street or highway, if cars containing placarded hazardous materials are moved over the track;
- (e) the operation over that segment shall have further limitations:
 - (1) no train shall be operated at speeds in excess of 10 miles per hour;
 - (2) no revenue passenger train shall be operated;

⁶⁵ Because of the complexity of the track standards, the specific sections are cited.

⁶⁶ In addition, FRA established Federal safety requirements for railroad bridges. The final rule requires track owners to implement bridge management programs, which include annual inspections of railroad bridges, and to audit the programs. This final rule also requires track owners to know the safe load capacity of bridges and to conduct special inspections if the weather or other conditions warrant such inspections. 49 C.F.R. Part 237; 75 Fed. Reg. 41282.

(3) no freight train may be operated that contains more than 5 cars placarded as hazardous materials; and (4) the gage on excepted track shall not be more than 4 feet 10 1/4 inches.

§ 213.5 Responsibility for Compliance

If an owner of track knows or has notice that the track does not comply with these regulations, he shall

- (a) bring the track into compliance; or
- (b) halt operations over that track; or
- (c) operate under the authority of a person designated who has at least one year of supervisory experience in railroad track maintenance; or a combination of supervisory experience and a course training in track maintenance (or a college level education related to track maintenance).

§ 213.7 Designation of Qualified Persons To Supervise Certain Renewals and Inspect Track

This requires each track owner to designate qualified track inspectors which have at least 1 year experience to supervise certain restorations and renewals, and inspect track. The person must know and understand the requirements of this part of which he is responsible.

§ 213.9 Speed Limits

Operations over excepted track may continue without the necessity to comply with the provisions of the higher classes of track.

The maximum allowable operating speeds over the various classes of track are as follows:
(In miles per hour)

Over track that meets all of the requirements prescribed in this part for —	The maximum allowable operating speed for freight train is—	The maximum allowable operating speed for passenger train is—
Excepted track.....	10	N/A
Class 1 track	10	15
Class 2 track	25	30
Class 3 track	40	60
Class 4 track	60	80
Class 5 track	80	90

A segment of track that does not meet all of the requirements for its intended class shall be reclassified to the next lowest class for which it does not meet the requirements. If the segment does not at least meet the requirements of Class 1 track, the railroad may continue Class 1 speeds for up to 30 days without bringing it into compliance under a designated and qualified person's

supervision.

On March 13, 2013, FRA issued a final rule (78 Fed. Reg. 16052) to amend the Federal Track Safety Standards to promote the safe interaction of rail vehicles and the tracks they operate on at speeds up to 220 mph. That final rule revised the track geometry and safety limits for various track classes, extended the limits for the highest track speeds from 200 to 220 mph (Class 9 track), and affirmed that the maximum authorized speed for Class 8 track is 160 mph. This rule would make the maximum authorized operating speed for Tier II passenger equipment consistent with the limits for Class 8 track. Under the proposal, existing Tier II operations FRA has approved to operate at speeds up to 150 mph would be required to provide sufficient testing and vehicle/track interaction performance data required under 49 C.F.R. 213.329 and 238.111 and obtain FRA approval before any operations occur at the new maximum authorized speed of 160 mph.

§ 213.11 Restoration or Renewal

If during a period of restoration or renewal, track does not meet all of the requirements, the work on the track must be under the continuous supervision of a designated person who has at least one year supervisory experience in railroad track maintenance. The term "continuous supervision" means the physical presence of that person at a job site. If the work is performed over a large area, it is not necessary that each phase of the work be done under visual supervision of that person.

§ 213.13 Measuring Track not Under Load

When unloaded track is measured to determine compliance with requirements of this part, the amount of rail movement, if any, that occurs while the track is loaded must be added to the measurements of the unloaded track.

§ 213.14 Track Alinement

Unless otherwise provided, requirements specified for curved track apply only to track having a curvature greater than 0.25 degrees.

Subpart B - Roadbed

§ 213.33 Drainage

Each drainage or other water-carrying facility under or immediately adjacent to the roadbed must be maintained and kept free of obstruction, to accommodate expected water flow for the area concerned.

§ 213.37 Vegetation

Vegetation on railroad property which is on or immediately adjacent to roadbed must be controlled so that it does not

- (a) become a fire hazard to track carrying structures;
- (b) obstruct visibility of railroad signs and signals along the right of way and at highway-rail crossings;
- (c) interfere with railroad employees performing normal trackside duties;
- (d) prevent proper functioning of signal and communication lines; or
- (e) prevent railroad employees from visually inspecting moving equipment from their normal duty stations.

Subpart C - Track Geometry

§ 213.53 Gage

Gage must be within the limits prescribed in the following table:

Class of track	The gage must be —	
	At least	But not more than —
Excepted Track	N/A	4'10 1/4"
1.....	4'8"	4'10 "
2 and 3.....	4'8"	4'9 3/4"
4 and 5.....	4'8"	4'9 1/2"

§ 213.55 Track Alinement

- (a) Except as provided in paragraph (b) of this section, alinement may not deviate from uniformity more than the amount prescribed in the following table:

Class of track	Tangent track	Curved track	
	The deviation of the mid-offset from a 62-foot line ¹ may not be more than— (inches)	The deviation of the mid-ordinate from a 31-foot chord ² may not be more than— (inches)	The deviation of the mid-ordinate from a 62-foot chord ² may not be more than— (inches)
Class 1 track	5	³ N/A	5
Class 2 track	3	³ N/A	3
Class 3 track	1 3/4	1 1/4	1 3/4
Class 4 track	1 1/2	1	1 1/2
Class 5 track	3/4	1/2	5/8

¹ The ends of the line shall be at points on the gage side of the line rail, five-eighths of an inch below the top of the railhead. Either rail may be used as the line rail; however, the same rail shall be used for the full length of that tangential segment of the track.

² The ends of the chord shall be at points on the gage side of the outer rail, five-eighths of an inch below the top of the railhead.

³ N/A—Not Applicable

(b) For operations at a qualified cant deficiency, E_{11} , of more than 5 inches, the alignment of the outside rail of the curve may not deviate from uniformity more than the amount prescribed in the following table:

Class of track	Curved track	
	The deviation of the mid-ordinate from a 31-foot chord ¹ may not be more than— (inches)	The deviation of the mid-ordinate from a 62-foot chord ¹ may not be more than— (inches)
Class 1 track ²	³ N/A	1¼
Class 2 track ²	³ N/A	1¼
Class 3 track	¾	1¼
Class 4 track	¾	7/8
Class 5 track	½	5/8

¹ The ends of the chord shall be at points on the gage side of the outer rail, five-eighths of an inch below the top of the railhead.

² Restraining rails or other systems may be required for derailment prevention.

³ N/A—Not Applicable

§ 213.57 Curves; elevation and speed limitations.

(a) The maximum elevation of the outside rail of a curve may not be more than 8 inches on track Classes 1 and 2, and 7 inches on track Classes 3 through 5. The outside rail of a curve may not be lower than the inside rail by design, except when engineered to address specific track or operating conditions; the limits in Sec. 213.63[track surface] apply in all cases.

(b) The maximum allowable posted timetable operating speed for each curve is determined by the following formula--

$$V_{\max} = \sqrt{\frac{E_a + 3}{0.0007D}}$$

Where--

V_{\max} = Maximum allowable posted timetable operating speed (m.p.h.).

E_a = Actual elevation of the outside rail (inches).^{1\}

^{1\} Actual elevation, E_a , for each 155-foot track segment in the body of the curve is determined by averaging the elevation for 11 points through the segment at 15.5-foot spacing. If the curve length is less than 155 feet, the points are averaged through the full length of the body of the curve.

E_u = Qualified cant deficiency ^{2\} (inches) of the vehicle type.

^{2\} If the actual elevation, E_a , and degree of curvature, D , change as a result of track degradation, then the actual cant deficiency for the maximum allowable posted timetable operating speed, V_{\max} , may be greater than the qualified cant deficiency, E_u . This actual cant deficiency for each curve may not exceed the qualified cant deficiency, E_u ,

plus 1 inch.

D = Degree of curvature (degrees).^{3\}

^{3\} Degree of curvature, D, is determined by averaging the degree of curvature over the same track segment as the elevation.

(c) All vehicles are considered qualified for operating on track with a cant deficiency, Eu, not exceeding 3 inches. Table 1 of appendix A to this part is a table of speeds computed in accordance with the formula in paragraph (b) of this section, when Eu equals 3 inches, for various elevations and degrees of curvature.

(d) Each vehicle type must be approved by FRA to operate on track with a qualified cant deficiency, Eu, greater than 3 inches. Each vehicle type must demonstrate, in a ready-for-service load condition, compliance with the requirements of either paragraph (d)(1) or (2) of this section.

(1) When positioned on a track with a uniform super-elevation equal to the proposed cant deficiency:

(i) No wheel of the vehicle type unloads to a value less than 60 percent of its static value on perfectly level track; and

(ii) For passenger cars, the roll angle between the floor of the equipment and the horizontal does not exceed 8.6 degrees; or

(2) When operating through a constant radius curve at a constant speed corresponding to the proposed cant deficiency, and a test plan is submitted to and approved by FRA in accordance with Sec. 213.345(e) and (f):

(i) The steady-state (average) load on any wheel, throughout the body of the curve, is not less than 60 percent of its static value on perfectly level track; and

(ii) For passenger cars, the steady-state (average) lateral acceleration measured on the floor of the carbody does not exceed 0.15g.

(e) The track owner or railroad shall transmit the results of the testing specified in paragraph (d) of this section to FRA's Associate Administrator for Railroad Safety/Chief Safety Officer (FRA) requesting approval for the vehicle type to operate at the desired curving speeds allowed under the formula in paragraph (b) of this section. The request shall be made in writing and contain, at a minimum, the following information--

(1) A description of the vehicle type involved, including schematic diagrams of the suspension system(s) and the estimated location of the center of gravity above top of rail;

(2) The test procedure,⁶⁷ including the load condition under which the testing was performed, and description of the instrumentation used to qualify the vehicle type, as well as the maximum values for wheel unloading and roll angles or accelerations that were observed during testing; and

⁶⁷ The test procedure may be conducted whereby all the wheels on one side (right or left) of the vehicle are raised to the proposed cant deficiency, the vertical wheel loads under each wheel are measured, and a level is used to record the angle through which the floor of the vehicle has been rotated.

(3) For vehicle types not subject to parts 229 or 238 of this chapter, procedures or standards in effect that relate to the maintenance of all safety-critical components of the suspension system(s) for the particular vehicle type. Safety-critical components of the suspension system are those that impact or have significant influence on the roll of the carbody and the distribution of weight on the wheels.

(f) In approving the request made pursuant to paragraph (e) of this section, FRA may impose conditions necessary for safely operating at the higher curving speeds. Upon FRA approval of the request, the track owner or railroad shall notify FRA in writing no less than 30 calendar days prior to the proposed implementation of the approved higher curving speeds allowed under the formula in paragraph (b) of this section. The notification shall contain, at a minimum, identification of the track segment(s) on which the higher curving speeds are to be implemented.

(g) The documents required by this section must be provided to FRA by:

- (1) The track owner; or
- (2) A railroad that provides service with the same vehicle type over trackage of one or more track owner(s), with the written consent of each affected track owner.

(h) (1) Vehicle types permitted by FRA to operate at cant deficiencies, Eu, greater than 3 inches but not more than 5 inches shall be considered qualified under this section to operate at those permitted cant deficiencies for any track segment. The track owner or railroad shall notify FRA in writing no less than 30 calendar days prior to the proposed implementation of such curving speeds in accordance with paragraph (f) of this section.

(2) Vehicle types permitted by FRA to operate at cant deficiencies, Eu, greater than 5 inches shall be considered qualified under this section to operate at those permitted cant deficiencies only for the previously operated or identified track segments(s).

(i) For vehicle types intended to operate at any curving speed producing more than 5 inches of cant deficiency, the following provisions of subpart G of this part shall apply: §§ 213.333(a) through (g), (j)(1), (k) and (m)[automated vehicle inspection systems], 213.345[vehicle qualification testing], and 213.369(f)[vehicle/track interaction safety record].

(j) As used in this section--

(1) Vehicle means a locomotive, as defined in § 229.5 of this chapter; a freight car, as defined in Sec. 215.5 of this chapter; a passenger car, as defined in § 238.5 of this chapter; and any rail rolling equipment used in a train with either a freight car or a passenger car.

(2) Vehicle type means like vehicles with variations in their physical properties, such as suspension, mass, interior arrangements, and dimensions that do not result in significant changes to their dynamic characteristics.

§ 213.59 Elevation of curved track; runoff.

(a) If a curve is elevated, the full elevation shall be provided throughout the curve, unless physical conditions do not permit. If elevation runoff occurs in a curve, the actual minimum elevation shall be used in computing the maximum allowable posted timetable operating speed for

that curve under § 213.57(b).

(b) Elevation runoff shall be at a uniform rate, within the limits of track surface deviation prescribed in § 213.63, and it shall extend at least the full length of the spirals. If physical conditions do not permit a spiral long enough to accommodate the minimum length of runoff, part of the runoff may be on tangent track.

§ 213.63 Track surface.

(a) Except as provided in paragraph (b) of this section, each track owner shall maintain the surface of its track within the limits prescribed in the following table:

Track surface (inches)	Class of track				
	1	2	3	4	5
The runoff in any 31 feet of rail at the end of a raise may not be more than	3½	3	2	1½	1
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	3	2¾	2¼	2	1¼
The deviation from zero crosslevel at any point on tangent or reverse crosslevel elevation on curves may not be more than	3	2	1¾	1¼	1
The difference in crosslevel between any two points less than 62 feet apart may not be more than ^{1, 2}	3	2¼	2	1¾	1½
*Where determined by engineering decision prior to June 22, 1998, due to physical restrictions on spiral length and operating practices and experience, the variation in crosslevel on spirals per 31 feet may not be more than	2	1¾	1¼	1	¾

¹ Except as limited by §213.57(a), where the elevation at any point in a curve equals or exceeds 6 inches, the difference in crosslevel within 62 feet between that point and a point with greater elevation may not be more than 1½ inches.

² However, to control harmonics on Class 2 through 5 jointed track with staggered joints, the crosslevel differences shall not exceed 1¼ inches in all of six consecutive pairs of joints, as created by seven low joints. Track with joints staggered less than 10 feet apart shall not be considered as having staggered joints. Joints within the seven low joints outside of the regular joint spacing shall not be considered as joints for purposes of this footnote.

(b) For operations at a qualified cant deficiency, E_u , of more than 5 inches, each track owner shall maintain the surface of the curve within the limits prescribed in the following table:

Track surface (inches)	Class of track				
	1	2	3	4	5
The deviation from uniform profile on either rail at the mid-ordinate of a 31-foot chord may not be more than	N/A ¹	N/A ¹	1	1	1
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	2¼	2¼	1¾	1¼	1
The difference in crosslevel between any two points less than 10 feet apart (short warp) shall not be more than	2	2	1¾	1¾	1½

¹ N/A—Not Applicable.

§213. 65 Combined track alinement and surface deviations

On any curved track where operations are conducted at a qualified cant deficiency, E_u , greater than 5 inches, the combination of alinement and surface deviations for the same chord length on the outside rail in the curve, as measured by a TGMS, shall comply with the following formula:

$$\frac{3}{4} \times \left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| \leq 1$$

Where—

A_m = measured alinement deviation from uniformity (outward is positive, inward is negative).

A_L = allowable alinement limit as per § 213.55(b) (always positive) for the class of track.

S_m = measured profile deviation from uniformity (down is positive, up is negative).

S_L = allowable profile limit as per § 213.63(b) (always positive) for the class of track.

$$\left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| = \text{the absolute (positive) value of the result of } \frac{A_m}{A_L} + \frac{S_m}{S_L} .$$

Subpart D - Track Structure

§ 213.103 Ballast

All track must be supported by a material which will (a) transmit and distribute the load of the track and railroad rolling equipment to the subgrade; (b) restrain the track laterally, longitudinally, and vertically under dynamic loads imposed by railroad equipment and thermal stress exerted by the rails; (c) provide adequate drainage for the track; (d) maintain proper track cross level, surface and alinement.

§ 213.109 Crossties⁶⁸

Crossties shall be made of a material to which rail can be securely fastened.

Each 39-foot segment of track shall have:

(1) A sufficient number of crossties which in combination provide effective support that will:

- (i) Hold gage;
- (ii) Maintain surface; and
- (iii) Maintain alinement.

(2) The minimum number and type of crossties specified in paragraph (c) of this section effectively distributed to support the entire segment; and

(3) At least 1 crosstie of the type specified in paragraph (c) and (d) of this section that is located at a joint location as specified in paragraph (e) of this section.

⁶⁸ FRA has issued a final rule covering concrete crossties. It mandates specific requirements for effective concrete crossties, for rail fastening systems connected to concrete crossties, and for automated inspections of track constructed with concrete crossties. 63 Fed. Reg. 18073 and 76 Fed. Reg. 55819.

Each 39-foot segment of: Class 1 track shall have 5 crossties; Classes 2 and 3 track shall have 8 crossties; and Classes 4 and 5 track shall have 12 crossties, which are not:

- (1) Broken through;
- (2) Split or otherwise impaired to the extent the crossties will allow the ballast to work through, or will not hold spikes or rail fasteners;
- (3) So deteriorated that the tie plate or base of rail can move laterally more than 1/2 inch relative to the crossties; or
- (4) Cut by the tie plate through more than 40 percent of a tie's thickness.

Each 39 foot segment of track shall have the minimum number and type of crossties as indicated in the following table.

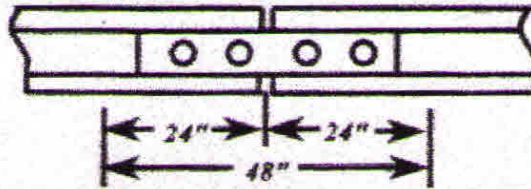
Class of Track	Tangent track and curves ≥ 2 degrees	Turnouts and curved track over 2 degrees
Class 1 track	5	6
Class 2 track	8	9
Class 3 track	8	10
Class 4 and 5 track	12	14

Crossties counted to satisfy the requirements set forth in the above table section shall not be -

- (1) Broken through;
- (2) Split or otherwise impaired to the extent the crossties will allow the ballast to work through, or will not hold spikes or rail fasteners;
- (3) So deteriorated that the tie plate or base of rail can move laterally 1/2 inch relative to the crossties; or
- (4) Cut by the tie plate through more than 40 percent of a crosstie's thickness.

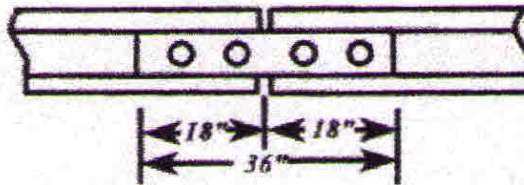
Class 1 and Class 2 track shall have one crosstie whose centerline is within 24 inches of each rail joint location, and Classes 3 through 5 track shall have one crosstie whose centerline is within 18 inches of each rail joint location or, two crossties whose centerlines are within 24 inches either side of each rail joint location. The relative position of these ties is described in the following diagrams:

Classes 1 and 2

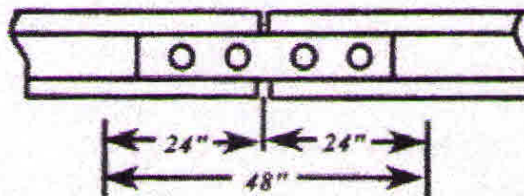


Each rail joint in Classes 1 and 2 track shall be supported by at least one cross-tie specified in paragraphs (c) and (d) of this section whose centerline is within 48" shown above.

Classes 3 through 5



Each rail joint in Classes 3 through 5 track shall be supported by either at least one cross-tie specified in paragraphs (c) and (d) of this section whose centerline is within 36" shown above, or:



Two cross-ties, one on each side of the rail joint, whose centerlines are within 24" of the rail joint location shown above.

(f) For track constructed without cross-ties, such as slab track, track connected directly to bridge structural components and track over servicing pits, the track structure hold gage, maintain surface and alinement.

§213.110 Gage Restraint Measurement Systems

(a) This provides for the implementation of a GRMS, supplemented by the use of a PTLF, to determine compliance with the cross-tie and rail fastener requirements specified in §§ 213.109 and 213.127. Track owners electing to implement this technology must provide the appropriate FRA Regional Office with notification that specifically identifies the line segment(s) where GRMS will be used. The appropriate FRA office is the headquarters location for the FRA region in which the GRMS designated line segment is located.

The notification must be provided to FRA at least 30 days prior to the designation of any line segment which will be subject to the requirements of this section. Track owners must also provide FRA with at least 10 days notice prior to the removal of a line segment from GRMS designation.

(b) This paragraph specifies what information track owners should include in their notifications to FRA about line segments designated for GRMS inspection. The information must include, at a minimum, the segment's timetable designation, milepost limits, track class, million gross tons of traffic per year, and any other identifying characteristics of the segment.

(c) The track owner shall also provide to FRA sufficient technical data to establish compliance with the following minimum design requirements of a GRMS vehicle:

(1) Gage restraint shall be measured between the heads of rail--

(A) At an interval not exceeding 16 inches;

(B) Under an applied vertical load of no less than 10 kips per rail; and

(C) Under an applied lateral load that provides for a lateral/vertical load ratio of between 0.5 and 1.25 \5\, and a load severity greater than 3 kips but less than 8 kips per rail.

\5\ GRMS equipment using load combinations developing L/V ratios that exceed 0.8 shall be operated with caution to protect against the risk of wheel climb by the test wheelset.

Where:

S = Load severity, defined as the lateral load applied to the fastener system (kips).
 L = Actual lateral load applied (kips).
 c = Coefficient of friction between rail/tie, which is assigned a nominal value of 0.4.
 V = Actual vertical load applied (kips), or static vertical wheel load if vertical load is not measured.

(e) The measured gage values shall be converted to a Projected Loaded Gage 24 (PLG24) as follows—
 $PLG24 = UTG + A \times (LTG - UTG)$
 Where—
 UTG = Unloaded track gage measured by the GRMS vehicle at a point no less than 10 feet from any lateral or vertical load application.

LTG = Loaded track gage measured by the GRMS vehicle at a point no more than 12 inches from the lateral load application point.
 A = The extrapolation factor used to convert the measured loaded gage to expected loaded gage under a 24-kip lateral load and a 33-kip vertical load.
 For all track—

$$A = \frac{13.513}{(L - 0.258 \times V) - .009 \times (L - 0.258 \times V)^2}$$

Note: The A factor shall not exceed a value of 3.184 under any valid loading configuration.

L = Actual lateral load applied (kips).
 V = Actual vertical load applied (kips), or static vertical wheel load if vertical load is not measured.

(f) The measured gage and load values shall be converted to a Gage Widening Projection (GWP) as follows:

$$GWP = (LTG - UTG) \times \frac{8.26}{L - 0.258 \times V}$$

(1)The GRMS record of lateral restraint shall identify two exception levels. At a minimum, the track owner shall initiate the required remedial action at each exception level as defined in the following table-

GRMS parameters ¹	If measurement value exceeds	Remedial action required
First Level Exception		
UTG	58 inches	(1) Immediately protect the exception location with a 10 m.p.h. speed restriction, then verify location; (2) Restore lateral restraint and maintain in compliance with PTLF criteria as described in paragraph (m) of this section; and (3) Maintain compliance with §213.53(b) as measured with the PTLF.
LTG	58 inches.	
PLG24	59 inches.	
GWP	1 inch.	
Second Level Exception		
LTG	57 $\frac{3}{4}$ inches on Class 4 and 5 track ² .	(1) Limit operating speed to no more than the maximum allowable under §213.9 for Class 3 track, then verify location; (2) Maintain in compliance with PTLF criteria as described in paragraph (m) of this section; and (3) Maintain compliance with §213.53(b) as measured with the PTLF.
PLG24	58 inches.	
GWP	0.75 inch.	

¹ Definitions for the GRMS parameters referenced in this table are found in paragraph (p) of this section.
² This note recognizes that good track will typically increase in total gage by as much as one-quarter of an inch due to outward rail rotation under GRMS loading conditions. For Class 2 and 3 track, the GRMS LTG values are also increased by one-quarter of an inch to a maximum of 58 inches. However, for any class of track, GRMS LTG values in excess of 58 inches are considered First Level exceptions and the appropriate remedial action(s) must be taken by the track owner. This 1/4-inch increase in allowable gage applies only to GRMS LTG. For gage measured by traditional methods, or with the use of the PTLF, the table in §213.53(b) applies.

(d), (e) and (f) The mathematical formulas prescribed in these paragraphs are to be used in the calculation of the Gage Widening Ratio (GWR) and the Projected Loaded Gage 24 (PLG 24). The accurate measurements of unloaded gage, GRMS loaded gage, and the lateral load applied are of critical importance because these measurements are used in the calculation of PLG 24 values and the values for GWR, values which comprise a direct measure of track strength. Therefore, to avoid any influence from adjacent loads, design requirements specify that the unloaded track gage must be measured by the GRMS vehicle at a point no less than 10 feet from any lateral or vertical load application. Loaded track gage measured by the GRMS vehicle shall be measured at a point no more than 12 inches from the lateral load application point.

This rule provides for the use of other gage measuring technologies, such as optical and laser gage measuring systems, by allowing the measurement of loaded gage to be taken no more than 12 inches from the lateral load application point.

Load severity is defined by the formula -- $S=L-cV$

Where --

S=Load severity, defined as the lateral load applied to the fastener system (pounds).

L=Actual lateral load applied (pounds).

c=Coefficient of friction between rail/tie which is assigned a nominal value of (0.4).

V=Actual vertical load applied (pounds).

The measured gage values shall be converted to a Projected Loaded Gage 24 (PLG 24) as follows

--

$$PLG\ 24 = UTG + A \times (LTG - UTG)$$

Where --

UTG=Unloaded track gage measured by the GRMS vehicle at a point no less than 10 feet from any lateral or vertical load application.

LTG=Loaded track gage measured by the GRMS vehicle at a point no more than 12 inches from the lateral load application point.

A=The extrapolation factor used to convert the measured loaded gage to expected loaded gage under a 24,000 pound lateral load and a 33,000 pound vertical load.

For all track --

13.513

$$A = \frac{13.513}{(.001 \times L - .000258 \times V) - .009 \times (.001 \times L - .000258 \times V)^2}$$

Note: The A factor shall not exceed (3.184) under any valid loading configuration.
where --

L=Actual lateral load applied (pounds).

V=Actual vertical load applied (pounds).

The measured gage value shall be converted to a Gage Widening Ratio (GWR) as follows:

$$GWR = \frac{(LTG - UTG)}{L} \times 16,000$$

(g), (h) and (i) GRMS vehicles must be also capable of producing strip chart traces of all the parameters specified in paragraph (l) of this section, as well as a printed exception report listing by magnitude and location all exceptions from these parameters. The exception report listing must be provided to the appropriate person designated as fully qualified under § 213.7 prior to the next inspection required under § 213.233 of this part.

(j) The track owner is required to institute procedures that will ensure the integrity of data collected by the GRMS and PTLF systems. Daily GRMS instrument verification procedures should ensure that measurements made on the ground of loaded and unloaded gage parameters correlate to those recorded by the instrumentation. Track owners shall maintain documented calibration procedures on each GRMS vehicle and make them available upon request from an FRA representative. Track owners must also develop and implement the necessary PTLF inspection and maintenance procedures so that the 4,000-pound reading is accurate within plus/minus five percent.

(k) This paragraph recognizes the need for all persons designated as fully qualified under §213.7 and whose territories are subject to the requirements of this section to receive training on the implementation of GRMS technology. The track owner, therefore is required to develop a formal GRMS training program which must be made available to FRA upon request.

The training program must provide detailed instruction on the specific areas identified in this paragraph. In particular, the training must address basic GRMS operational procedures, interpretation and handling of exception reports, how to locate and verify GRMS defects in the field, remedial action requirements to be initiated when defects are verified, how to use and calibrate the PTLF, and the recordkeeping requirements associated with the implementation of GRMS technology.

(l) This paragraph specifies the parameters and threshold levels to be reported as a record of lateral restraint following an inspection by a GRMS vehicle. The regulation requires that two levels of exceptions are reported during the GRMS inspection. Specific remedial actions are required for each level, as identified in the Remedial Action Table in this section. First Level exceptions are required to be immediately protected by a 10 mph speed restriction until

verification and corrective action can be instituted. Second Level exceptions are to be monitored and maintained within the PTLF criteria outlined in paragraph (m) of this section.

Footnote 2 in the Remedial Action Table of this section recognizes that typical good track will increase in total gage by as much as 1/4 inch due to outward rail rotation under GRMS loading conditions. Accordingly, for Class 2 and Class 3 track, the GRMS loaded track gage values are also increased by 1/4 inch to a maximum of 58 inches. GRMS loaded track gage values in excess of 58 inches must always be considered First Level exceptions. This 1/4 inch allowance in gage applies only to GRMS loaded gage, and does not apply to PTLF gage measurements or to measurements made by more traditional methods.

GRMS Parameter¹	If measurement value exceeds	Remedial action required
First Level Exception		
UTG	58 inches	(1) Immediately protect the Exception location with a 10 mph speed restriction; then verify location; and (2) Restore lateral restraint and maintain in compliance with PTLF criteria as described in paragraph (m) of this section; and (3) Maintain compliance with § 213.53(b) of this part as measured with the PTLF.
LTG	58 inches	
PLG24	59 inches	
GWR	1.0 inches	
Second Level Exception		
LTG	57 3/4 inches	² Limit operating speed to no more than the maximum allowable under § 213.9 for Class 3 track; then verify location; and (1) maintain in compliance with PTLF criteria as described in paragraph (m) of this section; and (2) Maintain compliance with § 213.53(b) of this part as measured with the PTLF.
PLG24	58 inches	
GWR	0.75 inches	

[fn1] Definitions for the GRMS parameters referenced in this table are found in paragraph (p) of this section.

[fn2] This note recognizes that typical good track will increase in total gage by as much as 1/4 inch due to outward rail rotation under GRMS loading conditions. For Class 2 & 3 track, the GRMS LTG values are also increased by 1/4 inch to a maximum of 58 inches. However, for any Class of track, GRMS LTG values in excess of 58 inches are considered First Level exceptions and the appropriate remedial actions must be taken by the track owner. This 1/4 -inch increase in

allowable gage applies only to GRMS LTG. For gage measured by traditional methods, or with the use of the PTLF, the table in § 213.53(b) will apply.

.....

(m) While the remedial action table in paragraph (l) requires the use of the PTLF to measure compliance with the lateral restraint and gage requirements at identified exception locations in GRMS territory, paragraph (m) also provides for the use of a PTLF as an additional analytical tool by fully qualified § 213.7 individuals at other locations in GRMS territory. Paragraph (m) also describes the manner in which a PTLF must be used in GRMS territory, whether it is being used as an additional analytical tool or being used to meet the remedial action requirements set forth in paragraph (l). Compliance with §§ 213.109 and 213.127 will be demonstrated when a PTLF is applied and (1) the total gage widening at that location does not exceed 5/8 inch when increasing the applied force from 0 to 4,000 pounds, and (2) the gage of the track measured under 4,000 pounds of applied force does not exceed the allowable gage prescribed in § 213.53(b) of this section for the class of track involved. Gage widening in excess of 5/8 inch shall constitute a deviation from Class 1 standards.

(n) The track owner must maintain a record of the two most recent GRMS inspections at locations meeting the requirements specified in § 213.241(b). The records must indicate the location and nature of each First Level exception and, the nature and date of initiated remedial action, if any, for each First Level exception. First Level exceptions are described in the Remedial Action Table in Paragraph (l).

The track owner is not required to maintain records of Second Level exceptions. However, as required in paragraph (i), reports of all exceptions, including Second Level exceptions, must be provided to the appropriate fully qualified § 213.7 individuals prior to the next inspection required under § 213.233. Second Level exceptions are also described in the Remedial Action Table in Paragraph (l).

(o) On line segments where the annual tonnage exceeds two million gross tons, or where the maximum operating speeds for passenger trains exceeds 30 mph, GRMS inspections must be performed annually, with no more than 14 months between inspections. The maximum interval of 14 months is intended to provide some flexibility for scheduling when it may not be possible to schedule annual inspections within the same calendar month each year.

On line segments where the annual tonnage is two million gross tons or less and the maximum operating speed for passenger trains does not exceed 30 mph, the interval between GRMS inspections cannot exceed 24 months. This extended frequency is an attempt to make the technology more accessible to short line operators who may not have the financial or equipment resources available to larger railroads.

(p) This subsection lists the following definitions: gage restraint measurement system; gage widening projection; L/V ratio; load severity; loaded track gage; portable track loading fixture; projected loaded gage; and unloaded track gage.

(1) **Gage restraint measurement system (GRMS)** means a track loading vehicle meeting the minimum design requirements specified in this section.

(2) **Gage widening projection (GWP)** means the measured gage widening, which is the difference between loaded and unloaded gage, at the applied loads, projected to reference

loads of 16 kips of lateral force and 33 kips of vertical force.

(3) **L/V ratio** means the numerical ratio of lateral load applied at a point on the rail to the vertical load applied at that same point. GRMS design requirements specify a L/V ratio of between 0.5 and 1.25.

(4) **Load severity** means the amount of lateral load applied to the fastener system after friction between rail and tie is overcome by any applied gage-widening lateral load.

(5) **Loaded track gage (LTG)** means the gage measured by the GRMS vehicle at a point no more than 12 inches from the lateral load application point.

(6) **Portable track loading fixture (PTLF)** means a portable track loading device capable of applying and increasing lateral force from 0 to 4,000 lbs on the web/base fillet of each rail simultaneously.

(7) **Projected loaded gage (PLG)** means an extrapolated value for loaded gage calculated from actual measured loads and deflections. PLG 24 means the extrapolated value for loaded gage under a 24,000 lb lateral load and a 33,000 lb vertical load.

(8) **Unloaded track gage (UTG)** means the gage measured by the GRMS vehicle at a point no less than 10 feet from any lateral or vertical load.

§ 213.113 Defective Rails

(a) When an owner of track to which this part applies learns, through inspection or otherwise, that a rail in that track contains any of the defects listed in the following table, a person designated under § 213.7 shall determine whether or not the track may continue in use. If he determines that the track may continue in use, operation over the defective rail is not permitted until:

- (1) The rail is replaced; or
- (2) The remedial action prescribed in the table is initiated.

(b) When an owner of track learns that a rail in the track contains an indication of any defect listed in the table below, the owner shall verify the indication within four hours, unless there is a defect which requires remedial action A, A2, or B in the table below, in which case the track owner must immediately verify the indication and replace or repair the rail, or take action set forth in the table.

REMEDIAL ACTION TABLE

Defect	Length of defect (inch(es))		Percentage of existing rail head cross-sectional area weakened by defect		If the defective rail is not replaced or repaired, take the remedial action prescribed in note
	More than	But not more than	Less than	But not less than	
Compound Fissure	..... ..... .....	..... ..... .....	70..... 100.....	5..... 70..... 100.....	B. A2. A.
Transverse Fissure Detail	.....	.....	25	5.....	C.
Fracture	.....	.....	60	25.....	D.
Engine Burn	.....	.....	100	60.....	A2, or [E and H].
Fracture	.....	.....	.....	100.....	A, or [E and H].
Defective Weld	.....	.....	.....	.....	.....
Horizontal Split Head	.....	.....	.....	.....	.....
Vertical Split Head	.....	.....	.....	.....	.....
Split Web	1.....	2.....	.....	.....	H and F.
Piped Rail	2.....	4.....	.....	.....	I and G.
Head Web	4.....	.....	.....	.....	B.
Separation	(¹).....	(¹).....	.....	.....	A.
Defective Weld (Longitudinal)	.....	.....	.....	.....	.....
Bolt Hole	1/2.....	1.....	.....	.....	H and F.
Crack	1.....	1 1/2.....	.....	.....	H and G.
	1 1/2.....	.....	.....	.....	B.
	(¹).....	(¹).....	.....	.....	A.
Broken Base	1.....	6.....	.....	.....	D.
	6 (²).....	.....	.....	.....	A, or [E and I].
Ordinary Break	.....	.....	.....	.....	A or E.
Damaged Rail	.....	.....	.....	.....	C.
Flattened Rail	Depth ≥ 3/8 and	.....	.....	.....	.....
Crushed Head	Length ≥ 8.....	.....	.....	.....	H.

(1) Break out in rail head.

(2) Remedial action D applies to a moon-shaped breakout, resulting from a derailment, with length greater than 6 inches but not exceeding 12 inches and width not exceeding one-third of the rail base width.

Notes:

A. Assign a person designated untie operation over the defective rail.

A2 Assign a person designated under §213.7 to make a visual inspection. After a visual inspection, that person may authorize operation to continue without continuous visual supervision at a maximum of 10 m.p.h. for up to 24 hours prior to another such visual inspection or replacement or repair of the rail.

B. Limited operating speed over the defective rail to that as authorized by a person designated under §213.7(a) who has at least one year of supervisory experience in rail track maintenance. The operating speed cannot be over 30 m.p.h. or the maximum allowable speed

under §213.9 for the class of track concerned, whichever is lower.

C. Apply joint bars bolted only through the outermost holes to the defect within 10 days after it is determined to continue the track in use. In the case of Class 3 through 5 track, limit the operating speed over the defective rail to 30 m.p.h. until joint bars are applied; thereafter, limit the speed to 50 m.p.h. or the maximum allowable speed under §213.9 for the class of track concerned, whichever is lower. When a search for internal rail defects is conducted under §213.237, and defects are discovered in Class 3 through 5 track that require remedial action C, the operating speed shall be limited to 50 m.p.h. or the maximum allowable speed under §213.9 for the class of track concerned, whichever is lower, for a period not to exceed 4 days. If the defective rail has not been removed from the track or a permanent repair made within 4 days of the discovery, limit operating speed over the defective rail to 30 m.p.h. until joint bars are applied; thereafter, limit speed to 50 m.p.h. or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower. When joint bars have not been applied within 10 days, the speed must be limited to 10 m.p.h. until joint bars are applied.

D. Apply joint bars bolted only through the outermost holes to the defect within 7 days after it is determined to continue the track in use. In the case of Class 3 through 5 track, limit operating speed over the defective rail to 30 m.p.h. or less as authorized by a person designated under § 213.7(a), who has at least one year of supervisory experience in railroad track maintenance, until joint bars are applied; thereafter, limit speed to 50 m.p.h. or the maximum allowable speed under §213.9 for the class of track concerned, whichever is lower. When joint bars have not been applied within 7 days, the speed must be limited to 10 m.p.h. until the joint bars are applied.

E. Apply joint bars to the defect and bolt in accordance with § 213.121(d) and (e).

F. Inspect the rail within 90 days after it is determined to continue the track in use. If the rail remains in the track and not replaced or repaired, the re-inspection cycle starts over with each successive re-inspection unless the re-inspection reveals the rail defect to have increased in size and therefore become subject to a more restrictive remedial action. This process continues indefinitely until the rail is removed from the track or repaired. If not inspected within 90 days, limit speed to that for Class 2 track or the maximum allowable speed under § 213.9 for the class of track concerned, whichever is lower, until it is inspected.

G. Inspect rail within 30 days after it is determined to continue the track in use. If the rail remains in the track and is not, replaced or repaired, the re-inspection cycle starts over with each successive re-inspection unless the re-inspection reveals the rail defect to have increased in size and therefore become subject to a more restrictive remedial action. This process continues indefinitely until the rail is removed from the track or repaired. If not inspected within 30 days, limit speed to that for Class 2 track or the maximum allowable speed under §213.9 for the class of track concerned, whichever is lower, until it is inspected.

H. Limit operating speed over the defective rail to 50 m.p.h. or the maximum allowable speed under §213.9 for the class of track concerned, whichever is lower.

I. Limit operating speed over the defective rail to 30 m.p.h. or the maximum

allowable speed under §213.9 for the class of track concerned, whichever is lower.

(d) As used in this section--

(1) **Bolt hole crack** means a crack across the web, originating from a bolt hole, and progressing on a path either inclined upward toward the rail head or inclined downward toward the base. Fully developed bolt hole cracks may continue horizontally along the head/web or base/web fillet, or they may progress into and through the head or base to separate a piece of the rail end from the rail. Multiple cracks occurring in one rail end are considered to be a single defect. However, bolt hole cracks occurring in adjacent rail ends within the same joint must be reported as separate defects.

(2) **Broken base** means any break in the base of the rail.

(3) **Compound fissure** means a progressive fracture originating from a horizontal split head that turns up or down, or in both directions, in the head of the rail. Transverse development normally progresses substantially at a right angle to the length of the rail.

(4) **Crushed head** means a short length of rail, not at a joint, which has drooped or sagged across the width of the rail head to a depth of $\frac{3}{8}$ inch or more below the rest of the rail head and 8 inches or more in length. Unlike flattened rail where the depression is visible on the rail head only, the sagging or drooping is also visible in the head/web fillet area.

(5) **Damaged rail** means any rail broken or otherwise damaged by a derailment, broken, flat, or unbalanced wheel, wheel slipping, or similar causes.

(6) **Defective weld** means a field or plant weld containing any discontinuities or pockets, exceeding 5 percent of the rail head area individually or 10 percent in the aggregate, oriented in or near the transverse plane, due to incomplete penetration of the weld metal between the rail ends, lack of fusion between weld and rail end metal, entrapment of slag or sand, under-bead or shrinkage cracking, or fatigue cracking. Weld defects may originate in the rail head, web, or base, and in some cases, cracks may progress from the defect into either or both adjoining rail ends. If the weld defect progresses longitudinally through the weld section, the defect is considered a split web for purposes of remedial action required by this section.

(7) **Detail fracture** means a progressive fracture originating at or near the surface of the rail head. These fractures should not be confused with transverse fissures, compound fissures, or other defects which have internal origins. Detail fractures may arise from shelled spots, head checks, or flaking.

(8) **Engine burn fracture** means a progressive fracture originating in spots where driving wheels have slipped on top of the rail head. In developing downward these fractures frequently resemble the compound or even transverse fissures with which they should not be confused or classified.

(9) **Flattened rail** means a short length of rail, not at a joint, which has flattened out across the width of the rail head to a depth of $\frac{3}{8}$ inch or more below the rest of the rail and 8 inches or more in length. Flattened rail occurrences have no repetitive regularity and thus do not include corrugations, and have no apparent localized cause such as a weld or engine burn. Their individual length is relatively short, as compared to a condition such as head flow on the low rail of curves.

(10) **Head and web separation** means a progressive fracture, longitudinally separating the head from the web of the rail at the head fillet area.

(11) **Horizontal split head** means a horizontal progressive defect originating inside of the rail head, usually $\frac{1}{4}$ inch or more below the running surface and progressing horizontally in

all directions, and generally accompanied by a flat spot on the running surface. The defect appears as a crack lengthwise of the rail when it reaches the side of the rail head.

(12) **Ordinary break** means a partial or complete break in which there is no sign of a fissure, and in which none of the other defects described in this paragraph (d) is found.

(13) **Piped rail** means a vertical split in a rail, usually in the web, due to failure of the shrinkage cavity in the ingot to unite in rolling.

(14) **Split web** means a lengthwise crack along the side of the web and extending into or through it.

(15) **Transverse fissure** means a progressive crosswise fracture starting from a crystalline center or nucleus inside the head from which it spreads outward as a smooth, bright, or dark round or oval surface substantially at a right angle to the length of the rail. The distinguishing features of a transverse fissure from other types of fractures or defects are the crystalline center or nucleus and the nearly smooth surface of the development which surrounds it.

(16) **Vertical split head** means a vertical split through or near the middle of the head, and extending into or through it. A crack or rust streak may show under the head close to the web or pieces may be split off the side of the head.

§213.115 Rail End Mismatch

Any mismatch of rails at joints may not be more than set forth in the following table.

Class of track	Any mismatch of rails at joint may not be more than the following—	
	On the trend of the rail ends (inch)	On the gauge side of the rail ends (inch)
1	1/4	1/4
2	1/4	3/16
3	3/16	3/16
4,5	1/8	1/8

§ 213.119 Continuous welded rail (CWR); general

Each track owner with track constructed of CWR shall have in effect and comply with written procedures which address the installation, adjustment, maintenance and inspection of CWR, and a training program for the application of those procedures. FRA reviews each plan for compliance with the following:

(a) Procedures for the installation and adjustment of CWR which include __

(1) Designation of a desired rail installation temperature range for the geographic area in which the CWR is located; and

(2) De-stressing procedures/methods which address proper attainment of the

desired rail installation temperature range when adjusting CWR.

(b) Rail anchoring or fastening requirements that will provide sufficient restraint to limit longitudinal rail and crosstie movement to the extent practical, and specifically addressing CWR rail anchoring or fastening patterns on bridges, bridge approaches, and at other locations where possible longitudinal rail and crosstie movement associated with normally expected train-induced forces, is restricted.

(c) Procedures which specifically address maintaining a desired rail installation temperature range when cutting CWR including rail repairs, in-track welding, and in conjunction with adjustments made in the area of tight track, a track buckle, or a pull-apart. Rail repair practices shall take into consideration existing rail temperature so that :

(1) When rail is removed, the length installed shall be determined by taking into consideration the existing rail temperature and the desired rail installation temperature range; and

(2) Under no circumstances should rail be added when the rail temperature is below that designated by paragraph (a)(1) of this section, without provisions for later adjustment.

(d) Procedures which address the monitoring of CWR in curved track for inward shifts of alignment toward the center of the curve as a result of disturbed track.

(e) Procedures which control train speed on CWR track when

(1) Maintenance work, track rehabilitation, track roadbed or ballast section and reduces the lateral or longitudinal resistance of the track; and

(2) In formulating the procedures under this paragraph (e), the track owner shall:

(i) Determine the speed required, and the duration and subsequent removal of any speed restriction based on the restoration of the ballast, along with sufficient ballast re-consolidation to stabilize the track to a level that can accommodate expected train-induced forces. Ballast re-consolidation can be achieved through either the passage of train tonnage or mechanical stabilization procedures, or both; and

(ii) Take into consideration the type of crossties used.

(f) Procedures which prescribe when physical track inspections are to be performed to detect buckling prone conditions in CWR track. At a minimum, these procedures shall address inspecting track to identify:

(1) Locations where tight or kindly rail conditions are likely to occur;

(2) Locations where track work of the nature described in paragraph (e)(1) of this section have recently been performed; and

(3) In formulating the procedures under this paragraph (f), the track owner shall:

(i) Specify the timing of the inspection; and

(ii) Specify the appropriate remedial actions to be taken when buckling prone conditions are found.

(g) Procedures which prescribe the scheduling and conduct of inspections to detect cracks and other indications of potential failures in CWR joints.

On and after January 1, 2007, in formulating the procedures under this paragraph, the track owner shall--

(1) Address the inspection of joints and the track structure at joints, including, at a minimum, periodic on-foot inspections;

(2) Identify joint bars with visible or otherwise detectable cracks and conduct remedial action pursuant to Sec. 213.121;

(3) Specify the conditions of actual or potential joint failure for which personnel must inspect, including, at a minimum, the following items:

(i) Loose, bent, or missing joint bolts;

(ii) Rail end batter or mismatch that contributes to instability of the joint; and

(iii) Evidence of excessive longitudinal rail movement in or near the joint, including, but not limited to; wide rail gap, defective joint bolts, disturbed ballast, surface deviations, gap between tie plates and rail, or displaced rail anchors;

(4) Specify the procedures for the inspection of CWR joints that are imbedded in highway-rail crossings or in other structures that prevent a complete inspection of the joint, including procedures for the removal from the joint of loose material or other temporary material;

(5) Specify the appropriate corrective actions to be taken when personnel find conditions of actual or potential joint failure, including on-foot follow-up inspections to monitor conditions of potential joint failure in any period prior to completion of repairs.

(6) Specify the timing of periodic inspections, which shall be based on the configuration and condition of the joint:

(i) Except as provided in paragraphs (g)(6)(ii) through (iv), track owners must specify that all CWR joints are inspected, at a minimum, in accordance with the intervals identified in the following table—

MINIMUM NUMBER OF INSPECTIONS PER CALENDAR YEAR 1

Freight trains operating over track with an annual tonnage of:

Passenger trains operating track with an annual tonnage of:

	Less than 40 mgt	40 to 60 mgt	Greater than 60 mgt	Less than 20 mgt	Greater than or equal to 20mgt
Class 5 & above	2 2	3 2	4 2	3 2	3
Class 4	2 2	3 2	4	2 2	3
Class 3	1	2	2	2	2
Class 2	0	0	0	1	1
Class 1	0	0	0	0	0
Excepted Track	0	0	0	n/a	n/a

4 = Four times per calendar year, with one inspection in each of the following periods: January to March, April to June, July to September, and October to December; and with consecutive inspections separated by at least 60 calendar days.
3 = Three times per calendar year, with one inspection in each of the following periods: January to April, May to August, and September to December; and with consecutive inspections separated by at least 90 calendar days
2 = Twice per calendar year, with one inspection in each of the following periods: January to June and July to December; and with consecutive inspections separated by at least 120 calendar days.
1 = Once per calendar year, with consecutive inspections separated by at least 180 calendar days.
1 Where a track owner operates both freight and passenger trains over a given segment of track, and there are two different possible inspection interval requirements, the more frequent inspection interval applies.
2 When extreme weather conditions prevent a track owner from conducting an inspection of a particular territory within the required interval, the track owner may extend the interval by up to 30 calendar days from the last day that the extreme weather condition prevented the required inspection.

(ii) Consistent with any limitations applied by the track owner, a passenger train conducting an unscheduled detour operation may proceed over track not normally used for passenger operations at a speed not to exceed the maximum authorized speed otherwise allowed, even though CWR joints have not been inspected in accordance with the frequency identified in paragraph (g)(6)(i), provided that:

(A) All CWR joints have been inspected consistent with requirements for freight service; and

(B) The unscheduled detour operation lasts no more than 14 consecutive calendar days. In order to continue operations beyond the 14-day period, the track owner must inspect the CWR joints in accordance with the requirements of paragraph (g)(6)(i).

(iii) Tourist, scenic, historic, or excursion operations, if limited to the maximum authorized speed for passenger trains over the next lower class of track, need not be considered in determining the frequency of inspections under paragraph (g)(6)(i).

(iv) All CWR joints that are located in switches, turnouts, track crossings, lift rail assemblies or other transition devices on moveable bridges must be inspected on foot at least monthly, consistent with the requirements in § 213.235; and all records of those inspections must be kept in accordance with the requirements in § 213.241. A track owner may include in its § 213.235 inspections, in lieu of the joint inspections required by paragraph (g)(6)(i), CWR joints that are located in track structure that is adjacent to switches and turnouts, provided that the track owner precisely defines the parameters of that arrangement in the CWR plans.

(7) Specify the recordkeeping requirements related to joint bars in CWR, including the following:

(i) The track owner shall keep a record of each periodic and follow-up inspection required to be performed by the track owner's CWR plan, except for those inspections conducted pursuant to § 213.235 for which track owners must maintain records pursuant to §213.241. The record shall be prepared on the day the inspection is made and signed by the person making the inspection. The record shall include, at a minimum, the following items: the boundaries of the territory inspected; the nature and location of any deviations at the joint from the requirements of this Part or of the track owner's CWR plan, with the location identified with sufficient precision that personnel could return to the joint and identify it without ambiguity; the date of the inspection; the remedial action, corrective action, or both, that has been taken or will be taken; and the name or identification number of the person who made the inspection.

(ii) The track owner shall generate a Fracture Report for every cracked or broken CWR joint bar that the track owner discovers during the course of an inspection conducted pursuant to §§ 213.119(g), 213.233, or 213.235 on track that is required under §213.119(g)(6)(i) to be inspected.

(A) The Fracture Report shall be prepared on the day the cracked or broken joint bar is discovered. The record shall include, at a minimum: the railroad name; the location of the joint bar as identified by milepost and subdivision; the class of track; annual million gross tons for the previous calendar year; the date of discovery of the crack or break; the rail section; the type of bar (standard, insulated, or compromise); the number of holes in the joint bar; a general description of the location of the crack or break in bar; the visible length of the crack in inches; the gap measurement between rail ends; the amount and length of rail end batter or ramp on each rail end; the amount of tread mismatch; the vertical movement of joint; and in curves or spirals, the amount of gage mismatch and the lateral movement of the joint.

(B) The track owner shall submit the information contained in the Fracture Reports to the FRA Associate Administrator for Safety (Associate Administrator) twice annually, by July 31 for the preceding six-month period from January 1 through June 30 and by January 31 for the preceding six-month period from July 1 through December 31.

(C) After February 1, 2010, any track owner may petition FRA to conduct a technical conference to review the Fracture Report data submitted through December of 2009 and assess whether there is a continued need for the collection of Fracture Report data. The track owner shall submit a written request to the Associate Administrator, requesting the technical conference and explaining the reasons for proposing to discontinue the collection of the data.

(8) In lieu of the requirements for the inspection of rail joints contained in paragraphs (g)(1) through (7) of this section, a track owner may seek approval from FRA to use alternate procedures.

(i) The track owner shall submit the proposed alternate procedures and a supporting statement of justification to the Associate Administrator for Safety (Associate Administrator).

(ii) If the Associate Administrator finds that the proposed alternate procedures provide an equivalent or higher level of safety than the requirements in paragraphs (g)(1) through (g)(7) of this section, the Associate Administrator will approve the alternate procedures by notifying the track owner in writing. The Associate Administrator will specify in the written notification the date on which the procedures will become effective, and after that date, the track owner shall comply with the procedures. If the Associate Administrator determines that the alternate procedures do not provide an equivalent level of safety, the Associate Administrator will disapprove the alternate procedures in writing, and the track owner shall continue to comply with the requirements in paragraphs (g)(1) through (7) of this section.

(iii) While a determination is pending with the Associate Administrator on a request submitted pursuant to paragraph (g)(8) of this section, the track owner shall continue to comply with the requirements contained in paragraphs (g)(1) through (7) of this section.

(h) The track owner shall have in effect a **comprehensive training** program for the application of these written CWR procedures, with provisions for periodic re-training, for those individuals designated under § 213.7 as qualified to supervise the installation, adjustment, and maintenance of CWR track and to perform inspections of CWR track.

(i) The track owner shall prescribe and comply with **recordkeeping** requirements necessary to provide an adequate history of track constructed with CWR. At a minimum, these records must include:

(1) Rail temperature, location and date of CWR installations. This record shall be retained for at least one year;

(2) A record of any CWR installation or maintenance work that does not conform with the written procedures. Such record shall include the location of the rail and be maintained until the CWR is brought into conformance with such procedures;

(3) Information on inspection of rail joints as specified in paragraph (g)(7) of this part.

(j) As used in this section--

Action Items mean the rail joint conditions that track owners identify in their CWR plans pursuant to paragraph (g)(3) which require the application of a corrective action.

Adjusting/De-stressing means the procedure by which a rail's temperature is re-adjusted to the desired value. It typically consists of cutting the rail and removing rail anchoring devices, which provides for the necessary expansion and contraction, and then re-assembling the track.

Buckling Incident means the formation of a lateral misalignment sufficient in magnitude to constitute a deviation from the Class 1 requirements specified in Sec. 213.55. These normally occur when rail temperatures are relatively high and are caused by high longitudinal compressive forces.

Continuous Welded Rail (CWR) means rail that has been welded together into lengths exceeding 400 feet.

Corrective Actions mean those actions which track owners specify in their CWR plans to address conditions of actual or potential joint failure, including, as applicable, repair, restrictions on operations, and additional on-foot inspections.

CWR Joint means (a) any joint directly connected to CWR, and (b) any joint(s) in a segment of rail between CWR strings that are less than 195 feet apart, except joints located on jointed sections on bridges.

Desired Rail Installation Temperature Range means the rail temperature range, within a specific geographical area, at which forces in CWR should not cause a buckling incident in extreme heat, or a pull-apart during extreme cold weather.

Disturbed Track means the disturbance of the roadbed or ballast section, as a result of track maintenance or any other event, which reduces the lateral or longitudinal resistance of the track, or both.

Mechanical Stabilization means a type of procedure used to restore track resistance to disturbed track following certain maintenance operations. This procedure may incorporate dynamic track stabilizers or ballast consolidators, which are units of work equipment that are used as a substitute for the stabilization action provided by the passage of tonnage trains.

Rail Anchors means those devices which are attached to the rail and bear against the side of the crosstie to control longitudinal rail movement. Certain types of rail fasteners also act as rail anchors and control longitudinal rail movement by exerting a downward clamping force on the upper surface of the rail base.

Rail Temperature means the temperature of the rail, measured with a rail thermometer.

Remedial Actions mean those actions which track owners are required to take as a result of requirements of this part to address a non-compliant condition.

Tight/Kinky Rail means CWR which exhibits minute alignment irregularities which indicate that the rail is in a considerable amount of compression.

Tourist, Scenic, Historic, or Excursion Operations mean railroad operations that carry passengers with the conveyance of the passengers to a particular destination not being the principal purpose.

Train-induced Forces means the vertical, longitudinal, and lateral dynamic forces which are generated during train movement and which can contribute to the buckling potential of the rail.

Track Lateral Resistance means the resistance provided by the rail/crosstie structure against lateral displacement.

Track Longitudinal Resistance means the resistance provided by the rail anchors/rail fasteners and the ballast section to the rail/crosstie structure against longitudinal displacement.

Unscheduled Detour Operation means a short-term, unscheduled operation where a track owner has no more than 14 calendar days' notice that the operation is going to occur.

§ 213.121 Rail Joints

- (a) Each rail joint, insulated joint, and compromise joint must be of the proper design and dimensions for the rail on which it is applied.
- (b) If a joint bar on Classes 3 through 5 track is cracked, broken, or because of wear allows vertical movement of either rail when all bolts are tight, it must be replaced.
- (c) If a joint bar is cracked or broken between the middle two bolt holes it must be replaced.
- (d) In the case of conventional jointed track, each rail must be bolted with at least two bolts at each joint in Classes 2 through 5 track, and with at least one bolt at each joint.
- (e) In the case of continuous welded rail track, each rail must be bolted with at least two bolts at each joint.
- (f) Each joint bar must be held in position by trackbolts tightened to allow the joint bar to firmly support the abutting rail ends and to allow longitudinal movement of the rail in the joint to accommodate expansion and contraction due to temperature variations. When out-of-face, no slip, joint-to-rail contact exists by design, the requirements of this paragraph do not apply. Those locations are considered to be continuous welded rail track and must meet all the requirements for continuous welded rail track prescribed in this part.
- (g) No rail or angle bar having a torch cut or burned bolt hole may be used in Classes 3 through 5 track.

§ 213.122 Torch cut rail

(a) Except as a temporary repair in emergency situations no rail having a torch cut end shall be used in Classes 3 through 5 track. When a rail end is torch cut in emergency situations, train speed over that rail end shall not exceed the maximum allowable for Class 2 track. For existing torch cut rail ends in Classes 3 through 5 track the following shall apply ___

(1) All torch cut rail ends in Class 5 track shall be removed;

(2) Within two years of September 21, 1998, all torch cut rail ends in Class 4 track shall be removed; and

(3) All torch cut rail ends in Class 3 track over which regularly scheduled passenger trains operate, shall be inventoried by the track owner.

(b) Following the expiration of the time limits specified in paragraphs (a)(1), (2), and (3) of this section, any torch cut rail end not removed from Classes 4 and 5 track, or any torch cut rail end not inventoried in Class 3 track over which regularly scheduled passenger trains operate, shall be removed within 30 days of discovery. Train speed over that rail end shall not exceed the maximum allowable for Class 2 track until removed.

§ 213.123 Tie plates

(a) In Classes 3 through 5 track where timber crossties are in use there shall be tie plates under the running rails on at least eight of any 10 consecutive ties.

(b) In Classes 3 through 5 track no metal object which causes a concentrated load by solely supporting a rail shall be allowed between the base of the rail and the bearing surface of the tie plate.

§ 213.127 Rail fastening systems

Track shall be fastened by a system of components which effectively maintains gage within the limits prescribed in § 213.53(b). Each component of each such system shall be evaluated to determine whether gage is effectively being maintained.

§ 213.133 Turnouts and track crossings

(a) In turnouts and track crossings, the fastenings must be intact and maintained so as to keep the components securely in place. Also, each switch, frog, and guard rail must be kept free of obstructions that may interfere with the passage of wheels.

(b) Classes 4 through 5 track must be equipped with rail anchors through and on each side of track crossings and turnouts, to restrain rail movement affecting the position of switch points and frogs.

(c) Each flangeway at turnouts and track crossings must be at least 1 1/2 inches wide.

§ 213.135 Switches

- (a) Each stock rail must be securely seated in switch plates, but care must be used to avoid canting the rail by over tightening the rail braces.
- (b) Each switch point must fit its stock rail properly, with the switch stand in either of its closed positions to allow wheels to pass the switch point. Lateral and vertical movement of a stock rail in the switch plates or of a switch plate on a tie must not adversely affect the fit of the switch point to the stock rail.
- (c) Each switch must be maintained so that the outer edge of the wheel tread cannot contact the gauge side of the stock rail.
- (d) The heel of each switch rail must be secure and the bolts in each heel must be keep tight.
- (e) Each switch stand and connecting rod must be securely fastened and operable without excessive lost motion.
- (f) Each throw lever must be maintained so that it cannot be operated with the lock or keeper in place.
- (g) Each switch position indicator must be clearly visible at all times.
- (h) Unusually chipped or worn switch points must be repaired or replaced. Metal flow must be removed to insure proper closure.
- (i) Tongue and Plate Mate switches which by design exceed Class 1 and excepted track maximum gage limits are permitted in Class 1 and excepted track.

§ 213.137 Frogs

- (a) The flangeway depth measured from a plane across wheel-bearing area of a frog on Class 1 track may not be less than 1 3/8 inches, or less than 1 1/2 inches on Classes 2 through 5 track.
- (b) If a frog point is chipped, broken, or wore more than 5/8 of an inch down and 6 inches back, operating speed over that frog may not be more than 10 miles per hour.
- (c) If the tread portion of a frog casting is worn down more than 3/8 of an inch below the original contour, operating speed over that frog may not be more than 10 miles per hour.
- (d) Where frogs are designed as flange-bearing, flangeway depth may be less than shown for Class 1 if operated at Class 1 speeds.

§ 213.139 Spring rail frogs

- (a) The outer edge of a wheel tread may not contact the gage side of a spring wing rail.
- (b) The toe of each wing rail must be solidly tamped and fully and tightly bolted.
- (c) Each frog with a bolt hole defect or head-web separation must be replaced.
- (d) Each spring must have a compression sufficient to hold the wing rail against the point rail.
- (e) The clearance between the hold down housing and the horn may not be more than 1/4 of an inch.

§ 213.141 Self-guarded frogs

- (a) The raised guard on a self-guarded frog may not be worn more than 3/8 of an inch.
- (b) If repairs are made to the self-guarded frog without removing it from service, the guarding face must be restored before rebuilding the point.

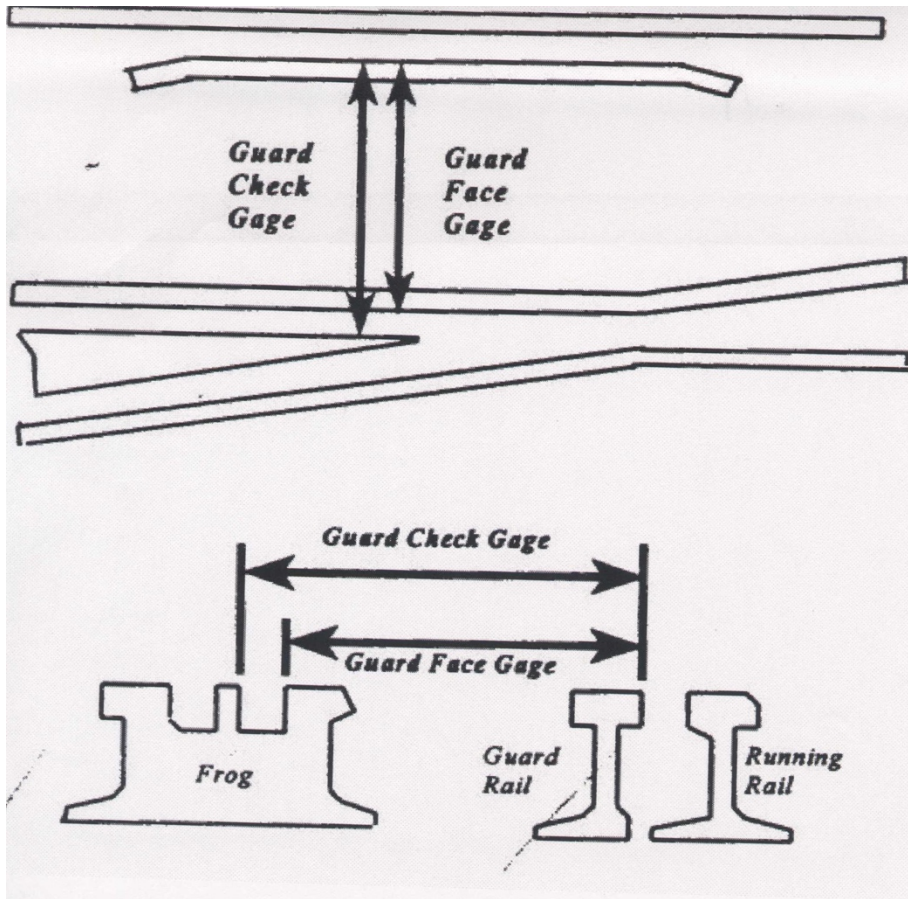
§ 213.143 Frog guard rails and guard faces; gage

The guard check and guard face gages in frogs must be within the limits prescribed in the following table

Class of track	Guard check gauge—the distance between the gauge line of a frog to the guard line ¹ of its guard rail or guarding face, measured across the track at right angles to the gauge line, ² may not be less than—	Guard face gauge—The distance between guard lines, ¹ measured across the track at right angles to the gauge line, ² may not be more than—
1.....	4'6 1/8"	4"5 1/4"
2.....	4'6 1/4"	4'5 1/8"
3 &	4'6 3/8"	4'5 1/8"
4.....	4'6 1/2"	4'5"
5.....		

¹A line along that side of the flangeway which is nearer to the center of the track and at the same elevation as the gauge line.

²A line 5/8 inch below the top of the center line of the head of the running rail, or corresponding location of the tread portion of the track structure.



Subpart E--Track Appliances and Track-Related Devices

§ 213.201 -- Scope.

This subpart prescribes minimum requirements for certain track appliances and track-related devices.

§ 213.205 -- Derails.

- (a) Each derail shall be clearly visible.
- (b) When in a locked position, a derail shall be free of lost motion which would prevent it from performing its intended function.
- (c) Each derail shall be maintained to function as intended.
- (d) Each derail shall be properly installed for the rail to which it is applied.

Subpart F--Inspection

§ 213.231 -- Scope.

This subpart prescribes requirements for the frequency and manner of inspecting track to detect deviations from the standards prescribed in this part.

§ 213.233 -- Track inspections.

(a) All track shall be inspected in accordance with the schedule prescribed in paragraph (c) of this section by a person designated under § 213.7.

(b) Each inspection shall be made on foot or by riding over the track in a vehicle at a speed that allows the person making the inspection to visually inspect the track structure for compliance with this part. However, mechanical, electrical, and other track inspection devices may be used to supplement visual inspection. If a vehicle is used for visual inspection, the speed of the vehicle may not be more than 5 miles per hour when passing over track crossings and turnouts, otherwise, the inspection vehicle speed shall be at the sole discretion of the inspector, based on track conditions and inspection requirements. When riding over the track in a vehicle, the inspection will be subject to the following conditions-

(1) One inspector in a vehicle may inspect up to two tracks at one time provided that the inspector's visibility remains unobstructed by any cause and that the second track is not centered more than 30 feet from the track upon which the inspector is riding;

(2) Two inspectors in one vehicle may inspect up to four tracks at a time provided that the inspectors' visibility remains unobstructed by any cause and that each track being inspected is centered within 39 feet from the track upon which the inspectors are riding;

(3) Each main track is actually traversed by the vehicle or inspected on foot at least once every two weeks, and each siding is actually traversed by the vehicle or inspected on foot at least once every month. On high density commuter railroad lines where track time does not permit an on track vehicle inspection, and where track centers are 15 foot or less, the requirements of this paragraph (b)(3) will not apply; and

(4) Track inspection records shall indicate which track(s) are traversed by the vehicle or inspected on foot as outlined in paragraph (b)(3) of this section.

(c) Each track inspection shall be made in accordance with the following schedule-

Class of track	Type of track	Required frequency
Excepted track and Class 1, 2,	Main track and sidings	Weekly with at least 3 calendar days interval between inspections, or before and 3 track use, if the track is used less than once a week, or twice weekly with at least 1 calendar day interval between inspections, if the track carries passenger trains or more than 10 million gross tons of traffic during the preceding calendar year.

Excepted track and Class 1, 2, and 3 track	Other than main track and sidings	Monthly with at least 20 calendar day interval between inspections.
Class 4 and 5 track		Twice weekly with at least calendar day interval between inspections.

(d) If the person making the inspection finds a deviation from the requirements of this part, the inspector shall immediately initiate remedial action.

Note to § 213.233: Except as provided in paragraph (b) of this section, no part of this section will in any way be construed to limit the inspector's discretion as it involves inspection speed and sight distance.

§ 213.235 -- Inspection of switches, track crossings, and lift rail assemblies or other transition devices on moveable bridges.

(a) Except as provided in paragraph (c) of this section, each switch, turnout, track crossing, and moveable bridge lift rail assembly or other transition device shall be inspected on foot at least monthly.

(b) Each switch in Classes 3 through 5 track that is held in position only by the operating mechanism and one connecting rod shall be operated to all of its positions during one inspection in every 3 month period.

(c) In the case of track that is used less than once a month, each switch, turnout, track crossing, and moveable bridge lift rail assembly or other transition device shall be inspected on foot before it is used.

§ 213.237 -- Inspection of rail.

(a) In addition to the inspections required by Sec. 213.233, each track owner shall conduct internal rail inspections sufficient to maintain service failure rates per rail inspection segment in accordance with this paragraph (a) for a 12-month period, as determined by the track owner and calculated within 45 days of the end of the period. These rates shall not include service failures that occur in rail that has been replaced through rail relay since the time of the service failure. Rail used to repair a service failure defect is not considered relayed rail. The service failure rates shall not exceed--

- (1) 0.1 service failure per year per mile of track for all Class 4 and 5 track;
- (2) 0.09 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains or is a hazardous materials route; and
- (3) 0.08 service failure per year per mile of track for all Class 3, 4, and 5 track that carries regularly-scheduled passenger trains and is a hazardous materials route.

(b) Each rail inspection segment shall be designated by the track owner no later than March 25, 2014 for track that is Class 4 or 5 track, or Class 3 track that carries regularly-scheduled

passenger trains or is a hazardous materials route and is used to determine the milepost limits for the individual rail inspection frequency.

(1) To change the designation of a rail inspection segment or to establish a new segment pursuant to this section, a track owner must submit a detailed request to the FRA Associate Administrator for Railroad Safety/Chief Safety Officer (Associate Administrator). Within 30 days of receipt of the submission, FRA will review the request. FRA will approve, disapprove, or conditionally approve the submitted request, and will provide written notice of its determination.

(2) The track owner's existing designation shall remain in effect until the track owner's new designation is approved or conditionally approved by FRA.

(3) The track owner shall, upon receipt of FRA's approval or conditional approval, establish the designation's effective date. The track owner shall advise in writing FRA and all affected railroad employees of the effective date.

(c) Internal rail inspections on Class 4 and 5 track, or Class 3 track with regularly-scheduled passenger trains or that is a hazardous materials route, shall not exceed a time interval of 370 days between inspections or a tonnage interval of 30 million gross tons (mgt) between inspections, whichever is shorter. Internal rail inspections on Class 3 track that is without regularly-scheduled passenger trains and not a hazardous materials route must be inspected at least once each calendar year, with no more than 18 months between inspections, or at least once every 30 mgt, whichever interval is longer, but in no case may inspections be more than 5 years apart.

(1) Any rail used as a replacement plug rail in track that is required to be tested in accordance with this section must have been tested for internal rail flaws.

(2) The track owner must verify that any plug rail installed after March 25, 2014 has not accumulated more than a total of 30 mgt in previous and new locations since its last internal rail flaw test, before the next test on the rail required by this section is performed.

(3) If plug rail not in compliance with this paragraph (c) is in use after March 25, 2014, trains over that rail must not exceed Class 2 speeds until the rail is tested in accordance with this section.

(d) If the service failure rate target identified in paragraph (a) of this section is not achieved, the track owner must inform FRA of this fact within 45 days of the end of the defined 12-month period in which the performance target is exceeded. In addition, the track owner may provide to FRA an explanation as to why the performance target was not achieved and provide a remedial action plan.

(1) If the performance target rate is not met for two consecutive years, then for the area where the greatest number of service failures is occurring, either:

(i) The inspection tonnage interval between tests must be reduced to 10 mgt;

or

(ii) The class of track must be reduced to Class 2 until the target service failure rate is achieved.

(2) In cases where a single service failure would cause the rate to exceed the applicable service failure rate as designated in paragraph (a) of this section, the service failure rate will be considered to comply with paragraph (a) of this section unless a second such failure occurs within a designated 12-month period. For the purposes of this paragraph (d)(2), a period begins no earlier than January 24, 2014.

- (e) Each defective rail shall be marked with a highly visible marking on both sides of the web and base except that, where a side or sides of the web and base are inaccessible because of permanent features, the highly visible marking may be placed on or next to the head of the rail.
- (f) Inspection equipment shall be capable of detecting defects between joint bars, in the area enclosed by joint bars.
- (g) If the person assigned to operate the rail defect detection equipment (i.e., the qualified operator) determines that a valid search for internal defects could not be made over a particular length of track, that particular length of track may not be considered as internally inspected under paragraphs (a) and (c) of this section.
- (h) If a valid search for internal defects could not be conducted, the track owner shall, before expiration of the time or tonnage limits in paragraph (a) or (c) of this section--
- (1) Conduct a valid search for internal defects;
 - (2) Reduce operating speed to a maximum of 25 m.p.h. until such time as a valid search can be made; or
 - (3) Replace the rail that had not been inspected.
- (i) The person assigned to operate the rail defect detection equipment must be a qualified operator as defined in Sec. 213.238 and have demonstrated proficiency in the rail flaw detection process for each type of equipment the operator is assigned.
- (j) As used in this section--
- (1) **Hazardous materials route** means track over which a minimum of 10,000 car loads or intermodal portable tank car loads of hazardous materials as defined in 49 C.F.R. 171.8 travel over a period of one calendar year; or track over which a minimum of 4,000 car loads or intermodal portable tank car loads of the hazardous materials specified in 49 C.F.R. 172.820 travel, in a period of one calendar year.
 - (2) **Plug rail** means a length of rail that has been removed from one track location and stored for future use as a replacement rail at another location.
 - (3) **Service failure** means a broken rail occurrence, the cause of which is determined to be a compound fissure, transverse fissure, detail fracture, or vertical split head.
 - (4) **Valid search** means a continuous inspection for internal rail defects where the equipment performs as intended and equipment responses are interpreted by a qualified operator as defined in Sec. 213.238.

§213.238 Qualified Operator

- (a) Each provider of rail flaw detection shall have a documented training program in place and shall identify the types of rail flaw detection equipment for which each equipment operator it employs has received training and is qualified. A provider of rail flaw detection may be the track owner. A track owner shall not utilize a provider of rail flaw detection that fails to comply with the requirements of this paragraph.

- (b) A qualified operator shall be trained and have written authorization from his or her employer to:
- (1) Conduct a valid search for internal rail defects utilizing the specific type(s) of equipment for which he or she is authorized and qualified to operate;
 - (2) Determine that such equipment is performing as intended;
 - (3) Interpret equipment responses and institute appropriate action in accordance with the employer's procedures and instructions; and
 - (4) Determine that each valid search for an internal rail defect is continuous throughout the area inspected and has not been compromised due to environmental contamination, rail conditions, or equipment malfunction.
- (c) To be qualified, the operator must have received training in accordance with the documented training program and a minimum of 160 hours of rail flaw detection experience under direct supervision of a qualified operator or rail flaw detection equipment manufacturer's representative, or some combination of both. The operator must demonstrate proficiency in the rail defect detection process, including the equipment to be utilized, prior to initial qualification and authorization by the employer for each type of equipment.
- (d) Each employer shall reevaluate the qualifications of, and administer any necessary recurrent training for, the operator as determined by and in accordance with the employer's documented program. The reevaluation process shall require that the employee successfully complete a recorded examination and demonstrate proficiency to the employer on the specific equipment type(s) to be operated. Proficiency may be determined by a periodic review of test data submitted by the operator.
- (e) Each employer of a qualified operator shall maintain written or electronic records of each qualification in effect. Each record shall include the name of the employee, the equipment to which the qualification applies, date of qualification, and date of the most recent reevaluation, if any.
- (f) Any employee who has demonstrated proficiency in the operation of rail flaw detection equipment prior to January 24, 2014, is deemed a qualified operator, regardless of the previous training program under which the employee was qualified. Such an operator shall be subject to paragraph (d) of this section.
- (g) Records concerning the qualification of operators, including copies of equipment-specific training programs and materials, recorded examinations, demonstrated proficiency records, and authorization records, shall be kept at a location designated by the employer and available for inspection and copying by FRA during regular business hours.

§ 213.239 -- Special inspections.

In the event of fire, flood, severe storm, or other occurrence which might have damaged track structure, a special inspection shall be made of the track involved as soon as possible after the occurrence and, if possible, before the operation of any train over that track.

§ 213.241 -- Inspection records.

(a) Each owner of track to which this part applies shall keep a record of each inspection required to be performed on that track under this subpart.

(b) Each record of an inspection under §§ 213.4[excepted track], 213.233[track], and 213.235 [switches, track crossings, lift rail assemblies, or other transition devices on moveable bridges] shall be prepared on the day the inspection is made and signed by the person making the inspection. Records shall specify the track inspected, date of inspection, location and nature of any deviation from the requirements of this part, and the remedial action taken by the person making the inspection. The owner shall designate the location(s) where each original record shall be maintained for at least one year after the inspection covered by the record. The owner shall also designate one location, within 100 miles of each state in which they conduct operations, where copies of records which apply to those operations are either maintained or can be viewed following 10 days notice by the Federal Railroad Administration.

(c) Records of internal rail inspections required by Sec. 213.237 shall specify the--

- (1) Date of inspection;
- (2) Track inspected, including beginning and end points;
- (3) Location and type of defects found under Sec. 213.113[defective rail];
- (4) Size of defects found under Sec. 213.113, if not removed prior to the next train movement;
- (5) Initial remedial action taken and the date thereof; and
- (6) Location of any track not tested pursuant to Sec. 213.237(d)[re: internal defects].

(d) The track owner shall retain a rail inspection record under paragraph (c) of this section for at least two years after the inspection and for one year after initial remedial action is taken.

(e) The track owner shall maintain records sufficient to demonstrate the means by which it computes the service failure rate on all track segments subject to the requirements of Sec. 213.237(a) for the purpose of determining compliance with the applicable service failure rate target.

(f) Each track owner required to keep inspection records under this section shall make those records available for inspection and copying by FRA upon request.

(g) For purposes of complying with the requirements of this section, a track owner may maintain and transfer records through electronic transmission, storage, and retrieval provided that--
(1) The electronic system is designed so that the integrity of each record is maintained through appropriate levels of security such as recognition of an electronic signature, or another

means, which uniquely identifies the initiating person as the author of that record. No two persons shall have the same electronic identity;

(2) The electronic storage of each record shall be initiated by the person making the inspection within 24 hours following the completion of that inspection;

(3) The electronic system shall ensure that each record cannot be modified in any way, or replaced, once the record is transmitted and stored;

(4) Any amendment to a record shall be electronically stored apart from the record which it amends. Each amendment to a record shall be uniquely identified as to the person making the amendment;

(5) The electronic system shall provide for the maintenance of inspection records as originally submitted without corruption or loss of data;

(6) Paper copies of electronic records and amendments to those records that may be necessary to document compliance with this part shall be made available for inspection and copying by FRA at the locations specified in paragraph (b) of this section; and

(7) Track inspection records shall be kept available to persons who performed the inspections and to persons performing subsequent inspections.

Subpart G--Train Operations at Track Classes 6 and Higher

§ 213.301 -- Scope of subpart.

This subpart applies to all track used for the operation of trains at a speed greater than 90 m.p.h. for passenger equipment and greater than 80 m.p.h. for freight equipment.

§ 213.303 -- Responsibility for compliance.

(a) Any owner of track to which this subpart applies who knows or has notice that the track does not comply with the requirements of this subpart, shall-

- (1) Bring the track into compliance; or
- (2) Halt operations over that track.

(b) If an owner of track to which this subpart applies assigns responsibility for the track to another person (by lease or otherwise), notification of the assignment shall be provided to the appropriate FRA Regional Office at least 30 days in advance of the assignment. The notification may be made by any party to that assignment, but shall be in writing and include the following-

- (1) The name and address of the track owner;
- (2) The name and address of the person to whom responsibility is assigned (assignee);
- (3) A statement of the exact relationship between the track owner and the assignee;
- (4) A precise identification of the track;
- (5) A statement as to the competence and ability of the assignee to carry out the duties of the track owner under this subpart;
- (6) A statement signed by the assignee acknowledging the assignment to that person of responsibility for purposes of compliance with this subpart.

(c) The Administrator may hold the track owner or the assignee or both responsible for compliance with this subpart and subject to the penalties under § 213.15.

(d) When any person, including a contractor for a railroad or track owner, performs any function required by this part, that person is required to perform that function in accordance with this part.

§ 213.305 -- Designation of qualified individuals; general qualifications.

Each track owner to which this subpart applies shall designate qualified individuals responsible for the maintenance and inspection of track in compliance with the safety requirements prescribed in this subpart. Each individual, including a contractor or an employee of a contractor who is not a railroad employee, designated to:

(a) Supervise restorations and renewals of track shall meet the following minimum requirements:

(1) At least:

(i) Five years of responsible supervisory experience in railroad track maintenance in track Class 4 or higher and the successful completion of a course offered by the employer or by a college level engineering program, supplemented by special on the job training emphasizing the techniques to be employed in the supervision, restoration, and renewal of high speed track; or

(ii) A combination of at least one year of responsible supervisory experience in track maintenance in Class 4 or higher and the successful completion of a minimum of 80 hours of specialized training in the maintenance of high speed track provided by the employer or by a college level engineering program, supplemented by special on the job training provided by the employer with emphasis on the maintenance of high speed track; or

(iii) A combination of at least two years of experience in track maintenance in track Class 4 or higher and the successful completion of a minimum of 120 hours of specialized training in the maintenance of high speed track provided by the employer or by a college level engineering program supplemented by special on the job training provided by the employer with emphasis on the maintenance of high speed track.

(2) Demonstrate to the track owner that the individual:

(i) Knows and understands the requirements of this subpart that apply to the restoration and renewal of the track for which he or she is responsible;

(ii) Can detect deviations from those requirements; and

(iii) Can prescribe appropriate remedial action to correct or safely compensate for those deviations; and

(3) Be authorized in writing by the track owner to prescribe remedial actions to correct or safely compensate for deviations from the requirements of this subpart and successful completion of a recorded examination on this subpart as part of the qualification process.

(b) Inspect track for defects shall meet the following minimum qualifications:

(1) At least:

(i) Five years of responsible experience inspecting track in Class 4 or above and the successful completion of a course offered by the employer or by a college level engineering program, supplemented by special on the job training emphasizing the techniques to be employed in the inspection of high speed track;

(ii) A combination of at least one year of responsible experience in track inspection in Class 4 or above and the successful completion of a minimum of 80 hours of specialized training in the inspection of high speed track provided by the employer or by a college level engineering program, supplemented by special on the job training provided by the employer with emphasis on the inspection of high speed track.

(iii) A combination of at least two years of experience in track maintenance in Class 4 or above and the successful completion of a minimum of 120 hours of specialized training in the inspection of high speed track provided by the employer or from a college level engineering program, supplemented by special on the job training provided by the employer with emphasis on the inspection of high speed track.

(2) Demonstrate to the track owner that the individual:

(i) Knows and understands the requirements of this subpart that apply to the inspection of the track for which he or she is responsible.

(ii) Can detect deviations from those requirements; and

(iii) Can prescribe appropriate remedial action to correct or safely compensate for those deviations; and

(3) Be authorized in writing by the track owner to prescribe remedial actions to correct or safely compensate for deviations from the requirements in this subpart and successful completion of a recorded examination on this subpart as part of the qualification process.

(c) Individuals designated under paragraphs (a) or (b) of this section that inspect continuous welded rail (CWR) track or supervise the installation, adjustment, and maintenance of CWR in accordance with the written procedures established by the track owner shall have:

(1) Current qualifications under either paragraph (a) or (b) of this section;

(2) Successfully completed a training course of at least eight hours duration specifically developed for the application of written CWR procedures issued by the track owner; and

(3) Demonstrated to the track owner that the individual:

(i) Knows and understands the requirements of those written CWR procedures;

(ii) Can detect deviations from those requirements; and

(iii) Can prescribe appropriate remedial action to correct or safely compensate for those deviations; and

(4) Written authorization from the track owner to prescribe remedial actions to correct or safely compensate for deviations from the requirements in those procedures and successful completion of a recorded examination on those procedures as part of the qualification process. The recorded examination may be written, or it may be a computer file with the results of an interactive training course.

(d) Persons not fully qualified to supervise certain renewals and inspect track as outlined in paragraphs (a), (b) and (c) of this section, but with at least one year of maintenance of way or signal experience, may pass trains over broken rails and pull aparts provided that-

(1) The track owner determines the person to be qualified and, as part of doing so, trains, examines, and re-examines the person periodically within two years after each prior examination on the following topics as they relate to the safe passage of trains over broken rails or pull aparts: rail defect identification, crosstie condition, track surface and alinement, gage restraint, rail end mismatch, joint bars, and maximum distance between rail ends over which trains may be allowed to pass. The sole purpose of the examination is to ascertain the person's ability to effectively apply these requirements and the examination may not be used to disqualify the person from other duties. A minimum of four hours training is adequate for initial training;

(2) The person deems it safe, and train speeds are limited to a maximum of 10 m.p.h. over the broken rail or pull apart;

(3) The person shall watch all movements over the broken rail or pull apart and be prepared to stop the train if necessary; and

(4) Person(s) fully qualified under § 213.305 of this subpart are notified and dispatched to the location as soon as practicable for the purpose of authorizing movements and effectuating temporary or permanent repairs.

(e) With respect to designations under paragraphs (a), (b), (c) and (d) of this section, each track owner shall maintain written records of:

(1) Each designation in effect;

(2) The basis for each designation, including but not limited to:

(i) The exact nature of any training courses attended and the dates thereof;

(ii) The manner in which the track owner has determined a successful completion of that training course, including test scores or other qualifying results;

(3) Track inspections made by each individual as required by § 213.369. These records shall be made available for inspection and copying by the Federal Railroad Administration during regular business hours.

§ 213.307 -- Classes of track: operating speed limits.

(a) Except as provided in paragraph (b) of this section, and as otherwise provided in this subpart G, the following maximum allowable speeds apply:

Over track that meets all of the requirements prescribed in this subpart for—	The maximum allowable operating speed for trains is ¹	Over track that meets all of the requirements prescribed in this subpart for—	The maximum allowable operating speed for trains is ¹
Class 6 track	110 m.p.h.	Class 9 track	220 m.p.h. ²
Class 7 track	125 m.p.h.		
Class 8 track	160 m.p.h. ²		

¹ Freight may be transported at passenger train speeds if the following conditions are met:

(1) The vehicles utilized to carry such freight are of equal dynamic performance and have been qualified in accordance with § 213.329 and § 213.345.

(2) The load distribution and securement in the freight vehicle will not adversely affect the dynamic performance of the vehicle. The axle loading pattern is uniform and does not exceed the passenger locomotive axle loadings utilized in passenger service, if any, operating at the same maximum speed.

(3) No carrier may accept or transport a hazardous material, as defined at 49 CFR 171.8, except as provided in Column 9A of the Hazardous Materials Table (49 CFR 172.101) for movement in the same train as a passenger-carrying vehicle or in Column 9B of the Table for movement in a train with no passenger-carrying vehicles.

² Operating speeds in excess of 125 m.p.h. are authorized by this part only in conjunction with FRA regulatory approval addressing other safety issues presented by the railroad system. For operations on a dedicated right-of-way, FRA's regulatory approval may allow for the use of inspection and maintenance criteria and procedures in the alternative to those contained in this subpart, based upon a showing that at least an equivalent level of safety is provided.

(b) If a segment of track does not meet all of the requirements for its intended class, it is to be reclassified to the next lower class of track for which it does meet all of the requirements of this subpart. If a segment does not meet all of the requirements for Class 6, the requirements for Classes 1 through 5 apply.

§ 213.309 -- Restoration or renewal of track under traffic conditions.

(a) Restoration or renewal of track under traffic conditions is limited to the replacement of worn, broken, or missing components or fastenings that do not affect the safe passage of trains.

(b) The following activities are expressly prohibited under traffic conditions:

(1) Any work that interrupts rail continuity, e.g., as in joint bar replacement or rail replacement;

(2) Any work that adversely affects the lateral or vertical stability of the track with the exception of spot tamping an isolated condition where not more than 15 lineal feet of track are involved at any one time and the ambient air temperature is not above 95 degrees Fahrenheit; and

(3) Removal and replacement of the rail fastenings on more than one tie at a time within 15 feet.

§ 213.311 -- Measuring track not under load.

When unloaded track is measured to determine compliance with requirements of this subpart, evidence of rail movement, if any, that occurs while the track is loaded shall be added to the measurements of the unloaded track.

§213.313 Application of requirements to curved track.

Unless otherwise provided in this part, requirements specified for curved track apply only to track having a curvature greater than 0.25 degree.

§ 213.317 -- Waivers.

- (a) Any owner of track to which this subpart applies may petition the Federal Railroad Administrator for a waiver from any or all requirements prescribed in this subpart.
- (b) Each petition for a waiver under this section shall be filed in the manner and contain the information required by §§ 211.7 and 211.9 of this chapter.
- (c) If the Administrator finds that a waiver is in the public interest and is consistent with railroad safety, the Administrator may grant the waiver subject to any conditions the Administrator deems necessary. Where a waiver is granted, the Administrator publishes a notice containing the reasons for granting the waiver.

§ 213.319 -- Drainage.

Each drainage or other water carrying facility under or immediately adjacent to the roadbed shall be maintained and kept free of obstruction, to accommodate expected water flow for the area concerned.

§ 213.321 -- Vegetation.

Vegetation on railroad property which is on or immediately adjacent to roadbed shall be controlled so that it does not -

- (a) Become a fire hazard to track-carrying structures;
- (b) Obstruct visibility of railroad signs and signals:
 - (1) Along the right of way, and
 - (2) At highway-rail crossings;
- (c) Interfere with railroad employees performing normal trackside duties;
- (d) Prevent proper functioning of signal and communication lines; or
- (e) Prevent railroad employees from visually inspecting moving equipment from their normal duty stations.

§ 213.323 -- Track gage.

(a) Gage is measured between the heads of the rails at right-angles to the rails in a plane five-eighths of an inch below the top of the rail head.

(b) Gage shall be within the limits prescribed in the following table:

Class of track	The gage must be at least—	But not more than—	The change of gage within 31 feet must not be greater than—
Class 6 track	4'8"	4'9 1/4"	3/4"
Class 7 track	4'8"	4'9 1/4"	1/2"
Class 8 track	4'8"	4'9 1/4"	1/2"
Class 9 track	4'8 1/4"	4'9 1/4"	1/2"

§ 213.327 -- Alinement.

(a) Uniformity at any point along the track is established by averaging the measured mid-chord offset values for nine consecutive points centered around that point and which are spaced according to the following table:

Chord length	Spacing
31'	7'9"
62'	15'6"
124'	31'0"

(b) Except as provided in paragraph (c) of this section, a single alinement deviation from uniformity may not be more than the amount prescribed in the following table:

Class of track	Tangent/ Curved track	The deviation from uniformity of the mid-chord offset for a 31-foot chord may not be more than—(inches)	The deviation from uniformity of the mid-chord offset for a 62-foot chord may not be more than—(inches)	The deviation from uniformity of the mid-chord offset for a 124-foot chord may not be more than—(inches)
Class 6 track	Tangent	1/2	3/4	1 1/2
	Curved	1/2	5/8	1 1/2
Class 7 track	Tangent	1/2	3/4	1 1/4
	Curved	1/2	1/2	1 1/4
Class 8 track	Tangent	1/2	3/4	1
	Curved	1/2	1/2	3/4
Class 9 track	Tangent	1/2	1/2	3/4
	Curved	1/2	1/2	3/4

(c) For operations at a qualified cant deficiency E_u , a single alinement deviation from uniformity of the outside of the curve may not be more than the amount prescribed in the following table:

Class of track	Track type	The deviation from uniformity of the mid-chord offset for a 31-foot chord may not be more than—(inches)	The deviation from uniformity of the mid-chord offset for a 62-foot chord may not be more than—(inches)	The deviation from uniformity of the mid-chord offset for a 124-foot chord may not be more than—(inches)
Class 6 track	Curved	1/2	5/8	1 1/4
Class 7 track	Curved	1/2	1/2	1
Class 8 track	Curved	1/2	1/2	3/4
Class 9 track	Curved	1/2	1/2	3/4

(d) For three or more non-overlapping deviations from uniformity in track alinement occurring within a distance equal to five times the specified chord length, each of which exceeds the limits in the following table, each track owner shall maintain the alinement of the track within the limits prescribed for each deviation:

Class of track	The deviation from uniformity of the mid-chord offset for a 31-foot chord may not be more than—(inches)	The deviation from uniformity of the mid-chord offset for a 62-foot chord may not be more than—(inches)	The deviation from uniformity of the mid-chord offset for a 124-foot chord may not be more than—(inches)
Class 6 track	3/8	1/2	1
Class 7 track	3/8	3/8	7/8
Class 8 track	3/8	3/8	1/2
Class 9 track	3/8	3/8	1/2

(e) For purposes of complying with this section, the ends of the chord shall be at points on the gage side of the rail, five-eighths on an inch below the top of the railhead. On tangent track, either rail may be used as the line rail; however, the same rail shall be used for the full length of that tangential segment of the track. On curved track, the line rail is the outside rail of the curve.

§ 213.329 Curves; elevation and speed limitations.

(a) The maximum elevation of the outside rail of a curve may not be more than 7 inches. The outside rail of a curve may not be lower than the inside rail by design, except when engineered to address specific track or operating conditions; the limits in § 213.331 apply in all cases.

(b) The maximum allowable posted timetable operating speed for each curve is determined by the following formula:

$$V_{max} = \sqrt{Ea + Eu + 0.0007D}$$

Where -

Vmax = Maximum allowable posted timetable operating speed (m.p.h.).

Ea = Actual elevation of the outside rail (inches). 6

6 Actual elevation, Ea, for each 155-foot track segment in the body of the curve is determined by averaging the elevation for 11 points through the segment at 15.5-foot spacing. If the curve length is less than 155 feet, the points are averaged through the full length of the body of the curve.

Eu = Qualified cant deficiency 7 (inches) of the vehicle type.

7 If the actual elevation, Ea, and degree of curvature, D, change as a result of track degradation, then the actual cant deficiency for the maximum allowable posted timetable operating speed, Vmax, may be greater than the qualified cant deficiency, Eu. This actual cant deficiency for each curve may not exceed the qualified cant deficiency, Eu, plus one-half inch.

D = Degree of curvature (degrees). 8

8 Degree of curvature, D, is determined by averaging the degree of curvature over the same track segment as the elevation.

(c) All vehicles are considered qualified for operating on track with a cant deficiency, E_u , not exceeding 3 inches. Table 1 of appendix A to this part is a table of speeds computed in accordance with the formula in paragraph (b) of this section, when E_u equals 3 inches, for various elevations and degrees of curvature.

(d) Each vehicle type must be approved by FRA to operate on track with a qualified cant deficiency, E_u , greater than 3 inches. Each vehicle type must demonstrate, in a ready-for-service load condition, compliance with the requirements of either paragraph (d)(1) or (2) of this section.

(1) When positioned on a track with a uniform superelevation equal to the proposed cant deficiency:

(i) No wheel of the vehicle type unloads to a value less than 60 percent of its static value on perfectly level track; and

(ii) For passenger cars, the roll angle between the floor of the equipment and the horizontal does not exceed 8.6 degrees; or

(2) When operating through a constant radius curve at a constant speed corresponding to the proposed cant deficiency, and a test plan is submitted and approved by FRA in accordance with § 213.345(e) and (f):

(i) The steady-state (average) load on any wheel, throughout the body of the curve, is not less than 60 percent of its static value on perfectly level track; and

(ii) For passenger cars, the steady-state (average) lateral acceleration measured on the floor of the carbody does not exceed 0.15g.

(e) The track owner or railroad shall transmit the results of the testing specified in paragraph (d) of this section to FRA's Associate Administrator for Railroad Safety/Chief Safety Officer (FRA) requesting approval for the vehicle type to operate at the desired curving speeds allowed under the formula in paragraph (b) of this section. The request shall be made in writing and contain, at a minimum, the following information -

(1) A description of the vehicle type involved, including schematic diagrams of the suspension system(s) and the estimated location of the center of gravity above top of rail;

(2) The test procedure, ⁹ including the load condition under which the testing was performed, and description of the instrumentation used to qualify the vehicle type, as well as the maximum values for wheel unloading and roll angles or accelerations that were observed during testing; and

⁹ The test procedure may be conducted whereby all the wheels on one side (right or left) of the vehicle are raised to the proposed cant deficiency, the vertical wheel loads under each wheel are measured, and a level is used to record the angle through which the floor of the vehicle has been rotated.

(3) For vehicle types not subject to part 238 or part 229 of this chapter, procedures or standards in effect that relate to the maintenance of all safety-critical components of the suspension system(s)

for the particular vehicle type. Safety-critical components of the suspension system are those that impact or have significant influence on the roll of the carbody and the distribution of weight on the wheels.

(f) In approving the request made pursuant to paragraph (e) of this section, FRA may impose conditions necessary for safely operating at the higher curving speeds. Upon FRA approval of the request, the track owner or railroad shall notify FRA in writing no less than 30 calendar days prior to the proposed implementation of the approved higher curving speeds allowed under the formula in paragraph (b) of this section. The notification shall contain, at a minimum, identification of the track segment(s) on which the higher curving speeds are to be implemented.

(g) The documents required by this section must be provided to FRA by:

(1) The track owner; or

(2) A railroad that provides service with the same vehicle type over trackage of one or more track owner(s), with the written consent of each affected track owner.

(h) (1) Vehicle types permitted by FRA to operate at cant deficiencies, E_u , greater than 3 inches but not more than 5 inches shall be considered qualified under this section to operate at those permitted cant deficiencies for any Class 6 track segment. The track owner or railroad shall notify FRA in writing no less than 30 calendar days prior to the proposed implementation of such curving speeds in accordance with paragraph (f) of this section.

(2) Vehicle types permitted by FRA to operate at cant deficiencies, E_u , greater than 5 inches on Class 6 track, or greater than 3 inches on Class 7 through 9 track, shall be considered qualified under this section to operate at those permitted cant deficiencies only for the previously operated or identified track segments(s). Operation of these vehicle types at such cant deficiencies and track class on any other track segment is permitted only in accordance with the qualification requirements in this subpart.

(i) As used in this section and in §§ 213.333 and 213.345 -

(1) Vehicle means a locomotive, as defined in § 229.5 of this chapter; a freight car, as defined in § 215.5 of this chapter; a passenger car, as defined in § 238.5 of this chapter; and any rail rolling equipment used in a train with either a freight car or a passenger car.

(2) Vehicle type means like vehicles with variations in their physical properties, such as suspension, mass, interior arrangements, and dimensions that do not result in significant changes to their dynamic characteristics.

§ 213.331 -- Track surface.

(a) For a single deviation in track surface, each track owner shall maintain the surface of its track within the limits prescribed in the following table:

Track surface (inches)	Class of track			
	6	7	8	9
The deviation from uniform ¹ profile on either rail at the mid-ordinate of a 31-foot chord may not be more than	1	1	¾	½
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	1	1	1	¾
Except as provided in paragraph (b) of this section, the deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1¾	1½	1¼	1
The deviation from zero crosslevel at any point on tangent track may not be more than ²	1	1	1	1
Reverse elevation on curves may not be more than	½	½	½	½
The difference in crosslevel between any two points less than 62 feet apart may not be more than ³	1½	1½	1¼	1
On curved track, the difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than	1¼	1⅛	1	¾

¹ Uniformity for profile is established by placing the midpoint of the specified chord at the point of maximum measurement.

² If physical conditions do not permit a spiral long enough to accommodate the minimum length of runoff, part of the runoff may be on tangent track.

³ However, to control harmonics on jointed track with staggered joints, the crosslevel differences shall not exceed 1 inch in all of six consecutive pairs of joints, as created by seven low joints. Track with joints staggered less than 10 feet apart shall not be considered as having staggered joints. Joints within the seven low joints outside of the regular joint spacing shall not be considered as joints for purposes of this footnote.

(b) For operations at a qualified cant deficiency, E_u, of more than 5 inches, a single deviation in track surface shall be within the limits prescribed in the following table:

Track surface (inches)	Class of track			
	6	7	8	9
The difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than	1¼	1	1	¾
The deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1½	1¼	1¼	1

¹ For curves with a qualified cant deficiency, E_u, of more than 7 inches, the difference in crosslevel between any two points less than 10 feet apart (short warp) may not be more than three-quarters of an inch.

² The test procedure may be conducted whereby all the wheels on one side (right or left) of the vehicle are raised to the proposed cant deficiency,

the vertical wheel loads under each wheel are measured, and a level is used to record the angle

through which the floor of the vehicle has been rotated.

(c) For three or more non-overlapping deviations in track surface occurring within a distance equal to five times the specified chord length, each of which exceeds the limits in the following table, each track owner shall maintain the surface of the track within the limits prescribed for each deviation:

Track surface (inches)	Class of track			
	6	7	8	9
The deviation from uniform profile on either rail at the mid-ordinate of a 31-foot chord may not be more than	¾	¾	½	¾
The deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not be more than	¾	¾	¾	½
The deviation from uniform profile on either rail at the mid-ordinate of a 124-foot chord may not be more than	1¼	1	7/8	5/8

§213.332 Combined track alignment and surface deviations

(a) This section applies to any curved track where operations are conducted at a qualified cant deficiency, E_u, greater than 5 inches, and to all Class 9 track, either curved or tangent.

(b) For the conditions defined in paragraph (a) of this section, the combination of alignment and surface deviations for the same chord length on the outside rail in a curve and on any of the two rails of a tangent section, as measured by a TGMS, shall comply with the following formula:

$$\frac{3}{4} \times \left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| \leq 1$$

Where—

$$\left| \frac{A_m}{A_L} + \frac{S_m}{S_L} \right| = \text{the absolute (positive) value of the result of } \frac{A_m}{A_L} + \frac{S_m}{S_L} .$$

Am = measured alinement deviation from uniformity (outward is positive, inward is negative).

AL = allowable alinement limit as per Sec. 213.327(c) (always positive) for the class of track.

Sm = measured profile deviation from uniformity (down is positive, up is negative).

SL = allowable profile limit as per Sec. 213.331(a) and Sec. 213.331(b) (always positive) for the class of track.

§ 213.333 -- Automated vehicle-based inspection systems.

(a) A qualifying Track Geometry Measurement System (TGMS) shall be operated at the following frequency:

(1) For operations at a qualified cant deficiency, Eu, of more than 5 inches on track Classes 1 through 5, at least twice per calendar year with not less than 120 days between inspections.

(2) For track Class 6, at least once per calendar year with not less than 170 days between inspections. For operations at a qualified cant deficiency, Eu, of more than 5 inches on track Class 6, at least twice per calendar year with not less than 120 days between inspections.

(3) For track Class 7, at least twice within any 120-day period with not less than 25 days between inspections.

(4) For track Classes 8 and 9, at least twice within any 60-day period with not less than 12 days between inspections.

(b) A qualifying TGMS shall meet or exceed minimum design requirements which specify that-

(1) Track geometry measurements shall be taken no more than 3 feet away from the contact point of wheels carrying a vertical load of no less than 10 kips per wheel, unless otherwise approved by FRA;

(2) Track geometry measurements shall be taken and recorded on a distance-based sampling interval preferably at 1 foot not exceeding 2 feet; and

(3) Calibration procedures and parameters are assigned to the system which assure that measured and recorded values accurately represent track conditions. Track geometry measurements recorded by the system shall not differ on repeated runs at the same site at the same speed more than 1/8 inch.

- (c) A qualifying TGMS shall be capable of measuring and processing the necessary track geometry parameters to determine compliance with--
- (1) For operations at a qualified cant deficiency, Eu, of more than 5 inches on track Classes 1 through 5: § 213.53, Track gage; § 213.55(b), Track alinement; § 213.57, Curves; elevation and speed limitations; §213.63, Track surface; and § 213.65, Combined track alinement and surface deviations.
 - (2) For track Classes 6 through 9: § 213.323, Track gage; § 213.327, Track alinement; § 213.329, Curves; elevation and speed limitations; § 213.331, Track surface; and for operations at a cant deficiency of more than 5 inches § 213.332, Combined track alinement and surface deviations.
- (d) A qualifying TGMS shall be capable of producing, within 24 hours of the inspection, output reports that -
- (1) Provide a continuous plot, on a constant-distance axis, of all measured track geometry parameters required in paragraph (c) of this section;
 - (2) Provide an exception report containing a systematic listing of all track geometry conditions which constitute an exception to the class of track over the segment surveyed.
- (e) The output reports required under paragraph (c) of this section shall contain sufficient location identification information which enable field forces to easily locate indicated exceptions.
- (f) Following a track inspection performed by a qualifying TGMS, the track owner shall, within two days after the inspection, field verify and institute remedial action for all exceptions to the class of track.
- (g) The track owner shall maintain for a period of one year following an inspection performed by a qualifying TGMS, copy of the plot and the exception for the track segment involved, and additional records which:
- (1) Specify the date the inspection was made and the track segment involved; and
 - (2) Specify the location, remedial action taken, and the date thereof, for all listed exceptions to the class.
- (h) For track Classes 8 and 9, a qualifying Gage Restraint Measurement System (GRMS) shall be operated at least once per calendar year with at least 170 days between inspections. The lateral capacity of the track structure shall not permit a gage widening projection (GWP) greater than 0.5 inches.
- (i) A GRMS shall meet or exceed minimum design requirements specifying that-
- (1) Gage restraint shall be measured between the heads of the rail-
 - (i) At an interval not exceeding 16 inches;
 - (ii) Under an applied vertical load of no less than 10 kips per rail; and
 - (iii) Under an applied lateral load which provides for lateral/vertical load ratio of between 0.5 and 1.25 n10, and a load severity greater than 3kips but less than 8kips per rail. Load severity is defined by the formula-

$$S = L -cV$$

where:

S = Load severity, defined as the lateral load applied to the fastener system (kips).

L = Actual lateral load applied (kips).

c = Coefficient of friction between rail/tie which is assigned a nominal value of (0.4).

V = Actual vertical load applied (kips), or static vertical wheel load is not measured.

(2) The measured gage value shall be converted to a gage widening ratio (GWP) as follows:

$$GWP = (LTG - UTG) \times \frac{8.26}{L - 0.258 \times V}$$

Where:

UTG=Unloaded track gage measured by the GRMS vehicle at a point no less than 10 feet from any lateral or vertical load application.

LTG=Loaded track gage measured by the GRMS vehicle at a point no more than 12 inches from the lateral load.

L=Actual lateral load applied (kips).

V=Actual vertical load applied(kips), or static vertical wheel load if vertical load is not measured.

GWP= Gage Widening Projection, which means the measured gage widening, which is the difference between loaded and unloaded gage, at the applied loads, projected to reference loads of 16 kips of lateral force and 33 kips of vertical force.

(j) As further specified for the combination of track class, cant deficiencies, and vehicles subject to paragraphs (j)(1) through (3) of this section, a vehicle having dynamic response characteristics that are representative of other vehicles assigned to the service shall be operated over the route at the revenue speed profile. The vehicle shall either be instrumented or equipped with a portable device that monitors onboard instrumentation on trains. Track personnel shall be notified when onboard accelerometers indicate a possible track-related problem. Testing shall be conducted at the frequencies specified in paragraphs (j)(1) through (3) of this section, unless otherwise determined by FRA after reviewing the test data required by this subpart.

(1) For operations at a qualified cant deficiency, E_u , of more than 5 inches on track Classes 1 through 6, carbody acceleration shall be monitored at least once each calendar quarter with not less than 25 days between inspections on at least one passenger car of each type that is assigned to the service; and

(2) For operations at track Class 7 speeds, carbody and truck accelerations shall be monitored at least twice within any 60-day period with not less than 12 days between inspections on at least one passenger car of each type that is assigned to the service; and

(3) For operations at track Class 8 or 9 speeds, carbody acceleration shall be monitored at least four times within any 7-day period with not more than 3 days between inspections on at least one non-passenger and one passenger carrying vehicle of each type that is assigned to the service, as appropriate. Truck acceleration shall be monitored at least twice within any 60-day period with not less than 12 days between inspections on at least one passenger carrying vehicle of each type that is assigned to the service, as appropriate.

(k) (1) The instrumented vehicle or the portable device, as required in paragraph (j) of this section, shall monitor lateral and vertical accelerations of the carbody. The accelerometers shall be attached to the carbody on or under the floor of the vehicle, as near the center of a truck as practicable.

(2) In addition, a device for measuring lateral accelerations shall be mounted on a truck frame at a longitudinal location as close as practicable to an axle's centerline (either outside axle for trucks containing more than 2 axles), or, if approved by FRA, at an alternate location. After monitoring this data for 2 years, or 1 million miles, whichever occurs first, the track owner or railroad may petition FRA for exemption from this requirement.

(3) If any of the carbody lateral, carbody vertical, or truck frame lateral acceleration safety limits in this section's table of vehicle/track interaction safety limits is exceeded, corrective action shall be taken as necessary. Track personnel shall be notified when the accelerometers indicate a possible track-related problem.

(l) For track Classes 8 and 9, the track owner or railroad shall submit a report to FRA, once each calendar year, which provides an analysis of the monitoring data collected in accordance with paragraphs (j) and (k) of this section. Based on a review of the report, FRA may require that an instrumented vehicle having dynamic response characteristics that are representative of other vehicles assigned to the service be operated over the track at the revenue speed profile. The instrumented vehicle shall be equipped to measure wheel/rail forces. If any of the wheel/rail force limits in this section's table of vehicle/track interaction safety limits is exceeded, appropriate speed restrictions shall be applied until corrective action is taken.

(m) The track owner or railroad shall maintain a copy of the most recent exception records for the inspections required under paragraphs (j), (k), and (l) of this section, as appropriate.

Vehicle/Track Interaction Safety Limits

Wheel-Rail Forces ¹			
Parameter	Safety Limit	Filter/ Window	Requirements
Single Wheel Vertical Load Ratio	≥ 0.15	5 ft	No wheel of the vehicle shall be permitted to unload to less than 15 percent of the static vertical wheel load for 5 or more continuous feet. The static vertical wheel load is defined as the load that the wheel would carry when stationary on level track.
Single Wheel L/V Ratio	$\leq \frac{\tan(\delta) - 0.5}{1 + 0.5 \tan(\delta)}$	5 ft	The ratio of the lateral force that any wheel exerts on an individual rail to the vertical force exerted by the same wheel on the rail shall not be greater than the safety limit calculated for the wheel's flange angle (δ) for 5 or more continuous feet.
Net Axle Lateral L/V Ratio	$\leq 0.4 + \frac{5.0}{V_a}$	5 ft	The net axle lateral force, in kips, exerted by any axle on the track shall not exceed a total of 5 kips plus 40 percent of the static vertical load that the axle exerts on the track for 5 or more continuous feet. <i>V_a</i> = static vertical axle load (kips)
Truck Side L/V Ratio	≤ 0.6	5 ft	The ratio of the lateral forces that the wheels on one side of any truck exert on an individual rail to the vertical forces exerted by the same wheels on that rail shall not be greater than 0.6 for 5 or more continuous feet.
Carbody Accelerations ²			
Parameter	Passenger Cars	Other Vehicles	Requirements
Carbody Lateral (Transient)	$\leq 0.65g$ peak-to-peak 1 sec window ³ excludes peaks < 50 msec	$\leq 0.75g$ peak-to-peak 1 sec window ³ excludes peaks < 50 msec	The peak-to-peak accelerations, measured as the algebraic difference between the two extreme values of measured acceleration in any 1-second time period, excluding any peak lasting less than 50 milliseconds, shall not

			exceed 0.65g and 0.75g for passenger cars and other vehicles, respectively.
Carbody Lateral (Sustained Oscillatory)	$\leq 0.10g \text{ RMS}_t^4$ 4 sec window ³ 4 sec sustained	$\leq 0.12g \text{ RMS}_t^4$ 4 sec window ³ 4 sec sustained	Sustained oscillatory lateral acceleration of the carbody shall not exceed the prescribed (root mean squared) safety limits of 0.10g and 0.12g for passenger cars and other vehicles, respectively. Root mean squared values shall be determined over a sliding 4-second window with linear trend removed and shall be sustained for more than 4 seconds.
Carbody Vertical (Transient)	$\leq 1.0g \text{ peak-to-peak}$ 1 sec window ³ excludes peaks < 50 msec	$\leq 1.25g \text{ peak-to-peak}$ 1 sec window ³ excludes peaks < 50 msec	The peak-to-peak accelerations, measured as the algebraic difference between the two extreme values of measured acceleration in any one second time period, excluding any peak lasting less than 50 milliseconds, shall not exceed 1.0g, or 1.25g, as specified.
Carbody Vertical (Sustained Oscillatory)	$\leq 0.25g \text{ RMS}_t^4$ 4 sec window ³ 4 sec sustained	$\leq 0.25g \text{ RMS}_t^4$ 4 sec window ³ 4 sec sustained	Sustained oscillatory vertical acceleration of the carbody shall not exceed the prescribed (root mean squared) safety limit of 0.25g. Root mean squared values shall be determined over a sliding 4-second window with linear trend removed and shall be sustained for more than 4 seconds.
Truck Lateral Acceleration⁵			
Parameter	Safety Limit	Filter/Window	Requirements
Truck Lateral	$\leq 0.30g \text{ RMS}_t^4$	2 sec window ³ 2 sec sustained	Truck hunting shall not develop below the maximum authorized speed. Truck hunting is defined as a sustained cyclic oscillation of the truck evidenced by lateral accelerations exceeding 0.3g root mean squared for more than 2 seconds. Root mean squared values shall be determined over a sliding 2-second window with linear trend removed.

¹ The lateral and vertical wheel forces shall be measured and processed through a low pass filter (LPF) with a minimum cut-off frequency of 25 Hz. The sample rate for wheel force data shall be at least 250 samples per second.

² Carbody accelerations in the vertical and lateral directions shall be measured by accelerometers oriented and located in accordance with § 213.333(k).

³ Acceleration measurements shall be processed through an LPF with a minimum cut-off frequency of 10 Hz. The sample rate for acceleration data shall be at least 100 samples per second.

⁴ RMS_t = RMS with linear trend removed.

⁵ Truck lateral acceleration shall be measured on the truck frame by accelerometers oriented and located in accordance with § 213.333(k).

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§ 213.334 -- Ballast; general.

Unless it is otherwise structurally supported, all track shall be supported by material which will-

- (a) Transmit and distribute the load of the track and railroad rolling equipment to the subgrade;
- (b) Restrain the track laterally, longitudinally, and vertically under dynamic loads imposed by railroad rolling equipment and thermal stress exerted by the rails;
- (c) Provide adequate drainage for the track; and
- (d) Maintain proper track cross-level, surface, and alinement.

§ 213.335 -- Crossties.

- (a) Crossties shall be made of a material to which rail can be securely fastened.
- (b) Each 39 foot segment of track shall have-
 - (1) A sufficient number of crossties which in combination provide effective support that will-
 - (i) Hold gage within the limits prescribed in § 213.323(b);
 - (ii) Maintain surface within the limits prescribed in § 213.331; and
 - (iii) Maintain alinement within the limits prescribed in § 213.327.
 - (2) The minimum number and type of crossties specified in paragraph (c) of this section effectively distributed to support the entire segment; and
 - (3) Crossties of the type specified in paragraph (c) of this section that are(is) located at a joint location as specified in paragraph (e) of this section.
- (c) For non-concrete tie construction, each 39 foot segment of Class 6 track shall have fourteen crossties; Classes 7, 8 and 9 shall have 18 crossties which are not-
 - (1) Broken through;
 - (2) Split or otherwise impaired to the extent the crossties will allow the ballast to work through, or will not hold spikes or rail fasteners;
 - (3) So deteriorated that the tie plate or base of rail can move laterally 3/8 inch relative to the crossties;

(4) Cut by the tie plate through more than 40 percent of a crosstie's thickness;
(5) Configured with less than 2 rail holding spikes or fasteners per tie plate; or
(6) So unable, due to insufficient fastener toeload, to maintain longitudinal restraint and maintain rail hold down and gage.

(d) For concrete tie construction, each 39 foot segment of Class 6 track shall have fourteen crossties, Classes 7, 8 and 9 shall have 16 crossties which are not-

(1) So deteriorated that the pre-stress strands are ineffective or withdrawn into the tie at one end and the tie exhibits structural cracks in the rail seat or in the gage of track;

(2) Configured with less than 2 fasteners on the same rail;

(3) So deteriorated in the vicinity of the rail fastener such that the fastener assembly may pull out or move laterally more than 3/8 inch relative to the crosstie;

(4) So deteriorated that the fastener base plate or base of rail can move laterally more than 3/8 inch relative to the crossties;

(5) So deteriorated that rail seat abrasion is sufficiently deep so as to cause loss of rail fastener toeload;

(6) Completely broken through; or

(7) So unable, due to insufficient fastener toeload, to maintain longitudinal restraint and maintain rail hold down and gage.

(e) Class 6 track shall have one non-defective crosstie whose centerline is within 18 inches of the rail joint location or two crossties whose center lines are within 24 inches either side of the rail joint location. Class 7, 8, and 9 track shall have two non-defective ties within 24 inches each side of the rail joint.

(f) For track constructed without crossties, such as slab track and track connected directly to bridge structural components, the track structure shall meet the requirements of paragraphs (b)(1)(i), (ii), and (iii) of this section

(g) In Classes 7, 8 and 9 there shall be at least three non-defective ties each side of a defective tie.

(h) Where timber crossties are in use there shall be tie plates under the running rails on at least nine of 10 consecutive ties.

(i) No metal object which causes a concentrated load by solely supporting a rail shall be allowed between the base of the rail and the bearing surface of the tie plate.

§ 213.337 – Defective rails.

(a) When an owner of track to which this part applies learns, through inspection or otherwise, that a rail in that track contains any of the defects listed in the following table, a person designated under § 213.305 shall determine whether or not the track may continue in use. If the person determines that the track may continue in use, operation over the defective rail is not permitted until-

(1) The rail is replaced; or

(2) The remedial action prescribed in the table is initiated-

REMEDIAL ACTION

Defect	Length of defect (inch)		Percent of rail head cross-sectional area weakened by defect		If defective rail is not replaced, take the remedial action prescribed in note
	More than	But not more than	Less than	But not less than	
Transverse fissure			70..... 100.....	5..... 70..... 100.....	B. A2. A.
Compound fissure			70..... 100.....	5..... 70..... 100.....	B. A2. A.
Detail fracture Engine burn fracture Defective weld			25..... 80..... 100.....	5..... 25..... 80..... 100.....	C. D. [A2] or [E and H]. [A] or [E and H].
Horizontal split head Vertical split head Split web Piped rail Head web separation	1..... 2..... 4..... (¹).....	2..... 4..... (¹).....	(¹).....	(¹).....	H and F. I and G. B. A.
Bolt hole crack	¼..... 1..... 1½..... (¹).....	1..... 1½..... (¹).....	(¹).....	(¹).....	H and F. H and G. B. A.
Broken base	1..... 6.....	6.....	(¹).....	(¹).....	D. [A] or [E and I].
Ordinary break					A or E.
Damaged rail					D.
Flattened rail	Depth > ¼ and Length > 8				H.

(¹) Break out in rail head.

Notes:

A. Assign person designated under § 213.305 to visually supervise each operation over defective rail.

A2. Assign person designated under § 213.305 to make visual inspection. That person may authorize operation to continue without visual supervision at a maximum of 10 m.p.h. for up to 24 hours prior to another such visual inspection or replacement or repair of the rail.

B. Limit operating speed over defective rail to that as authorized by a person designated under § 213.305(a)(1)(i) or (ii). The operating speed cannot be over 30 m.p.h.

C. Apply joint bars bolted only through the outermost holes to defect within 20 days after it is determined to continue the track in use. Limit operating speed over defective rail to 30 m.p.h. until joint bars are applied; thereafter, limit speed to 50 m.p.h. When a search for internal rail defects is conducted under § 213.339 and defects are discovered which require remedial action, the operating speed shall be limited to 50 m.p.h., for a period not to exceed 4 days. If the defective rail has not been removed from the track or a permanent repair made within 4 days of the discovery, limit operating speed over the defective rail to 30 m.p.h. until joint bars are applied; thereafter, limit speed to 50 m.p.h.

D. Apply joint bars bolted only through the outermost holes to defect within 10 days after it is determined to continue the track in use. Limit operating speed over the defective rail to 30 m.p.h. or less as authorized by a person designated under § 213.305(a)(1)(i) or (ii) until joint bars are applied; thereafter, limit speed to 50 m.p.h.

E. Apply joint bars to defect and bolt in accordance with § 213.351(d) and (e).

F. Inspect rail 90 days after it is determined to continue the track in use.

G. Inspect rail 30 days after it is determined to continue the track in use.

H. Limit operating speed over defective rail to 50 m.p.h.

I. Limit operating speed over defective rail to 30 m.p.h.

(b) As used in this section-

(1) **Transverse fissure** means a progressive crosswise fracture starting from a crystalline center or nucleus inside the head from which it spreads outward as a smooth, bright, or dark, round or oval surface substantially at a right angle to the length of the rail. The distinguishing features of a transverse fissure from other types of fractures or defects are the crystalline center or nucleus and the nearly smooth surface of the development which surrounds it.

(2) **Compound fissure** means a progressive fracture originating in a horizontal split head which turns up or down in the head of the rail as a smooth, bright, or dark surface progressing until substantially at a right angle to the length of the rail. Compound fissures require examination of both faces of the fracture to locate the horizontal split head from which they originate.

(3) **Horizontal split head** means a horizontal progressive defect originating inside of the rail head, usually one-quarter inch or more below the running surface and progressing horizontally in all directions, and generally accompanied by a flat spot on the running surface. The defect appears as a crack lengthwise of the rail when it reaches the side of the rail head.

(4) **Vertical split head** means a vertical split through or near the middle of the head, and extending into or through it. A crack or rust streak may show under the head close to the web or pieces may be split off the side of the head.

(5) **Split web** means a lengthwise crack along the side of the web and extending into or through it.

(6) **Piped rail** means a vertical split in a rail, usually in the web, due to failure of the shrinkage cavity in the ingot to unite in rolling.

(7) **Broken base** means any break in the base of the rail.

(8) **Detail fracture** means a progressive fracture originating at or near the surface of the rail head. These fractures should not be confused with transverse fissures, compound fissures, or other defects which have internal origins. Detail fractures may arise from shelly spots, head checks, or flaking.

(9) **Engine burn fracture** means a progressive fracture originating in spots where driving wheels have slipped on top of the rail head. In developing downward they frequently resemble the compound or even transverse fissures with which they should not be confused or classified.

(10) **Ordinary break** means a partial or complete break in which there is no sign of a fissure, and in which none of the other defects described in this paragraph (b) are found.

(11) **Damaged rail** means any rail broken or injured by wrecks, broken, flat, or unbalanced wheels, slipping, or similar causes.

(12) **Flattened rail** means a short length of rail, not a joint, which has flattened out across the width of the rail head to a depth of 3/8 inch or more below the rest of the rail. Flattened rail occurrences have no repetitive regularity and thus do not include corrugations, and have no apparent localized cause such as a weld or engine burn. Their individual length is relatively short, as compared to a condition such as head flow on the low rail of curves.

(13) **Bolt hole crack** means a crack across the web, originating from a bolt hole, and progressing on a path either inclined upward toward the rail head or inclined downward toward the base. Fully developed bolt hole cracks may continue horizontally along the head/web or base/web fillet, or they may progress into and through the head or base to separate a piece of the rail end from the rail. Multiple cracks occurring in one rail end are considered to be a single

defect. However, bolt hole cracks occurring in adjacent rail ends within the same joint shall be reported as separate defects.

(14) **Defective weld** means a field or plant weld containing any discontinuities or pockets, exceeding 5 percent of the rail head area individually or 10 percent in the aggregate, oriented in or near the transverse plane, due to incomplete penetration of the weld metal between the rail ends, lack of fusion between weld and rail end metal, entrapment of slag or sand, under-bead or other shrinkage cracking, or fatigue cracking. Weld defects may originate in the rail head, web, or base, and in some cases, cracks may progress from the defect into either or both adjoining rail ends.

(15) **Head and web separation** means a progressive fracture, longitudinally separating the head from the web of the rail at the head fillet area.

§ 213.339 -- Inspection of rail in service.

(a) A continuous search for internal defects shall be made of all rail in track at least twice annually with not less than 120 days between inspections.

(b) Inspection equipment shall be capable of detecting defects between joint bars, in the area enclosed by joint bars.

(c) Each defective rail shall be marked with a highly visible marking on both sides of the web and base.

(d) If the person assigned to operate the rail defect detection equipment being used determines that, due to rail surface conditions, a valid search for internal defects could not be made over a particular length of track, the test on that particular length of track cannot be considered as a search for internal defects under § 213.337(a).

(e) If a valid search for internal defects cannot be conducted for reasons described in paragraph (d) of this section, the track owner shall, before the expiration of time limits-

- (1) Conduct a valid search for internal defects;
- (2) Reduce operating speed to a maximum of 25 miles per hour until such time as a valid search for internal defects can be made; or
- (3) Remove the rail from service.

§ 213.341 -- Initial inspection of new rail and welds.

The track owner shall provide for the initial inspection of newly manufactured rail, and for initial inspection of new welds made in either new or used rail. A track owner may demonstrate compliance with this section by providing for:

(a) **In-service inspection** -A scheduled periodic inspection of rail and welds that have been placed in service, if conducted in accordance with the provisions of § 213.339[inspection of rail in service], and if conducted not later than 90 days after installation, shall constitute compliance with paragraphs (b) and (c) of this section;

(b) **Mill inspection** -A continuous inspection at the rail manufacturer's mill shall constitute compliance with the requirement for initial inspection of new rail, provided that the inspection equipment meets the applicable requirements specified in § 213.339. The track owner shall obtain a copy of the manufacturer's report of inspection and retain it as a record until the rail receives its first scheduled inspection under § 213.339;

(c) **Welding plant inspection** -A continuous inspection at a welding plant, if conducted in accordance with the provisions of paragraph (b) of this section, and accompanied by a plant operator's report of inspection which is retained as a record by the track owner, shall constitute compliance with the requirements for initial inspection of new rail and plant welds, or of new plant welds made in used rail;

(d) **Inspection of field welds** -An initial inspection of field welds, either those joining the ends of CWR strings or those made for isolated repairs, shall be conducted not less than one day and not more than 30 days after the welds have been made. The initial inspection may be conducted by means of portable test equipment. The track owner shall retain a record of such inspections until the welds receive their first scheduled inspection under § 213.339; and

(e) Each defective rail found during inspections conducted under paragraph (a) or (d) of this section shall be marked with highly visible markings on both sides of the web and base and the remedial action as appropriate under § 213.337 will apply.

§ 213.343 -- Continuous welded rail (CWR).

Each track owner with track constructed of CWR shall have in effect written procedures which address the installation, adjustment, maintenance and inspection of CWR, and a training program for the application of those procedures, which shall be submitted to the Federal Railroad Administration within six months following the effective date of this rule. FRA reviews each plan for compliance with the following-

(a) Procedures for the installation and adjustment of CWR which include-

(1) Designation of a desired rail installation temperature range for the geographic area in which the CWR is located; and

(2) De-stressing procedures/methods which address proper attainment of the desired rail installation temperature range when adjusting CWR.

(b) Rail anchoring or fastening requirements that will provide sufficient restraint to limit longitudinal rail and crosstie movement to the extent practical, and specifically addressing CWR rail anchoring or fastening patterns on bridges, bridge approaches, and at other locations where possible longitudinal rail and crosstie movement associated with normally expected train-induced forces, is restricted.

(c) Procedures which specifically address maintaining a desired rail installation temperature range when cutting CWR including rail repairs, in-track welding, and in conjunction with adjustments made in the area of tight track, a track buckle, or a pull-apart. Rail repair practices shall take into consideration existing rail temperature so that-

(1) When rail is removed, the length installed shall be determined by taking into consideration the existing rail temperature and the desired rail installation temperature range; and

(2) Under no circumstances should rail be added when the rail temperature is below that designated by paragraph (a)(1) of this section, without provisions for later adjustment.

(d) Procedures which address the monitoring of CWR in curved track for inward shifts of alignment toward the center of the curve as a result of disturbed track.

(e) Procedures which control train speed on CWR track when -

(1) Maintenance work, track rehabilitation, track construction, or any other event occurs which disturbs the roadbed or ballast section and reduces the lateral and/or longitudinal resistance of the track; and

(2) In formulating the procedures under this paragraph (e), the track owner shall-

(i) Determine the speed required, and the duration and subsequent removal of any speed restriction based on the restoration of the ballast, along with sufficient ballast re-consolidation to stabilize the track to a level that can accommodate expected train-induced forces. Ballast re-consolidation can be achieved through either the passage of train tonnage or mechanical stabilization procedures, or both; and

(ii) Take into consideration the type of crossties used.

(f) Procedures which prescribe when physical track inspections are to be performed to detect buckling prone conditions in CWR track. At a minimum, these procedures shall address inspecting track to identify -

(1) Locations where tight or kinky rail conditions are likely to occur;

(2) Locations where track work of the nature described in paragraph (e)(1) of this section have recently been performed; and

(3) In formulating the procedures under this paragraph (f), the track owner shall-

(i) Specify the timing of the inspection; and

(ii) Specify the appropriate remedial actions to be taken when buckling prone conditions are found.

(g) The track owner shall have in effect a comprehensive training program for the application of these written CWR procedures, with provisions for periodic re-training, for those individuals designated under § 213.305(c) of this part as qualified to supervise the installation, adjustment, and maintenance of CWR track and to perform inspections of CWR track.

(h) The track owner shall prescribe recordkeeping requirements necessary to provide an adequate history of track constructed with CWR. At a minimum, these records shall include:

(1) Rail temperature, location and date of CWR installations. This record shall be retained for at least one year; and

(2) A record of any CWR installation or maintenance work that does not conform with the written procedures. Such record shall include the location of the rail and be maintained until the CWR is brought into conformance with such procedures.

(i) As used in this section-

(1) **Adjusting/de-stressing** means the procedure by which a rail's temperature is re-adjusted to the desired value. It typically consists of cutting the rail and removing rail anchoring devices, which provides for the necessary expansion and contraction, and then re-assembling the track.

(2) **Buckling incident** means the formation of a lateral mis-alignment sufficient in magnitude to constitute a deviation of 5 inches measured with a 62-foot chord. These normally occur when rail temperatures are relatively high and are caused by high longitudinal compressive forces.

(3) **Continuous welded rail (CWR)** means rail that has been welded together into lengths exceeding 400 feet.

(4) **Desired rail installation temperature range** means the rail temperature range, within a specific geographical area, at which forces in CWR should not cause a buckling incident in extreme heat, or a pull-apart during extreme cold weather.

(5) **Disturbed track** means the disturbance of the roadbed or ballast section, as a result of track maintenance or any other event, which reduces the lateral or longitudinal resistance of the track, or both.

(6) **Mechanical stabilization** means a type of procedure used to restore track resistance to disturbed track following certain maintenance operations. This procedure may incorporate dynamic track stabilizers or ballast consolidators, which are units of work equipment that are used as a substitute for the stabilization action provided by the passage of tonnage trains.

(7) **Rail anchors** means those devices which are attached to the rail and bear against the side of the crosstie to control longitudinal rail movement. Certain types of rail fasteners also act as rail anchors and control longitudinal rail movement by exerting a downward clamping force on the upper surface of the rail base.

(8) **Rail temperature** means the temperature of the rail, measured with a rail thermometer.

(9) **Tight/kinky rail** means CWR which exhibits minute alignment irregularities which indicate that the rail is in a considerable amount of compression.

(10) **Train-induced forces** means the vertical, longitudinal, and lateral dynamic forces which are generated during train movement and which can contribute to the buckling potential.

(11) **Track lateral resistance** means the resistance provided to the rail/crosstie structure against lateral displacement.

(12) **Track longitudinal resistance** means the resistance provided by the rail anchors/rail fasteners and the ballast section to the rail/crosstie structure against longitudinal displacement.

§ 213.345 -- Vehicle track/system qualification.

(a) **General.** All vehicle types intended to operate at track Class 6 speeds or above, or at any curving speed producing more than 5 inches of cant deficiency, shall be qualified for operation for their intended track classes in accordance with this subpart. A qualification program shall be used to demonstrate that the vehicle/track system will not exceed the wheel/rail force safety limits and the carbody and truck acceleration criteria specified in Sec. 213.333--

(1) At any speed up to and including 5 m.p.h. above the proposed maximum operating speed; and

(2) On track meeting the requirements for the class of track associated with the proposed maximum operating speed. For purposes of qualification testing, speeds may exceed the maximum allowable operating speed for the class of track in accordance with the test plan

approved by FRA.

(b) **Existing vehicle type qualification.** Vehicle types previously qualified or permitted to operate at track Class 6 speeds or above or at any curving speeds producing more than 5 inches of cant deficiency prior to March 13, 2013, shall be considered as being successfully qualified under the requirements of this section for operation at the previously operated speeds and cant deficiencies over the previously operated track segment(s).

(c) **New vehicle type qualification.** Vehicle types not previously qualified under this subpart shall be qualified in accordance with the requirements of this paragraph (c).

(1) Simulations or measurement of wheel/rail forces. For vehicle types intended to operate at track Class 6 speeds, simulations or measurement of wheel/rail forces during qualification testing shall demonstrate that the vehicle type will not exceed the wheel/rail force safety limits specified in Sec. 213.333[re: track surface]. Simulations, if conducted, shall be in accordance with paragraph (c)(2) of this section. Measurement of wheel/rail forces, if conducted, shall be performed over

a representative segment of the full route on which the vehicle type is intended to operate.

(2) Simulations. For vehicle types intended to operate at track Class 7 speeds or above, or at any curving speed producing more than 6 inches of cant deficiency, analysis of vehicle/track performance (computer simulations) shall be conducted using an industry recognized methodology on:

(i) An analytically defined track segment representative of minimally compliant track conditions (MCAT--Minimally Compliant Analytical Track) for the respective track class(es) as specified in appendix D to this part; and

(ii) A track segment representative of the full route on which the vehicle type is intended to operate. Both simulations and physical examinations of the route's track geometry shall be used to determine a track segment representative of the route.

(3) Carbody acceleration. For vehicle types intended to operate at track Class 6 speeds or above, or at any curving speed producing more than 5 inches of cant deficiency, qualification testing conducted over a representative segment of the route shall demonstrate that the vehicle type will not exceed the carbody lateral and vertical acceleration safety limits specified in § 213.333.

(4) Truck lateral acceleration. For vehicle types intended to operate at track Class 6 speeds or above, qualification testing conducted over a representative segment of the route shall demonstrate that the vehicle type will not exceed the truck lateral acceleration safety limit specified in § 213.333.

(5) Measurement of wheel/rail forces. For vehicle types intended to operate at track Class 7 speeds or above, or at any curving speed producing more than 6 inches of cant deficiency, qualification testing conducted over a representative segment of the route shall demonstrate that the vehicle type will not exceed the wheel/rail force safety limits specified in Sec. 213.333.

(d) **Previously qualified vehicle types.** Vehicle types previously qualified under this subpart for a track class and cant deficiency on one route may be qualified for operation at the same class and cant deficiency on another route through analysis or testing, or both, to demonstrate compliance with paragraph (a) of this section in accordance with the following:

(1) Simulations or measurement of wheel/rail forces. For vehicle types intended to operate at any curving speed producing more than 6 inches of cant deficiency, or at curving speeds that both correspond to track Class 7 speeds or above and produce more than 5 inches of cant deficiency, simulations or measurement of wheel/rail forces during qualification testing shall demonstrate that the vehicle type will not exceed the wheel/rail force safety limits specified in §213.333. Simulations, if conducted, shall be in accordance with paragraph (c)(2) of this section. Measurement of wheel/rail forces, if conducted, shall be performed over a representative segment of the new route.

(2) Carbody acceleration. For vehicle types intended to operate at any curving speed producing more than 5 inches of cant deficiency, or at track Class 7 speeds and above, qualification testing conducted over a representative segment of the new route shall demonstrate that the vehicle type will not exceed the carbody lateral and vertical acceleration safety limits specified in § 213.333.

(3) Truck lateral acceleration. For vehicle types intended to operate at track Class 7 speeds or above, measurement of truck lateral acceleration during qualification testing shall demonstrate that the vehicle type will not exceed the truck lateral acceleration safety limits specified in § 213.333. Measurement of truck lateral acceleration, if conducted, shall be performed over a representative segment of the new route.

(e) **Qualification testing plan.** To obtain the data required to support the qualification program outlined in paragraphs (c) and (d) of this section, the track owner or railroad shall submit a qualification testing plan to FRA's Associate Administrator for Railroad Safety/Chief Safety Officer (FRA) at least 60 days prior to testing, requesting approval to conduct the testing at the desired speeds and cant deficiencies. This test plan shall provide for a test program sufficient to evaluate the operating limits of the track and vehicle type and shall include:

(1) Identification of the representative segment of the route for qualification testing;

(2) Consideration of the operating environment during qualification testing, including operating practices and conditions, the signal system, highway-rail grade crossings, and trains on adjacent tracks;

(3) The maximum angle found on the gage face of the designed (newly-profiled) wheel flange referenced with respect to the axis of the wheelset that will be used for the determination of the Single Wheel L/V Ratio safety limit specified in § 213.333;

(4) A target maximum testing speed in accordance with paragraph (a) of this section and the maximum testing cant deficiency;

(5) An analysis and description of the signal system and operating practices to govern operations in track Classes 7 through 9, which shall include a statement of sufficiency in these areas for the class of operation; and

(6) The results of vehicle/track performance simulations that are required by this section.

(f) **Qualification testing.** Upon FRA approval of the qualification testing plan, qualification testing shall be conducted in two sequential stages as required in this subpart.

(1) Stage-one testing shall include demonstration of acceptable vehicle dynamic response of the subject vehicle as speeds are incrementally increased--

(i) On a segment of tangent track, from acceptable track Class 5 speeds to the target maximum test speed (when the target speed corresponds to track Class 6 and above operations); and

(ii) On a segment of curved track, from the speeds corresponding to 3 inches of cant deficiency to the maximum testing cant deficiency.

(2) When stage-one testing has successfully demonstrated a maximum safe operating speed and cant deficiency, stage-two testing shall commence with the subject equipment over a representative segment of the route as identified in paragraph (e)(1) of this section.

(i) A test run shall be conducted over the route segment at the speed the railroad will request FRA to approve for such service.

(ii) An additional test run shall be conducted at 5 m.p.h. above this speed.

(3) When conducting stage-one and stage-two testing, if any of the monitored safety limits is exceeded on any segment of track intended for operation at track Class 6 speeds or greater, or on any segment of track intended for operation at more than 5 inches of cant deficiency,

testing may continue provided that the track location(s) where any of the limits is exceeded be identified and test speeds be limited at the track location(s) until corrective action is taken. Corrective action may include making an adjustment in the track, in the vehicle, or both of these system components. Measurements taken on track segments intended for operations below track Class 6 speeds and at 5 inches of cant deficiency, or less, are not required to be reported.

(4) Prior to the start of the qualification testing program, a qualifying TGMS specified in § 213.333 shall be operated over the intended route within 30 calendar days prior to the start of the qualification testing program.

(g) **Qualification testing results.** The track owner or railroad shall submit a report to FRA detailing all the results of the qualification program. When simulations are required as part of vehicle qualification, this report shall include a comparison of simulation predictions to the actual wheel/rail force or acceleration data, or both, recorded during full-scale testing. The report shall be submitted at least 60 days prior to the intended operation of the equipment in revenue service over the route.

(h) Based on the test results and all other required submissions, FRA will approve a maximum train speed and value of cant deficiency for revenue service, normally within 45 days of receipt of all the required information. FRA may impose conditions necessary for safely operating at the maximum approved train speed and cant deficiency.

(i) The documents required by this section must be provided to FRA by:

(1) The track owner; or

(2) A railroad that provides service with the same vehicle type over trackage of one or more track owner(s), with the written consent of each affected track owner.

§ 213.347 -- Automotive or railroad crossings at grade.

(a) There shall be no at-grade (level) highway crossings, public or private, or rail-to-rail crossings at-grade on Class 8 and 9 track.

(b) If train operation is projected at Class 7 speed for a track segment that will include rail-highway grade crossings, the track owner shall submit for FRA's approval a complete description of the proposed warning/barrier system to address the protection of highway traffic and high speed trains. Trains shall not operate at Class 7 speeds over any track segment having highway-rail grade crossings unless:

- (1) An FRA-approved warning/barrier system exists on that track segment; and
- (2) All elements of that warning/barrier system are functioning.

§ 213.349 -- Rail end mismatch.

Any mismatch of rails at joints may not be more than that prescribed by the following table-

Class of track	Any mismatch of rails at joints may not be more than the following—	
	On the tread of the rail ends (inch)	On the gage side of the rail ends(in.)
Class 6, 7, 8 and 9	1/8	1/8

§ 213.351 -- Rail joints.

(a) Each rail joint, insulated joint, and compromise joint shall be of a structurally sound design and dimensions for the rail on which it is applied.

(b) If a joint bar is cracked, broken, or because of wear allows excessive vertical movement of either rail when all bolts are tight, it shall be replaced.

(c) If a joint bar is cracked or broken between the middle two bolt holes it shall be replaced.

(d) Each rail shall be bolted with at least two bolts at each joint.

(e) Each joint bar shall be held in position by track bolts tightened to allow the joint bar to firmly support the abutting rail ends and to allow longitudinal movement of the rail in the joint to accommodate expansion and contraction due to temperature variations. When no-slip, joint-to-rail contact exists by design, the requirements of this section do not apply. Those locations, when over 400 feet long, are considered to be continuous welded rail track and shall meet all the requirements for continuous welded rail track prescribed in this subpart.

- (f) No rail shall have a bolt hole which is torch cut or burned.
- (g) No joint bar shall be reconfigured by torch cutting.

§ 213.352 -- Torch cut rail.

- (a) Except as a temporary repair in emergency situations no rail having a torch cut end shall be used. When a rail end with a torch cut is used in emergency situations, train speed over that rail shall not exceed the maximum allowable for Class 2 track. All torch cut rail ends in Class 6 shall be removed.
- (b) Following the expiration of the time limits specified in paragraph (a) of this section, any torch cut rail end not removed shall be removed within 30 days of discovery. Train speed over that rail shall not exceed the maximum allowable for Class 2 track until removed.

§ 213.353 -- Turnouts, crossovers and lift rail assemblies or other transition devices on moveable bridges.

- (a) In turnouts and track crossings, the fastenings must be intact and maintained so as to keep the components securely in place. Also, each switch, frog, and guard rail shall be kept free of obstructions that may interfere with the passage of wheels. Use of rigid rail crossings at grade is limited per § 213.347
- (b) Track shall be equipped with rail anchoring through and on each side of track crossings and turnouts, to restrain rail movement affecting the position of switch points and frogs. Elastic fasteners designed to restrict longitudinal rail movement are considered rail anchoring.
- (c) Each flangeway at turnouts and track crossings shall be at least 1 1/2 inches wide.
- (d) For all turnouts and crossovers, and lift rail assemblies or other transition devices on moveable bridges, the track owner shall prepare an inspection and maintenance Guidebook for use by railroad employees which shall be submitted to the Federal Railroad Administration. The Guidebook shall contain at a minimum-
 - (1) Inspection frequency and methodology including limiting measurement values for all components subject to wear or requiring adjustment.
 - (2) Maintenance techniques.
- (e) Each hand operated switch shall be equipped with a redundant operating mechanism for maintaining the security of switch point position.

§ 213.355 -- Frog guard rails and guard faces; gage.

The guard check and guard face gages in frogs shall be within the limits prescribed in the following table-

Class of track	Guard check gage--The	Guard face gage--
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Distance between the gage line of a frog to the guard line of its guard rail or guarding face measured track at right angles to the gage line fn2 may not be less than -

The distance between guard lines fn1 measured across the track at across the right angles to the gage line fn2 may not be more than-

Class 6,7,8,9 track

4' 6 1/2 "

4' 5"

fn1 A line along that side of the flangeway which is nearer to the center of the track and at the same elevation as the gage line.

fn2 A line 5/8 inch below the top of the center line of the head of the running rail, or corresponding location of the tread portion of the track structure.

.....
§ 213.357 -- Derails.

- (a) Each track, other than a main track, which connects with a Class 7, 8 or 9 main track shall be equipped with a functioning derail of the correct size and type, unless railroad equipment on the track, because of grade characteristics cannot move to foul the main track.
- (b) For the purposes of this section, a derail is a device which will physically stop or divert movement of railroad rolling stock or other railroad on-track equipment past the location of the device.
- (c) Each derail shall be clearly visible. When in a locked position, a derail shall be free of any lost motion which would prevent it from performing its intended function.
- (d) Each derail shall be maintained to function as intended.
- (e) Each derail shall be properly installed for the rail to which it is applied.
- (f) If a track protected by a derail is occupied by standing railroad rolling stock, the derail shall be in derailing position.
- (g) Each derail on a track which is connected to a Class 7, 8 or 9 main track shall be interconnected with the signal system.

§ 213.359 -- Track stiffness.

- (a) Track shall have a sufficient vertical strength to withstand the maximum vehicle loads generated at maximum permissible train speeds, cant deficiencies and surface defects. For purposes of this section, vertical track strength is defined as the track capacity to constrain vertical deformations so that the track shall return following maximum load to a configuration in

compliance with the vehicle/track interaction safety limits and geometry requirements of this subpart.

(b) Track shall have sufficient lateral strength to withstand the maximum thermal and vehicle loads generated at maximum permissible train speeds, cant deficiencies and lateral alignment defects. For purposes of this section lateral track strength is defined as the track capacity to constrain lateral deformations so that track shall return following maximum load to a configuration in compliance with the vehicle/track interaction safety limits and geometry requirements of this subpart.

§ 213.361 -- Right of way.

The track owner in Class 8 and 9 shall submit a barrier plan, termed a "right-of-way plan," to the Federal Railroad Administration for approval. At a minimum, the plan will contain provisions in areas of demonstrated need for the prevention of-

- (a) Vandalism;
- (b) Launching of objects from overhead bridges or structures into the path of trains; and
- (c) Intrusion of vehicles from adjacent rights of way.

§ 213.365 -- Visual inspections.

(a) All track shall be visually inspected in accordance with the schedule prescribed in paragraph (c) of this section by a person designated under § 213.305.

(b) Each inspection shall be made on foot or by riding over the track in a vehicle at a speed that allows the person making the inspection to visually inspect the track structure for compliance with this part. However, mechanical, electrical, and other track inspection devices may be used to supplement visual inspection. If a vehicle is used for visual inspection, the speed of the vehicle may not be more than 5 miles per hour when passing over track crossings and turnouts, otherwise, the inspection vehicle speed shall be at the sole discretion of the inspector, based on track conditions and inspection requirements. When riding over the track in a vehicle, the inspection will be subject to the following conditions-

(1) One inspector in a vehicle may inspect up to two tracks at one time provided that the inspector's visibility remains unobstructed by any cause and that the second track is not centered more than 30 feet from the track upon which the inspector is riding;

(2) Two inspectors in one vehicle may inspect up to four tracks at a time provided that the inspector's visibility remains unobstructed by any cause and that each track being inspected is centered within 39 feet from the track upon which the inspectors are riding;

(3) Each main track is actually traversed by the vehicle or inspected on foot at least once every two weeks, and each siding is actually traversed by the vehicle or inspected on foot at least once every month. On high density commuter railroad lines where track time does not permit an on track vehicle inspection, and where track centers are 15 foot or less, the requirements of this paragraph (b)(3) will not apply; and

(4) Track inspection records shall indicate which track(s) are traversed by the vehicle or inspected on foot as outlined in paragraph (b)(3) of this section.

(c) Each track inspection shall be made in accordance with the following schedule-

<u>Class of track</u>	<u>Required frequency</u>
6, 7, 8	Twice weekly with at least 2 calendar-day's interval between inspections.
9	Three times per week.

(d) If the person making the inspection finds a deviation from the requirements of this part, the person shall immediately initiate remedial action.

(e) Each switch, turnout, crossover, and lift rail assemblies on moveable bridges shall be inspected on foot at least weekly. The inspection shall be accomplished in accordance with the Guidebook required under § 213.353.

(f) In track Classes 8 and 9, if no train traffic operates for a period of eight hours, a train shall be operated at a speed not to exceed 100 miles per hour over the track before the resumption of operations at the maximum authorized speed.

§ 213.367 -- Special inspections.

In the event of fire, flood, severe storm, temperature extremes or other occurrence which might have damaged track structure, a special inspection shall be made of the track involved as soon as possible after the occurrence and, if possible, before the operation of any train over that track.

§ 213.369 -- Inspection records.

(a) Each owner of track to which this part applies shall keep a record of each inspection required to be performed on that track under this subpart.

(b) Except as provided in paragraph (e) of this section, each record of an inspection under § 213.365[visual inspections] shall be prepared on the day the inspection is made and signed by the person making the inspection. Records shall specify the track inspected, date of inspection, location and nature of any deviation from the requirements of this part, and the remedial action taken by the person making the inspection. The owner shall designate the location(s) where each original record shall be maintained for at least one year after the inspection covered by the record. The owner shall also designate one location, within 100 miles of each state in which they conduct operations, where copies of record which apply to those operations are either maintained or can be viewed following 10 days notice by the Federal Railroad Administration.

(c) Rail inspection records shall specify the date of inspection, the location and nature of any internal defects found, the remedial action taken and the date thereof, and the location of any intervals of track not tested per § 213.339(d)[re: internal defects]. The owner shall retain a rail inspection record for at least two years after the inspection and for one year after remedial action is taken.

(d) Each owner required to keep inspection records under this section shall make those records available for inspection and copying by the Federal Railroad Administrator.

(e) For purposes of compliance with the requirements of this section, an owner of track may maintain and transfer records through electronic transmission, storage, and retrieval provided that-

(1) The electronic system be designed such that the integrity of each record maintained through appropriate levels of security such as recognition of an electronic signature, or other means, which uniquely identify the initiating person as the author of that record. No two persons shall have the same electronic identity;

(2) The electronic storage of each record shall be initiated by the person making the inspection within 24 hours following the completion of that inspection;

(3) The electronic system shall ensure that each record cannot be modified in any way, or replaced, once the record is transmitted and stored;

(4) Any amendment to a record shall be electronically stored apart from the record which it amends. Each amendment to a record shall be uniquely identified as to the person making the amendment;

(5) The electronic system shall provide for the maintenance of inspection records as originally submitted without corruption or loss of data; and

(6) Paper copies of electronic records and amendments to those records, that may be necessary to document compliance with this part, shall be made available for inspection and copying by the FRA and track inspectors responsible under § 213.305. Such paper copies shall be made available to the track inspectors and at the locations specified in paragraph (b) of this section.

(7) Track inspection records shall be kept available to persons who performed the inspection and to persons performing subsequent inspections.

(f) Each vehicle/track interaction safety record required under § 213.333 (g), and (m) shall be made available for inspection and copying by the FRA at the locations specified in paragraph (b) of this section.

Appendix A- Maximum Allowable Curving Speeds

Appendix B- Schedule of Civil Penalties

Appendix C- Reserved

Appendix D-Minimally Compliant Analytical Track(MCAT) Simulations Used for
Qualifying Vehicles To Operate at High Speeds and at High Cant Deficiencies

Rail Failure Prevention Program

The following are recommended practices to be used to manage rail head wear, visible rolling contact fatigue damage, and defect development in rail in mainline. These recommended practices are intended as agency guidance, not for enforcement.

- For purposes of these recommended practices, visible rolling contact fatigue (RCF) damage is a combination of crack formation and material flow on the running surface of the rail, leading to visual degradation of the rail surface (spalling, shelling and head checks), higher impact forces and reduced rail life.

It is proposed that track owners consider developing and maintaining a program for rail in mainline:

- Class 2 track not within yard limits with annual tonnage of at least 25 MGT, or is a HAZMAT route;
- Class 3 track not within yard limits with annual tonnage of at least 25 MGT, is a HAZMAT route, or has regularly scheduled passenger service; and
- Class 4 and 5 track that contains the following:
 - a. Rail head wear guidelines;
 - b. Guidelines which address the identification and management of visible rolling contact fatigue damage and improve rail performance;
 - c. An inspection plan that includes rail head wear measurements for comparison with established guidelines and means for identification of visible rolling contact fatigue damage;
 - d. Corrective actions to be taken when rail head wear guidelines are exceeded or visible rolling contact fatigue damage mis- identified; and
 - e. Training for the application of the procedures listed above.

Program Content.

It is recommended that the Rail Failure Prevention Program contain the following elements:

- a. Rail head wear guidelines which include:
 1. Head wear guidelines that consider rail section, class of track, alignment and other criteria as determined by the track owner.
 2. Specification of the measurement methods to be used and definition of reference points for these measurements.

- b. An inspection plan to measure rail head wear that considers alignment, class of track, and or other criteria as determined by the track owner.

- c. Guidelines for the management of visible rolling contact fatigue damage and improved rail performance. Procedures may include lubrication, friction modification or grinding.
 1. Lubrication or friction modification practices should consider train traffic, alignment, curvature length, and grade;
 2. Rail grinding or other techniques that address maintenance of rail head profile to improve rail surface conditions and reduce visible rolling contact fatigue damage.

- d. Guidelines which address the monitoring of visible rolling contact fatigue damage which include the following:
 1. Inspection procedures to identify areas of visible rolling contact fatigue damage. The

inspection procedures should include prioritization methods for assessing the severity of these conditions; and

2. Establishment of inspection frequencies to monitor development of visible rolling contact fatigue damage that consider alignment, track class, and other factors as determined by the track owner.

e. Guidelines for applying rail grinding or other techniques which improve rail head profile and visible rolling contact fatigue damage. The guidelines should identify:

1. The techniques utilized;
2. Application of these techniques taking into consideration alignment, tonnage, class of track, or other factors as determined by the track owner; and
3. Prioritize corrective action for areas of significant visible rolling contact fatigue damage to reduce defect development.

f. Recordkeeping procedures for each inspection performed under the Rail Failure Prevention Program. The record should include the following items:

1. The limits of the territory inspected
2. Head wear measurements
3. Areas identified to have significant visible rolling contact fatigue damage and type of rail surface degradation.

g. Guidelines for rail service life monitoring which consider class of track, tonnage, rail section, rail wear, visible rolling contact fatigue damage, defect development, rail failure history and other factors as determined by the track owner.

h. Recommended corrective action to be taken when rail head wear or visible rolling contact fatigue damage guidelines are exceeded.

i. A system or process that is designed for the recording and tracking of rail defects and rail failure incidents with the capability to identify locations with sudden or accelerated failure rates.

j. Training for employees involved in the application of the written Rail Failure Prevention Program, with provisions for periodic retraining for those individuals.

Additionally, FRA should dedicate resources to the following research items:

- Develop and implement TTCI Rolling Load Machine (RCF on Rail and Wheels)
- Develop improved rail steel
- Improve the understanding of worn rail to better forecast rail life
- Improve rail inspection technologies
- Develop performance-based predictive modeling software to better control rail life through improved preventive maintenance processes
- Study the effects of rail grinding on defect development

ROADWAY WORKER PROTECTION⁶⁹

On June 10, 2016, FRA amended the roadway worker regulations. They include: a job briefing requirement regarding the accessibility of the roadway worker in charge; the adoption of procedures for how roadway workers cross railroad track; a new exception for railroads conducting snow removal and weed spraying operations; a clarification of the existing “foul time” provision; three new permissible methods of establishing working limits on non-controlled track; the expanded use of individual train detection at controlled points; an amended provision governing train audible warnings for roadway workers; and, amendment of certain roadway worker training requirements.⁷⁰

FRA is also addressed other items. Among these items are: signal protections; the electronic display of working limits authorities; amendments to the existing provision governing the qualification of roadway workers in charge; a new provision establishing minimum safety standards governing the use of “occupancy behind” or “conditional” working limit authorities; the phase-out of the use of definite train location and informational train line-ups; amendments to clarify the existing roadway worker protection and blue signal protection requirements for work performed within shop areas; the use of existing tunnel niches and clearing bays as a place of safety; and, the use of other railroad tracks as a place of safety. This final rule also deletes certain outdated incorporations by reference of personal protective equipment standards in FRA’s Bridge Worker Safety Standards at subpart B of part 214, and instead cross references the relevant OSHA’s regulations. 81 Fed. Reg. 37840

As relevant, the provisions below reflect the changes.

Subpart C--Roadway Worker Protection

§ 214.301-- Purpose and scope

- (a) To prevent accidents and casualties caused by moving railroad cars, locomotives or on-track equipment striking roadway workers.
- (b) Prescribes minimum safety standards for roadway workers.
- (c) This subpart prescribes safety standards related to the movement of roadway maintenance machines where such movements affect the safety of roadway workers. Except as provided for in § 214.320, this subpart does not otherwise affect movements of roadway maintenance machines that are conducted under the authority of a train dispatcher, a control operator, or the operating rules of the railroad.

§ 214.303 --Railroad on track safety programs, generally

- (a) Each railroad shall adopt and implement a program for on-track safety.

⁶⁹ The FRA has issued 31 roadway worker protection technical bulletins which clarify the application of the rule. They are identified as G-05-01 through G-05- 31. Copies may be obtained from the FRA's Office of Safety Assurance and Compliance.

⁷⁰ There is also discussion of roadway worker protection in Parts 213 and 236 of the CFR.

(b) Each railroad program shall include procedures for monitoring the effectiveness and compliance with the program. Such internal procedures will not replace FRA inspection and monitoring.

§214.307—On-track safety programs

(a) Each railroad subject to this part shall maintain and have in effect an on-track safety program which complies with the requirements of this subpart. New railroads must have an on-track safety program in effect by the date on which operations commence. The on-track safety program shall be retained at a railroad's system headquarters and division headquarters, and shall be made available to representatives of the FRA for inspection and copying during normal business hours. Each railroad to which this part applies is authorized to retain its program by electronic recordkeeping in accordance with §§ 217.9(g) and 217.11(c) of this chapter.

(b) Each railroad shall notify, in writing, the Associate Administrator for Safety and Chief Safety Officer, Federal Railroad Administration, RRS-15, 1200 New Jersey Avenue SE., Washington, DC 20590, not less than one month before its on-track safety program becomes effective. The notification shall include the effective date of the program and the name, title, address and telephone number of the primary person to be contacted with regard to review of the program. This notification procedure shall also apply to subsequent changes to a railroad's on-track safety program.

(c) Upon review of a railroad's on-track safety program, the FRA Associate Administrator for Railroad Safety and Chief Safety Officer may, for cause stated, may disapprove the program. Notification of such disapproval shall be made in writing and specify the basis for the disapproval decision. If the Associate Administrator for Railroad Safety and Chief Safety Officer disapproves the program:

(1) The railroad has 35 days from the date of the written notification of such disapproval to:

(i) Amend its program and submit it to the Associate Administrator for Railroad Safety and Chief Safety Officer for approval; or

(ii) Provide a written response in support of its program to the Associate Administrator for Railroad Safety and Chief Safety Officer.

(2) FRA's Associate Administrator for Railroad Safety and Chief Safety Officer will subsequently issue a written decision either approving or disapproving the railroad's program.

(3) Failure to submit to FRA an amended program or provide a written response in accordance with this paragraph will be considered a failure to implement an on-track safety program under this subpart.

§ 214.309 -- On track safety manual

(a) The applicable on-track safety manual (as defined by § 214.7) shall be readily available to all roadway workers. Each roadway worker in charge responsible for the on-track safety of others, and each lone worker, shall be provided with and shall maintain a copy of the on-track safety manual.

(b) When it is impracticable for the on-track safety manual to be readily available to a lone worker, the employer shall establish provisions for such worker to have alternative access to the information in the manual.

(c) Changes to the on-track safety manual may be temporarily published in bulletins or notices. Such publications shall be retained along with the on-track safety manual until fully incorporated into the manual.

§ 214.311 -- Responsibility of employers

(a) All employers, including contractors, are responsible to assure that employees are trained and understand on-track safety procedures.

(b) Employers shall guarantee the absolute right of each employee to: 1) challenge on-track safety procedures, and 2) remain clear of track until challenge is resolved.

(c) Employer must develop written procedures for equitably resolving such challenges.

§ 214.313 -- Responsibility of individual roadway workers

(a) Roadway workers are responsible for following the roadway worker rules.

(b) Roadway workers shall not foul track unless necessary to perform duties.

(c) Roadway workers must ascertain on-track safety is being provided.

(d) Roadway workers may refuse any directive to violate on-track safety rules.

§ 214.315 -- Supervision and communications

(a) When an employer assigns a duty to a roadway worker that calls for that employee to foul a track, the employer shall provide the employee with an on-track safety job briefing that, at a minimum, includes the following:

(1) Information on the means by which on-track safety is to be provided for each track identified to be fouled;

(2) Instruction on each on-track safety procedure to be followed;

(3) Information about any adjacent tracks, on-track safety for such tracks, if required by this subpart or deemed necessary by the roadway worker in charge, and identification of any roadway maintenance machines that will foul such tracks;

(4) A discussion of the nature of the work to be performed and the characteristics of the work location to ensure compliance with this subpart; and

(5) Information on the accessibility of the roadway worker in charge and alternative procedures in the event the roadway worker in charge is no longer accessible to the members of the roadway work group.

(b) A job briefing for on-track safety shall be deemed complete only after the roadway worker(s) has acknowledged understanding of the on-track safety procedures and instructions presented.

(c) Every roadway work group whose duties require fouling a track shall have one roadway worker in charge designated by the employer to provide on-track safety for all members of the group. The designated person shall be qualified under the rules of the railroad that conducts train operations on those tracks to provide the protection necessary for on-track safety of each individual in the group. The responsible person may be designated generally, or specifically for a particular work situation.

(d) Before any member of a roadway work group fouls a track, the roadway worker in charge designated under paragraph (c) of this section shall inform each roadway worker of the on-track safety procedures to be used and followed during the performance of the work at that time and location. Each roadway worker shall again be so informed at any time the on-track safety procedures change during the work period. Such information shall be given to all roadway workers affected before the change is effective, except in cases of emergency. Any roadway workers who, because of an emergency, cannot be notified in advance shall be immediately warned to leave the fouling space and shall not return to the fouling space until on-track safety is re-established.

(e) Each lone worker shall communicate at the beginning of each duty period with a supervisor or another designated employee to receive an on-track safety job briefing and to advise of his or her planned itinerary and the procedures that he or she intends to use for on-track safety.

* * *

§ 214.317 -- On track safety procedures, generally

(a) Each employer subject to the provisions of this part shall provide on-track safety for roadway workers by adopting a program that contains specific rules for protecting roadway workers that comply with the provisions of §§ 214.319 through 214.337.

(b) Roadway workers may walk across any track provided that they can safely be across and clear of the track before a train or other on-track equipment would arrive at the crossing point under the following circumstances:

(1) Employers shall adopt, and roadway workers shall comply with, applicable railroad safety rules governing how to determine that it is safe to cross the track before starting across;

(2) Roadway workers shall move directly and promptly across the track; and

(3) On-track safety protection is in place for all roadway workers who are actually engaged in work, including inspection, construction, maintenance or repair, and extending to carrying tools or material that restricts motion, impairs sight or hearing, or prevents an employee from detecting and moving rapidly away from an approaching train or other on-track equipment.

(c) On non-controlled track, on-track roadway maintenance machines engaged in weed spraying or snow removal may proceed under the provisions of § 214.301(c), under the following conditions:

(1) Each railroad shall establish and comply with an operating procedure for on-track snow removal and weed spray equipment to ensure that:

(i) All on-track movements in the affected area are informed of such operations;

(ii) All on-track movements shall operate at restricted speed as defined in § 214.7, except on other than yard tracks and yard switching leads, where all on-track movements shall operate prepared to stop within one-half the range of vision but not exceeding 25 mph;

(iii) A means for communication between the on-track equipment and other on-track movements is provided; and

(iv) Remotely controlled hump yard facility operations are not in effect, and kicking of cars is prohibited unless agreed to by the roadway worker in charge.

(2) Roadway workers engaged in such snow removal or weed spraying operations subject to this section shall retain an absolute right to use the provisions of § 214.327 (inaccessible track).

(3) Roadway workers assigned to work with this equipment may line switches (or derails operated via a switch stand) for the machine's movement but shall not engage in any roadway work activity unless protected by another form of on-track safety.

(4) Each roadway maintenance machine engaged in snow removal or weed spraying under this provision shall be equipped with and utilize:

(i) An operative 360-degree intermittent warning light or beacon;

(ii) Work lights, if the machine is operated during the period between one-half hour after sunset and one-half hour before sunrise or in dark areas such as tunnels, unless equivalent lighting is otherwise provided;

(iii) An illumination device, such as a headlight, capable of illuminating obstructions on the track ahead in the direction of travel for a distance of 300 feet under normal weather and atmospheric conditions;

(iv) A brake light activated by the application of the machine braking system, and designed to be visible for a distance of 300 feet under normal weather and atmospheric conditions; and

(v) A rearward viewing device, such as a rearview mirror.

(d) Tunnel niches or clearing bays in existence prior to April 1, 2017 that are designed to permit roadway workers to occupy a place of safety when trains or other on-track equipment pass the niche or clearing bay, but are less than four feet from the field side of the nearest rail, may continue to be used as a place of safety provided:

(1) Such niches or clearing bays are visually inspected by the roadway worker in charge or lone worker prior to making the determination that the niche or clearing bay is suitable for use as a place of safety;

(2) There is adequate sight distance to permit a roadway worker or lone worker to occupy the place of safety in the niche or clearing bay at least 15 seconds prior to the arrival of a train or other on-track equipment at the work location in accordance with §§ 214.329 and 214.337; and

(3) The roadway worker in charge or lone worker shall have the absolute right to designate a place of safety as a location other than that of a tunnel niche or clearing bay described by this paragraph (d), or to establish working limits.

§214.318 Locomotive servicing and car shop repair track areas.

(a) In lieu of the requirements of this subpart, workers (as defined by § 218.5 of this chapter) within the limits of locomotive servicing and car shop repair track areas (as both are defined by § 218.5 of this chapter) may utilize procedures established by a railroad in accordance with part 218, subpart B, of this chapter (Blue Signal Protection) to perform duties incidental to inspecting, testing, servicing, or repairing rolling equipment when those incidental duties involve fouling a track that is protected by Blue Signal Protection. A railroad utilizing Blue Signal Protection in lieu of the requirements of this subpart must have rules in effect governing the applicability of those protections to the incidental duties being performed.

(b) Paragraph (a) of this section applies to employees of a contractor to a railroad if such incidental duties are performed under the supervision of a railroad employee qualified (as defined by § 217.4 of this chapter) on the railroad's rules and procedures implementing the Blue Signal Protection requirements.

(c) Any work performed within the limits of a locomotive servicing or car shop repair track area with the potential of fouling a track which requires a person qualified under § 213.7 of this chapter to be present to inspect or supervise such work must be performed in accordance with the requirements of this subpart.

§ 214.319 -- Working limits, generally

Working limits established on controlled track shall conform to the provisions of § 214.321 Exclusive track occupancy, § 214.323 Foul time, or § 214.325 Train coordination. Working limits established on non-controlled track shall conform to the provision of § 214.327 Inaccessible track.

(a) Working limits established under any procedure shall, in addition, conform to the following provisions:

(1) Only a roadway worker in charge who is qualified in accordance with § 214.353 shall establish or have control over working limits for the purpose of establishing on-track safety.

(2) Only one roadway worker in charge who is qualified in accordance with § 214.353 shall have control over working limits on any one segment of track.

(3) All affected roadway workers shall be notified before working limits are released for the operation of trains. Working limits shall not be released until all affected roadway workers have either left the track or have been afforded on-track safety through train approach warning in accordance with § 214.329.

(b) Each Class I or Class II railroad or each railroad providing regularly scheduled intercity or commuter rail passenger transportation that utilizes controlled track working limits as a form of on-track safety (under §§ 214.321 through 214.323) in signalized territory shall:

(1) By July 1, 2017, evaluate its on-track safety program and identify an appropriate method(s) of providing redundant signal protections for roadway work groups who depend on a train dispatcher or control operator to provide signal protection in establishing controlled track working limits. For purposes of this section, redundant signal protections means risk mitigation measures or safety redundancies adopted to ensure the proper establishment and maintenance of signal protections for controlled track working limits until such working limits are released by the roadway worker in charge. Appropriate redundant protections could include the use of various risk mitigation measures (or a combination of risk mitigation measures) such as technology, training, supervision, or operating-based procedures; or could include use of redundant signal protection, such as shunting, designed to prevent signal system-related incursions into established controlled track working limits; and

(2) By January 1, 2018, specifically identify, implement, and comply with the method(s) of providing redundant protections in its on-track safety program.

(c) Upon a railroad's request, FRA will consider an exemption from the requirements of paragraph (b) of this section for each segment of track(s) for which operations are governed by a positive train control system under part 236, subpart I, of this chapter. A request for approval to exempt a segment of track must be submitted in writing to the FRA Associate Administrator for Railroad Safety and Chief Safety Officer. The FRA Associate Administrator for Railroad Safety and Chief Safety Officer will review a railroad's submission and will notify a railroad of its approval or disapproval in writing within 90 days of FRA's receipt of a railroad's written request, and shall specify the basis for any disapproval decision.

§214.320 Roadway maintenance machine movements over signalized non-controlled track.

Working limits must be established for roadway maintenance machine movements on non-controlled track equipped with automatic block signal systems over which trains are permitted to exceed restricted speed (for purposes of this section, on-track movements prepared to stop within on-half the range of vision but not exceeding 25 mph). This section applies unless the railroad's operating rules protect the movements of roadway maintenance machines in a manner equivalent to that provided for by limiting all train and locomotive movements to restricted speed, and such equivalent level of protection is first approved in writing by FRA's Associate Administrator for Railroad Safety and Chief Safety Officer.

§ 214.321 --Exclusive track occupancy

Working limits established on controlled track through the use of exclusive track occupancy procedures shall comply with the following requirements:

(a) The track within working limits shall be placed under the control of one roadway worker in charge by either:

(1) Authority issued to the roadway worker in charge by the train dispatcher or control operator who controls train movements on that track,

(2) Flagmen stationed at each entrance to the track within working limits and instructed by the roadway worker in charge to permit the movement of trains and equipment into the working limits only as permitted by the roadway worker in charge, or

(3) The roadway worker in charge causing fixed signals at each entrance to the working limits to display an aspect indicating "Stop."

(b) An authority for exclusive track occupancy given to the roadway worker in charge of the working limits shall be transmitted on a written or printed document directly, by relay through a designated employee, in a data transmission, or by oral communication, to the roadway worker in charge by the train dispatcher or control operator in charge of the track.

(1) Where authority for exclusive track occupancy is transmitted orally, the authority shall be written as received by the roadway worker in charge and repeated to the issuing employee for verification.

(2) The roadway worker in charge of the working limits shall maintain possession of the written or printed authority for exclusive track occupancy while the authority for the working limits is in effect. A data transmission of an authority displayed on an electronic screen may be used as a substitute for a written or printed document required under this paragraph. Electronic displays of authority shall comply with the requirements of § 214.322.

(3) The train dispatcher or control operator in charge of the track shall make a written or electronic record of all authorities issued to establish exclusive track occupancy.

(4) An authority shall specify a unique roadway work group number, an employee name, or a unique identifier. A railroad shall adopt procedures that require precise communication between trains and other on-track equipment and the roadway worker in charge or lone worker controlling the working limits in accordance with § 214.319. The procedures may permit communications to be made directly between a train or other on-track equipment and a roadway worker in charge or lone worker, or through a train dispatcher or control operator.

(c) The extent of working limits established through exclusive track occupancy shall be defined by one of the following physical features clearly identifiable to a locomotive engineer or other person operating a train or railroad equipment:

(1) A flagman with instructions and capability to hold all trains and equipment clear of the working limits;

(2) A fixed signal that displays an aspect indicating "Stop";

(3) A station shown in the time-table, and identified by name with a sign, beyond which train movement is prohibited by train movement authority or the provisions of a direct train control system.

(4) A clearly identifiable milepost sign beyond which train movement is prohibited by train movement authority or the provisions of a direct train control system; or

(5) A clearly identifiable physical location prescribed by the operating rules of the railroad that trains may not pass without proper authority.

(d) Movements of trains and roadway maintenance machines within working limits established through exclusive track occupancy shall be made only under the direction of the roadway worker in charge of the working limits. Such movements shall be at restricted speed unless a higher authorized speed has been specifically authorized by the roadway worker in charge of the working limits.

(e) Working limits established by exclusive track occupancy authority may occur behind designated trains moving through the same limits in accordance with the following provisions:

(1) The authority establishing working limits will only be considered to be in effect after it is confirmed by the roadway worker in charge or lone worker that the affected train(s) have passed the point to be occupied or fouled by:

(i) Visually identifying the affected trains(s); or

(ii) Direct radio contact with a crew member of the affected train(s); or

(iii) Receiving information about the affected train from the train dispatcher or control operator.

(2) When utilizing the provisions of paragraph (e)(1)(i) of this section, a railroad's operating rules shall include procedures prohibiting the affected train(s) from making a reverse movement into or within the limits being fouled or occupied.

(3) After the roadway worker in charge or lone worker has confirmed that the affected trains(s) have passed the point to be occupied or fouled, the roadway worker in charge shall record on the authority the time of passage and engine number(s) of the affected trains(s). If the confirmation is by direct communication with the train(s), or through confirmation by the train dispatcher or control operator, the roadway worker in charge shall record the time of such confirmation and the engine number(s) of the affected trains on the authority.

(4) A separate roadway work group afforded on-track safety by the roadway worker in charge of authority limits, and that is located away from the roadway worker in charge of authority limits, shall:

(i) Occupy or foul the track only after receiving permission from the roadway worker in charge to occupy the working limits after the roadway worker charge has fulfilled the provisions of paragraph (e)(1) of this section; and

(ii) Be accompanied by an employee qualified to the level of a roadway worker in charge who shall also have a copy of the authority and who shall independently execute the required communication requirements of paragraphs (e)(1) and (3) of this section.

(5) Any subsequent train or on-track equipment movements within working limits after the passage of the affected train(s) shall be governed by paragraph (d) of this section.

§214.322 Exclusive track occupancy, electronic display.

(a) While it is in effect, all the contents of an authority electronically displayed shall be readily viewable by the roadway worker in charge that is using the authority to provide on-track safety for a roadway work group.

(b) If the electronic display device malfunctions, fails, or cannot display an authority while it is in effect, the roadway worker in charge shall either obtain a written or printed copy of the authority in accordance with § 214.321 (except that on-track roadway maintenance machine and

hi-rail movements must stop) or establish another form of on-track safety without delay. In the event that a written or printed copy of the authority cannot be obtained or another form of on-track safety cannot be established after failure of an electronic display device, the roadway worker in charge shall instruct all roadway workers to stop work and occupy a place of safety and conduct an on-track safety job briefing to determine the safe course of action with the roadway work group.

(c) All authorized users of an electronic display system shall be uniquely identified to support individual accountability. A user may be a person, a process, or some other system that accesses or attempts to access an electronic display system to perform tasks or process an authority.

(d) All authorized users of an electronic display system must be authenticated prior to being granted access to such system. The system shall ensure the confidentiality and integrity of all internally stored authentication data and protect it from access by unauthorized users. The authentication scheme shall utilize algorithms approved by the National Institute of Standards and Technology (NIST), or any similarly recognized and FRA approved standards body.

(e) The integrity of all data must be ensured during transmission/reception, processing, and storage. All new electronic display systems implemented on or after July 1, 2017 shall utilize a Message Authentication Code (MAC) to ensure that all data is error free. The MAC shall utilize algorithms approved by NIST, or any similarly recognized and FRA approved standards body. Systems implemented prior to July 1, 2017 may utilize a Cyclical Redundancy Code (CRC) to ensure that all data is error free provided:

(1) The collision rate for the CRC check utilized shall be less than or equal to 1 in 232. Systems implemented prior to July 1, 2017 that do not utilize a CRC with a collision rate less than or equal to 1 in 232 must be retired or updated to utilize a MAC no later than July 1, 2018.

(2) MAC and CRC checks shall only be used to verify the accuracy of an electronic authority data message and shall not be used in an error correction reconstruction of the data. An authority must fail if the MAC or CRC checks do not match.

(f) Authorities transmitted to each electronic display device shall be retained in the device's non-volatile memory for not less than 72 hours.

(g) If any electronic display device used to obtain an authority is involved in an accident/incident that is required to be reported to FRA under part 225 of this chapter, the railroad or employer that was using the device at the time of the accident shall, to the extent possible, and to the extent consistent with the safety of life and property, preserve the data recorded by each such device for analysis by FRA. This preservation requirement permits the railroad or employer to extract and analyze such data, provided the original downloaded data file, or an unanalyzed exact copy of it, shall be retained in secure custody and shall not be utilized for analysis or any other purpose except by direction of FRA or the National Transportation Safety Board. This preservation requirement shall expire one (1) year after the date of the accident unless FRA or the National Transportation Safety Board notifies the railroad in writing that the data are desired for analysis.

(h) New electronic display systems implemented on or after July 1, 2017 shall provide Level

3 assurance as defined by NIST Special Publication 800-63-2, Electronic Authentication Guideline, “Computer Security,” August 2013. Systems implemented prior to July 1, 2017 shall provide Level 2 assurance. Systems implemented prior to July 1, 2017 that do not provide Level 2 or higher assurance must be retired, or updated to provide Level 2 assurance, no later than July 1, 2018. The incorporation by reference of this NIST Special Publication was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated document from the National Institute of Standards and Technology, 100 Bureau Drive, Stop 8930, Gaithersburg, MD 20899-8930, <http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-63-2.pdf>. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue SE., Washington, DC, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

§ 214.323 --Foul time

Working limits established on controlled track through the use of foul time procedures shall comply with the following requirements:

- (a) Foul time may be given orally or in writing by the train dispatcher or control operator only after that employee has withheld the authority of all trains or other on-track equipment to move into or within the working limits during the foul time period.
- (b) Each roadway worker in charge to whom foul time is transmitted orally shall repeat the track number or identifier, track limits and time limits of the foul time to the issuing employee for verification before the foul time becomes effective.
- (c) The train dispatcher or control operator shall not permit the movement of trains or other on-track equipment into working limits protected by foul time until the roadway worker in charge who obtained the foul time has reported clear of the track.
- (d) The roadway worker in charge shall not permit the movement of trains or other on-track equipment into or within working limits protected by foul time.

§ 214.325—Train coordination

Working limits established on controlled track by a roadway worker in charge through the use of train coordination shall comply with the following requirements:

- (a) Only one train holds exclusive authority to move within segment(s) of track or tracks.
- (b) The roadway worker who establishes working limits through “train coordination” shall communicate with a member of the train crew and shall determine that:
 - (1) The train is visible to the roadway worker,

- (2) The train is stopped,
- (3) Further movements of the train will be made only as permitted by the roadway worker in charge of working limits, and
- (4) The train crew shall not give up its exclusive authority to move until working limits have been released to the train crew by the roadway worker in charge.

§ 214.327 -- Inaccessible track

(a) Working limits on non-controlled track shall be established by rendering the track within working limits physically inaccessible to trains at each possible point of entry by one of the following features:

(1) A flagman with instructions and capability to hold all trains and equipment clear of the working limits;

(2) A switch or derail aligned to prevent access to the working limits and secured with an effective securing device by the roadway worker in charge of the working limits;

(3) A discontinuity in the rail that precludes passage of trains or engines into the working limits;

(4) Working limits on controlled track that connects directly with the inaccessible track, established by the roadway worker in charge of the working limits on the inaccessible track; or

(5) A remotely controlled switch aligned to prevent access to the working limits and secured by the control operator of such remotely controlled switch by application of a locking or blocking device to the control of that switch, when:

(i) The control operator has secured the remotely controlled switch by applying a locking or blocking device to the control of the switch, and

(ii) The control operator has notified the roadway worker who has established the working limits that the requested protection has been provided, and

(iii) The control operator is not permitted to remove the locking or blocking device from the control of the switch until receiving permission to do so from the roadway worker who established the working limits.

(6) A locomotive with or without cars placed to prevent access to the working limits at one or more points of entry to the working limits, provided the following conditions are met:

(i) The roadway worker in charge who is responsible for establishing working limits communicates with a member of the crew assigned to the locomotive and determines that:

(A) The locomotive is visible to the roadway worker in charge that is establishing the working limits; and

(B) The locomotive is stopped.

(ii) Further movements of the locomotive shall be made only as permitted by the roadway worker in charge controlling the working limits;

(iii) The crew of the locomotive shall not leave the locomotive unattended or go off duty unless communication occurs with the roadway worker in charge and an alternate means of on-track safety protection has been established by the roadway worker in charge; and

(iv) Cars coupled to the locomotive on the same end and on the same track as the roadway workers shall be connected to the train line air brake system and such system shall be charged with compressed air to initiate an emergency brake application in case of unintended

uncoupling. Cars coupled to the locomotive on the same track on the opposite end of the roadway workers shall have sufficient braking capability to control their movement.

(7) A railroad's procedure governing block register territory that prevents trains and other on-track equipment from occupying the track when the territory is under the control of a lone worker or roadway worker in charge. The roadway worker in charge or lone worker shall have the absolute right to render block register territory inaccessible under the other provisions of paragraph (a) of this section.

(8) Railroad operating rules that prohibit train or engine or other on-track equipment movements on a main track within yard limits or restricted limits until the train or engine or on-track equipment receives notification of any working limits in effect and prohibit the train or engine or on-track equipment from entering working limits until permission is received by the roadway worker in charge. Such working limits shall be delineated with stop signs (flags), and where speeds are in excess of restricted speed and physical characteristics permit, also with advance signs (flags).

(b) Trains and roadway maintenance machines within working limits established by means of inaccessible track shall move only under the direction of the roadway worker in charge of the working limits, and shall move at restricted speed.

(c) No operable locomotives or other items of on-track equipment, except those present or moving under the direction of the roadway worker in charge of the working limits, shall be located within working limits established by means of inaccessible track.

§ 214.329 -- Train approach warning provided watchman/lookouts

Roadway workers in a roadway work group who foul any track outside of working limits shall be given warning of approaching trains by one or more watchmen/lookouts in accordance with the following provisions:

(a) Train approach warning shall be given in sufficient time to enable each roadway worker to move to and occupy a previously arranged place of safety not less than 15 seconds before a train moving at the maximum authorized speed on that track can pass the location of the roadway worker. The place of safety to be occupied upon the approach of a train may not be on a track, unless working limits are established on that track.

(b) Watchmen/lookouts assigned to provide train approach warning shall devote full attention to detecting the approach of trains and communicating a warning thereof, and shall not be assigned any other duties while functioning as watchmen/lookouts.

(c) The means used by a watchman/lookout to communicate a train approach warning shall be distinctive and shall clearly signify to all recipients of the warning that a train or other on-track equipment is approaching.

(d) Every roadway worker who depends upon train approach warning for on-track safety shall maintain a position that will enable him or her to receive a train approach warning communicated by a watchman/lookout at any time while on-track safety is provided by train approach warning.

(e) Watchmen/lookouts shall communicate train approach warnings by a means that does not require a warned employee to be looking in any particular direction at the time of the warning, and that can be detected by the warned employee regardless of noise or distraction of work.

(f) Every roadway worker who is assigned the duties of a watchman/lookout shall first be trained, qualified and designated in writing by the employer to do so in accordance with the provisions of § 214.349.

(g) Every watchman/lookout shall be provided by the employer with the equipment necessary for compliance with the on-track safety duties which the watchman/lookout will perform.

§ 214.331 -- Definite train location

A roadway worker may establish on-track safety by using definite train location only where permitted by and in accordance with the following provisions:

(a) A Class I railroad or a commuter railroad may only use definite train location to establish on-track safety at points where such procedures were in use on January 15, 1997.

(b) Each Class I or commuter railroad shall include in its on-track safety program for approval by FRA in accordance with § 214.307 of this part a schedule for phase-out of the use of definite train location to establish on-track safety.

(c) A railroad other than a Class I or commuter railroad may use definite train location to establish on-track safety on subdivisions only where:

(1) Such procedures were in use on January 15, 1997, or

(2) The number of trains operated on the subdivision does not exceed:

(i) Three during any nine-hour period in which roadway workers are on duty, and

(ii) Four during any twelve-hour period in which roadway workers are on duty.

(d) Definite train location shall only be used to establish on-track safety according to the following provisions:

(1) Definite train location information shall be issued only by the one train dispatcher who is designated to authorize train movements over the track for which the information is provided.

(2) A definite train location list shall indicate all trains to be operated on the track for which the list is provided, during the time for which the list is effective.

(3) Trains not shown on the definite train location list shall not be operated on the track for which the list is provided, during the time for which the list is effective, until each roadway worker to whom the list has been issued has been notified of the train movement, has acknowledged the notification to the train dispatcher, and has canceled the list. A list thus canceled shall then be invalid for on-track safety.

(4) Definite train location shall not be used to establish on-track safety within the limits of a manual interlocking, or on track over which train movements are governed by a Traffic Control System or by a Manual Block System.

(5) Roadway workers using definite train location for on-track safety shall not foul a track within ten minutes before the earliest time that a train is due to depart the last station at which time is shown in approach to the roadway worker's location nor until that train has passed the location of the roadway worker.

(6) A railroad shall not permit a train to depart a location designated in a definite train location list before the time shown therein.

(7) Each roadway worker who uses definite train location to establish on-track safety must be qualified on the relevant physical characteristics of the territory for which the train location information is provided.

(e) Each on-track safety program that provides for the use of definite train location shall discontinue such use by June 12, 2017.

§ 214.333 -- Informational line ups of trains

(a) May be used only on sub-divisions where such procedures were in effect prior to March 14, 1996.

(b) Must include all provisions necessary to protect roadway workers from being struck by moving trains and equipment.

(c) Each railroad must include a schedule for discontinuance of Informational Line-ups by June 12, 2017.

§ 214.335 -- On track safety procedures for roadway work groups,general.

(a) No employer subject to the provisions of this part shall require or permit a roadway worker who is a member of a roadway work group to foul a track unless on-track safety is provided by either working limits, train approach warning, or definite train location in accordance with the applicable provisions of § 214.319, § 214.321, § 214.323, § 214.325, § 214.327, § 214.329, § 214.331, or § 214.336.

(b) No roadway worker who is a member of a roadway work group shall foul a track without having been informed by the roadway worker in charge of the roadway work group that on-track safety is provided.

§ 214.336 On-track safety procedures for certain roadway work groups and adjacent tracks.

(a) ***Procedures; general.***

(1) ***General rule.*** Except as provided in paragraph (e) of this section, on-track safety is required for each adjacent controlled track when a roadway work group with at least one of the roadway workers on the ground is engaged in a common task with on-track, self-propelled equipment or coupled equipment on an occupied track. The required on-track safety shall be established through § 214.319 (Working limits, generally) or § 214.329 (Train approach warning provided by watchmen/lookouts) and as more specifically described in this section.

(2) **Definitions.** As used in this section—

Adjacent controlled track means a controlled track whose track center is spaced 19 feet or less from the track center of the occupied track. **Note**, however, that under the special circumstances specified in paragraph (a)(2)(ii) of this section, a non-controlled track whose track center is spaced 19 feet or less from the track center of the occupied track must be treated as an adjacent controlled track for purposes of this section.

Adjacent track means a controlled or non-controlled track whose track center is spaced less than 25 feet from the track center of the occupied track.

Inter-track barrier means a continuous barrier of a permanent or semi-permanent nature that spans the entire work area, that is at least four feet in height, and that is of sufficient strength to prevent a roadway worker from fouling the adjacent track.

Minor correction means one or more repairs of a minor nature, including but not limited to, spiking, anchoring, hand tamping, welding and certain uses of all handheld, hand-supported or hand-guided power tools (such as hydraulic, pneumatic, gas powered, and others), and joint bolt replacement that is accomplished with hand tools or handheld pneumatic tools only. The term does not include machine spiking, machine tamping, or any similarly distracting repair.

Occupied track means a track on which on-track, self-propelled equipment or coupled equipment is authorized or permitted to be located while engaged in a common task with a roadway work group with at least one of the roadway workers on the ground.

(b) **Procedures for adjacent-controlled-track movements.** If a freight train or other on-track equipment is authorized to move on an adjacent controlled track at a speed greater than 25 mph (40 mph or less for passenger trains), each roadway worker in the roadway work group that is affected by such movement must comply with the following procedures:

(1) **Ceasing work and occupying a predetermined place of safety.** Except for the work activities as described in paragraph (e) of this section, each affected roadway worker shall, as described in Table 1 of this section, cease all on-ground work and equipment movement that is being performed on or between the rails of the occupied track or on one or both sides of the occupied track, and occupy a predetermined place of safety upon receiving either a watchman/lookout warning or, alternatively, a notification that the roadway worker in charge intends to permit one or more train or other on-track equipment movements through the working limits on the adjacent controlled track.

(2) **Resuming work.**

(i) An affected roadway worker may resume on-ground work and equipment movement (on or between the rails of the occupied track or on one or both sides of the occupied track as described in Table 1 of this section) only after the trailing-end of all trains or other on-track equipment moving on the adjacent controlled track (for which a warning or notification has been received in accordance with paragraph (b)(1) of this section) has passed and remains ahead of that roadway worker.

(ii) If the train or other on-track equipment stops before its trailing-end has passed all of the affected roadway workers in the roadway work group, the work to be performed (on or between the rails of the occupied track or on one or both sides of the occupied track as described in Table 1 of this section) ahead of the trailing-end of the train or other on-track equipment on the adjacent controlled track may resume only—

(A) If on-track safety through train approach warning (§ [214.329](#)) has been established on the adjacent controlled track; or

(B) After the roadway worker in charge has communicated with a member of the train crew or the on-track equipment operator and established that further movements of such train or other on-track equipment shall be made only as permitted by the roadway worker in charge.

(c) **Procedures for adjacent-controlled-track movements.** If a freight train or other on-track equipment is authorized or permitted to move on an adjacent controlled track at a speed of 25 mph or less (40 mph or less for passenger trains), each roadway worker in the roadway work group that is affected by such movement must comply with the procedures listed in paragraph (b) of this section, except that equipment movement on the rails of the occupied track and on-ground work performed exclusively between the rails (*i.e.*, not breaking the plane of the rails) of the occupied track may continue, provided that no on-ground work is performed within the areas 25 feet in front of and 25 feet behind any on-track, self-propelled equipment or coupled equipment permitted to move on the occupied track.

(d) **Discretion of roadway worker in charge.** Nothing in this subpart prohibits the roadway worker in charge from establishing on-track safety on one or more adjacent tracks as he or she deems necessary consistent with both the purpose and requirements of this subpart.

(e) **Exceptions to certain requirements for adjacent-controlled-track on-track safety.** No on-track safety (other than that required by paragraph (f) of this section or provided under paragraph (d) of this section) is required by paragraphs (a) through (c) of this section for an adjacent controlled track during the times that the roadway work group is exclusively performing one or more of the following work activities:

(1) **On-ground work performed on a side of the occupied track meeting specified condition(s).** A roadway work group with all of its on-ground roadway workers (other than those performing work in accordance with another exception in paragraph (e) of this section) performing work while exclusively positioned on a side of the occupied track as follows and as further specified in Table 1 of this section:

(i) The side with no adjacent track;

(ii) The side with one or more adjacent tracks, the closest of which has working limits on it and no movements permitted within such working limits by the roadway worker in charge; or

(iii) The side with one or more adjacent tracks, provided that that it has an inter-track barrier between the occupied track and the closest adjacent track on that side.

(2) **Maintenance or repairs performed alongside machines or equipment on the occupied track.** One or more roadway workers performing maintenance or repairs alongside a roadway maintenance machine or coupled equipment or within the perimeter of the machine or equipment (*i.e.*, while either on or under the body of the machine or coupled equipment), provided that such machine or equipment would effectively prevent the worker from fouling the adjacent controlled track on the other side of such equipment, and that such maintenance or repairs are performed while positioned on a side of the occupied track as described in paragraph (e)(1)(i), (ii), or (iii) and Table 1 of this section.

(3) **Work activities involving certain equipment and purposes.** One or more on-ground roadway workers engaged in a common task on an occupied track with on-track, self-propelled equipment or coupled equipment consisting exclusively of one or more of the types of equipment

described in paragraphs (e)(3)(i) through (iii) of this section. If such a roadway work group (“excepted group”) is authorized or permitted to operate on the same occupied track and within the working limits of a separate roadway work group performing work that is subject to the requirements of this section (“non-excepted group”) or vice versa (*i.e.*, a non-excepted group is authorized or permitted to operate on the same occupied track and within the working limits of an excepted group), the groups must conduct an on-track safety job briefing to determine if adjacent-controlled-track on-track safety is necessary for the excepted group. Such determination shall be made by the roadway worker in charge of the working limits; however, if the groups are in such proximity where the ability of the roadway workers in the excepted group to hear or see approaching trains and other on-track equipment is impaired by background noise, lights, sight obstructions or any other physical conditions caused by the equipment, then this exception does not apply, and adjacent-controlled-track on-track safety must be provided to both groups. This exception otherwise applies to work activities involving one or more of the following types of equipment:

(i) A hi-rail vehicle including on-track, self-propelled equipment (other than an automated inspection car or a catenary maintenance tower vehicle) being used for inspection or minor correction purposes (including welding), provided that such hi-rail vehicle is not coupled to one or more railroad cars. In accordance with § 214.315(a), where multiple hi-rail vehicles being used for inspection or minor correction are engaged in a common task, the on-track safety job briefing shall include discussion of the nature of the work to be performed to determine if adjacent-controlled-track on-track safety is necessary.

(ii) An automated inspection car being used for inspection or minor correction purposes.

(iii) A catenary maintenance tower car or vehicle, provided that all of the on-ground workers engaged in the common task (other than those performing work in accordance with another exception in paragraph (e) of this section) are positioned within the gage of the occupied track for the sole purpose of applying or removing grounds.

(f) **Procedures for components of roadway maintenance machines fouling an adjacent controlled track.** Except as provided for in § 214.341(c), a component of a roadway maintenance machine shall not foul an adjacent controlled track unless working limits have been established on the adjacent-controlled-track and there are no movements permitted within the working limits by the roadway worker in charge that would affect any of the roadway workers engaged in a common task with such machine.

TABLE 1—SUMMARY OF ON-TRACK SAFETY PROCEDURES FOR CERTAIN ROADWAY WORK GROUPS AND ADJACENT TRACKS

Example No./ Diagram No. (see Figure 1)	"Side A" of the Occupied Track—the side from the vertical plane of the near running rail of the occupied track extending outward through to the fouling space of the adjacent controlled track ("No. 1" Track)		"Side B" of the Occupied Track—the side from the vertical plane of the near running rail of the occupied track extending outward through to the fouling space of the adjacent controlled track ("No. 3" Track)	
	Method of On-Track Safety on Side A	Requirements	Requirements	Method of On-Track Safety on Side B
1	Working limits or train approach warning	Upon receiving a notification or warning for movement(s) ("movement notification or warning") for No. 1, cease work and occupy a predetermined place of safety ("PPOS"). ¹	Upon movement notification or warning for No. 1, cease work and occupy a PPOS, except work may continue during movement(s) on No. 1 auth'd. at 25 mph or less if maintain 25' spacing. ²	Not applicable (N/A), because there is no adjacent track
2	Working limits	Upon movement notification for No. 1, cease work and occupy a PPOS. Work ³ is not required to cease during movement(s) on No. 3.	Upon movement notification for No. 1 or No. 3, cease work and occupy a PPOS, except work may continue during movement(s) on No. 1 or No. 3 auth'd. at 25 mph or less if maintain 25' spacing. ²	Working limits
3	Working limits	Upon movement notification for No. 1, cease work and occupy a PPOS. Work ³ is not required to cease during movement(s) on No. 3.	Upon movement notification for No. 1 or No. 3, cease work and occupy a PPOS, except work may continue during movement(s) on No. 1 or No. 3 auth'd. at 25 mph or less if maintain 25' spacing. ²	Train approach warning
4	Train approach warning	Upon movement warning for No. 1 or No. 3, cease work and occupy a PPOS.	Upon movement warning for No. 1 or No. 3, cease work and occupy a PPOS.	Train approach warning
5	None, but with inter-track barrier	Work is prohibited on No. 1 and up to barrier ("Side A1"). Work is not required to cease b/wn. barrier and near running rail of occupied track ("Side A2") during movement(s) on No. 1.	Work is not required to cease during movement(s) on No. 1.	N/A, because there is no adjacent track
6	None, but with inter-track barrier	Work is prohibited on Side A1. Work ³ is not required to cease on Side A2 during movement(s) on No. 1 or No. 3.	Work is not required to cease during movement(s) on No. 1.	Working limits or train approach warning

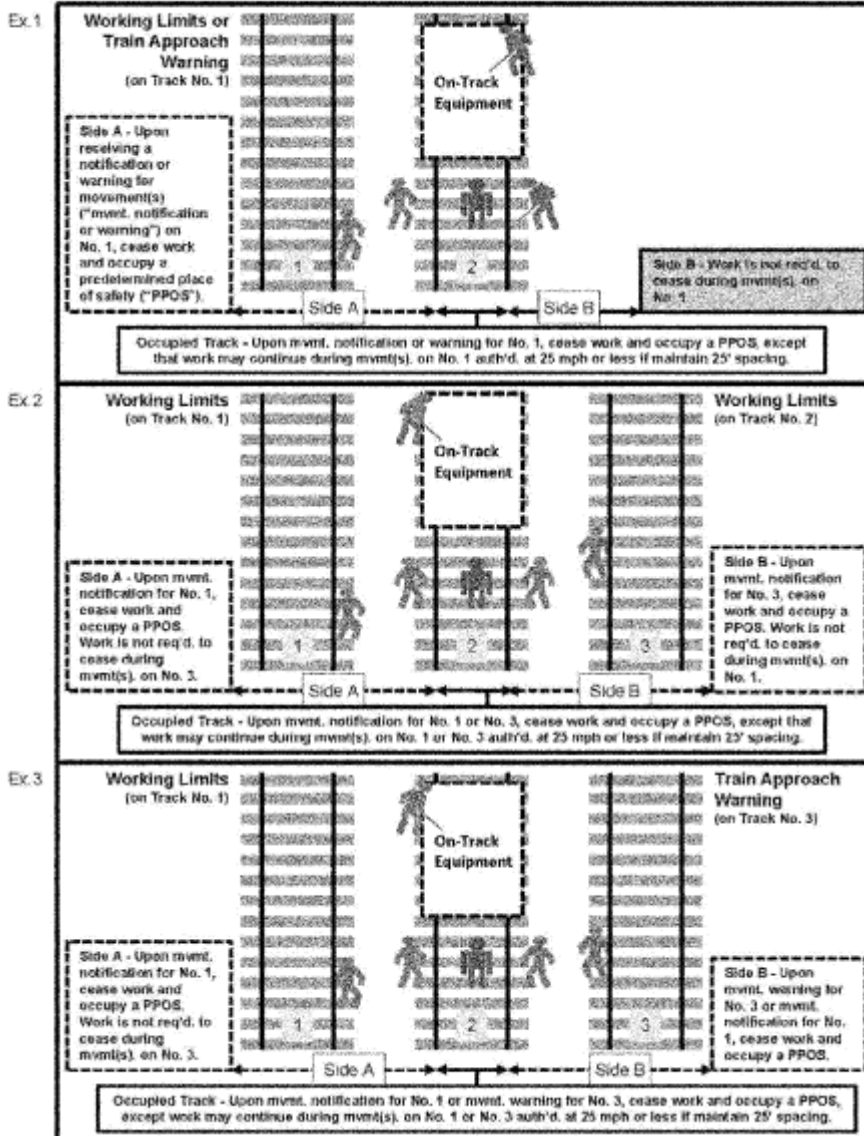
¹ As used in the above table, a "predetermined place of safety" or "PPOS" means a specific location that an affected roadway worker must occupy upon receiving a watchman/lookout's warning of approaching movement(s) ("warning") or a roadway worker in charge's ("RWIC's") notification of pending movement(s) on an adjacent track ("notification"), as designated during the on-track safety job briefing required by § 214.315. The PPOS may not be on a track, unless the track has working limits on it and no movements permitted within such working limits by the RWIC. Thus, under these circumstances, the space between the rails of the occupied track (No. 2 in this table) may be designated as a place to remain in position or to otherwise occupy upon receiving a warning or notification. The RWIC must determine any change to a PPOS, and communicate such change to all affected roadway workers through an updated on-track safety job briefing.

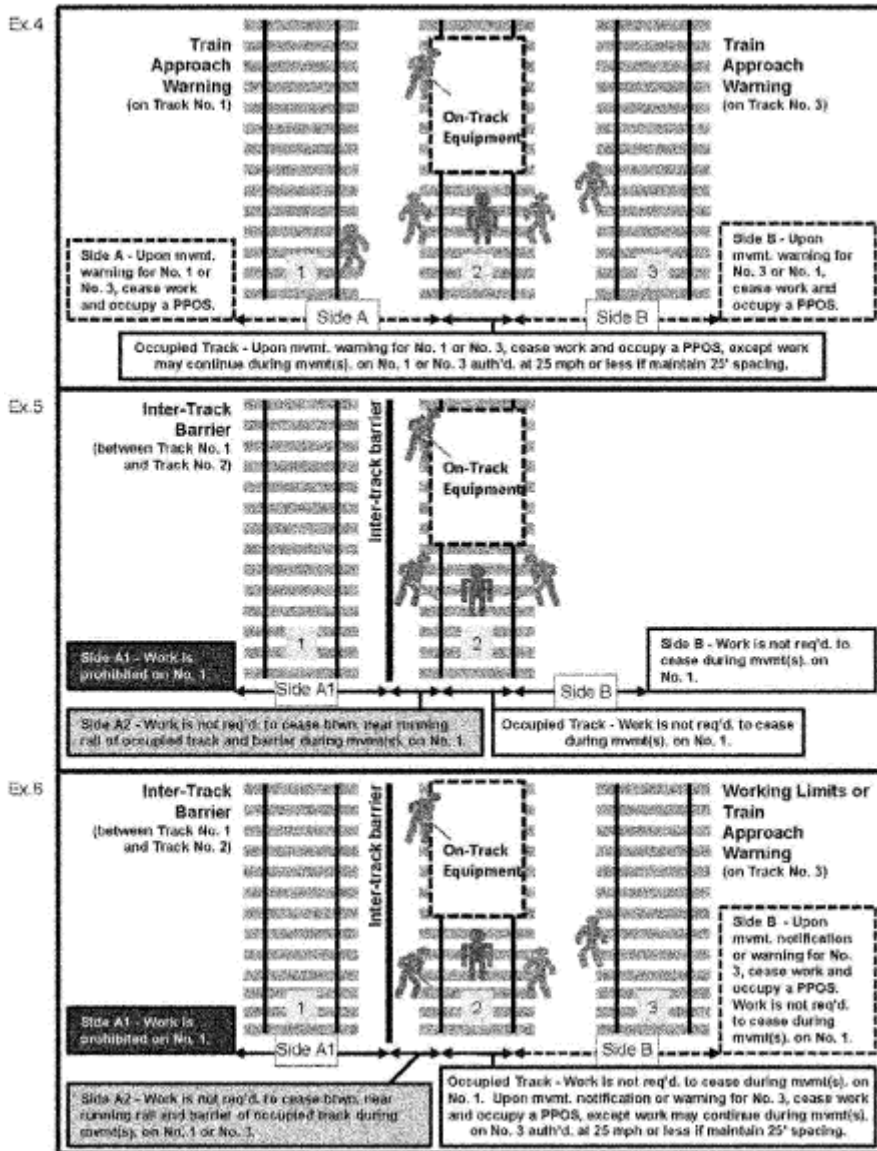
² On-ground work is prohibited in the areas 25' in front of and 25' behind equipment on the occupied track (No. 2), and must not break the plane of a rail on No. 2 towards a side of No. 2 unless work is permitted on that side. Note, however, that per § 214.336(a)(2)(i), work would no longer be permitted to continue on or between the rails of the occupied track during movement(s) on an adjacent controlled track at 25 mph or less if there is a simultaneous movement on the other adjacent controlled track at more than 25 mph.

³ Work that does not break the plane of the near running rail of the occupied track (No. 2) is not required to cease during such movements; work that breaks the plane of the near running rail of the occupied track may also continue: 1) during the times that work is permitted on or between the rails of the occupied track in accordance with § 214.336(c) (Procedures for adjacent-controlled-track movements 25 mph or less); or 2) if such work is performed alongside a roadway maintenance machine or coupled equipment in accordance with § 214.336(e)(2).

Note: In the above chart, where 25 mph or less is listed, that applies only to freight trains. For passenger trains, it is 40 mph or less.

FIGURE 1 - EXAMPLES APPLYING § 214.336, ON-TRACK SAFETY PROCEDURES FOR CERTAIN ROADWAY WORK GROUPS AND ADJACENT TRACKS
 (All tracks are controlled, with centerlines less than 19 feet apart.)





76 Fed. Reg. 74615

§ 214.337 --On track safety procedures for lone workers

- (a) A lone worker who fouls a track while performing routine inspection or minor correction may use individual train detection to establish on-track safety only where permitted by this section and the on-track safety program of the railroad.
- (b) A lone worker retains an absolute right to use on-track safety procedures other than individual train detection if he or she deems it necessary, and to occupy a place of safety until such other form of on-track safety can be established.
- (c) Individual train detection may be used to establish on-track safety only:

(1) By a lone worker who has been trained, qualified, and designated to do so by the employer in accordance with § 214.347 of this subpart;

(2) While performing routine inspection and minor correction work;

(3) On track outside the limits of a manual interlocking, a controlled point (except those consisting of signals only), or a remotely controlled hump yard facility;

(4) Where the lone worker is able to visually detect the approach of a train moving at the maximum speed authorized on that track, and move to a previously determined place of safety, not less than 15 seconds before the train would arrive at the location of the lone worker;

(5) Where no power-operated tools or roadway maintenance machines are in use within the hearing of the lone worker; and

(6) Where the ability of the lone worker to hear and see approaching trains and other on-track equipment is not impaired by background noise, lights, precipitation, fog, passing trains, or any other physical conditions.

(d) The place of safety to be occupied by a lone worker upon the approach of a train may not be on a track, unless working limits are established on that track.

(e) A lone worker using individual train detection for on-track safety while fouling a track may not occupy a position or engage in any activity that would interfere with that worker's ability to maintain a vigilant lookout for, and detect the approach of, a train moving in either direction as prescribed in this section.

(f) A lone worker who uses individual train detection to establish on-track safety shall first complete a written Statement of On-track Safety. The Statement shall designate the limits of the track for which it is prepared and the date and time for which it is valid. The statement shall show the maximum authorized speed of trains within the limits for which it is prepared, and the sight distance that provides the required warning of approaching trains. The lone worker using individual train detection to establish on-track safety shall produce the Statement of On-track Safety when requested by a representative of the Federal Railroad Administrator.

(g) Individual train detection shall not be used to provide on-track safety for a lone worker using a roadway maintenance machine, equipment, or material that cannot be readily removed by hand.

§214.339—Audible warning from trains

(a) Each railroad shall have in effect and comply with written procedures that prescribe effective requirements for audible warning by horn and/or bell for trains and locomotives approaching any roadway workers or roadway maintenance machines that are either on the track on which the movement is occurring, or about the track if the roadway workers or roadway

maintenance machines are at risk of fouling the track. At a minimum, such written procedures shall address:

- (1) Initial horn warning;
- (2) Subsequent warning(s); and
- (3) Alternative warnings in areas where sounding the horn adversely affects roadway workers (e.g., in tunnels and terminals).

(b) Such audible warning shall not substitute for on-track safety procedures prescribed in this part.

§ 214.341 -- Roadway maintenance machines

(a) Each employer's on-track safety program shall include provisions for:

- (1) Training and qualifications for operators;
- (2) Establishment and issuance of safety procedures for general application and specific types of machines;
- (3) Communication between operators and other roadway workers;
- (4) Equipment spacing;
- (5) Spacing between equipment and roadway workers;
- (6) Maximum working and traveling speeds under various conditions.

(b) Instruction for the safe operation of each machine shall be provided and maintained with each machine large enough to carry instruction document.

- (1) No roadway worker shall operate roadway maintenance machinery without having been trained in accordance with 214.353;
- (2) No roadway worker shall operate roadway maintenance machine without having complete knowledge of safety instructions for machine;
- (3) No roadway worker shall be assigned to work near roadway maintenance machinery unless informed of, and acknowledge, safety procedures applicable to such duties.

(c) Components of roadway maintenance machinery shall be kept clear of passing trains on adjacent tracks.

§ 214.343 --Training and qualification, general

(a) No roadway worker shall accept, or be assigned, roadway worker duties unless trained and able to demonstrate the ability to perform such duties with regard to on-track safety.

(b) All roadway workers shall receive initial or recurrent training annually in on-track safety.

(c) Employees, other than roadway workers, whose duties concern the movement of trains shall be trained to perform their function as it relates to on-track protection rules.

(d) Each employer shall maintain records of roadway worker qualifications in effect and shall be available for inspection by FRA.

§ 214.345 -- Training for all roadway workers

Roadway worker training shall include:

- (a) Recognition and understanding of when and where on-track protection is required.
- (b) Functions and responsibilities of persons involved with on-track safety procedures.
- (c) Proper compliance with on-track safety instructions.
- (d) Signals given by watchmen/lookouts.
- (e) Hazards associated with working on or near tracks.

§ 214.347 -- Training and qualification for lone workers

Each Lone Worker shall be trained, qualified and authorized by the railroad.

- (a) Training for Lone Workers shall include:
 - (1) Detection of approaching trains and clearing to place of safety;
 - (2) Determination of distance to assure prescribed warning time;
 - (3) Rules and procedures for Individual Train Detection;
 - (4) On-track safety procedures for territory where employee is working alone.
- (b) Qualification of Lone Worker shall be evidenced by demonstrated proficiency.

§ 214.349 -- Training and qualification of watchmen/lookouts

- (a) Training and qualifications for Watchmen/Lookouts shall include:
 - (1) Detection and recognition of approaching movements;
 - (2) Effective warning of roadway workers;
 - (3) Determination of distance to assure prescribed warning time;
 - (4) Rules and procedures to be used for train approach warning.
- (b) Initial and periodic (as specified by § 243.201 of this chapter) qualification of a watchman/lookout shall be evidenced by demonstrated proficiency.

§ 214.351 -- Training and qualification of flagmen

- (a) Shall include operating rules pertaining to giving stop signal to trains and holding trains clear of work limits.
- (b) Initial and periodic (as specified by § 243.201 of this chapter) qualification of a flagman shall be evidenced by demonstrated proficiency.

§ 214.353 – Training and qualification of roadway workers in charge.

- (a) The training and qualification of each roadway worker in charge, or any other employee acting as a roadway worker in charge (e.g., a conductor or a brakeman), who provides for the on-track safety of roadway workers through establishment of working limits or the assignment and supervision of watchmen/lookouts or flagmen shall include, at a minimum:
 - (1) All the on-track safety training and qualification required of the roadway workers to be supervised and protected, including the railroad's procedures governing good faith challenges in §§ 214.311(b) and (c) and 214.313(d).
 - (2) The content and application of the operating rules of the railroad pertaining to the establishment of working limits.
 - (3) The content and application of the rules of the railroad pertaining to the establishment or train approach warning.
 - (4) The relevant physical characteristics of the territory of the railroad upon which the roadway worker is qualified.
 - (5) The procedures required to ensure that the roadway worker in charge of the on-track safety of group(s) of roadway workers remains immediately accessible and available to all roadway workers being protected under the working limits or other provisions of on-track safety established by the roadway worker in charge.
- (b) Initial and periodic (as specified by § 243.201 of this chapter) qualification of a roadway worker in charge shall be evidenced by demonstrated proficiency.

§ 214.355 – Training and qualification of each roadway worker in on-track safety for operators of roadway maintenance machines.

- (a) Training and Qualifications for roadway worker machine operators shall include:
 - (1) Procedures to prevent person from being struck by machine;
 - (2) Procedures to prevent machine from being struck by train or other equipment;
 - (3) Procedures for stopping machine short of collision;
 - (4) Safe operating procedures for each machine.
- (b) Initial and periodic (as specified by Sec. 243.201 of this chapter) qualification of a roadway worker to operate roadway maintenance machines shall be evidenced by demonstrated proficiency.

ROADWAY MAINTENANCE MACHINE SAFETY

The FRA amended the workplace safety regulations by adding the subpart below which prescribes safety standards for railroad on-track roadway maintenance machines and hi-rail vehicles. The purpose of the standards is to protect roadway workers operating such equipment.

§ 214.7 Definitions

Designated official means any person(s) designated by the employer to receive notification of non-complying conditions on on-track roadway maintenance machines and hi-rail vehicles.

Hi-rail vehicle means a roadway maintenance machine that is manufactured to meet Federal Motor Vehicle Safety Standards and is equipped with retractable flanged wheels so that the vehicle may travel over the highway or on railroad tracks.

Hi-rail vehicle, new means a hi-rail vehicle that is ordered after December 26, 2003 or completed after September 27, 2004. * * * * *

On-track roadway maintenance machine means a self-propelled, rail-mounted, non-highway, maintenance machine whose light weight is in excess of 7,500 pounds, and whose purpose is not for the inspection of railroad track.

On-track roadway maintenance machine, existing means any on-track roadway maintenance machine that does not meet the definition of a “new on-track roadway maintenance machine.”

On-track roadway maintenance machine, new means an on-track roadway maintenance machine that is ordered after December 26, 2003, and completed after September 27, 2004.

§ 214.501 Purpose and scope.

- (a) The purpose of this subpart is to prevent accidents and casualties caused by the lawful operation of on-track roadway maintenance machines and hi-rail vehicles.
- (b) This sub-part prescribes minimum safety standards for on-track roadway maintenance machines and hi-rail vehicles. An employer may prescribe additional or more stringent standards that are consistent with this subpart.
- (c) Any working condition that involves the protection of employees engaged in roadway maintenance duties covered by this subpart but is not within the subject matter addressed by this subpart, including employee exposure to noise, shall be governed by the regulations of the U.S. Department of Labor, Occupational Safety and Health Administration.

§ 214.503 Good-faith challenges; procedures for notification and resolution.

- (a) An employee operating an on-track roadway maintenance machine or hi-rail vehicle shall inform the employer whenever the employee makes a good faith determination that the machine or vehicle does not comply with FRA regulations or has a condition that inhibits its safe operation
- (b) Any employee charged with operating an on-track roadway maintenance machine or hi-rail vehicle covered by this subpart may refuse to operate the machine or vehicle if the employee makes a good-faith determination that it does not comply with the requirements of this subpart or

has a condition that inhibits its safe operation. The employer shall not require the employee to operate the machine or vehicle until the challenge resulting from the good-faith determination is resolved.

(c) Each employer shall have in place and follow written procedures to assure prompt and equitable resolution of challenges resulting from good-faith determinations made in accordance with this section. The procedures shall include specific steps to be taken by the employer to investigate each good-faith challenge, as well as procedures to follow once the employer finds a challenged machine or vehicle does not comply with this subpart or is otherwise unsafe to operate. The procedures shall also include the title and location of the employer's designated official.

§ 214.505 Required environmental control and protection systems for new on-track roadway maintenance machines with enclosed cabs.

(a) The following new on-track roadway maintenance machines shall be equipped with enclosed cabs with operative heating systems, operative air conditioning systems, and operative positive pressurized ventilation systems: (1) Ballast regulators; (2) Tampers; (3) Mechanical brooms; (4) Rotary scarifiers; (5) Undercutters; and (6) Functional equivalents of any of the machines identified in paragraphs (a)(1) through (a)(5) of this section.

(b) New on-track roadway maintenance machines, and existing on track roadway maintenance machines specifically designated by the employer, of the types identified in paragraphs (a)(1) through (a)(5) of this section, or functionally equivalent thereto, shall be capable of protecting employees in the cabs of the machines from exposure to air contaminants, in accordance with 29 C.F.R. 1910.1000.

(c) An employer shall maintain a list of new and designated existing on-track roadway maintenance machines of the types identified in paragraphs (a)(1) through (a)(5) of this section, or functionally equivalent thereto. The list shall be kept current and made available to the Federal Railroad Administration and other Federal and State agencies upon request.

(d) An existing roadway maintenance machine of the type identified in paragraphs (a)(1) through (a)(5) of this section, or functionally equivalent thereto, becomes "designated" when the employer adds the machine to the list required in paragraph (c) of this section. The designation is irrevocable, and the designated existing roadway maintenance machine remains subject to paragraph (b) of this section until it is retired or sold.

(e) If the ventilation system on a new on-track roadway maintenance machine or a designated existing on-track roadway maintenance machine of the type identified in paragraphs (a)(1) through (a)(5) of this section, or functionally equivalent thereto, becomes incapable of protecting an employee in the cab of the machine from exposure to air contaminants in accordance with 29 C.F.R. 1910.1000, personal respiratory protective equipment shall be provided for each such employee until the machine is repaired in accordance with § 214.531.

(f) Personal respiratory protective equipment provided under paragraph (e) of this section shall comply with 29 C.F.R. 1910.134.

(g) New on-track roadway maintenance machines with enclosed cabs, other than the types identified in paragraphs (a)(1) through (a)(5) of this section or functionally equivalent thereto, shall be equipped with operative heating and ventilation systems

(h) When new on-track roadway maintenance machines require operation from non-enclosed stations outside of the main cab, the non-enclosed stations shall be equipped, where feasible from an engineering standpoint, with a permanent or temporary roof, canopy, or umbrella designed to provide cover from normal rainfall and midday sun.

§ 214.507 Required safety equipment for new on-track roadway maintenance machines.

(a) Each new on-track roadway maintenance machine shall be equipped with:

(1) A seat for each operator, except as provided in paragraph (b) of this section;

(2) A safe and secure position with handholds, handrails, or a secure seat for each roadway worker transported on the machine. Each position shall be protected from moving parts of the machine;

(3) A positive method of securement for turntables, on machines equipped with a turntable, through engagement of pins and hooks that block the descent of turntable devices below the rail head when not in use;

(4) A windshield with safety glass, or other material with similar properties, if the machine is designed with a windshield. Each new on-track roadway maintenance machine designed with a windshield shall also have power windshield wipers or suitable alternatives that provide the machine operator an equivalent level of vision if windshield wipers are incompatible with the windshield material;

(5) A machine braking system capable of effectively controlling the movement of the machine under normal operating conditions;

(6) A first-aid kit that is readily accessible and complies with 29 C.F.R. 1926.50(d)(2);

and

(7) An operative and properly charged fire extinguisher of 5 BC rating or higher which is securely mounted and readily accessible to the operator from the operator's work station.

(b) Each new on-track roadway maintenance machine designed to be operated and transported by the operator in a standing position shall be equipped with handholds and handrails to provide the operator with a safe and secure position.

(c) Each new on-track roadway maintenance machine that weighs more than 32,500 pounds light weight and is operated in excess of 20 mph shall be equipped with a speed indicator that is accurate within ± 5 mph of the actual speed at speeds of 10 mph and above.

(d) Each new on-track roadway maintenance machine shall have its as built light weight displayed in a conspicuous location on the machine.

§ 214.509 Required visual illumination and reflective devices for new on-track roadway maintenance machines.

Each new on-track roadway maintenance machine shall be equipped with the following visual illumination and reflective devices:

- (a) An illumination device, such as a headlight, capable of illuminating obstructions on the track ahead in the direction of travel for a distance of 300 feet under normal weather and atmospheric conditions;
- (b) Work lights, if the machine is operated during the period between one-half hour after sunset and one-half hour before sunrise or in dark areas such as tunnels, unless equivalent lighting is otherwise provided;
- (c) An operative 360-degree intermittent warning light or beacon mounted on the roof of the machine. New roadway maintenance machines that are not equipped with fixed roofs and have a light weight less than 17,500 pounds are exempt from this requirement;
- (d) A brake light activated by the application of the machine braking system, and designed to be visible for a distance of 300 feet under normal weather and atmospheric conditions; and
- (e) Rearward viewing devices, such as rearview mirrors.

§ 214.511 Required audible warning devices for new on-track roadway maintenance machines

Each new on-track roadway maintenance machine shall be equipped with:

- (a) A horn or other audible warning device that produces a sound loud enough to be heard by roadway workers and other machine operators within the immediate work area. The triggering mechanism for the device shall be clearly identifiable and within easy reach of the machine operator; and
- (b) An automatic change-of-direction alarm which provides an audible signal that is at least three seconds long and is distinguishable from the surrounding noise. Change of direction alarms may be interrupted by the machine operator when operating the machine in the work mode if the function of the machine would result in a constant, or almost constant, sounding of the device. In any action brought by FRA to enforce the change-of-direction alarm requirement, the employer shall have the burden of proving that use of the change-of direction alarm in a particular work function would cause a constant, or almost constant, sounding of the device.

§ 214.513 Retrofitting of existing on-track roadway maintenance machines; general.

- (a) Each existing on-track roadway maintenance machine shall have a safe and secure position for each roadway worker transported on the machine and protection from moving parts of the machine.

(b) Each existing on-track roadway maintenance machine shall be equipped with a permanent or portable horn or other audible warning device that produces a sound loud enough to be heard by roadway workers and other machine operators within the immediate work area. The triggering mechanism for the device shall be clearly identifiable and within easy reach of the machine operator.

(c) Each existing on-track roadway maintenance machine shall be equipped with a permanent illumination device or a portable light that is securely placed and not handheld. The illumination device or portable light shall be capable of illuminating obstructions on the track ahead for a distance of 300 feet under normal weather and atmospheric conditions when the machine is operated during the period between one-half hour after sunset and one-half hour before sunrise or in dark areas such as tunnels.

§ 214.515 Overhead covers for existing on-track roadway maintenance machines.

(a) For those existing on-track roadway maintenance machines either currently or previously equipped with overhead covers for the operator's position, defective covers shall be repaired, and missing covers shall be reinstalled, by March 28, 2005 and thereafter maintained in accordance with the provisions of § 214.531.

(b) For those existing on-track roadway maintenance machines that are not already equipped with overhead covers for the operator's position, the employer shall evaluate the feasibility of providing an overhead cover on such a machine if requested in writing by the operator assigned to operate the machine or by the operator's designated representative. The employer shall provide the operator a written response to each request within 60 days. When the employer finds the addition of an overhead cover is not feasible, the response shall include an explanation of the reasoning used by the employer to reach that conclusion.

(c) For purposes of this section, overhead covers shall provide the operator's position with cover from normal rainfall and midday sun.

§ 214.517 Retrofitting of existing on-track roadway maintenance machines manufactured on or after January 1, 1991.

In addition to meeting the requirements of § 214.513, after March 28, 2005 each existing on-track roadway maintenance machine manufactured on or after January 1, 1991, shall have the following:

(a) A change-of-direction alarm or rearview mirror or other rearward viewing device, if either device is feasible, given the machine's design, and if either device adds operational safety value, given the machine's function. In any action brought by FRA to enforce this requirement, the employer shall have the burden of proving that neither device is feasible or adds operational safety value, or both, given the machine's design or work function.

- (b) An operative heater, when the machine is operated at an ambient temperature less than 50 degrees Fahrenheit and is equipped with, or has been equipped with, a heater installed by the manufacturer or the railroad.
- (c) The light weight of the machine stenciled or otherwise clearly displayed on the machine, if the light weight is known.
- (d) Reflective material, or a reflective device, or operable brake lights.
- (e) Safety glass when its glass is normally replaced, except that replacement glass that is specifically intended for on-track roadway maintenance machines may be utilized until exhausted.
- (f) A turntable restraint device, on machines equipped with a turntable, to prevent undesired lowering, or a warning light indicating that the turntable is not in the normal travel position.

§ 214.518 Safe and secure positions for riders.

A roadway worker, other than the machine operator, is prohibited from riding on any on-track roadway maintenance machine unless a safe and secure position for each roadway worker on the machine is clearly identified by stenciling, marking, or other written notice.

§ 214.519 Floors, decks, stairs, and ladders of on-track roadway maintenance machines.

Floors, decks, stairs, and ladders of on-track roadway maintenance machines shall be of appropriate design and maintained to provide secure access and footing, and shall be free of oil, grease, or any obstruction which creates a slipping, falling, or fire hazard.

§ 214.521 Flagging equipment for on-track roadway maintenance machines and hi-rail vehicles.

Each on-track roadway maintenance machine and hi-rail vehicle shall have on board a flagging kit that complies with the operating rules of the railroad, if

- (a) The equipment is operated over trackage subject to a railroad operating rule requiring flagging; and
- (b)
 - (1) The equipment is not part of a roadway work group; or
 - (2) The equipment is the lead or trailing piece or equipment in a roadway work group operating under the same occupancy authority.

§ 214.523 Hi-rail vehicles.

- (a) The hi-rail gear of all hi-rail vehicles shall be inspected for safety at least annually and with no more than 14 months between inspections. Tram, wheel wear, and gage shall be measured and, if necessary, adjusted to allow the vehicle to be safely operated.

(b) Each employer shall keep records pertaining to compliance with paragraph (a) of this section. Records may be kept on forms provided by the employer or by electronic means. The employer shall retain the record of each inspection until the next required inspection is performed. The records shall be made available for inspection and copying during normal business hours by representatives of FRA and States participating under part 212 of this chapter. The records may be kept on the hi-rail vehicle or at a location designated by the employer.

(c) A new hi-rail vehicle shall be equipped with:

(1) An automatic change-of-direction alarm or backup alarm that provides an audible signal at least three seconds long and distinguishable from the surrounding noise; and

(2) An operable 360-degree intermittent warning light or beacon mounted on the outside of the vehicle.

(d) (1) The operator of a hi-rail vehicle shall check the vehicle for compliance with this subpart, prior to using the vehicle at the start of the operator's work shift. (2) A non-complying condition that cannot be repaired immediately shall be tagged and dated in a manner prescribed by the employer and reported to the designated official. (3) Non-complying automatic change of direction alarms, backup alarms, and 360-degree intermittent warning lights or beacons shall be repaired or replaced as soon as practicable within seven calendar days.

§ 214.525 Towing with on-track roadway maintenance machines or hi-rail vehicles.

(a) When used to tow push cars or other maintenance-of-way equipment, each on-track roadway maintenance machine or hi-rail vehicle shall be equipped with a towing bar or other coupling device that provides a safe and secure attachment.

(b) An on-track roadway maintenance machine or hi-rail vehicle shall not be used to tow pushcars or other maintenance-of-way equipment if the towing would cause the machine or hi-rail vehicle to exceed the capabilities of its braking system. In determining the limit of the braking system, the employer must consider the track grade (slope), as well as the number and weight of push cars or other equipment to be towed.

§ 214.527 On-track roadway maintenance machines; inspection for compliance and schedule for repairs.

(a) The operator of an on-track roadway maintenance machine shall check the machine components for compliance with this subpart, prior to using the machine at the start of the operator's work shift.

(b) Any non-complying condition that cannot be repaired immediately shall be tagged and dated in a manner prescribed by the employer and reported to the designated official.

(c) The operation of an on-track roadway maintenance machine with a non-complying condition shall be governed by the following requirements:

(1) An on-track roadway maintenance machine with headlights or work lights that are not in compliance may be operated for a period not exceeding 7 calendar days and only during the period between one-half hour before sunrise and one-half hour after sunset;

(2) A portable horn may be substituted for a non-complying or missing horn for a period not exceeding seven calendar days;

(3) A fire extinguisher readily available for use may temporarily replace a missing, defective or discharged fire extinguisher on a new on-track roadway maintenance machine for a period not exceeding 7 calendar days, pending the permanent replacement or repair of the missing, defective or used fire extinguisher;

(4) Non-complying automatic change of direction alarms, backup alarms, and 360-degree intermittent warning lights or beacons shall be repaired or replaced as soon as practicable within 7 calendar days; and

(5) A structurally defective or missing operator's seat shall be replaced or repaired within 24 hours or by the start of the machine's next tour of duty, whichever is later. The machine may be operated for the remainder of the operator's tour of duty if the defective or missing operator's seat does not prevent its safe operation.

§ 214.529 In-service failure of primary braking system.

(a) In the event of a total in-service failure of its primary braking system, an on-track roadway maintenance machine may be operated for the remainder of its tour of duty with the use of a secondary braking system or by coupling to another machine, if such operations may be done safely.

(b) If the total in-service failure of an on-track roadway maintenance machine's primary braking system occurs where other equipment is not available for coupling, the machine may, if it is safe to do so, travel to a clearance or a repair point where it shall be placed out of service until repaired.

§ 214.531 Schedule of repairs; general.

Except as provided in §§ 214.527(c)(5)[on track roadway maintenance machine with a non-complying condition], 214.529[in service failure of primary braking system], and § 214.533[schedule of repairs subject to availability of parts], an on-track roadway maintenance machine or hi-rail vehicle that does not meet all the requirements of this subpart shall be brought into compliance as soon as practicable within seven calendar days. If repairs are not made within seven calendar days, the on-track roadway maintenance machine or hi-rail vehicle shall be placed out of on-track service.

§ 214.533 Schedule of repairs subject to availability of parts.

(a) The employer shall order a part necessary to repair a non-complying condition on an on-track roadway maintenance machine or a hi-rail vehicle by the end of the next business day following the report of the defect.

(b) When the employer cannot repair a non-complying condition as required by § 214.531 because of the temporary unavailability of a necessary part, the employer shall repair the on-track roadway maintenance machine or hi-rail vehicle within seven calendar days after receiving the necessary part. The employer may continue to use the on track roadway maintenance machine or hi-rail vehicle with a non-complying condition until receiving the necessary part(s) for repair, subject to the requirements of § 214.503[good faith determination that vehicle does not comply]. However, if a non-complying condition is not repaired within 30 days following the report of the defect, the employer shall remove the on-track roadway maintenance machine or hi-rail vehicle from on-track service until it is brought into compliance with this subpart.

(c) If the employer fails to order a part necessary to repair the reported non-complying condition, or if it fails to install an available part within the required seven calendar days, the on-track roadway maintenance machine or hi-rail vehicle shall be removed from on-track service until brought into compliance with this subpart.

(d) Each employer shall maintain records pertaining to compliance with this section. Records may be kept on forms provided by the employer or by electronic means. The employer shall retain each record for at least one year, and the records shall be made available for inspection and copying during normal business hours by representatives of FRA and States participating under part 212 of this chapter. The records may be kept on the on-track roadway maintenance machine or hi-rail vehicle or at a location designated by the employer.

.....
A penalty may be assessed against an individual only for a willful violation. The Administrator reserves the right to assess a penalty of up to \$22,000 for any violation where circumstances warrant. *See*, 49 C.F.R. part 209, Appendix A.

Appendix A—Schedule of Civil Penalties

TESTING AND INSPECTIONS OF POWER BRAKES

Because of the complexity of the power brake regulations, I will first summarize the rule and then reproduce the entire rule from the Code of Federal Regulations.

HIGHLIGHTS of the rule include:

1. The four existing types of brake inspections have been given new identifications—

The initial terminal test is called a Class I brake test; the former 1,000 mile test is now Class IA; the intermediate terminal test is Class II; and the brake pipe continuity test is now Class III. In addition, there is a new fifth type test required for so called “extended haul trains”.

2. A Class I brake test-initial terminal inspection is required at the following locations:

- (1) The location where the train is originally assembled ("initial terminal");
- (2) A location where the train consist is changed other than by:

- (i) Adding a single car or a solid block of cars;
 - (ii) Removing a single car or a solid block of cars;
 - (iii) Removing cars determined to be defective under this chapter; or
 - (iv) A combination of the changes listed above.
- (3) A location where the train is off air for a period of more than four hours;
 - (4) A location where a unit or cycle train has traveled 3,000 miles since its last Class I brake test; and
 - (5) A location where the train is received in interchange if the train consist is changed other than by:
 - (i) Removing a car or a solid block of cars from the train;
 - (ii) Adding a previously tested car or a previously tested solid block of cars to the train;
 - (iii) Changing motive power;
 - (iv) Removing or changing the caboose; or
 - (v) Any combination of the changes listed in (5) of this section.

- (A) If changes other than those contained in (5) are made to the train consist when it is received in interchange and the train will move 20 miles or less, then the railroad may conduct a Class II brake test.

3. Class IA brake tests-1,000-mile inspection requirements:

Except as provided for extended haul trains, each train shall receive a Class IA brake test performed by a qualified person at a location that is not more than 1,000 miles from the point where any car in the train last received a Class I or Class IA brake test. The most restrictive car or block of cars in the train shall determine the location of this test.

4. A Class II-intermediate test- shall be conducted at a location, other than the initial terminal of a train, on the following equipment when added to a train:

- (1) Each car or solid block of cars that has not previously received a Class I brake test or that has been off air for more than four hours;
- (2) Each solid block of cars that is comprised of cars from more than one previous train; and
- (3) Each solid block of cars that is comprised of cars from only one previous train but the cars of which have not remained continuously and consecutively coupled together with the train line remaining connected, other than for removing defective equipment, since being removed from its previous train.

5. A Class III brake test-trainline continuity inspection- shall be performed on a train to test the train brake system when the configuration of the train has changed as follows:

- (1) Where a locomotive or a caboose is changed;
- (2) Where a car or a block of cars is removed from the train with the consist otherwise remaining intact;

- (3) At a point other than the initial terminal for the train, where a car or a solid block of cars that is comprised of cars from only one previous train the cars of which have remained continuously and consecutively coupled together with the trainline remaining connected, other than for removing defective equipment, since being removed from its previous train that has previously received a Class I brake test and that has not been off air for more than four hours is added to a train;
 - (4) At a point other than the initial terminal for the train, where a car or a solid block of cars that has received a Class I or Class II brake test at that location, prior to being added to the train, and that has not been off air for more than four hours is added to a train; or
 - (5) Whenever the continuity of the brake pipe is broken or interrupted.
6. Class III brake tests-trainline continuity inspection-is required when the configuration of the train has changed as follows:

- (1) Where a locomotive or a caboose is changed;
- (2) Where a car or a block of cars is removed from the train with the consist otherwise remaining intact;
- (3) At a point other than the initial terminal for the train, where a car or a solid block of cars that is comprised of cars from only one previous train the cars of which have remained continuously and consecutively coupled together with the trainline remaining connected, other than for removing defective equipment, since being removed from its previous train that has previously received a Class I brake test and that has not been off air for more than four hours is added to a train;
- (4) At a point other than the initial terminal for the train, where a car or a solid block of cars that has received a Class I or Class II brake test at that location, prior to being added to the train, and that has not been off air for more than four hours is added to a train; or
- (5) Whenever the continuity of the brake pipe is broken or interrupted.

7. Tests of extended haul trains:

The 1,000 mile inspection test was not extended to 1,500 miles as proposed by AAR. However, a railroad may designate in writing to the FRA certain trains as “extended haul” trains , in which case any such train will be permitted to move up to 1,500 miles between brake tests and inspections.

- (a) A railroad may be permitted to move a train up to, but not exceeding, 1,500 miles between brake tests and inspections if the railroad designates a train as an extended haul train. In order for a railroad to designate a train as an extended haul train, all of the following requirements must be met:

- (1) The railroad must designate the train in writing to FRA’s Associate Administrator for Safety. This designation must include the following:

- (i) The train identification symbol or identification of the location where extended haul trains will originate and a description of the trains that will be operated as extended haul trains from those locations;

- (ii) The origination and destination points for the train;
- (iii) The type or types of equipment the train will haul; and
- (iv) The locations where all train brake and mechanical inspections and tests will be performed.

(2) A Class I brake test shall be performed at the initial terminal for the train by a qualified mechanical inspector .

(3) A freight car inspection pursuant to part 215[freight car standards] shall be performed at the initial terminal for the train and shall be performed by an inspector designated under §215.11.

(4) All cars having conditions not in compliance with part 215 at the initial terminal for the train shall be either repaired or removed from the train. Except for a car developing such a condition en route, no car shall be moved of this chapter in the train.

(5) The train shall have no more than one pick-up and one set-out en route, except for the set-out of defective equipment pursuant to the requirements of this chapter.

- (i) Cars added to the train en route shall be inspected pursuant to the requirements contained in paragraphs (a)(2) through (a)(5) of this section at the location where they are added to the train.

- (ii) Cars set out of the train en route shall be inspected pursuant to the requirements contained in paragraph (a)(6) of this section at the location where they are set out of the train.

(6) At the point of destination, if less than 1,500 miles from the train's initial terminal, or at the point designated by the railroad pursuant to paragraph (a)(1)(iv) of this section, not to exceed 1,500 miles, an inbound inspection of the train shall be conducted by a qualified mechanical inspector to identify any defective, inoperative, or ineffective brakes or any other condition not in compliance with this part as well as any conditions not in compliance with part 215 and part 231[safety appliance standards] of this chapter.

(7) The railroad shall maintain a record of all defective, inoperative, or ineffective brakes as well as any conditions not in compliance with part 215 and part 231 of this chapter discovered at anytime during the movement of the train. These records shall be retained for a period of one year and made available to FRA upon request. The records required by this section may be maintained either electronically or in writing.

(8) In order for an extended haul train to proceed beyond 1,500 miles, the following requirements shall be met:

- (i) If the train will move 1,000 miles or less from that location before receiving a Class IA brake test or reaching destination, a

Class I brake test shall be conducted to ensure 100 percent effective and operative brakes. The inbound inspection required by paragraph (a)(6) of this section may be used to meet this requirement provided it encompasses all the inspection elements contained in the Class I inspections.

(ii) If the train will move greater than 1,000 miles from that location without another brake inspection, the train must be identified as an extended haul train for that movement and shall meet all the requirements contained in paragraphs (a)(1) through (a)(7) of this section. Such trains shall receive a Class I brake test by a qualified mechanical inspector to ensure 100 percent effective and operative brakes, a freight car inspection pursuant to part 215 by an inspector designated under §215.11, and all cars containing non-complying conditions under part 215 shall either be repaired or removed from the train. The inbound inspection required by paragraph (a)(6) of this section may be used to meet these inspection requirements provided it encompasses all the inspection elements contained paragraphs (a)(2) through (a)(4) of this section.

(9) FRA inspectors shall have physical access to visually observe all brake and freight car inspections and tests required by this section.

(b) Failure to comply with any of the requirements contained in paragraph (a) of this section will be considered an improper movement of a designated priority train for which appropriate civil penalties may be assessed as outlined in Appendix A to this part. Furthermore, FRA's Associate Administrator for Safety may revoke a railroad's ability to designate any or all trains as extended haul trains for repeated or willful noncompliance with any of the requirements contained in this section. Such a determination will be made in writing and will state the basis for such action.

8. When performing the initial terminal test (i.e., Class I), both sides of the car must be observed during the inspection process. Both sides of the equipment do not need to be inspected at the same time the brakes are applied, so long as proper inspection of the brake components was conducted on both sides sometime during the inspection process. The inspector may walk one side with the brake applied, and walk the other side of the car with the brake released. However, if he cannot *See* the piston, he must cross over the car and observe the piston travel. Piston travel on each car must be inspected while the brakes are applied.

9. Cars that have been previously tested must be retested if the equipment is removed from a source of compressed air for longer than 4 hours.

10. In performing a brake test to determine if the brakes apply, any obvious defect may be corrected and the brakes retested. If there is a retest, the brakes must remain applied for at least 3 minutes.

11. A defective car may be moved to the nearest repair point where necessary repairs can be performed. At locations where a railroad uses repair trucks in the same manner as a fixed facility,

this may be considered a location where necessary repairs can be made. The FRA will determine on a case by case basis what constitutes the nearest location where repairs can be made.

12. The railroads will be permitted to use an automated tracking system in lieu of required tagging of defective equipment, if the railroad's system is first approved by FRA.

13. The final rule retained existing requirements that a train have 100% operative brakes when departing an initial terminal. (This does not apply to transfer trains, unless such train originates at a location where repairs can be made). The only exception is for movement of defective cars for repair, but in such case there is an absolute prohibition on moving a train with more than 15% of the cars with brakes cut out, or have inoperative brakes.

14. The rule does not mandate that dynamic brakes be placed on locomotives. However, where they exist, the locomotive engineer must be notified in writing as to the condition of the dynamic brakes on the controlling locomotive. An inoperative dynamic brake must be repaired within 30 days, at the locomotive's next periodic inspection, whichever occurs first. When operating a locomotive with an inoperative dynamic brake, such locomotive must have the capability to control the dynamic brakes on trailing units. Also, the locomotive must have the capability to display to the engineer the deceleration rate of the train or the total train dynamic brake retarding force. The dynamic brake requirements must be incorporated into the engineer certification training program.

15. Railroads are required to include in their operating rules a requirement that a train must be immediately stopped if it exceeds maximum authorized speed more than 5 mph when descending a grade of 1% or greater.

16. The regulations contain detailed training requirements for each person who will be required to perform any of the brakes tests and inspections. The training must provide the employee with the necessary skills and knowledge necessary to perform any required tasks. Refresher training is required every 3 years. The requirements of the FRA regulations must be spelled out so that the employees can distinguish federal requirements from individual railroad rules. Detailed records must be maintained by the railroads on the training which is provided. Prior training and testing received by an employee may be taken into consideration in determining whether an employee is qualified. Any previous training must be clearly documented, or it cannot be considered. Because some of the rules are new, all employees will need some additional training. The railroads are given 3 years to develop and complete the required training.

17. The use of chemicals in a train air brake system which are known to degrade or harm brake system components, such as alcohol, are prohibited. Yard air sources must be inspected at least twice annually and that two of the inspections be no less than 5 months apart.

18. Regarding single car and repair track tests, the FRA set out the requirements for when and how these tests are to be performed. Where fully equipped mobile repair trucks perform the same type of repairs that were previously performed in the shop or repair tracks, such will be considered shop or repair tracks. However, repair or shop tracks must be at locations that have fixed repair facilities and where all types of repairs are performed on a regular basis. In such case, this would require the car to have its brakes inspected and the car is required to receive a repair

track air brake test. The final rule does not increase the frequency at which single car or repair track air brake tests are currently to be performed. A repair track test is required on cars that have inoperative or cut-out brakes when removed from a train, not when just minor repairs are made to the brake system. Cars are permitted to be moved from a location where necessary repairs can be made to a location where single car or repair track repairs are conducted. When being moved to such a location, the cars must be tagged.

19. The FRA will continue to permit roll-by inspections of the release of brakes on trains, and the train speed cannot exceed 10 mph.

20. If a railroad's collective bargaining agreement provides that carmen alone are to perform the initial terminal test and inspection, carmen will be considered the only qualified employee to perform such work. The parties to such an agreement would first have to obtain a decision from the Railroad Adjustment Board interpreting the agreement giving the work exclusively to the carmen.

21. Where a railroad intends to put into service new brake system technologies or major upgrades, the railroad must petition FRA for approval.

22. Piston travel for standard 12-inch stroke brake cylinders continues to be 10 1/2 inches. For standard 8 1/2 inch and 10 inch diameter brake cylinders, piston travel found to be less than 7 inches or more than 9 inches must be adjusted to 7 1/2 inches. For non standard equipment, such as WABCOPAC or NYCOPAC truck mounted brake cylinders, the cylinders must have a badge plate, sticker, or marker indicating both the permissible piston travel range for Class 1 brake tests and the lengths at which the piston travel renders the brake ineffective. The railroads are allowed to use indicators for measuring piston travel and brake actuation in place of direct observation. All new equipment must be designed so that it will not be necessary for an inspector to place himself between, on, or under the car to observe brake application or release.

23. The rules address the issue of "bottling air" on unattended equipment by requiring an emergency brake application be initiated on all equipment prior to its being left unattended.

24. The railroads are encouraged, but not required, to equip yard air sources with air dryers.

25. When a train crew takes charge of a train, the weight and length of the train must be provided to the crew.

26. A new proposed regulation will require improved securement requirements for unattended trains and cars.⁷¹

27. Also, a new proposed rule requires the controlling locomotive cab to be locked or the reverser in the control stand be removed and secured.

POWER BRAKE REGULATIONS

⁷¹ Paragraph 26 and 27 will be summarized below.

PART 232--BRAKE SYSTEM SAFETY STANDARDS for FREIGHT and OTHER NON-PASSENGER TRAINS and EQUIPMENT; END-of-TRAIN DEVICES

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Subpart A--General

§ 232.1 -- Scope.

(a) This part prescribes Federal safety standards for freight and other non-passenger train brake systems and equipment. Subpart E of this part prescribes Federal safety standards not only for freight and other non-passenger train brake systems and equipment, but also for passenger train brake systems. This part does not restrict a railroad from adopting or enforcing additional or more stringent requirements not inconsistent with this part.

(b)....

(c) A railroad may request earlier application of the requirements contained in subparts A through C and subpart F of this part upon written notification to FRA's Associate Administrator for Safety. Such a request shall indicate the railroad's readiness and ability to comply with all of the requirements contained in those subparts.

(d) Except for operations identified in § 232.3(c)(1)[track that is not part of the general railroad system], (c)(4)[rapid transit operations not connected to the general railroad system], and (c)(6) through (c)(8)[4 wheel coal cars, 8 wheel logging cars not greater than 25 inches high] , all railroads which are part of the general railroad system of transportation shall operate pursuant to the requirements contained in this part 232 as it existed on April 1, 2001 and included as Appendix B to this part until they are either required to operate pursuant to the requirements contained in this part or the requirements contained in part 238 of this chapter or they elect to comply earlier than otherwise required with the requirements contained in this part or the requirements contained in part 238 of this chapter.

§ 232.3 -- Applicability.

(a) Except as provided in paragraphs (b) and (c) of this section, this part applies to all railroads that operate freight or other non-passenger train service on standard gage track which is part of the general railroad system of transportation. This includes the operation of circus trains and private cars when hauled on such railroads.

(b) Subpart E of this part, "End-of-Train Devices," applies to all trains operating on track which is part of the general railroad system of transportation unless specifically excepted in that subpart.

(c) Except as provided in § 232.1(d) and paragraph (b) of this section, this part does *not* apply to:

(1) A railroad that operates only on track inside an installation that is not part of the general railroad system of transportation.

(2) Intercity or commuter passenger train operations on standard gage track which is part of the general railroad system of transportation;

(3) Commuter or other short-haul rail passenger train operations in a metropolitan or suburban area (as described by 49 U.S.C. § 20102(1)), including public authorities operating passenger train service;

(4) Rapid transit operations in an urban area that are not connected with the general railroad system of transportation;

(5) Tourist, scenic, historic, or excursion operations, whether on or off the general railroad system;

(6) Freight and other non-passenger trains of four-wheel coal cars;

(7) Freight and other non-passenger trains of eight-wheel standard logging cars if the height of each car from the top of the rail to the center of the coupling is not more than 25 inches; or

(8) A locomotive used in hauling a train referred to in paragraph (c)(7) of this subsection when the locomotive and cars of the train are used only to transport logs.

(d) The provisions formerly contained in Interstate Commerce Commission Order 13528, of May 30, 1945, as amended, now revoked, are codified in this paragraph. This part is not applicable to the following equipment:

(1) Scale test weight cars.

(2) Locomotive cranes, steam shovels, pile drivers, and machines of similar construction, and maintenance machines built prior to September 21, 1945.

(3) Export, industrial, and other cars not owned by a railroad which are not to be used in service, except for movement as shipments on their own wheels to given destinations. Such cars shall be properly identified by a card attached to each side of the car, signed by the shipper, stating that such movement is being made under the authority of this paragraph.

(4) Industrial and other than railroad-owned cars which are not to be used in service except for movement within the limits of a single switching district (i.e., within the limits of an industrial facility).

(5) Narrow-gage cars.

(6) Cars used exclusively in switching operations and not used in train movements within the meaning of the Federal safety appliance laws (49 U.S.C. §§ 20301-20306).

§ 232.5 -- Definitions.

For purposes of this part-

AAR means the Association of American Railroads.

Air brake means a combination of devices operated by compressed air, arranged in a system, and controlled manually, electrically, electronically, or pneumatically, by means of which the motion of a railroad car or locomotive is retarded or arrested.

Air Flow Indicator, AFM means a specific air flow indicator required by the air flow method of qualifying train air brakes (AFM). The AFM Air Flow Indicator is a calibrated air flow measuring device which is clearly visible and legible in daylight and darkness from the engineer's normal operating position. The indicator face displays:

(1) Markings from 10 cubic feet per minute (CFM) to 80 CFM, in increments of 10 CFM or less; and

(2) Numerals indicating 20, 40, 60, and 80 CFM for continuous monitoring of air flow.

Bind means restrict the intended movement of one or more brake system components by reduced clearance, by obstruction, or by increased friction.

Brake, dynamic means a train braking system whereby the kinetic energy of a moving train is used to generate electric current at the locomotive traction motors, which is then dissipated through resistor grids or into the catenary or third rail system.

Brake, effective means a brake that is capable of producing its required designed retarding force on the train. A car's air brake is not considered effective if it is not capable of producing its designed retarding force or if its piston travel exceeds:

(1) 10 1/2 inches for cars equipped with nominal 12-inch stroke brake cylinders; or

(2) the piston travel limits indicated on the stencil, sticker, or badge plate for that brake cylinder.

Brake, hand means a brake that can be applied and released by hand to prevent or retard the movement of a locomotive.

Brake indicator means a device which indicates the brake application range and indicates whether brakes are applied and released.

Brake, inoperative means a primary brake that, for any reason, no longer applies or releases as intended.

Brake, inoperative dynamic means a dynamic brake that, for any reason, no longer provides its designed retarding force on the train.

Brake, parking means a brake that can be applied by means other than by hand, such as spring, hydraulic, or air pressure when the brake pipe air is depleted, or by an electrical motor.

Brake pipe means the system of piping (including branch pipes, angle cocks, cutout cocks, dirt collectors, hoses, and hose couplings) used for connecting locomotives and all railroad cars for the passage of compressed air.

Brake, primary means those components of the train brake system necessary to stop the train within the signal spacing distance without thermal damage to friction braking surfaces.

Brake, secondary means those components of the train brake system which develop supplemental brake retarding force that is not needed to stop the train within signal spacing distances or to prevent thermal damage to wheels.

Emergency application means an irretrievable brake application resulting in the maximum retarding force available from the train brake system.

End-of-train device, one-way means two pieces of equipment linked by radio that meet the requirements of § 232.403.

End-of-train device, two-way means two pieces of equipment linked by radio that meet the requirements of §§ 232.403 and 232.405.

Foul means any condition which restricts the intended movement of one or more brake system components because the component is snagged, entangled, or twisted.

Freight car means a vehicle designed to carry freight, or railroad personnel, by rail and a vehicle designed for use in a work or wreck train or other non-passenger train.

Initial terminal means the location where a train is originally assembled.

Locomotive means a piece of railroad on-track equipment, other than hi-rail, specialized maintenance, or other similar equipment, which may consist of one or more units operated from a single control stand-

- (1) With one or more propelling motors designed for moving other railroad equipment;
- (2) With one or more propelling motors designed to transport freight or passenger traffic or both; or
- (3) Without propelling motors but with one or more control stands.

Locomotive cab means that portion of the superstructure designed to be occupied by the crew operating the locomotive.

Locomotive, controlling means the locomotive from which the engineer exercises control over the train.

Off air means not connected to a continuous source of compressed air of at least 60 pounds per square inch (psi).

Ordered date or date ordered means the date on which notice to proceed is given by a procuring railroad to a contractor or supplier for new equipment.

Piston travel means the amount of linear movement of the air brake hollow rod (or equivalent) or piston rod when forced outward by movement of the piston in the brake cylinder or actuator and limited by the brake shoes being forced against the wheel or disc.

Pre-revenue service acceptance testing plan means a document, as further specified in § 232.505, prepared by a railroad that explains in detail how pre-revenue service tests of certain equipment demonstrate that the equipment meets Federal safety standards and the railroad's own safety design requirements.

Previously tested equipment means equipment that has received a Class I brake test pursuant to § 232.205 and has not been off air for more than four hours.

Primary responsibility means the task that a person performs at least 50 percent of the time. The totality of the circumstances will be considered on a case-by-case basis in circumstances where an individual does not spend 50 percent of the day engaged in any one readily identifiable type of activity.

Qualified mechanical inspector means a qualified person who has received, as a part of the training, qualification, and designation program required under § 232.203, instruction and training that includes "hands-on" experience (under appropriate supervision or apprenticeship) in one or more of the following functions: troubleshooting, inspection, testing, maintenance or repair of the specific train brake components and systems for which the person is assigned responsibility. This person shall also possess a current understanding of what is required to properly repair and maintain the safety-critical brake components for which the person is assigned responsibility. Further, the qualified mechanical inspector shall be a person whose primary responsibility includes work generally consistent with the functions listed in this definition.

Qualified person means a person who has received, as a part of the training, qualification, and designation program required under § 232.203, instruction and training necessary to perform one or more functions required under this part. The railroad is responsible for determining that the person has the knowledge and skills necessary to perform the required function for which the person is assigned responsibility. The railroad determines the qualifications and competencies for employees designated to perform various functions in the manner set forth in this part. Although the rule uses the term "qualified person" to describe a person responsible for performing various functions required under this part, a person may be deemed qualified to perform some functions but not qualified to perform other functions. For example, although a person may be deemed qualified to perform the Class II/intermediate brake test required by this part, that same person may or may not be deemed qualified to perform the Class I/initial Terminal brake test or authorize the movement of defective equipment under this part. The railroad will determine the required functions for which an individual will be deemed a "qualified person" based upon the instruction and training the individual has received pursuant to § 232.203 concerning a particular function.

Railroad means any form of non-highway ground transportation that runs on rails or electromagnetic guideways, including:

(1) Commuter or short-haul railroad passenger service in a metropolitan or suburban area and commuter railroad service that was operated by the Consolidated Rail Corporation on January 1, 1979; and

(2) High speed ground transportation systems that connect metropolitan areas, without regard to whether those systems use new technologies not associated with traditional railroads. The term "railroad" is also intended to mean a person that provides transportation by railroad, whether directly or by contracting out operation of the railroad to another person. The term does not include rapid transit operations in an urban area that are not connected to the general railroad system of transportation.

Rebuilt equipment means equipment that has undergone overhaul identified by the railroad as a capital expense under the Surface Transportation Board's accounting standards.

Refresher training means periodic retraining required for employees or contractors to remain qualified to perform specific equipment troubleshooting, inspection, testing, maintenance, or repair functions.

Respond as intended means to produce the result that a device or system is designed to produce.

"Roll-by" inspection means an inspection performed while equipment is moving.

Service application means a brake application that results from one or more service reductions or the equivalent.

Service reduction means a decrease in brake pipe pressure, usually from 5 to 25 psi at a rate sufficiently rapid to move the operating valve to service position, but at a rate not rapid enough to move the operating valve to emergency position.

Solid block of cars means two or more freight cars consecutively coupled together and added to or removed from a train as a single unit.

State inspector means an inspector of a participating State rail safety program under part 212 of this chapter.

Switching service means the classification of freight cars according to commodity or destination; assembling of cars for train movements; changing the position of cars for purposes of loading, unloading, or weighing; placing of locomotives and cars for repair or storage; or moving of rail equipment in connection with work service that does not constitute a train movement.

Tourist, scenic, historic, or excursion operations are railroad operations that carry passengers, often using antiquated equipment, with the conveyance of the passengers to a particular destination not being the principal purpose.

Train means one or more locomotives coupled with one or more freight cars, except during switching service.

Train line means the brake pipe or any non-pneumatic system used to transmit the signal that controls the locomotive and freight car brakes.

Train, unit or train, cycle means a train that, except for the changing of locomotive power and the removal or replacement of defective equipment, remains coupled as a consist and continuously operates from location A to location B and back to location A.

Transfer train means a train that travels between a point of origin and a point of final destination not exceeding 20 miles. Such trains may pick up or deliver freight equipment while en route to destination.

Yard air means a source of compressed air other than from a locomotive.

Yard means a system of tracks, not including main tracks and sidings, used for classifying cars, making-up and inspecting trains, or storing cars and equipment.

§ 232.7 -- Waivers.

- (a) Any person subject to a requirement of this part may petition the Administrator for a waiver of compliance with such requirement. The filing of such a petition does not affect that person's responsibility for compliance with that requirement while the petition is being considered.
- (b) Each petition for waiver must be filed in the manner and contain the information required by part 211 of this chapter.
- (c) If the Administrator finds that a waiver of compliance is in the public interest and is consistent with railroad safety, the Administrator may grant the waiver subject to any conditions the Administrator deems necessary. If a waiver is granted, the Administrator publishes a notice in the Federal Register containing the reasons for granting the waiver.

§ 232.9 -- Responsibility for compliance.

(a) A railroad subject to this part shall not use, haul, permit to be used or hauled on its line, offer in interchange, or accept in interchange any train, railroad car, or locomotive with one or more conditions not in compliance with this part; however, a railroad shall not be liable for a civil penalty for such action if such action is in accordance with § 232.15[movement of defective equipment]. For purposes of this part, a train, railroad car, or locomotive will be considered in use prior to departure but after it has received, or should have received, the inspection required for movement and is deemed ready for service.

(b) Although many of the requirements of this part are stated in terms of the duties of a railroad, when any person performs any function required by this part, that person (whether or not a railroad) is required to perform that function in accordance with this part.

(c) Any person performing any function or task required by this part shall be deemed to have consented to FRA inspection of the person's operation to the extent necessary to determine whether the function or task is being performed in accordance with the requirements of this part.

§ 232.11 -- Penalties.

(a) Any person (including but not limited to a railroad; any manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track, or facilities; any employee of such owner, manufacturer, lessor, lessee, or independent contractor) who violates any requirement of this part or causes the violation of any such requirement is subject to a civil penalty of at least \$ 500, but not more than \$ 11,000 per violation, except that: Penalties may be assessed against individuals only for willful violations, and, where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$ 22,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. Appendix A to this part contains a schedule of civil penalty amounts used in connection with this rule.

(b) Any person who knowingly and willfully falsifies a record or report required by this part is subject to criminal penalties under 49 U.S.C. § 21311.

§ 232.13 -- Preemptive effect.

(a) Under 49 U.S.C. §§ 20106. issuance of the regulations in this part preempts any State law, rule, regulation, order, or standard covering the same subject matter, except for a provision necessary to eliminate or reduce a local safety hazard if that provision is not incompatible with this part and does not impose an undue burden on interstate commerce.

(b) Preemption should also be considered pursuant to the Locomotive Boiler Inspection Act (now codified at 49 U.S.C. §§ 20701-20703), the Safety Appliance Acts (now codified at 49 U.S.C. §§ 20301-20304), and the Commerce Clause based on the relevant case law pertaining to preemption under those provisions.

(c) FRA does not intend by issuance of the regulations in this part to preempt provisions of State criminal law that impose sanctions for reckless conduct that leads to actual loss of life, injury, or damage to property, whether such provisions apply specifically to railroad employees or generally to the public at large.

§ 232.15 -- Movement of defective equipment.

(a) **General provision.** Except as provided in paragraph (c) of this section, a railroad car or locomotive with one or more conditions not in compliance with this part may be used or hauled without civil penalty liability under this part only if all of the following conditions are met:

(1) The defective car or locomotive is properly equipped in accordance with the applicable provisions of 49 U.S.C. chapter 203 and the requirements of this part.

(2) The car or locomotive becomes defective while it is being used by the railroad on its line or becomes defective on the line of a connecting railroad and is properly accepted in interchange for repairs in accordance with paragraph (a)(7) of this section.

(3) The railroad first discovers the defective condition of the car or locomotive prior to moving it for repairs.

(4) The movement of the defective car or locomotive for repairs is from the location where the car or locomotive is first discovered defective by the railroad.

(5) The defective car or locomotive cannot be repaired at the location where the railroad first discovers it to be defective.

(6) The movement of the car or locomotive is necessary to make repairs to the defective condition.

(7) The location to which the car or locomotive is being taken for repair is the nearest available location where necessary repairs can be performed on the line of the railroad where the car or locomotive was first found to be defective or is the nearest available location where necessary repairs can be performed on the line of a connecting railroad if:

(i) The connecting railroad elects to accept the defective car or locomotive for such repair; and

(ii) The nearest available location where necessary repairs can be performed on the line of the connecting railroad is no farther than the nearest available location where necessary repairs can be performed on the line of the railroad where the car or locomotive was found defective.

(8) The movement of the defective car or locomotive for repairs is not by a train required to receive a Class I brake test at that location pursuant to § 232.205[initial terminal].

(9) The movement of the defective car or locomotive for repairs is not in a train in which less than 85 percent of the cars have operative and effective brakes.

(10) The defective car or locomotive is tagged, or information is recorded, as prescribed in paragraph (b) of this section.

(11) Except for cars or locomotives with brakes cut out en route, the following additional requirements are met:

(i) A qualified person shall determine-

(A) That it is safe to move the car or locomotive; and

(B) The maximum safe speed and other restrictions necessary for safely conducting the movement.

(ii) The person in charge of the train in which the car or locomotive is to be moved shall be notified in writing and inform all other crew members of the presence of the defective car or locomotive and the maximum speed and other restrictions determined under paragraph (a)(11)(i)(B) of this section. A copy of the tag or card described in paragraph (b) of this section may be used to provide the notification required by this paragraph.

(iii) The defective car or locomotive is moved in compliance with the maximum speed and other restrictions determined under paragraph (a)(11)(i)(B) of this section.

(12) The defective car or locomotive is not subject to a Special Notice for Repair under part 216 of this chapter, unless the movement of the defective car is made in accordance with the restrictions contained in the Special Notice.

(b) ***Tagging of defective equipment.***

(1) At the place where the railroad first discovers the defect, a tag or card shall be placed on both sides of the defective equipment or locomotive and in the cab of the locomotive, or an automated tracking system approved for use by FRA shall be provided with the following information about the defective equipment:

- (i) The reporting mark and car or locomotive number;
- (ii) The name of the inspecting railroad;
- (iii) The name and job title of the inspector;
- (iv) The inspection location and date;
- (v) The nature of each defect;
- (vi) A description of any movement restrictions;
- (vii) The destination of the equipment where it will be repaired; and
- (viii) The signature, or electronic identification, of the person reporting the defective condition.

(2) The tag or card required by paragraph (b)(1) of this section shall remain affixed to the defective equipment until the necessary repairs have been performed.

(3) An electronic or written record or a copy of each tag or card attached to or removed from a car or locomotive shall be retained for 90 days and, upon request, shall be made available within 15 calendar days for inspection by FRA or State inspectors.

(4) Each tag or card removed from a car or locomotive shall contain the date, location, reason for its removal, and the signature of the person who removed it from the piece of equipment.

(5) Any automated tracking system approved by FRA to meet the tagging requirements contained in paragraph (b)(1) of this section shall be capable of being reviewed and monitored by FRA at any time to ensure the integrity of the system. FRA's Associate Administrator for Safety may prohibit or revoke a railroad's authority to utilize an approved automated tracking system in lieu of tagging if FRA finds that the automated tracking system is not properly secure, is inaccessible to FRA or a railroad's employees, or fails to adequately track and monitor the movement of defective equipment. FRA will record such a determination in writing, include a statement of the basis for such action, and provide a copy of the document to the railroad.

(c) ***Movement for unloading or purging of defective cars.*** If a defective car is loaded with a hazardous material or contains residue of a hazardous material, the car may not be placed for

unloading or purging unless unloading or purging is consistent with determinations made and restrictions imposed under paragraph (a)(11)(i) of this section and the unloading or purging is necessary for the safe repair of the car.

(d) ***Computation of percent operative power brakes.***

(1) The percentage of operative power brakes in a train shall be based on the number of control valves in the train. The percentage shall be determined by dividing the number of control valves that are cut-in by the total number of control valves in the train. A control valve shall not be considered cut-in if the brakes controlled by that valve are inoperative. Both cars and locomotives shall be considered when making this calculation.

(2) The following brake conditions not in compliance with this part are not considered inoperative power brakes for purposes of this section:

- (i) Failure or cutting out of secondary brake systems;
- (ii) Inoperative or otherwise defective handbrakes or parking brakes;
- (iii) Piston travel that is in excess of the Class I brake test limits required in § 232.205 but that does not exceed the outside limits contained on the stencil, sticker, or badge plate required by § 232.103(g) for considering the power brakes to be effective; and
- (iv) Power brakes overdue for inspection, testing, maintenance, or stenciling under this part.

(e) ***Placement of equipment with inoperative brakes.***

(1) A freight car or locomotive with inoperative brakes shall not be placed as the rear car of the train.

(2) No more than two freight cars with either inoperative brakes or not equipped with power brakes shall be consecutively placed in the same train.

(3) Multi-unit articulated equipment shall not be placed in a train if the equipment has more than two consecutive individual control valves cut-out or if the brakes controlled by the valves are inoperative.

(f) ***Guidelines for determining locations where necessary repairs can be performed.*** The following guidelines will be considered by FRA when determining whether a location is a location where repairs to a car's brake system or components can be performed and whether a location is the nearest location where the needed repairs can be effectuated.

(1) The following general factors and guidelines will be considered when making determinations as to whether a location is a location where brake repairs can be performed:

- (i) The accessibility of the location to persons responsible for making repairs;
- (ii) The presence of hazardous conditions that affect the ability to safely make repairs of the type needed at the location;
- (iii) The nature of the repair necessary to bring the car into compliance;
- (iv) The need for railroads to have in place an effective means to ensure the safe and timely repair of equipment;
- (v) The relevant weather conditions at the location that affect accessibility or create hazardous conditions;
- (vi) A location need not have the ability to effectuate every type of brake system repair in order to be considered a location where some brake repairs can be performed;

- (vii) A location need not be staffed continuously in order to be considered a location where brake repairs can be performed;
 - (viii) The ability of a railroad to perform repair track brake tests or single car tests at a location shall not be considered; and
 - (ix) The congestion of work at a location shall not be considered
- (2) The general factors and guidelines outlined in paragraph (f)(1) of this section should be applied to the following locations:
- (i) A location where a mobile repair truck is used on a regular basis;
 - (ii) A location where a mobile repair truck originates or is permanently stationed;
 - (iii) A location at which a railroad performs mechanical repairs other than brake system repairs; and
 - (iv) A location that has an operative repair track or repair shop;
- (3) In determining whether a location is the nearest location where the necessary brake repairs can be made, the distance to the location is a key factor but should not be considered the determining factor. The distance to a location must be considered in conjunction with the factors and guidance outlined in paragraphs (f)(1) and (f)(2) of this section. In addition, the following safety factors must be considered in order to optimize safety:
- (i) The safety of the employees responsible for getting the equipment to or from a particular location; and
 - (ii) The potential safety hazards involved with moving the equipment in the direction of travel necessary to get the equipment to a particular location.

(g) Based on the guidance detailed in paragraph (f) of this section and consistent with other requirements contained in this part, a railroad and the representatives of the railroad's employees may submit, for FRA approval, a joint proposal containing a plan designating locations where brake system repairs will be performed. Approval of such plans shall be made in writing by FRA's Associate Administrator for Safety and shall be subject to any modifications or changes determined by FRA to be necessary to ensure consistency with the requirements and guidance contained in this part.

§ 232.17 -- Special approval procedure.

- (a) **General.** The following procedures govern consideration and action upon requests for special approval of an alternative standard under §§ 232.305[single car air brake test] and §232.307[modification of single car brake test]; and for special approval of pre-revenue service acceptance testing plans under subpart F of this part.
- (b) **Petitions for special approval of an alternative standard.** Each petition for special approval of an alternative standard shall contain:
- (1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition;
 - (2) The alternative proposed, in detail, to be substituted for the particular requirement of this part;
 - (3) Appropriate data or analysis, or both, for FRA to consider in determining whether the alternative will provide at least an equivalent level of safety; and

(4) A statement affirming that the railroad has served a copy of the petition on designated representatives of its employees, together with a list of the names and addresses of the persons served.

(c) ***Petitions for special approval of pre-revenue service acceptance testing plan.*** Each petition for special approval of a pre-revenue service acceptance testing plan shall contain:

(1) The name, title, address, and telephone number of the primary person to be contacted with regard to review of the petition; and

(2) The elements prescribed in § 232.505[pre-revenue service acceptance testing plan].

(d) ***Service.***

(1) Each petition for special approval under paragraph (b) or (c) of this section shall be submitted in triplicate to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., SE., Washington, DC 20590.

(2) Service of each petition for special approval of an alternative standard under paragraph (b) of this section shall be made on the following:

(i) Designated employee representatives responsible for the equipment's operation, inspection, testing, and maintenance under this part;

(ii) Any organizations or bodies that either issued the standard incorporated in the section(s) of the rule to which the special approval pertains or issued the alternative standard that is proposed in the petition; and

(iii) Any other person who has filed with FRA a current statement of interest in reviewing special approvals under the particular requirement of this part at least 30 days but not more than 5 years prior to the filing of the petition. If filed, a statement of interest shall be filed with FRA's Associate Administrator for Safety and shall reference the specific section(s) of this part in which the person has an interest.

(e) ***Federal Register notice.*** FRA will publish a notice in the Federal Register concerning each petition under paragraph (b) of this section.

(f) ***Comment.*** Not later than 30 days from the date of publication of the notice in the Federal Register concerning a petition under paragraph (b) of this section, any person may comment on the petition.

(1) A comment shall set forth specifically the basis upon which it is made, and contain a concise statement of the interest of the commenter in the proceeding.

(2) The comment shall be submitted in triplicate to the Associate Administrator for Safety, Federal Railroad Administration, 1200 New Jersey Ave., N.E., Washington, D.C. 20590.

(3) The commenter shall certify that a copy of the comment was served on each petitioner.

(g) ***Disposition of petitions.***

(1) If FRA finds that the petition complies with the requirements of this section and that the proposed alternative standard or pre-revenue service plan is acceptable and justified, the petition will be granted, normally within 90 days of its receipt. If the petition is neither granted nor denied within 90 days, the petition remains pending for decision. FRA may attach special conditions to the approval of any petition. Following the approval of a petition, FRA may reopen consideration of the petition for cause.

(2) If FRA finds that the petition does not comply with the requirements of this section and that the alternative standard or pre-revenue service plan is not acceptable or justified, the petition will be denied, normally within 90 days of its receipt.

(3) When FRA grants or denies a petition, or reopens consideration of the petition, written notice is sent to the petitioner and other interested parties.

§ 232.19 -- Availability of records.

Except as otherwise provided, the records and plans required by this part shall be made available to representatives of FRA and States participating under part 212 of this chapter for inspection and copying upon request.

§ 232.21 -- Information Collection.

(a) The information collection requirements of this part were reviewed by the Office of Management and Budget pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) and are assigned OMB control number 2130-0008.

(b) The information collection requirements are found in the following sections: §§ 229.27, 231.31, 232.1, 232.3, 232.7, 232.11, 232.15, 232.17, 232.103, 232.105, 232.107, 232.109, 232.111, 232.203, 232.205, 232.207, 232.209, 232.211, 232.213, 232.303, 232.307, 232.309, 232.403, 232.405, 232.407, 232.409, 232.503, 232.505.

Subpart B--General Requirements

§ 232.101 -- Scope.

This subpart contains general operating, performance, and design requirements for each railroad that operates freight or other non-passenger trains and for specific equipment used in those operations.

§ 232.103 -- General requirements for all train brake systems.

(a) The primary brake system of a train shall be capable of stopping the train with a service application from its maximum operating speed within the signal spacing existing on the track over which the train is operating.

(b) If the integrity of the train line of a train brake system is broken, the train shall be stopped. If a train line uses other than solely pneumatic technology, the integrity of the train line shall be monitored by the brake control system.

(c) A train brake system shall respond as intended to signals from the train line.

(d) One hundred percent of the brakes on a train shall be effective and operative brakes prior to use or departure from any location where a Class I brake test is required to be performed on the train pursuant to § 232.205.

- (e) A train shall not move if less than 85 percent of the cars in that train have operative and effective brakes.
- (f) Each car in a train shall have its air brakes in effective operating condition unless the car is being moved for repairs in accordance with §§ 232.15 and 232.609. The air brakes on a car are not in effective operating condition if its brakes are cut-out or otherwise inoperative or if the piston travel exceeds:
- (1) 10 1/2 inches for cars equipped with nominal 12-inch stroke brake cylinders; or
 - (2) The piston travel limits indicated on the stencil, sticker, or badge plate for the brake cylinder with which the car is equipped.
- (g) Except for cars equipped with nominal 12-inch stroke (8 1/2 and 10-inch diameters) brake cylinders, all cars shall have a legible decal, stencil, or sticker affixed to the car or shall be equipped with a badge plate displaying the permissible brake cylinder piston travel range for the car at Class I brake tests and the length at which the piston travel renders the brake ineffective, if different from Class I brake test limits. The decal, stencil, sticker, or badge plate shall be located so that it may be easily read and understood by a person positioned safely beside the car.
- (h) All equipment ordered on or after August 1, 2002, or placed in service for the first time on or after April 1, 2004, shall have train brake systems designed so that an inspector can observe from a safe position either the piston travel, an accurate indicator which shows piston travel, or any other means by which the brake system is actuated. The design shall not require the inspector to place himself or herself on, under, or between components of the equipment to observe brake actuation or release.
- (i) All trains shall be equipped with an emergency application feature that produces an irretrievable stop, using a brake rate consistent with prevailing adhesion, train safety, and brake system thermal capacity. An emergency application shall be available at all times, and shall be initiated by an unintentional parting of the train line or loss of train brake communication.
- (j) A railroad shall set the maximum main reservoir working pressure.
- (k) The maximum brake pipe pressure shall not be greater than 15 psi less than the air compressor governor starting or loading pressure.
- (l) Except as otherwise provided in this part, all equipment used in freight or other non-passenger trains shall, at a minimum, meet the Association of American Railroads (AAR) Standard S-469-47, "Performance Specification for Freight Brakes," contained in the AAR Manual of Standards and Recommended Practices, Section E (April 1, 1999). The incorporation by reference of this AAR standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 11 C.F.R. part 51. You may obtain a copy of the incorporated document from the Association of American Railroads, 50 F Street, NW, Washington, DC. 20001. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Avenue, SE., Washington, DC or at the National Archives and Records Administration (NARA). For information on the availability of this

material at NARA, call 202-741-6030, or go to:
http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(m) If a train qualified by the Air Flow Method as provided for in subpart C of this part experiences a brake pipe air flow of greater than 60 CFM or brake pipe gradient of greater than 15 psi while en route and the movable pointer does not return to those limits within a reasonable time, the train shall be stopped at the next available location and be inspected for leaks in the brake system.

(n) **Securement of unattended equipment.** Unattended equipment shall be secured in accordance with the following requirements:

(1) A sufficient number of hand brakes, to be not fewer than one, shall be applied to hold the equipment unless an acceptable alternative method of securement is provided pursuant to paragraph (n)(11)(i) of this section. Railroads shall develop and implement a process or procedure to verify that the applied hand brakes will sufficiently hold the equipment with the air brakes released.

(2) Except for equipment connected to a source of compressed air (e.g., locomotive or ground air source), or as provided under paragraph (n)(11)(ii) of this section, prior to leaving equipment unattended, the brake pipe shall be reduced to zero at a rate that is no less than a service rate reduction, and the brake pipe vented to atmosphere by leaving the angle cock in the open position on the first unit of the equipment left unattended. A train's air brake shall not be depended upon to hold equipment standing unattended (including a locomotive, a car, or a train whether or not locomotive is attached).

(3) Except for distributed power units, the following requirements apply to unattended locomotives:

(i) All hand brakes shall be fully applied on all locomotives in the lead consist of an unattended train.

(ii) All hand brakes shall be fully applied on all locomotives in an unattended locomotive consist outside of a yard.

(iii) At a minimum, the hand brake shall be fully applied on the lead locomotive in an unattended locomotive consist within a yard.

(iv) A railroad shall develop, adopt, and comply with procedures for securing any unattended locomotive required to have a hand brake applied pursuant to paragraph (n)(3)(i) through (iii) of this section when the locomotive is not equipped with an operative hand brake.

(4) A railroad shall adopt and comply with a process or procedures to verify that the applied hand brakes will sufficiently hold an unattended locomotive consist. A railroad shall also adopt and comply with instructions to address throttle position, status of the reverse lever, position of the generator field switch, status of the independent brakes, position of the isolation switch, and position of the automatic brake valve on all unattended locomotives. The procedures and instruction required in this paragraph shall take into account winter weather conditions as they relate to throttle position and reverser handle.

(5) Any hand brakes applied to hold unattended equipment shall not be released until it is known that the air brake system is properly charged.

(6)(i) The requirements in paragraph (n)(7) through (8) of this section apply to any freight train or standing freight car or cars that contain:

(A) Any loaded tank car containing a material poisonous by inhalation as defined in § 171.8 of this title, including anhydrous ammonia (UN 1005) and ammonia solutions (UN 3318); or

(B) Twenty (20) or more loaded tank cars or loaded intermodal portable tanks of any one or any combination of a hazardous material listed in paragraph (n)(6)(i)(A) of this section, or any Division 2.1 (flammable gas), Class 3 (flammable or combustible liquid), Division 1.1 or 1.2 (explosive), or a hazardous substance listed at § 173.31(f)(2) of this title.

(ii) For the purposes of this paragraph, a tank car containing a residue of a hazardous material as defined in § 171.8 of this title is not considered a loaded car.

(7)(i) No equipment described in paragraph (n)(6) of this section shall be left unattended on a main track or siding (except when that main track or siding runs through, or is directly adjacent to a yard) until the railroad has adopted and is complying with a plan identifying specific locations or circumstances when the equipment may be left unattended. The plan shall contain sufficient safety justification for determining when equipment may be left unattended. The railroad must notify FRA when the railroad develops and has in place a plan, or modifies an existing plan, under this provision prior to operating pursuant to the plan. The plan shall be made available to FRA upon request. FRA reserves the right to require modifications to any plan should it determine the plan is not sufficient.

(ii) Except as provided in paragraph (n)(8)(iii) of this section, any freight train described in paragraph (n)(6) of this section that is left unattended on a main track or siding that runs through, or is directly adjacent to, a yard shall comply with the requirements contained in paragraphs (n)(8)(i) and (n)(8)(ii) of this section.

(8)(i) Where a freight train or standing freight car or cars as described in paragraph (n)(6) of this section is left unattended on a main track or siding outside of a yard, and not directly adjacent to a yard, an employee responsible for securing the equipment shall verify with another person qualified to make the determination that the equipment is secured in accordance with the railroad's processes and procedures.

(ii) The controlling locomotive cab of a freight train described in paragraph (n)(6) of this section shall be locked on locomotives capable of being locked. If the controlling cab is not capable of being locked, the reverser on the controlling locomotive shall be removed from the control stand and placed in a secured location.

(iii) A locomotive that is left unattended on a main track or siding that runs through, or is directly adjacent to, a yard is excepted from the requirements in (n)(8)(ii) of this section where the locomotive is not equipped with an operative lock and the locomotive has a reverser that cannot be removed from its control stand or has a reverser that is necessary for cold weather operations.

(9) Each railroad shall implement operating rules and practices requiring the job briefing of securement for any activity that will impact or require the securement of any unattended equipment in the course of the work being performed.

(10) Each railroad shall adopt and comply with procedures to ensure that, as soon as safely practicable, a qualified employee verifies the proper securement of any unattended equipment when the railroad has knowledge that a non-railroad emergency responder has been on, under, or between the equipment.

(11) A railroad may adopt and then must comply with alternative securement procedures to do the following:

(i) In lieu of applying hand brakes as required under paragraph (n) of this section, properly maintain and use mechanical securement devices, within their design criteria and as intended within a classification yard or on a repair track.

(ii) In lieu of compliance with the associated requirement in paragraph (n)(2) of this section - and in lieu of applying hand brakes as required under paragraph (n) of this section - isolate the brake pipe of standing equipment from atmosphere if it:

(A) Initiates an emergency brake application on the equipment;

(B) Closes the angle cock; and

(C) Operates the locomotive or otherwise proceeds directly to the opposite end of the equipment for the sole purpose to either open the angle cock to vent to atmosphere or provide an air source.

(iii) Upon completion of the procedure described in paragraph (n)(11)(ii) of this section, the securement requirements of paragraph (n) of this section shall apply.

(o) **Air pressure regulating devices shall be adjusted for the following pressures:**

Locomotives	PSI
(1) Minimum brake pipe air pressure:	
Road Service	90
Switch Service	60
(2) Minimum differential between brake pipe and main reservoir air pressures, with brake valve in running position	15
(3) Safety valve for straight air brake	30-55
(4) Safety valve for LT, ET, No. 8-EL, No. 14 EI, No. 6-DS, No. 6-BL and No. 6-SL equipment	30-68
(5) Safety valve for HSC and No. 24-RL equipment	30-75
(6) Reducing valve for independent or straight air brake	30-50
(7) Self-lapping portion for electro-pneumatic brake (minimum full application pressure)	50
(8) Self-lapping portion for independent air brake (full application pressure)	30-

(9) Reducing valve for high-speed brake (minimum) 50

66 Fed. Reg. 4193, Jan. 17, 2001, as amended at 67 Fed. Reg. 17581, Apr. 10, 2002; 73 Fed. Reg. 61553, Oct. 16, 2008; 74 Fed. Reg. 25174, May 27, 2009; 80 Fed. Reg. 47834, Aug. 6, 2015

§ 232.105 -- General requirements for locomotives.

(a) The air brake equipment on a locomotive shall be in safe and suitable condition for service.

(b) All locomotives ordered on or after August 1, 2002, or placed in service for the first time on or after April 1, 2004, shall be equipped with a hand or parking brake that is:

- (1) Capable of application or activation by hand;
- (2) Capable of release by hand; and
- (3) Capable of holding the unit on a three (3) percent grade.

(c) On locomotives so equipped, the hand or parking brake as well as its parts and connections shall be inspected, and necessary repairs made, as often as service requires but no less frequently than every 368 days. The date of the last inspection shall be either entered on Form FRA F 6180-49A or suitably stenciled or tagged on the locomotive.

(d) The amount of leakage from the equalizing reservoir on locomotives and related piping shall be zero, unless the system is capable of maintaining the set pressure at any service application with the brakes control valve in the freight position. If such leakage is detected en route, the train may be moved only to the nearest forward location where the equalizing-reservoir leakage can be corrected. On locomotives equipped with electronic brakes, if the system logs or displays a fault related to equalizing reservoir leakage, the train may be moved only to the nearest forward location where the necessary repairs can be made.

(e) Use of the feed or regulating valve to control braking is prohibited.

(f) The passenger position on the locomotive brake control stand shall be used only if the trailing equipment is designed for graduated brake release or if equalizing reservoir leakage occurs en route and its use is necessary to safely control the movement of the train until it reaches the next forward location where the reservoir leakage can be corrected.

(g) When taking charge of a locomotive or locomotive consist, an engineer must know that the brakes are in operative condition.

(h) Locomotive Cab Exterior Locking Mechanisms.

(1) After March 1, 2017, each locomotive left unattended outside of a yard shall be equipped with an operative exterior locking mechanism.

(2) The railroad shall inspect and, where necessary, repair the locking mechanism during a locomotive's periodic inspection required in 49 C.F.R. 229.23.

(3) In the event that a locking mechanism becomes inoperative during the time interval between periodic inspections, the railroad must repair the locking mechanism within 30 days of finding the inoperative lock.

(4) A railroad may continue the use of a locomotive without an operative locking mechanism; however, if the controlling locomotive of a train meeting the requirements of 49 C.F.R. 232.103(n)(6)(i) does not have an operative locking mechanism for the locomotive the train cannot be left unattended on main track or a siding unless the reverser is removed from the control stand as required in § 232.103(n)(8)(i) or the locomotive otherwise meets one of the exceptions described in § 232.103(n)(8)(ii).

§ 232.107 -- Air source requirements and cold weather operations.

(a) ***Monitoring plans for yard air sources.***

(1) A railroad shall adopt and comply with a written plan to monitor all yard air sources, other than locomotives, to determine that they operate as intended and do not introduce contaminants into the brake system of freight equipment.

(2) This plan shall require the railroad to:

(i) Inspect each yard air source at least two times per calendar year, no less than five months apart, to determine it operates as intended and does not introduce contaminants into the brake system of the equipment it services.

(ii) Identify yard air sources found not to be operating as intended or found introducing contaminants into the brake system of the equipment it services.

(iii) Repair or take other remedial action regarding any yard air source identified under paragraph (a)(2)(ii) of this section.

(3) A railroad shall maintain records of the information and actions required by paragraph (a)(2). These records shall be maintained for a period of at least one year from the date of creation and may be maintained either electronically or in writing.

(b) Condensation and other contaminants shall be blown from the pipe or hose from which compressed air is taken prior to connecting the yard air line or motive power to the train.

(c) No chemicals which are known to degrade or harm brake system components shall be placed in the train air brake system.

(d) Yard air reservoirs shall either be equipped with an operable automatic drain system or be manually drained at least once each day that the devices are used or more often if moisture is detected in the system.

(e) A railroad shall adopt and comply with detailed written operating procedures tailored to the equipment and territory of that railroad to cover safe train operations during cold weather. For purposes of this provision, "cold weather" means when the ambient temperature drops below 10 degrees Fahrenheit (F) (minus 12.2 degrees Celsius).

§ 232.109 -- Dynamic brake requirements.

(a) Except as provided in paragraph (i) of this section, a locomotive engineer shall be informed of the operational status of the dynamic brakes on all locomotive units in the consist at the initial terminal or point of origin for a train and at other locations where a locomotive engineer first begins operation of a train. The information required by this paragraph may be provided to the locomotive engineer by any means determined appropriate by the railroad; however, a written or electronic record of the information shall be maintained in the cab of the controlling locomotive.

(b) Except as provided in paragraph (e) of this section, all inoperative dynamic brakes shall be repaired within 30 calendar days of becoming inoperative or at the locomotive's next periodic inspection pursuant to § 229.23 of this chapter, whichever occurs first.

(c) Except as provided in paragraph (e) of this section, a locomotive discovered with inoperative dynamic brakes shall have a tag bearing the words "inoperative dynamic brake" securely attached and displayed in a conspicuous location in the cab of the locomotive. This tag shall contain the following information:

- (1) The locomotive number;
- (2) The name of the discovering carrier;
- (3) The location and date where condition was discovered; and
- (4) The signature of the person discovering the condition.

(d) An electronic or written record of repairs made to a locomotive's dynamic brakes shall be retained for 92 days.

(e) A railroad may elect to declare the dynamic brakes on a locomotive deactivated without removing the dynamic brake components from the locomotive, only if all of the following conditions are met:

- (1) The locomotive is clearly marked with the words "dynamic brake deactivated" in a conspicuous location in the cab of the locomotive; and
- (2) The railroad has taken appropriate action to ensure that the deactivated locomotive is incapable of utilizing dynamic brake effort to retard or control train speed.

(f) If a locomotive consist is intended to have its dynamic brakes used while in transit, a locomotive with inoperative or deactivated dynamic brakes or a locomotive not equipped with dynamic brakes shall not be placed in the controlling (lead) position of a consist unless the locomotive has the capability of:

- (1) Controlling the dynamic braking effort in trailing locomotives in the consist that are so equipped; and
- (2) Displaying to the locomotive engineer the deceleration rate of the train or the total train dynamic brake retarding force.

(g) All locomotives equipped with dynamic brakes and ordered on or after August 1, 2002, or placed in service for the first time on or after April 1, 2004, shall be designed to:

- (1) Test the electrical integrity of the dynamic brake at rest; and
- (2) Display the available total train dynamic brake retarding force at various speed increments in the cab of the controlling (lead) locomotive.

- (h) All rebuilt locomotives equipped with dynamic brakes and placed in service on or after April 1, 2004, shall be designed to:
- (1) Test the electrical integrity of the dynamic brake at rest; and
 - (2) Display either the train deceleration rate or the available total train dynamic brake retarding force at various speed increments in the cab of the controlling (lead) locomotive.
- (i) The information required by paragraph (a) of this section is not required to be provided to the locomotive engineer if all of the locomotives in the lead consist of a train are equipped in accordance with paragraph (g) of this section.
- (j) A railroad operating a train with a brake system that includes dynamic brakes shall adopt and comply with written operating rules governing safe train handling procedures using these dynamic brakes under all operating conditions, which shall be tailored to the specific equipment and territory of the railroad. The railroad's operating rules shall:
- (1) Ensure that the friction brakes are sufficient by themselves, without the aid of dynamic brakes, to stop the train safely under all operating conditions.
 - (2) Include a "miles-per-hour-overspeed-stop" rule. At a minimum, this rule shall require that any train, when descending a grade of 1 percent or greater, shall be immediately brought to a stop, by an emergency brake application if necessary, when the train's speed exceeds the maximum authorized speed for that train by more than 5 miles per hour. A railroad shall reduce the 5 mile per hour overspeed restriction if validated research indicates the need for such a reduction. A railroad may increase the 5 mile per hour overspeed restriction only with approval of FRA and based upon verifiable data and research.
- (k) A railroad operating a train with a brake system that includes dynamic brakes shall adopt and comply with specific knowledge, skill, and ability criteria to ensure that its locomotive engineers are fully trained in the operating rules prescribed by paragraph (j) of this section. The railroad shall incorporate such criteria into its locomotive engineer certification program pursuant to part 240 of this chapter.

§ 232.111 -- Train handling information.

- (a) A railroad shall adopt and comply with written procedures to ensure that a train crew employed by the railroad is given accurate information on the condition of the train brake system and train factors affecting brake system performance and testing when the crew takes over responsibility for the train. The information required by this paragraph may be provided to the locomotive engineer by any means determined appropriate by the railroad; however, a written or electronic record of the information shall be maintained in the cab of the controlling locomotive.
- (b) The procedures shall require that each train crew taking charge of a train be informed of:
- (1) The total weight and length of the train, based on the best information available to the railroad;
 - (2) Any special weight distribution that would require special train handling procedures;
 - (3) The number and location of cars with cut-out or otherwise inoperative brakes and the location where they will be repaired;

- (4) If a Class I or Class IA brake test is required prior to the next crew change point, the location at which that test shall be performed; and
- (5) Any train brake system problems encountered by the previous crew of the train.

Subpart C--Inspection and Testing Requirements

§ 232.201 -- Scope.

This subpart contains the inspection and testing requirements for brake systems used in freight and other non-passenger trains. This subpart also contains general training requirements for railroad and contract personnel used to perform the required inspections and tests.

§ 232.203 -- Training requirements.

- (a) Each railroad and each contractor shall adopt and comply with a training, qualification, and designation program for its employees that perform brake system inspections, tests, or maintenance. For purposes of this section, a "contractor" is defined as a person under contract with the railroad or car owner. The records required by this section may be maintained either electronically or in writing.
- (b) As part of this program, the railroad or contractor shall:
 - (1) Identify the tasks related to the inspection, testing, and maintenance of the brake system required by this part that must be performed by the railroad or contractor and identify the skills and knowledge necessary to perform each task.
 - (2) Develop or incorporate a training curriculum that includes both classroom and "hands-on" lessons designed to impart the skills and knowledge identified as necessary to perform each task. The developed or incorporated training curriculum shall specifically address the Federal regulatory requirements contained in this part that are related to the performance of the tasks identified.
 - (3) Require all employees to successfully complete a training curriculum that covers the skills and knowledge the employee will need to possess in order to perform the tasks required by this part that the employee will be responsible for performing, including the specific Federal regulatory requirements contained in this part related to the performance of a task for which the employee will be responsible;
 - (4) Require all employees to pass a written or oral examination covering the skills and knowledge the employee will need to possess in order to perform the tasks required by this part that the employee will be responsible for performing, including the specific Federal regulatory requirements contained in this part related to the performance of a task for which the employee will be responsible for performing;
 - (5) Require all employees to individually demonstrate "hands-on" capability by successfully applying the skills and knowledge the employee will need to possess in order to perform the tasks required by this part that the employee will be responsible for performing to the satisfaction of the employee's supervisor or designated instructor;
 - (6) Consider training and testing, including efficiency testing, previously received by an employee in order to meet the requirements contained in paragraphs (b)(3) through (b)(5) of this

section; provided, such training and testing can be documented as required in paragraph (e) of this section;

(7) Require supervisors to exercise oversight to ensure that all the identified tasks are performed in accordance with the railroad's written procedures and the specific Federal regulatory requirements contained in this part;

(8) Require periodic refresher training at an interval not to exceed three years that includes classroom and "hands-on" training, as well as testing. Efficiency testing may be used to meet the "hands-on" portion of this requirement; provided, such testing is documented as required in paragraph (e) of this section; and

(9) Add new brake systems to the training, qualification and designation program prior to its introduction to revenue service.

(c) A railroad that operates trains required to be equipped with a two-way end-of-train telemetry device pursuant to Subpart E of this part, and each contractor that maintains such devices shall adopt and comply with a training program which specifically addresses the testing, operation, and maintenance of two-way end-of-train devices for employees who are responsible for the testing, operation, and maintenance of the devices.

(d) A railroad that operates trains under conditions that require the setting of air brake pressure retaining valves shall adopt and comply with a training program which specifically addresses the proper use of retainers for employees who are responsible for using or setting retainers.

(e) A railroad or contractor shall maintain adequate records to demonstrate the current qualification status of all of its personnel assigned to inspect, test, or maintain a train brake system. The records required by this paragraph may be maintained either electronically or in writing and shall be provided to FRA upon request. These records shall include the following information concerning each such employee:

(1) The name of the employee;

(2) The dates that each training course was completed;

(3) The content of each training course successfully completed;

(4) The employee's scores on each test taken to demonstrate proficiency;

(5) A description of the employee's "hands-on" performance applying the skills and knowledge the employee needs to possess in order to perform the tasks required by this part that the employee will be responsible for performing and the basis for finding that the skills and knowledge were successfully demonstrated;

(6) A record that the employee was notified of his or her current qualification status and of any subsequent changes to that status;

(7) The tasks required to be performed under this part which the employee is deemed qualified to perform; and

(8) The date that the employee's status as qualified to perform the tasks identified in paragraph (e)(6) of this section expires due to the need for refresher training. (9) The date that the employee's status as qualified to perform the tasks identified in paragraph (e)(7) of this section expires due to the need for refresher training.

(f) A railroad or contractor shall adopt and comply with a plan to periodically assess the effectiveness of its training program. One method of validation and assessment could be through the use of efficiency tests or periodic review of employee performance.

§ 232.205 -- Class I brake test-initial terminal inspection.

(a) Each train and each car in the train shall receive a Class I brake test as described in paragraph (b) of this section by a qualified person, as defined in § 232.5, at the following points:

- (1) The location where the train is originally assembled ("initial terminal");
- (2) A location where the train consist is changed other than by:
 - (i) Adding a single car or a solid block of cars;
 - (ii) Removing a single car or a solid block of cars;
 - (iii) Removing cars determined to be defective under this chapter; or
 - (iv) A combination of the changes listed in paragraphs (a)(2)(i) through (a)(2)(iii) of this section (*See*, §§ 232.209 and 232.211 for requirements related to the pick-up of cars and solid blocks of cars en route.);
- (3) A location where the train is off air for a period of more than four hours;
- (4) A location where a unit or cycle train has traveled 3,000 miles since its last Class I brake test; and
- (5) A location where the train is received in interchange if the train consist is changed other than by:
 - (i) Removing a car or a solid block of cars from the train;
 - (ii) Adding a previously tested car or a previously tested solid block of cars to the train;
 - (iii) Changing motive power;
 - (iv) Removing or changing the caboose; or
 - (v) Any combination of the changes listed in paragraphs (a)(5) of this section.
 - (A) If changes other than those contained in paragraph (a)(5)(i)-(a)(5)(v) of this section are made to the train consist when it is received in interchange and the train will move 20 miles or less, then the railroad may conduct a brake test pursuant to § 232.209 on those cars added to the train.
 - (B) Reserved.

(b) A Class I brake test of a train shall consist of the following tasks and requirements:

- (1) Brake pipe leakage shall not exceed 5 psi per minute or air flow shall not exceed 60 cubic feet per minute (CFM).
 - (i) **Leakage Test.** The brake pipe leakage test shall be conducted as follows:
 - (A) Charge the air brake system to the pressure at which the train will be operated, and the pressure at the rear of the train shall be within 15 psi of the pressure at which the train will be operated, but not less than 75 psi, as indicated by an accurate gauge or end-of-train device at the rear end of train;
 - (B) Upon receiving the signal to apply brakes for test, make a 20-psi brake pipe service reduction;
 - (C) If the locomotive used to perform the leakage test is equipped with a means for maintaining brake pipe pressure at a constant level during a 20-psi brake pipe service reduction, this feature shall be cut out during the leakage test; and

(D) With the brake valve lapped and the pressure maintaining feature cut out (if so equipped) and after waiting 45-60 seconds, note the brake pipe leakage as indicated by the brake-pipe gauge in the locomotive, which shall not exceed 5 psi per minute.

(ii) ***Air Flow Method Test.*** When a locomotive is equipped with a 26-L brake valve or equivalent pressure maintaining locomotive brake valve, a railroad may use the Air Flow Method Test as an alternate to the brake pipe leakage test. The Air Flow Method (AFM) Test shall be performed as follows:

(A) Charge the air brake system to the pressure at which the train will be operated, and the pressure at the rear of the train shall be within 15 psi of the pressure at which the train will be operated, but not less than 75 psi, as indicated by an accurate gauge or end-of-train device at the rear end of train; and

(B) Measure air flow as indicated by a calibrated AFM indicator, which shall not exceed 60 cubic feet per minute (CFM).

(iii) The AFM indicator shall be calibrated for accuracy at periodic intervals not to exceed 92 days. The AFM indicator calibration test orifices shall be calibrated at temperatures of not less than 20 degrees Fahrenheit. AFM indicators shall be accurate to within #3 standard cubic feet per minute (CFM).

(2) The inspector shall position himself/herself, taking positions on each side of each car sometime during the inspection process, so as to be able to examine and observe the functioning of all moving parts of the brake system on each car in order to make the determinations and inspections required by this section. A "roll-by" inspection of the brake release as provided for in paragraph (b)(8) of this section shall not constitute an inspection of that side of the train for purposes of this requirement;

(3) The train brake system shall be charged to the pressure at which the train will be operated, and the pressure at the rear of the train shall be within 15 psi of the pressure at which the train will be operated, but not less than 75 psi, angle cocks and cutout cocks shall be properly positioned, air hoses shall be properly coupled and shall not kink, bind, or foul or be in any other condition that restricts air flow. An examination must be made for leaks and necessary repairs made to reduce leakage to the required minimum. Retaining valves and retaining valve pipes shall be inspected and known to be in proper condition for service;

(4) The brakes on each car and shall apply in response to a 20-psi brake pipe service reduction and shall remain applied until a release of the air brakes has been initiated by the controlling locomotive or yard test device. The brakes shall not be applied or released until the proper signal is given. A car found with brakes that fail to apply or remain applied may be retested and remain in the train if the retest is conducted at the pressure the train will be operated from the controlling locomotive, head end of the consist, or a suitable test device, as described in § 232.217(a) of this part, positioned at one end of the car(s) being retested and the brakes remain applied until a release is initiated after a period which is no less than three minutes. If the retest is performed at the car(s) being retested with a suitable device, the compressed air in the car(s) shall be depleted prior to disconnecting the hoses between the car(s) to perform the retest;

(5) For cars equipped with 8 1/2-inch or 10-inch diameter brake cylinders, piston travel shall be within 7 to 9 inches. If piston travel is found to be less than 7 inches or more than 9 inches, it must be adjusted to nominally 7 1/2 inches. For cars not equipped with 8 1/2-inch or 10-inch diameter brake cylinders, piston travel shall be within the piston travel stenciled or marked on the car or badge plate. Minimum brake cylinder piston travel of truck-mounted brake cylinders

must be sufficient to provide proper brake shoe clearance when the brakes are released. Piston travel must be inspected on each freight car while the brakes are applied;

(6) Brake rigging shall be properly secured and shall not bind or foul or otherwise adversely affect the operation of the brake system;

(7) All parts of the brake equipment shall be properly secured. On cars where the bottom rod passes through the truck bolster or is secured with cotter keys equipped with a locking device to prevent their accidental removal, bottom rod safety supports are not required; and

(8) When the release is initiated by the controlling locomotive or yard test device, the brakes on each freight car shall be inspected to verify that it did release; this may be performed by a "roll-by" inspection. If a "roll-by" inspection of the brake release is performed, train speed shall not exceed 10 MPH and the qualified person performing the "roll-by" inspection shall communicate the results of the inspection to the operator of the train. The operator of the train shall note successful completion of the release portion of the inspection on the record required in paragraph (d) of this section.

(c) Where a railroad's collective bargaining agreement provides that a carman is to perform the inspections and tests required by this section, a carman alone will be considered a qualified person. In these circumstances, the railroad shall ensure that the carman is properly trained and designated as a qualified person or qualified mechanical inspector pursuant to the requirements of this part.

(d) A railroad shall notify the locomotive engineer that the Class I brake test was satisfactorily performed and provide the information required in this paragraph to the locomotive engineer or place the information in the cab of the controlling locomotive following the test. The information required by this paragraph may be provided to the locomotive engineer by any means determined appropriate by the railroad; however, a written or electronic record of the information shall be retained in the cab of the controlling locomotive until the train reaches its destination. The written or electronic record shall contain the date, time, number of freight cars inspected, and identify the qualified person(s) performing the test and the location where the Class I brake test was performed.

(e) Before adjusting piston travel or working on brake rigging, cutout cock in brake pipe branch must be closed and air reservoirs must be voided of all compressed air. When cutout cocks are provided in brake cylinder pipes, these cutout cocks only may be closed and air reservoirs need not be voided of all compressed air.

(f) Except as provided in § 232.209, each car or solid block of cars, as defined in § 232.5, that has not received a Class I brake test or that has been off air for more than four hours and that is added to a train shall receive a Class I test when added to a train. A Class III brake test as described in § 232.211 shall then be performed on the entire new train.

§ 232.207 -- Class IA brake tests--1,000-mile inspection.

(a) Except as provided in § 232.213, each train shall receive a Class IA brake test performed by a qualified person, as defined in § 232.5, at a location that is not more than 1,000 miles from

the point where any car in the train last received a Class I or Class IA brake test. The most restrictive car or block of cars in the train shall determine the location of this test.

(b) A Class IA brake test of a train shall consist of the following tasks and requirements:

(1) Brake pipe leakage shall not exceed 5 psi per minute, or air flow shall not exceed 60 cubic feet per minute (CFM). The brake pipe leakage test or air flow method test shall be conducted pursuant to the requirements contained in § 232.205(c)(1);

(2) The inspector shall position himself/herself, taking positions on each side of each car sometime during the inspection process, so as to be able to examine and observe the functioning of all moving parts of the brake system on each car in order to make the determinations and inspections required by this section;

(3) The air brake system shall be charged to the pressure at which the train will be operated, and the pressure at the rear of the train shall be within 15 psi of the pressure at which the train will be operated, but not less than 75 psi, as indicated by an accurate gauge or end-of-train device at rear end of train;

(4) The brakes on each car shall apply in response to a 20-psi brake pipe service reduction and shall remain applied until the release is initiated by the controlling locomotive. A car found with brakes that fail to apply or remain applied may be retested and remain in the train if the retest is conducted as prescribed in § 232.205(c)(4); otherwise, the defective equipment may only be moved pursuant to the provisions contained in § 232.15, if applicable; (5) Brake rigging shall be properly secured and shall not bind or foul or otherwise adversely affect the operation of the brake system; and

(6) All parts of the brake equipment shall be properly secured.

(c) A railroad shall designate the locations where Class IA brake tests will be performed, and the railroad shall furnish to the Federal Railroad Administration upon request a description of each location designated. A railroad shall notify FRA's Associate Administrator for Safety in writing 30 days prior to any change in the locations designated for such tests and inspections.

(1) Failure to perform a Class IA brake test on a train at a location designated pursuant to this paragraph constitutes a failure to perform a proper Class IA brake test if the train is due for such a test at that location.

(2) In the event of an emergency that alters normal train operations, such as a derailment or other unusual circumstance that adversely affects the safe operation of the train, the railroad is not required to provide prior written notification of a change in the location where a Class IA brake test is performed to a location not on the railroad's list of designated locations for performing Class IA brake tests, provided that the railroad notifies FRA's Associate Administrator for Safety and the pertinent FRA Regional Administrator within 24 hours after the designation has been changed and the reason for that change.

§ 232.209 -- Class II brake tests--intermediate inspection.

(a) At a location other than the initial terminal of a train, a Class II brake test shall be performed by a qualified person, as defined in § 232.5, on the following equipment when added to a train:

(1) Each car or solid block of cars, as defined in § 232.5, that has not previously received a Class I brake test or that has been off air for more than four hours;

(2) Each solid block of cars, as defined in § 232.5, that is comprised of cars from more than one previous train; and

(3) Each solid block of cars that is comprised of cars from only one previous train but the cars of which have not remained continuously and consecutively coupled together with the train line remaining connected, other than for removing defective equipment, since being removed from its previous train.

(b) A Class II brake test shall consist of the following tasks and requirements:

(1) Brake pipe leakage shall not exceed 5 psi per minute or air flow shall not exceed 60 cubic feet per minute (CFM). The brake pipe leakage test or air flow method test shall be conducted on the entire train pursuant to the requirements contained in § 232.205(c)(1);

(2) The air brake system shall be charged to the pressure at which the train will be operated, and the pressure at the rear of the train shall be within 15 psi of the pressure at which the train will be operated, but not less than 75 psi, as indicated by an accurate gauge or end-of-train device at the rear end of train;

(3) The brakes on each car added to the train and on the rear car of the train shall be inspected to ensure that they apply in response to a 20-psi brake pipe service reduction and remain applied until the release is initiated from the controlling locomotive. A car found with brakes that fail to apply or remain applied may be retested and remain in the train if the retest is conducted as prescribed in § 232.205(b)(4); otherwise, the defective equipment may only be moved pursuant to the provisions contained in § 232.15, if applicable;

(4) When the release is initiated, the brakes on each car added to the train and on the rear car of the train shall be inspected to verify that they did release; this may be performed by a "roll-by" inspection. If a "roll-by" inspection of the brake release is performed, train speed shall not exceed 10 MPH, and the qualified person performing the "roll-by" inspection shall communicate the results of the inspection to the operator of the train; and

(5) Before the train proceeds the operator of the train shall know that the brake pipe pressure at the rear of the train is being restored.

(c) As an alternative to the rear car brake application and release portion of the test, the operator of the train shall determine that brake pipe pressure of the train is being reduced, as indicated by a rear car gauge or end-of-train telemetry device, and then that the brake pipe pressure of the train is being restored, as indicated by a rear car gauge or end-of-train telemetry device. (When an end-of-train telemetry device is used to comply with any test requirement in this part, the phrase "brake pipe pressure of the train is being reduced" means a pressure reduction of at least 5 psi, and the phrase "brake pipe pressure of the train is being restored" means a pressure increase of at least 5 psi). If an electronic communication link between a controlling locomotive and a remotely controlled locomotive attached to the rear end of a train is utilized to determine that brake pipe pressure is being restored, the operator of the train shall know that the air brakes function as intended on the remotely controlled locomotive.

(d) Each car or solid block of cars that receives a Class II brake test pursuant to this section when added to the train shall receive a Class I brake test at the next forward location where facilities are available for performing such a test. A Class III brake test as described in § 232.211 shall then be performed on the entire train.

§ 232.211 -- Class III brake tests-trainline continuity inspection.

(a) A Class III brake test shall be performed on a train by a qualified person, as defined in § 232.5, to test the train brake system when the configuration of the train has changed in certain ways. In particular, a Class III brake test shall be performed at the location where any of the following changes in the configuration of the train occur:

- (1) Where a locomotive or a caboose is changed;
- (2) Where a car or a block of cars is removed from the train with the consist otherwise remaining intact;
- (3) At a point other than the initial terminal for the train, where a car or a solid block of cars that is comprised of cars from only one previous train the cars of which have remained continuously and consecutively coupled together with the trainline remaining connected, other than for removing defective equipment, since being removed from its previous train that has previously received a Class I brake test and that has not been off air for more than four hours is added to a train;
- (4) At a point other than the initial terminal for the train, where a car or a solid block of cars that has received a Class I or Class II brake test at that location, prior to being added to the train, and that has not been off air for more than four hours is added to a train; or
- (5) Whenever the continuity of the brake pipe is broken or interrupted.

(b) A Class III brake test shall consist of the following tasks and requirements:

- (1) The train brake system shall be charged to the pressure at which the train will be operated, and the pressure at the rear of the train shall be within 15 psi of the pressure at which the train will be operated, but not less than 75 psi, or 60 psi for transfer trains, as indicated at the rear of the train by an accurate gauge or end-of-train device;
- (2) The brakes on the rear car of the train shall apply in response to a 20-psi brake pipe service reduction and shall remain applied until the release is initiated by the controlling locomotive;
- (3) When the release is initiated, the brakes on the rear car of the train shall be inspected to verify that it did release; and
- (4) Before proceeding the operator of the train shall know that the brake pipe pressure at the rear of freight train is being restored.

(c) As an alternative to the rear car brake application and release portion of the test, it shall be determined that the brake pipe pressure of the train is being reduced, as indicated by a rear car gauge or end-of-train telemetry device, and then that the brake pipe pressure of the train is being restored, as indicated by a rear car gauge or end-of-train telemetry device. If an electronic or radio communication link between a controlling locomotive and a remotely controlled locomotive attached to the rear end of a train is utilized to determine that brake pipe pressure is being restored, the operator of the train shall know that the air brakes function as intended on the remotely controlled locomotive.

§ 232.213 -- Extended haul trains.

(a) A railroad may be permitted to move a train up to, but not exceeding, 1,500 miles between brake tests and inspections if the railroad designates a train as an extended haul train. In order for

a railroad to designate a train as an extended haul train, all of the following requirements must be met:

(1) The railroad must designate the train in writing to FRA's Associate Administrator for Safety. This designation must include the following:

(i) The train identification symbol or identification of the location where extended haul trains will originate and a description of the trains that will be operated as extended haul trains from those locations;

(ii) The origination and destination points for the train;

(iii) The type or types of equipment the train will haul; and

(iv) The locations where all train brake and mechanical inspections and tests will be performed.

(2) A Class I brake test pursuant to § 232.205 shall be performed at the initial terminal for the train by a qualified mechanical inspector as defined in § 232.5.

(3) A freight car inspection pursuant to part 215 of this chapter shall be performed at the initial terminal for the train and shall be performed by an inspector designated under § 215.11 of this chapter.

(4) All cars having conditions not in compliance with part 215 of this chapter at the initial terminal for the train shall be either repaired or removed from the train. Except for a car developing such a condition en route, no car shall be moved pursuant to the provisions of § 215.9 of this chapter in the train.

(5) The train shall have no more than one pick-up and one set-out en route, except for the set-out of defective equipment pursuant to the requirements of this chapter.

(i) Cars added to the train en route shall be inspected pursuant to the requirements contained in paragraphs (a)(2) through (a)(5) of this section at the location where they are added to the train.

(ii) Cars set out of the train en route shall be inspected pursuant to the requirements contained in paragraph (a)(6) of this section at the location where they are set out of the train.

(6) At the point of destination, if less than 1,500 miles from the train's initial terminal, or at the point designated by the railroad pursuant to paragraph (a)(1)(iv) of this section, not to exceed 1,500 miles, an inbound inspection of the train shall be conducted by a qualified mechanical inspector to identify any defective, inoperative, or ineffective brakes or any other condition not in compliance with this part as well as any conditions not in compliance with part 215 and part 231 of this chapter.

(7) The railroad shall maintain a record of all defective, inoperative, or ineffective brakes as well as any conditions not in compliance with part 215 and part 231 of this chapter discovered at anytime during the movement of the train. These records shall be retained for a period of one year and made available to FRA upon request. The records required by this section may be maintained either electronically or in writing.

(8) In order for an extended haul train to proceed beyond 1,500 miles, the following requirements shall be met:

(i) If the train will move 1,000 miles or less from that location before receiving a Class IA brake test or reaching destination, a Class I brake test shall be conducted pursuant to § 232.205 to ensure 100 percent effective and operative brakes. The inbound inspection required by paragraph (a)(6) of this section may be used to meet this requirement provided it encompasses all the inspection elements contained in § 232.205.

(ii) If the train will move greater than 1,000 miles from that location without another brake inspection, the train must be identified as an extended haul train for that movement and shall meet all the requirements contained in paragraphs (a)(1) through (a)(7) of this section. Such trains shall receive a Class I brake test pursuant to § 232.205 by a qualified mechanical inspector to ensure 100 percent effective and operative brakes, a freight car inspection pursuant to part 215 of this chapter by an inspector designated under § 215.11 of this chapter, and all cars containing non-complying conditions under part 215 of this chapter shall either be repaired or removed from the train. The inbound inspection required by paragraph (a)(6) of this section may be used to meet these inspection requirements provided it encompasses all the inspection elements contained paragraphs (a)(2) through (a)(4) of this section.

(9) FRA inspectors shall have physical access to visually observe all brake and freight car inspections and tests required by this section.

(b) Failure to comply with any of the requirements contained in paragraph (a) of this section will be considered an improper movement of a designated priority train for which appropriate civil penalties may be assessed as outlined in Appendix A to this part. Furthermore, FRA's Associate Administrator for Safety may revoke a railroad's ability to designate any or all trains as extended haul trains for repeated or willful noncompliance with any of the requirements contained in this section. Such a determination will be made in writing and will state the basis for such action.

§ 232.215 -- Transfer train brake tests.

(a) A transfer train, as defined in § 232.5, shall receive a brake test performed by a qualified person, as defined in § 232.5, that includes the following:

(1) The air brake hoses shall be coupled between all freight cars;

(2) After the brake system is charged to not less than 60 psi as indicated by an accurate gauge or end-of-train device at the rear of the train, a 15-psi service brake pipe reduction shall be made; and

(3) An inspection shall be made to determine that the brakes on each car apply and remain applied until the release is initiated by the controlling locomotive. A car found with brakes that fail to apply or remain applied may be retested and remain in the train if the retest is conducted as prescribed in § 232.205(b)(4); otherwise, the defective equipment may only be moved pursuant to the provisions contained in § 232.15, if applicable.

(b) Cars added to transfer trains en route shall be inspected pursuant to the requirements contained in paragraph (a) of this section at the location where the cars are added to the train.

(c) If a train's movement will exceed 20 miles or is not a transfer train as defined in § 232.5, the train shall receive a Class I brake test in accordance with § 232.205 prior to departure.

§ 232.217 -- Train brake tests conducted using yard air.

(a) When a train air brake system is tested from a yard air source, an engineer's brake valve or a suitable test device shall be used to provide any increase or reduction of brake pipe air pressure at the same, or slower, rate as an engineer's brake valve.

(b) The yard air test device must be connected to the end of the train or block of cars that will be nearest to the controlling locomotive. However, if the railroad adopts and complies with written procedures to ensure that potential overcharge conditions to the train brake system are avoided, the yard air test device may be connected to other than the end nearest to the controlling locomotive.

(c) Except as provided in this section, when a yard air is used the train air brake system must be charged and tested as prescribed by § 232.205(b) and when practicable should be kept charged until road motive power is coupled to train, after which, a Class III brake test shall be performed as prescribed by § 232.211.

(1) If the cars are off air for more than four hours, these cars shall be retested in accordance with § 232.205(b) through (e).

(2) At a minimum, yard air pressure shall be 60 psi at the end of the consist or block of cars opposite from the yard test device and shall be within 15 psi of the regulator valve setting on yard test device.

(3) If the air pressure of the yard test device is less than the pressure at which the train will be operated, then a leakage or air flow test shall be conducted at the operating pressure of the train when the locomotives are attached in accordance with § 232.205(b)(1).

(d) Mechanical yard air test devices and gauges shall be calibrated every 92 days. Electronic yard test devices and gauges shall be calibrated annually. Mechanical and electronic yard air test devices and gauges shall be calibrated so that they are accurate to within #3 psi.

(e) If used to test a train, a yard air test device and any yard air test equipment shall be accurate and function as intended.

§ 232.219 -- Double heading and helper service.

(a) When more than one locomotive is attached to a train, the engineer of the controlling locomotive shall operate the brakes. In case it becomes necessary for the controlling locomotive to give up control of the train short of the destination of the train, a Class III brake test pursuant to § 232.211 shall be made to ensure that the brakes are operative from the automatic brake valve of the locomotive taking control of the train.

(b) When one or more helper locomotives are placed in a train, a visual inspection shall be made of each helper locomotive brake system to determine that the brake system operates as intended in response to a 20-psi reduction initiated from the controlling locomotive of the train. A helper locomotive with inoperative or ineffective brakes shall be repaired prior to use or removed from the train.

(c) If a helper locomotive utilizes a Helper Link device or a similar technology, the locomotive and device shall be equipped, designed, and maintained as follows:

- (1) The locomotive engineer shall be notified by a distinctive alarm of any loss of communication between the device and the two-way end-of-train device of more than 25 seconds;
- (2) A method to reset the device shall be provided in the cab of the helper locomotive that can be operated from the engineer's usual position during operation of the locomotive;
- (3) The device shall be tested for accuracy and calibrated if necessary according to the manufacturer's specifications and procedures every 365 days. This shall include testing radio frequencies and modulation of the device. A legible record of the date and location of the last test or calibration shall be maintained with the device.

Subpart D--Periodic Maintenance and Testing Requirements

§ 232.301 -- Scope.

This subpart contains the periodic brake system maintenance and testing requirements for equipment used in freight and other non-passenger trains.

§ 232.303 -- General requirements.

- (a) **Definitions.** The following definitions are intended solely for the purpose of identifying what constitutes a shop or repair track under this subpart.
 - (1) **Shop or repair track** means:
 - (i) A fixed repair facility or track designated by the railroad as a shop or repair track;
 - (ii) A fixed repair facility or track which is regularly and consistently used to perform major repairs;
 - (iii) track which is used at a location to regularly and consistently perform both minor and major repairs where the railroad has not designated a certain portion of that trackage as a repair track;
 - (iv) A track designated or used by a railroad to regularly and consistently perform minor repairs during the period when major repairs are being conducted on such a track; and
 - (v) The facilities and tracks identified in paragraphs (a)(1)(i) through (a)(1)(iv) shall be considered shop or repair tracks regardless of whether a mobile repair vehicle is used to conduct the repairs.
 - (2) **Major repair** means a repair of such a nature that it would normally require greater than four man-hours to accomplish or would involve the use of specialized tools and equipment. Major repairs would include such things as coupler replacement, draft gear repair, and repairs requiring the use of an air jack.
 - (3) **Minor repair** means repairs, other than major repairs, that can be accomplished in a short period of time with limited tools and equipment. Minor repairs would include such things as safety appliance straightening, handhold replacement, air hose replacement, lading adjustment, and coupler knuckle or knuckle pin replacement.
- (b) A car on a shop or repair track shall be tested to determine that the air brakes apply and remain applied until a release is initiated.

(c) A car on a shop or repair track shall have its piston travel inspected. For cars equipped with 8 1/2-inch or 10-inch diameter brake cylinders, piston travel shall be within 7 to 9 inches. If piston travel is found to be less than 7 inches or more than 9 inches, it must be adjusted to nominally 7 1/2 inches. For cars not equipped with 8 1/2-inch or 10-inch diameter brake cylinders, piston travel shall be within the piston travel stenciled or marked on the car or badge plate.

(d) Before a car is released from a shop or repair track, a qualified person shall ensure:

- (1) The brake pipe is securely clamped;
- (2) Angle cocks are properly located with suitable clearance and properly positioned to allow maximum air flow;
- (3) Valves, reservoirs, and cylinders are tight on supports and the supports are securely attached to the car;
- (4) Hand brakes are tested, inspected, and operate as intended; and
- (5) Brake indicators, on cars so equipped, are accurate and operate as intended.

(e) If the repair track air brake test or single car test required in §§ 232.305 and 232.307 cannot be conducted at the point where repairs can be made to the car, the car may be moved after the repairs are effectuated to the next forward location where the test can be performed. Inability to perform a repair track air brake test or single car test does not constitute an inability to effectuate the necessary repairs.

(1) If it is necessary to move a car from the location where the repairs are performed in order to perform a repair track air brake test or a single car test required by this part, a tag or card shall be placed on both sides of the equipment, or an automated tracking system approved for use by FRA, with the following information about the equipment:

- (i) The reporting mark and car number;
- (ii) The name of the inspecting railroad;
- (iii) The location where repairs were performed and date;
- (iv) Indication whether the car requires a repair track brake test or single car test;
- (v) The location where the appropriate test is to be performed; and
- (vi) The name, signature, if possible, and job title of the qualified person approving the move.

(2) The tag or card required by paragraph (e)(1) of this section shall remain affixed to the equipment until the necessary test has been performed.

(3) An electronic or written record or copy of each tag or card attached to or removed from a car or locomotive shall be retained for 90 days and, upon request, shall be made available within 15 calendar days for inspection by FRA or State inspectors.

(4) The record or copy of each tag or card removed from a car or locomotive shall contain the date, location, and the signature or identification of the qualified person removing it from the piece of equipment.

(f) The location and date of the last repair track brake test or single car test required by §§ 232.305 and 232.307 of this part shall be clearly stenciled, marked, or labeled in two-inch high letters or numerals on the side of the equipment. Alternatively, the railroad industry may use an electronic or automated tracking system to track the required information and the performance of the tests required by §§ 232.305 and 232.307 of this part.

(1) Electronic or automated tracking systems used to meet the requirement contained in this paragraph shall be capable of being reviewed and monitored by FRA at any time to ensure the integrity of the system. FRA's Associate Administrator for Safety may prohibit or revoke the railroad industry's authority to utilize an electronic or automated tracking system in lieu of stenciling or marking if FRA finds that the electronic or automated tracking system is not properly secure, is inaccessible to FRA or railroad employees, or fails to adequately track and monitor the equipment. FRA will record such a determination in writing, include a statement of the basis for such action, and will provide a copy of the document to the affected railroads.

(2) [Reserved.]

§ 232.305 -- Repair track air brake tests.

(a) Repair track brake tests shall be performed by a qualified person in accordance with either Section 3.0, "Procedures for Repair Track Test for Air Brake Equipment," of the Association of American Railroads Standard S-486-99, "Code of Air Brake System Tests for Freight Equipment," contained in the *AAR Manual of Standards and Recommended Practices, Section E* (April 1, 1999) or an alternative procedure approved by FRA pursuant to § 232.17. The incorporation by reference of this AAR standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated document from the Association of American Railroads, 425 Third St., S.W., Washington, DC 20024. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Ave., S.E., Washington, D.C. 20590, or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

(b) Except as provided in § 232.303(e), a railroad shall perform a repair track brake test on a car when:

(1) A car has its brakes cut-out or inoperative when removed from a train or when placed on a shop or repair track;

(2) A car is on a repair or shop track, as defined in § 232.303(a), for any reason and has not received a repair track brake test within the previous 12 month period;

(3) A car is found with missing or incomplete repair track brake test information;

(4) One or more of the following conventional air brake equipment items is removed, repaired, or replaced:

(i) Brake reservoir;

(ii) Control valve mounting gasket; or

(iii) Pipe bracket stud.

(5) A car is found with one or more of the following wheel defects:

(i) Built-up tread, unless known to be caused by hand brake left applied;

(ii) Slid flat wheel, unless known to be caused by hand brake left applied; or

(iii) Thermal cracks.

(c) Except as provided in paragraph (d) of this section, each car shall receive a repair track brake test no less than every 5 years.

(d) Each car shall receive a repair track brake test no less than 8 years from the date the car was built or rebuilt.

§ 232.307 -- Single car tests.

(a) Single car tests shall be performed by a qualified person in accordance with either Section 4.0, "Tests-Standard Single Capacity Freight Brake Equipment (Single Car Test)," of the Association of American Railroads Standard S-486-99, "Code of Air Brake System Tests for Freight Equipment," contained in the AAR *Manual of Standards and Recommended Practices, Section E* (April 1, 1999) or an alternative procedure approved by FRA pursuant to § 232.17. The incorporation by reference of this AAR standard was approved by the Director of the Federal Register in accordance with 5 U.S.C. § 552(a) and 1 C.F.R. part 51. You may obtain a copy of the incorporated document from the Association of American Railroads, 425 Third St., S.W., Washington, DC 20024. You may inspect a copy of the document at the Federal Railroad Administration, Docket Clerk, 1200 New Jersey Ave., S.E., Washington, D.C. 20590, or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

(b) Except as provided in § 232.303(e), a railroad shall perform a single car test on a car when one or more of the following conventional air brake equipment items is removed, repaired or replaced:

- (1) Service portion;
- (2) Emergency portion; or
- (3) Pipe bracket.

(c) A single car test pursuant to paragraph (a) of this section shall be performed on a new or rebuilt car prior to placing or using the car in revenue service.

§ 232.309 -- Repair track air brake test and single car test equipment and devices.

(a) Test equipment and devices used to perform repair track air brake tests or single car tests shall be tested for correct operation at least once each calendar day of use.

(b) Except for single car test devices, mechanical test devices such as pressure gauges, flow meters, orifices, etc. shall be calibrated once every 92 days.

(c) Electronic test devices shall be calibrated at least once every 365 days.

(d) Test equipment and single car test devices placed in service shall be tagged or labeled with the date its next calibration is due.

(e) Each single car test device shall be tested not less frequently than every 92 days after being placed in service and may not continue in service if more than one year has passed since its last 92-day test.

(f) Each single car test device shall be disassembled and cleaned not less frequently than every 365 days after being placed in service.

Subpart E--End-of-Train Devices

§ 232.401 -- Scope.

This subpart contains the requirements related to the performance, operation, and testing of end-of-train devices. Unless expressly excepted in this subpart, the requirements of this subpart apply to all trains operating on track which is part of the general railroad system of transportation.

§ 232.403 -- Design standards for one-way end-of-train devices.

- (a) **General.** A one-way end-of-train device shall be comprised of a rear-of-train unit (rear unit) located on the last car of a train and a front-of-train unit (front unit) located in the cab of the locomotive controlling the train.
- (b) **Rear unit.** The rear unit shall be capable of determining the brake pipe pressure on the rear car and transmitting that information to the front unit for display to the locomotive engineer. The rear unit shall be-
- (1) Capable of measuring the brake pipe pressure on the rear car with an accuracy of #3 pounds per square inch (psig) and brake pipe pressure variations of #1 psig;
 - (2) Equipped with a "bleeder valve" that permits the release of any air under pressure from the rear of train unit or the associated air hoses prior to detaching the rear unit from the brake pipe;
 - (3) Designed so that an internal failure will not cause an undesired emergency brake application;
 - (4) Equipped with either an air gauge or a means of visually displaying the rear unit's brake pipe pressure measurement; and
 - (5) Equipped with a pressure relief safety valve to prevent explosion from a high pressure air leak inside the rear unit.
- (c) **Reporting rate.** Multiple data transmissions from the rear unit shall occur immediately after a variation in the rear car brake pipe pressure of #2 psig and at intervals of not greater than 70 seconds when the variation in the rear car brake pipe pressure over the 70-second interval is less than 2 psig.
- (d) **Operating environment.** The rear unit shall be designed to meet the performance requirements of paragraphs (b) and (c) of this section under the following environmental conditions:
- (1) At temperatures from 40 [degrees] C to 60 [degrees] C;
 - (2) At a relative humidity of 95% non-condensing at 50 [degrees] C;
 - (3) At altitudes of zero to 12,000 feet mean sea level;
 - (4) During vertical and lateral vibrations of 1 to 15 Hz., with 0.5 g. peak to peak, and 15 to 500 Hz., with 5 g. peak to peak;
 - (5) During the longitudinal vibrations of 1 to 15 Hz., with 3 g. peak to peak, and 15 to 500 Hz., with 5 g. peak to peak; and
 - (6) During a shock of 10 g. peak for 0.1 second in any axis.

(e) **Unique code.** Each rear unit shall have a unique and permanent identification code that is transmitted along with the pressure message to the front-of-train unit. A code obtained from the Association of American Railroads, 425 3rd Street, SW., Washington, DC 20036 shall be deemed to be a unique code for purposes of this section. A unique code also may be obtained from the Office of Safety Assurance and Compliance (RRS-10), Federal Railroad Administration, Washington, DC 20590.

(f) **Front unit.**

(1) The front unit shall be designed to receive data messages from the rear unit and shall be capable of displaying the rear car brake pipe pressure in increments not to exceed one pound.

(2) The display shall be clearly visible and legible in daylight and darkness from the engineer's normal operating position.

(3) The front device shall have a means for entry of the unique identification code of the rear unit being used. The front unit shall be designed so that it will display a message only from the rear unit with the same code as entered into the front unit.

(4) The front unit shall be designed to meet the requirements of paragraphs (d)(2), (3), (4), and (5) of this section. It shall also be designed to meet the performance requirements in this paragraph under the following environmental conditions:

(i) At temperatures from 0 [degrees] C to 60 [degrees] C;

(ii) During a vertical or lateral shock of 2 g. peak for 0.1 second; and

(iii) During a longitudinal shock of 5 g. peak for 0.1 second.

(g) **Radio equipment.**

(1) The radio transmitter in the rear unit and the radio receiver in the front unit shall comply with the applicable regulatory requirements of the Federal Communications Commission (FCC) and use of a transmission format acceptable to the FCC.

(2) If power is supplied by one or more batteries, the operating life shall be a minimum of 36 hours at 0 [degrees] C.

§ 232.405 -- Design and performance standards for two-way end-of-train devices.

Two-way end-of-train devices shall be designed and perform with the features applicable to one-way end-of-train devices described in § 232.403, except those included in § 232.403(b)(3). In addition, a two-way end-of-train device shall be designed and perform with the following features:

(a) An emergency brake application command from the front unit of the device shall activate the emergency air valve at the rear of the train within one second.

(b) The rear unit of the device shall send an acknowledgment message to the front unit immediately upon receipt of an emergency brake application command. The front unit shall listen for this acknowledgment and repeat the brake application command if the acknowledgment is not correctly received.

(c) The rear unit, on receipt of a properly coded command, shall open a valve in the brake line and hold it open for a minimum of 15 seconds. This opening of the valve shall cause the brake line to vent to the exterior.

(d) The valve opening shall have a minimum diameter of 3/4 inch and the internal diameter of the hose shall be 5/8 inch to effect an emergency brake application.

(e) The front unit shall have a manually operated switch which, when activated, shall initiate an emergency brake transmission command to the rear unit or the locomotive shall be equipped with a manually operated switch on the engineer control stand designed to perform the equivalent function. The switch shall be labeled "Emergency" and shall be protected so that there will exist no possibility of accidental activation.

(f) All locomotives ordered on or after August 1, 2001, or placed in service for the first time on or after August 1, 2003, shall be designed to automatically activate the two-way end-of-train device to effectuate an emergency brake application whenever it becomes necessary for the locomotive engineer to place the train air brakes in emergency.

(g) The availability of the front-to-rear communications link shall be checked automatically at least every 10 minutes.

(h) Means shall be provided to confirm the availability and proper functioning of the emergency valve.

(i) Means shall be provided to arm the front and rear units to ensure the rear unit responds to an emergency command only from a properly associated front unit.

§ 232.407 -- Operations requiring use of two-way end-of-train devices; prohibition on purchase of nonconforming devices.

(a) **Definitions.** The following definitions are intended solely for the purpose of identifying those operations subject to the requirements for the use of two-way end-of-train devices.

(1) **Heavy grade** means:

(i) For a train operating with 4,000 trailing tons or less, a section of track with an average grade of two percent or greater over a distance of two continuous miles; and

(ii) For a train operating with greater than 4,000 trailing tons, a section of track with an average grade of one percent or greater over a distance of three continuous miles.

(2) **Train** means one or more locomotives coupled with one or more rail cars, except during switching operations or where the operation is that of classifying cars within a railroad yard for the purpose of making or breaking up trains.

(3) **Local train** means a train assigned to perform switching en route which operates with 4,000 trailing tons or less and travels between a point of origin and a point of final destination, for a distance that is no greater than that which can normally be operated by a single crew in a single tour of duty.

(4) **Work train** means a non-revenue service train of 4,000 trailing tons or less used for the administration and upkeep service of the railroad.

(5) **Trailing tons** means the sum of the gross weights-expressed in tons-of the cars and the locomotives in a train that are not providing propelling power to the train.

(b) **General.** All trains not specifically excepted in paragraph (e) of this section shall be equipped with and shall use either a two-way end-of-train device meeting the design and performance requirements contained in § 232.405 or a device using an alternative technology to perform the same function.

(c) **New devices.** Each newly manufactured end-of-train device purchased by a railroad after January 2, 1998 shall be a two-way end-of-train device meeting the design and performance requirements contained in § 232.405 or a device using an alternative technology to perform the same function.

(d) **Grandfathering.** Each two-way end-of-train device purchased by any person prior to July 1, 1997 shall be deemed to meet the design and performance requirements contained in § 232.405.

(e) **Exceptions.** The following types of trains are excepted from the requirement for the use of a two-way end-of-train device:

(1) Trains with a locomotive or locomotive consist located at the rear of the train that is capable of making an emergency brake application, through a command effected by telemetry or by a crew member in radio contact with the controlling locomotive;

(2) Trains operating in the push mode with the ability to effectuate an emergency brake application from the rear of the train;

(3) Trains with an operational caboose placed at the rear of the train, carrying one or more crew members in radio contact with the controlling locomotive, that is equipped with an emergency brake valve;

(4) Trains operating with a secondary, fully independent braking system capable of safely stopping the train in the event of failure of the primary system;

(5) Trains that do not operate over heavy grades and do not exceed 30 mph;

(6) Local trains, as defined in paragraph (a)(3) of this section, that do not operate over heavy grades;

(7) Work trains, as defined in paragraph (a)(4) of this section, that do not operate over heavy grades;

(8) Trains that operate exclusively on track that is not part of the general railroad system;

(9) Trains that must be divided into two sections in order to traverse a grade (*e.g.*, doubling a hill). This exception applies only to the extent necessary to traverse the grade and only while the train is divided in two for such purpose;

(10) Passenger trains in which all of the cars in the train are equipped with an emergency brake valve readily accessible to a crew member;

(11) Passenger trains that have a car at the rear of the train, readily accessible to one or more crew members in radio contact with the engineer, that is equipped with an emergency brake valve readily accessible to such a crew member; and

(12) Passenger trains that have twenty-four (24) or fewer cars (not including locomotives) in the consist and that are equipped and operated in accordance with the following train-configuration and operating requirements:

(i) If the total number of cars in a passenger train consist is twelve (12) or fewer, a car located no less than halfway through the consist (counting from the first car in the train) must be equipped with an emergency brake valve readily accessible to a crew member;

(ii) If the total number of cars in a passenger train consist is thirteen (13) to twenty-four (24), a car located no less than two-thirds ($2/3$) of the way through the consist (counting from the first car in the train) must be equipped with an emergency brake valve readily accessible to a crew member;

(iii) Prior to descending a section of track with an average grade of two percent or greater over a distance of two continuous miles, the engineer of the train shall communicate with the conductor, to ensure that a member of the crew with a working two-way radio is stationed in the car with the rearmost readily accessible emergency brake valve on the train when the train begins its descent; and

(iv) While the train is descending a section of track with an average grade of two percent or greater over a distance of two continuous miles, a member of the train crew shall occupy the car that contains the rearmost readily accessible emergency brake valve on the train and be in constant radio communication with the locomotive engineer. The crew member shall remain in this car until the train has completely traversed the heavy grade.

(f) ***Specific requirements for use.*** If a train is required to use a two-way end-of-train device:

(1) That device shall be armed and operable from the time the train departs from the point where the device is installed until the train reaches its destination. If a loss of communication occurs at the location where the device is installed, the train may depart the location at restricted speed for a distance of no more than one mile in order to establish communication. When communication is established, the quantitative values of the head and rear unit shall be compared pursuant to § 232.409(b) and the device tested pursuant to § 232.409(c), unless the test was performed prior to installation.

(2) The rear unit batteries shall be sufficiently charged at the initial terminal or other point where the device is installed and throughout the train's trip to ensure that the end-of-train device will remain operative until the train reaches its destination.

(3) The device shall be activated to effectuate an emergency brake application either by using the manual toggle switch or through automatic activation, whenever it becomes necessary for the locomotive engineer to initiate an emergency application of the air brakes using either the automatic brake valve or the conductor's emergency brake valve.

(g) ***En route failure of device on a freight or other non-passenger train.*** Except on passenger trains required to be equipped with a two-way end-of-train device (which are provided

for in paragraph (h) of this section), en route failures of a two-way end-of-train device shall be handled in accordance with this paragraph. If a two-way end-of-train device or equivalent device fails en route (i.e., is unable to initiate an emergency brake application from the rear of the train due to certain losses of communication (front to rear) or due to other reasons, the speed of the train on which it is installed shall be limited to 30 mph until the ability of the device to initiate an emergency brake application from the rear of the train is restored. This limitation shall apply to a train using a device that uses an alternative technology to serve the purpose of a two-way end-of-train device. With regard to two-way end-of-train devices, a loss of communication between the front and rear units is an en route failure only if the loss of communication is for a period greater than 16 minutes and 30 seconds. Based on the existing design of the devices, the display to an engineer of a message that there is a communication failure indicates that communication has been lost for 16 minutes and 30 seconds or more.

(1) If a two-way end-of-train device fails en route, the train on which it is installed, in addition to observing the 30-mph speed limitation, shall not operate over a section of track with an average grade of two percent or greater for a distance of two continuous miles, unless one of the following alternative measures is provided:

(i) Use of an occupied helper locomotive at the end of the train. This alternative may be used only if the following requirements are met:

(A) The helper locomotive engineer shall initiate and maintain two-way voice radio communication with the engineer on the head end of the train; this contact shall be verified just prior to passing the crest of the grade.

(B) If there is a loss of communication prior to passing the crest of the grade, the helper locomotive engineer and the head-end engineer shall act immediately to stop the train until voice communication is resumed, in accordance with the railroad's operating rules.

(C) If there is a loss of communication once the descent has begun, the helper locomotive engineer and the head-end engineer shall act to stop the train, in accordance with the railroad's operating rules, if the train has reached a predetermined rate of speed that indicates the need for emergency braking.

(D) The brake pipe of the helper locomotive shall be connected and cut into the train line and tested to ensure operation.

(ii) Use of an occupied caboose at the end of the train with a tested, functioning brake valve capable of initiating an emergency brake application from the caboose. This alternative may be used only if the train service employee in the caboose and the engineer on the head end of the train establish and maintain two-way voice radio communication and respond appropriately to the loss of such communication in the same manner as prescribed for helper locomotives in paragraph (g)(1)(i) of this section.

(iii) Use of a radio-controlled locomotive at the rear of the train under continuous control of the engineer in the head end by means of telemetry, but only if such radio-controlled locomotive is capable of initiating an emergency application on command from the lead (controlling) locomotive.

(2) [Reserved.]

(h) *En route failure of device on a passenger train.*

(1) A passenger train required to be equipped with a two-way end-of-train device that develops an en route failure of the device (as explained in paragraph (g) of this section) shall not operate over a section of track with an average grade of two percent or greater over a distance of two continuous miles until an operable two-way end-of-train device is installed on the train or an alternative method of initiating an emergency brake application from the rear of the train is achieved.

(2) Except as provided in paragraph (h)(1) of this section, a passenger train required to be equipped with a two-way end-of-train device that develops an en route failure of the device (as explained in paragraph (g) of this section) shall be operated in accordance with the following:

(i) A member of the train crew shall be immediately positioned in the car which contains the rearmost readily accessible emergency brake valve on the train and shall be equipped with an operable two-way radio that communicates with the locomotive engineer; and

(ii) The locomotive engineer shall periodically make running tests of the train's air brakes until the failure is corrected; and

(3) Each en route failure shall be corrected at the next location where the necessary repairs can be conducted or at the next location where a required brake test is to be performed, whichever is reached first.

§ 232.409 -- Inspection and testing of end-of-train devices.

(a) After each installation of either the front or rear unit of an end-of-train device, or both, on a train and before the train departs, the railroad shall determine that the identification code entered into the front unit is identical to the unique identification code on the rear unit.

(b) After each installation of either the front or rear unit of an end-of-train device, or both, on a train and before the train departs, the functional capability of the device shall be determined, after charging the train, by comparing the quantitative value of the air pressure displayed on the front unit with the quantitative value of the air pressure displayed on the rear unit or on a properly calibrated air gauge. The end-of-train device shall not be used if the difference between the two readings exceeds three pounds per square inch.

(c) A two-way end-of-train device shall be tested at the initial terminal or other point of installation to ensure that the device is capable of initiating an emergency power brake application from the rear of the train. If this test is conducted by a person other than a member of the train crew, the locomotive engineer shall be notified that a successful test was performed. The notification required by this paragraph may be provided to the locomotive engineer by any means determined appropriate by the railroad; however, a written or electronic record of the notification shall be maintained in the cab of the controlling locomotive and shall include the date and time of the test, the location where the test was performed, and the name of person conducting the test.

(d) The telemetry equipment shall be tested for accuracy and calibrated if necessary according to the manufacturer's specifications and procedures at least every 365 days. This shall include testing radio frequencies and modulation of the device. The date and location of the last calibration or test as well as the name of the person performing the calibration or test shall be legibly displayed on a weather-resistant sticker or other marking device affixed to the outside of

both the front unit and the rear unit; however, if the front unit is an integral part of the locomotive or is inaccessible, then the information may be recorded on Form FRA F6180-49A instead, provided the serial number of the unit is recorded.

Subpart F--Introduction of New Brake System Technology

§ 232.501 -- Scope.

This subpart contains general requirements for introducing new brake system technologies. This subpart is intended to facilitate the introduction of new complete brake system technologies or major upgrades to existing systems which the current regulations do not adequately address (i.e., electronic brake systems). This subpart is not intended for use in the introduction of a new brake component or material.

§ 232.503 -- Process to introduce new brake system technology.

- (a) Pursuant to the procedures contained in § 232.17, each railroad shall obtain special approval from the FRA Associate Administrator for Safety of a pre-revenue service acceptance testing plan, developed pursuant to § 232.505, for the new brake system technology, prior to implementing the plan.
- (b) Each railroad shall complete a pre-revenue service demonstration of the new brake system technology in accordance with the approved plan, shall fulfill all of the other requirements prescribed in § 232.505, and shall obtain special approval from the FRA Associate Administrator for Safety under the procedures of § 232.17 prior to using such brake system technology in revenue service.

§ 232.505 -- Pre-revenue service acceptance testing plan.

- (a) **General; submission of plan.** Except as provided in paragraph (f) of this section, before using a new brake system technology for the first time on its system the operating railroad or railroads shall submit a pre-revenue service acceptance testing plan containing the information required by paragraph (e) of this section and obtain the approval of the FRA Associate Administrator for Safety, under the procedures specified in § 232.17[*special approval procedures*].
- (b) **Compliance with plan.** After receiving FRA approval of the pre-revenue service testing plan and before introducing the new brake system technology into revenue service, the operating railroad or railroads shall:
 - (1) Adopt and comply with such FRA-approved plan, including fully executing the tests required by the plan;
 - (2) Report to the FRA Associate Administrator for Safety the results of the pre-revenue service acceptance tests;
 - (3) Correct any safety deficiencies identified by FRA in the design of the equipment or in the inspection, testing, and maintenance procedures or, if safety deficiencies cannot be corrected by design or procedural changes, agree to comply with any operational limitations that may be

imposed by the Associate Administrator for Safety on the revenue service operation of the equipment; and

- (4) Obtain FRA approval to place the new brake system technology in revenue service.
- (c) **Compliance with limitations.** The operating railroad shall comply with each operational limitation, if any, imposed by the Associate Administrator for Safety.
- (d) **Availability of plan.** The plan shall be made available to FRA for inspection and copying upon request.
- (e) **Elements of plan.** The plan shall include all of the following elements:
- (1) An identification of each waiver, if any, of FRA or other Federal safety regulations required for the tests or for revenue service operation of the equipment.
 - (2) A clear statement of the test objectives. One of the principal test objectives shall be to demonstrate that the equipment meets the safety design and performance requirements specified in this part when operated in the environment in which it is to be used.
 - (3) A planned schedule for conducting the tests.
 - (4) A description of the railroad property or facilities to be used to conduct the tests.
 - (5) A detailed description of how the tests are to be conducted. This description shall include:
 - (i) An identification of the equipment to be tested;
 - (ii) The method by which the equipment is to be tested;
 - (iii) The criteria to be used to evaluate the equipment's performance; and
 - (iv) The means by which the test results are to be reported to FRA.
 - (6) A description of any special instrumentation to be used during the tests.
 - (7) A description of the information or data to be obtained.
 - (8) A description of how the information or data obtained is to be analyzed or used.
 - (9) A description of any criteria to be used as safety limits during the testing.
 - (10) A description of the criteria to be used to measure or determine the success or failure of the tests. If acceptance is to be based on extrapolation of less than full level testing results, the analysis to be done to justify the validity of the extrapolation shall be described.
 - (11) A description of any special safety precautions to be observed during the testing.
 - (12) A written set of standard operating procedures to be used to ensure that the testing is done safely.
 - (13) Quality control procedures to ensure that the inspection, testing, and maintenance procedures are followed.
 - (14) Criteria to be used for the revenue service operation of the equipment.
 - (15) A description of all testing of the equipment that has previously been performed, if any.
- (f) **Exception.** For brake system technologies that have previously been used in revenue service in the United States, the railroad shall test the equipment on its system, prior to placing it in revenue service, to ensure the compatibility of the equipment with the operating system (track, signals, etc.) of the railroad. A description of such testing shall be retained by the railroad and made available to FRA for inspection and copying upon request.

§232.601 Scope.

This subpart contains specific requirements(and exceptions) applicable to freight trains and cars equipped with ECP brake systems.

§232.602 Applicability.

This subpart applies to all freight cars or trains equipped with an ECP brake system.

§232.603 Design, interoperability, and configuration management requirements.

A freight train or car equipped with an ECP brake system shall comply with the AAR's standards for ECP brakes contained in its Manual of Standards and Recommended Practices.

§232.605 Training requirements.

Each railroad that operates a train or car with ECP brakes shall adopt and comply with a training, qualification, and designation program for inspection, testing, and maintenance of ECP brake systems. The training shall comply with §§232.203(a), (b), (e), and (f).

§232.607 Inspection and testing requirements.

At the initial terminal, the train shall receive a Class I brake test, and a pre-departure inspection under part 215.

Except for a unit train or a cycle train, no train shall operate more than 3,500 miles without the Class I brake test and pre-departure inspection.

A unit or cycle train shall receive the Class I brake test and pre-departure inspection every 3,500 miles.

§232.609 Handling of defective equipment with ECP brake systems.

95% of the cars in the train shall have effective and operative brakes prior to departure from the initial terminal or wherever a Class I test is required.

If a car with the ECP brake is defective, it cannot leave the initial terminal unless the railroad cannot conduct the repairs at that location, or is being hauled only for the purpose of repair.

§232.611 Periodic maintenance.

A car with an ECP brake system shall be inspected and repaired before being released from a shop or repair track.

§232.613 End-of-train devices.

An ECP-EOT device shall, at a minimum, serve as the final node on the ECP brake circuit, provide a cable terminal circuit, and monitor, confirm, and report train, brake pipe, and

train line cable continuity, cable voltage, brake pipe pressure, and the status of the ECP device battery charge. The device shall transmit a status message at least once per second, contain a means of communicating with the HEU, and be equipped with a brake pipe pressure transducer and a battery that charges from the train line cable.

66 Fed. Reg. 4193, Jan. 17, 2001, as amended at 67 Fed. Reg. 17581, Apr. 10, 2002; 73 Fed. Reg. 61553, Oct. 16, 2008; 74 Fed. Reg. 25174, May 27, 2009; 80 Fed. Reg. 47834, Aug. 6, 2015

TWO WAY END-OF-TRAIN TELEMETRY DEVICES⁷²

In general, the regulations require trains exceeding 30 miles per hour which operate on heavy grades to be equipped with such devices. There are a number of exceptions, and the definition of heavy grade encompasses two different sets of conditions as follows:

For a train operating with 4,000 trailing tons or less, a section of track with an average grade of 2% or greater over a distance of 2 continuous miles; and for a train operating with greater than 4,000 trailing tons, a section of track with an average grade of 1% or greater over a distance of 3 continuous miles.

The following types of trains are exempted from the requirement for having a two-way EOT:

1. Trains with a locomotive capable of making an emergency brake application located in the rear third of the train length.
2. Trains operating in the push mode with the ability to make an emergency brake application from the rear.
3. Trains with an operational and occupied caboose equipped with an emergency brake valve.
4. Trains operating with a secondary fully independent braking system capable of stopping the train in the event of failure of the primary system.
5. Trains that do not operate over heavy grades and do not exceed 30 miles per hour.
6. Local trains that do not operate over heavy grades. A local train is defined as one assigned to perform switching en route which operates with 4,000 trailing tons or less and travels a distance that is no greater than that which can normally be operated by a single crew in a single tour of duty.
7. Work trains that do not operate over heavy grades. A work train is defined as a non-revenue service train of 4,000 trailing tons or less used for the administration and the upkeep

⁷² The full text of these rules are contained in the power brake regulations, reprinted in this booklet.

service of the railroad.

8. Trains that are not part of the general railroad system.
9. Passenger trains equipped with emergency brake valves on all cars and which are readily accessible to a crew member.
10. Passenger trains that operate with a car placed at the rear of the train that is equipped with an emergency brake valve readily accessible to a crew member in radio communication with the engineer.
11. Passenger trains with 24 or fewer cars that do not have a rear car with a readily accessible emergency brake valve and operated in accordance with the following:
 - (a) If the total number of cars in the passenger train is 12 or less, a car no less than halfway in the train must be equipped with an emergency brake valve readily accessible to a crew member;
 - (b) If the total number of cars are between 13 and 24, and located 2/3 of the way through the train shall be equipped as in (a);
 - (c) Before descending an average of 2% grade over a 2 mile distance, the engineer shall communicate with the conductor to ensure that a working two-way radio is located in the car with the rearmost readily accessible emergency brake valve; and
 - (d) While the train is descending the 2% grade, a member of the train crew shall occupy the car with the rearmost accessible emergency brake valve.
 - (e) Trains that must be divided into two sections in order to traverse a grade. This applies only to the extent necessary to traverse the grade and only while the train is divided.

The two-way EOT rule sets out design and performance standards which must be met, including among other things that the rear unit on a command shall open a valve on the brake line and hold it open for a minimum of 15 seconds; and the front to rear communications link shall be checked automatically at least every 10 minutes.

The FRA has imposed a performance standard which requires that the rear unit batteries shall be sufficiently charged at the initial terminal or other point where the device is installed and throughout the train's trip to ensure that the EOT will remain operative until the train reaches its destination. Therefore, FRA will impose a strict liability standard regarding failures due to insufficiently charged batteries, and it will be a per se violation, if a device fails en route due to insufficiently charged batteries.

The device shall be armed and operable from the time the train departs from the point where the device is installed until the train reaches its destination. If there is a loss of communication at the location where the device is installed, the train may depart the location at restricted speed for a distance of no more than one mile to establish communication.

If the EOT device fails en route, the speed of the train shall be limited to 30 mile per hour. A loss of communication between the front and rear units will be considered an en route failure only if the loss of communication is for a period greater than 16 minutes and 30 seconds. In addition to the 30 miles per hour speed restriction, the train shall not operate over a section of track with an average grade of 2% or higher over a distance of 2 continuous miles unless (1) the train has an occupied helper locomotive in which there is two-way voice radio communication with the engineer on the head end of the train and they have the capability of stopping the train where there is a loss of communication; or (2) there is an occupied caboose at the end of the train with a functional brake valve capable of initiating an emergency brake application from the caboose; or (3) use of a radio-controlled locomotive in the rear third of the train under continuous control of the engineer in the head end.

If a passenger train develops an en route failure of the EOT device, it shall not operate over an area where a two way EOT device is required until an operable one is installed on the train or an alternative method of initiating an emergency brake application from the rear is achieved. In non heavy grade territory the train shall have a train crew member located in the rearmost car with a readily accessible emergency brake valve and shall be equipped with an operable two-way radio; and the engineer shall periodically make running brake tests until the EOT failure is corrected.

Each en route failure shall be corrected at the next location where repairs can be made or at the next location where a required brake test is to be performed, whichever is closer.

Regarding the inspection and testing of EOTs, before the train departs, the identification code of the front and rear unit shall be determined to be identical; the value displayed on the front unit shall be within 3 pounds per square inch of the reading on the rear; the EOT shall be tested at the initial terminal or other point of installation; and the equipment shall be calibrated for accuracy at least every 368 days.

The locomotive engineer shall be notified that a successful test of the device has occurred by any means determined appropriate by the railroad. However, a written or electronic record must be maintained in the cab of the controlling locomotive.

49 C.F.R. §§ 232.401-232.409

ACCIDENT REPORTS ACT AND ACCIDENT/INCIDENT REPORTING REGULATIONS

The FRA has published a guide dated May 23, 2011, entitled "FRA Guide for Preparing Accident/Incident Reports", which sets forth the requirements for filing of reports with the FRA. The general requirements are stated below.

Monthly Report by Carrier

Each railroad must file with the Secretary of Transportation a monthly report of all

collisions, derailments or other accidents or incidents resulting in injury to any person or in damage to equipment or roadbed. The report must state the nature and cause of all such accidents.

It should be pointed out that the requirement for reporting "accidents" is contained in the statute. However, in 1974 the FRA added the word "incident" which also is required to be reported under the regulations. The FRA stated that the term "incidents" is more descriptive of both accidents and occupational illnesses than the word "accident." Train accidents are events, with or without casualties, arising in connection with the operation of railroad on-track equipment where there is a collision, derailment, fire, explosion, or any event which results in more than \$9,800 in damages to railroad on-track equipment, signals, track, track structures and roadbed. Train incidents are events arising in connection with the movement of railroad on-track equipment which result in a reportable death, injury or illness, but do not result in damage to railroad, track or roadbed of more than \$9,800.

Primary groups of accidents/ incidents. For reporting purposes railroad accidents/incidents are divided into three groups. These include I. Highway-rail grade crossing; II .Rail equipment accidents/incidents which are collisions, derailments, fires, explosions, acts of God, and other events involving the operation of on track equipment(standing or moving) that result in damages greater than \$9,800; The third category was amended in 2005 and is defined as follows: *Group III—Death, injury, or occupational illness.* Each event or exposure arising from the operation of a railroad shall be reported on Form FRA F 6180.55a if the event or exposure is a discernable cause of one or more of the following outcomes, and this outcome is a new case or a significant aggravation of a pre-existing injury or illness: (1) Death to any person; (2) Injury to any person that results in medical treatment; (3) Injury to a railroad employee that results in: (i) A day away from work; (ii) Restricted work activity or job transfer; or (iii) Loss of consciousness; (4) Occupational illness of a railroad employee that results in any of the following: (i) A day away from work; (ii) Restricted work activity or job transfer; (iii) Loss of consciousness; or (iv) Medical treatment; (5) Significant injury to or significant illness of a railroad employee diagnosed by a physician or other licensed health care professional even if it does not result in death, a day away from work, restricted work activity or job transfer, medical treatment, or loss of consciousness; (6) Illness or injury that meets the application of any of the following specific case criteria: (i) Needle stick or sharps injury to a railroad employee; (ii) Medical removal of a railroad employee; (iii) Occupational hearing loss of a railroad employee; (iv) Occupational tuberculosis of a railroad employee; or (v) Musculoskeletal disorder of a railroad employee if this disorder is independently reportable under one or more of the general reporting criteria.

Determination of the Reporting Threshold

In calculating the accident reporting dollar threshold, the FRA will use the average hourly wage rate and the equipment values. The components will be Class 1 railroads average hourly earnings as reported to the Surface Transportation Board, and the Producer Price Index will be determined for railroad equipment. Such equipment cost data would be indexed to a base year of 1982.

In calculating the damages threshold as to whether an accident must be reported, the labor costs reported are only the direct labor costs to the railroad (i.e., hourly wages, transportation cost

and hotel expenses). The cost of fringe benefits and overhead are excluded when calculating these costs. For services performed by a contractor, the direct hourly labor cost is calculated by multiplying the contractor's total labor hours charged to the railroad by the hourly wage rate for the railroad worker in that particular craft.

Material costs are not to be based upon the cost of acquiring new material, if the railroad chooses to use refurbished or used material in its actual repairs.

The specific method for determining the threshold is set forth in **Appendix B**.

Human Error Caused Accident/Incident

The federal railroad safety laws permit an employee who has been cited by a railroad for primarily causing, or contributing to, an accident/incident to supplement an accident/incident report by stating his/her reasons why the event was caused. The railroad must notify the employee that the railroad has attributed human error by him/her as the cause of the accident/incident.

Forms

There are the following Forms which re required to be completed by the railroad, depending upon the type of accident/incident, injury or illness:

Form FRA F 6180.55 Railroad Injury and Illness
Form FRA F 6180.98 Railroad Employee Injury and/or Illness Record
Form FRA F 6180.97 Initial Rail Equipment Accident/Incident Record
Form FRA F 6180.55a Railroad Injury and Illness Summary(Continuation Sheet)
Form FRA F 6180.54 Rail Equipment Accident/Incident Report
Form FRA F 6180.81 Employee Human Factor Attachment
Form FRA F 6180.78 Notice to Railroad Employee Involved in Rail Equipment
Accident/Incident Attributed to Employee Human Error: Employee Statement
Supplementing Railroad Accident Report.

Report Not Evidence In Suits for Damages

No carrier's monthly accident report or any report of an investigation by the NTSB, or any part thereof, shall be admitted as evidence or shall be used for any other purpose in any suit for damages growing out of any matter mentioned therein.

Definitions:

Non-Train Incident: An event that results in a reportable casualty, but does not involve the movement of on-track equipment, nor cause reportable damage above the threshold established for train accidents.

Qualified Health Care Professional: Includes a professional operating within the scope of his or her license, registration or certification. (The railroad's employee assistance officer is

considered a qualified health care professional when he/she provides counseling to an employee who has been diagnosed as having a mental disorder that was caused or aggravated by an accident/incident.

Train Accident: Any collision, derailment, fire, explosion, act of God, or other event involving operation of railroad on-track equipment (standing or moving) that results in reportable damages greater than the current reporting threshold (currently \$9,800) to railroad on-track equipment, signals, track, track structures, and roadbed.

Train Incident: An event involving the movement of on-track equipment that results in a reportable casualty but does not cause reportable damage above the threshold established for train accidents.

Reportable injury: An injury reportable under part 225 of this chapter except for an injury that is classified as “covered data” under § 225.5 of this chapter (*i.e.*, employee injury/illness cases reportable exclusively because a physician or other licensed health care professional either made a one-time topical application of a prescription strength medication to the employee’s injury or made a written recommendation that the employee: Take one or more days away from work when the employee instead reports to work (or would have reported had he or she been scheduled) and takes no days away from work in connection with the injury or illness; work restricted duty for one or more days when the employee instead works unrestricted (or would have worked unrestricted had he or she been scheduled) and takes no other days of restricted work activity in connection with the injury or illness; or take over-the-counter medication at a dosage equal to or greater than the minimum prescription strength, whether or not the employee actually takes the medication.

Accident/incident: Any event or exposure arising from the operation of a railroad, if the event or exposure is a discernable cause of one or more of the following outcomes, and this outcome is a new case or a significant aggravation of a preexisting injury or illness:(i) Death to any person; (ii) Injury to any person that results in medical treatment; (iii) Injury to a railroad employee that results in: (A) A day away from work; (B) Restricted work activity or job transfer; or (C) Loss of consciousness; (iv) Occupational illness of a railroad employee that results in any of the following: (A) A day away from work; (B) Restricted work activity or job transfer;(C) Loss of consciousness; or (D) Medical treatment; (v) Significant injury to or significant illness of a railroad employee diagnosed by a physician or other licensed health care professional even if it does not result in death, a day away from work, restricted work activity or job transfer, medical treatment, or loss of consciousness;(vi) Illness or injury that meets the application of any of the following specific case criteria:(A) Needlestick or sharps injury to a railroad employee; (B) Medical removal of a railroad employee; (C) Occupational hearing loss of a railroad employee; (D) Occupational tuberculosis of a railroad employee; or (E) Musculoskeletal disorder of a railroad employee if this disorder is independently reportable under one or more of the general reporting criteria.

Accident or incident reportable under part 225 does not include a case that is classified as “covered data” under § 225.5 of this chapter (*i.e.*, employee injury/illness cases reportable exclusively because a physician or other licensed health care professional either made a one-time

topical application of a prescription-strength medication to the employee's injury or made a written recommendation that the employee: Take one or more days away from work when the employee instead reports to work (or would have reported had he or she been scheduled) and takes no days away from work in connection with the injury or illness; work restricted duty for one or more days when the employee instead works unrestricted (or would have worked unrestricted had he or she been scheduled) and takes no other days of restricted work activity in connection with the injury or illness; or take over-the-counter medication at a dosage equal to or greater than the minimum prescription strength, whether or not the employee actually takes the medication).

Accountable injury or illness: Any condition, not otherwise reportable, of a railroad employee that is discernably caused by an event, exposure, or activity in the work environment which condition causes or requires the railroad employee to be examined or treated by a qualified health care professional.

Covered data: Information that must be reported to FRA under this part concerning a railroad employee injury or illness case that is reportable exclusively because a physician or other licensed health care professional—(1) Recommended in writing that— (i) The employee take one or more days away from work when the employee instead reports to work (or would have reported had he or she been scheduled) and takes no days away from work in connection with the injury or illness, (ii) The employee work restricted duty for one or more days when the employee instead works unrestricted (or would have worked unrestricted had he or she been scheduled) and takes no days of restricted work activity in connection with the injury or illness, or (iii) The employee take over-the counter medication at a dosage equal to or greater than the minimum prescription strength, whether or not the employee actually takes the medication; or (2) Made a one-time topical application of a prescription-strength medication to the employee's injury.

Day away from work: A day away from work as described in paragraph (1) of this definition or, if paragraph (1) does not apply, a day away from work solely for reporting purposes as described in paragraph (2) of this definition. For purposes of this definition, the count of days includes all calendar days, regardless of whether the employee would normally be scheduled to work on those days (*e.g.*, weekend days, holidays, rest days, and vacation days), and begins on the first calendar day after the railroad employee has been examined by a physician or other licensed health care professional (PLHCP) and diagnosed with a work related injury or illness. In particular, the term means—(1) Each calendar day that the employee, for reasons associated with his or her condition, does not report to work (or would have been unable to report had he or she been scheduled) if not reporting results from: (i) A PLHCP's written recommendation not to work, or (ii) A railroad's instructions not to work, if the injury or illness is otherwise reportable; or (2) A minimum of one calendar day if a PLHCP, for reasons associated with the employee's condition, recommends in writing that the employee take one or more days away from work, but the employee instead reports to work (or would have reported had he or she been scheduled). This paragraph is intended to take into account "covered data" cases and also those non-covered data cases that are independently reportable for some other reason (*e.g.*, "medical treatment" or "day of restricted work activity"). The requirement to report "a minimum of one calendar day" is intended to give a railroad the discretion to report up to the total number of days recommended by the PLHCP.

Day of restricted work activity: A day of restricted work activity as described in paragraph (1) of this definition or, if paragraph (1) does not apply, a day of restricted work activity solely for reporting purposes as described in paragraph (2) of this definition; in both cases, the work restriction must affect one or more of the employee's routine job functions (*i.e.*, those work activities regularly performed at least once per week) or prevent the employee from working the full workday that he or she would otherwise have worked. For purposes of this definition, the count of days includes all calendar days, regardless of whether the employee would normally be scheduled to work on those days (*e.g.*, weekend days, holidays, rest days, and vacation days), and begins on the first calendar day after the railroad employee has been examined by a physician or other licensed health care professional (PLHCP) and diagnosed with a work-related injury or illness. In particular, the term means—(1) Each calendar day that the employee, for reasons associated with his or her condition, works restricted duty (or would have worked restricted duty had he or she been scheduled) if the restriction results from: (i) A PLHCP's written recommendation to work restricted duty, or (ii) A railroad's instructions to work restricted duty, if the injury or illness is otherwise reportable; or (2) A minimum of one calendar day if a PLHCP, for reasons associated with the employee's condition, recommends in writing that the employee work restricted duty for one or more days, but the employee instead works unrestricted (or would have worked unrestricted had he or she been scheduled). This paragraph is intended to take into account "covered data" cases and also those non-covered data cases that are independently reportable for some other reason (*e.g.*, "medical treatment" or "day of restricted work activity"). The requirement to report "a minimum of one calendar day" is intended to give a railroad the discretion to report up to the total number of days recommended by the PLHCP

Event or exposure arising from the operation of a railroad: includes— (1) With respect to a person who is on property owned, leased, or maintained by the railroad, an activity of the railroad that is related to the performance of its rail transportation business or an exposure related to the activity; (2) With respect to an employee of the railroad (whether on or off property owned, leased, or maintained by the railroad), an activity of the railroad that is related to the performance of its rail transportation business or an exposure related to the activity; and (3) With respect to a person who is not an employee of the railroad and not on property owned, leased, or maintained by the railroad—an event or exposure directly resulting from one or more of the following railroad operations: (i) A train accident, a train incident, or a highway-rail crossing accident or incident involving the railroad; or (ii) A release of a hazardous material from a railcar in the possession of the railroad or of another dangerous commodity that is related to the performance of the railroad's rail transportation business.

Medical removal: Medical removal under the medical surveillance requirements of the Occupational Safety and Health Administration standard in 29 C.F.R. part 1910, even if the case does not meet one of the general reporting criteria.

Medical treatment: Any medical care or treatment beyond "first aid" regardless of who provides such treatment. Medical treatment does not include diagnostic procedures, such as X-rays and drawing blood samples. Medical treatment also does *not* include counseling.

Musculoskeletal disorder (MSD): A disorder of the muscles, nerves, tendons, ligaments, joints, cartilage, and spinal discs. The term does not include disorders caused by slips, trips, falls, motor vehicle accidents, or other similar accidents. Examples of MSDs include: Carpal tunnel syndrome, Rotator cuff syndrome, De Quervain's disease, Trigger finger, Tarsal tunnel syndrome, Sciatica, Epicondylitis, Tendinitis, Raynaud's phenomenon, Carpet layers knee, Herniated spinal disc, and Low back pain.

Needle stick or sharp injury: A cut, laceration, puncture, or scratch from a needle or other sharp object that involves contamination with another person's blood or other potentially infectious material, even if the case does not meet one of the general reporting criteria.

New case: A case in which either the employee has not previously experienced a reported injury or illness of the same type that affects the same part of the body, or the employee previously experienced a reported injury or illness of the same type that affected the same part of the body but had recovered completely (all signs had disappeared) from the previous injury or illness and an event or exposure in the work environment caused the signs or symptoms to reappear.

Occupational hearing loss: A diagnosis of occupational hearing loss by a physician or other licensed health care professional, where the employee's audiogram reveals a work-related Standard Threshold Shift (STS) (*i.e.*, at least a 10-decibel change in hearing threshold, relative to the baseline audiogram for that employee) in hearing in one or both ears, and the employee's total hearing level is 25 decibels or more above audiometric zero (averaged at 2000, 3000, and 4000 Hz) in the same ear(s) as the STS.

Occupational illness: Any abnormal condition or disorder, as diagnosed by a physician or other licensed health care professional, of any person who falls under the definition for the classification of Worker on Duty—Employee, other than one resulting from injury, discernably caused by an environmental factor associated with the person's railroad employment, including, but not limited to, acute or chronic illnesses or diseases that may be caused by inhalation, absorption, ingestion, or direct contact.

Occupational tuberculosis The occupational exposure of an employee to anyone with a known case of active tuberculosis if the employee subsequently develops a tuberculosis infection, as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional, even if the case does not meet one of the general reporting criteria.

Privacy concern case: Any occupational injury or illness in the following list: (1) Any injury or illness to an intimate body part or the reproductive system; (2) An injury or illness resulting from a sexual assault; (3) Mental illnesses; (4) HIV infection, hepatitis, or tuberculosis; (5) Needlestick and sharps injuries; and (6) Other injuries or illnesses, if the employee independently and voluntarily requests in writing to the railroad reporting officer that his or her injury or illness not be posted.

Significant change in the damage costs for reportable rail equipment accidents/incidents: At least a ten percent variance between the damage amount reported to FRA and current cost figures.

Significant change in the number of reportable days away from work or days restricted: At least a ten-percent variance in the number of actual reportable days away from work or days restricted compared to the number of days already reported.

Significant illness: An illness involving cancer or a chronic irreversible disease such as bysinosis or silicosis, if the disease does not result in death, a day away from work, restricted work, job transfer, medical treatment, or loss of consciousness.

Significant injury: An injury involving a fractured or cracked bone or a punctured eardrum, if the injury does not result in death, a day away from work, restricted work, job transfer, medical treatment, or loss of consciousness.

Applicability

The accident/incident reporting requirements will apply to all railroads and independent contractors except:

(a) A railroad that operates freight trains only on track inside an installation which is not part of the general railroad system of transportation or that owns no track except for track that is inside an installation that is not part of the general railroad system of transportation;

(b) Rail mass transit operations in an urban area that are not connected with the general railroad system of transportation;
and

(c) A railroad that exclusively hauls passengers inside an installation that is insular or that owns no track except for track used exclusively for the hauling of passengers inside an installation that is insular.

An operation will not be considered insular if one or more of the following exists on its line: (1) A public highway-rail grade crossing that is in use; (2) an at-grade rail crossing that is in use; (3) a bridge over a public road or waters used for commercial navigation; or (4) a common corridor with a railroad, i.e., its operations are within 30 feet of those of any railroad.

Investigation

It is the policy of the FRA to investigate rail transportation accidents/incidents which result in the death of a railroad employee or the injury of 5 or more persons. Other accidents/incidents are investigated when it appears an investigation would substantially serve to promote railroad safety.

FRA representatives are authorized to investigate accidents/incidents and have been issued credentials authorizing them to inspect railroad reports and property. They are authorized to obtain all relevant information concerning accidents/incidents under investigation, to make inquiries of persons having knowledge of the facts, conduct interviews and inquiries and to attend as an observer hearings conducted by railroads.

Whenever necessary the FRA will schedule a public hearing before an authorized hearing officer in which event testimony will be taken under oath, a record made and the opportunity provided to question witnesses.

When necessary in the conduct of an investigation the Federal Railroad Administrator may require autopsies and other tests of the remains of railroad employees who die as of the result of an accident/incident.

Information obtained through FRA investigations may be published in public reports or used for other purposes FRA deems to be appropriate.

Where An Employee is Alleged to Have Caused Accident/Incident:

In the Rail Safety Improvement Act of 1988, Congress made changes in the accident reporting requirements. If human error is assigned as a cause of an accident or incident, the employee may explain any factors he or she alleges contributed to the accident or incident. The FRA is required to file such statement with the report it receives from the railroad.

1. If a railroad cites an employee human factor as the primary cause or a contributing cause of an accident, then the railroad is required to fill out a new form titled Employee Human Factor Attachment. On a separate form, the railroad must notify the employee(s) of the allegations involved within 45 days after the end of the month in which the accident occurred.
2. If joint rail operations are involved, the railroad which makes the allegations concerning the employee of another railroad, the employing railroad is required to promptly provide the name, job title, address and medical status of the employee identified. Where the railroad is initially unable to identify a particular employee, but subsequently makes such identification, a revised report must be immediately submitted to the FRA, with a copy to the employee within fifteen days after the report is filed with the FRA. The railroad which is reporting the accident may defer notification of an implicated employee on medical grounds where the employee is seriously injured in the accident.
3. If the employee has been killed as a result of an accident, no notice is required to be sent by the railroad to any person (FRA's rationale is that they investigate every accident which an employee is killed).
4. The regulation makes it clear that the employee's statement is completely voluntary. The failure of the employee to respond to a charge that he caused the accident does not imply that the employee either admits or denies the railroad's conclusion as to the cause of an accident.
5. The employee's statement must be submitted to the FRA, as well as to the railroad, within 35 days after the employee was notified of the allegation. If an employee wishes to provide confidential information to the FRA, the employee should not use the form that is provided under this regulation. Rather, the employee should provide the confidential information

by other means, such as a letter to the collective bargaining representative or to the office of safety at the FRA.

6. A person who willfully files a false statement with the FRA is subject to a civil penalty up to \$5,000. If a person knowingly and willfully files a false statement he is subject to a \$5,000 fine or two years imprisonment, or both, under the Federal Railroad Safety Act provisions.

7. Once the railroad receives the employee's analysis of the accident, the railroad must make all justified revisions to the original accident report forms. (The railroad is not required to send the employee a copy of the revised forms).

8. The accident report form shall be submitted by the railroad within 30 days after the expiration of the month in which the accident/incident occurred.

FORMS:

1. FRA Form F 6180-54---Rail Equipment Accident/Incident Report

This is the basic form which must be filed for all accidents or incidents. Amended reports must be filed if the damages are at least 10% higher than the amount originally reported to the FRA.

2. FRA Form F6180-55a---Railroad Injury and Illness summary:

(a) Any reportable death, injury, or illness of an employee arising from an accident/incident, including those involving joint operations, must be reported on this form by the employing railroad.

(b) In hazardous materials accidents, the railroad shall submit the number of persons injured and the type of injury resulting from exposure.

(c) It requires information as to the county where the incident occurred, as well as the day of the month and the time of day.

(d) Additional information on the form concerning injuries and illnesses include physical acts, location, event, result, and cause.

(e) A railroad is given an opportunity to provide details on any unusual circumstance surrounding the worker's injury or illness.

(f) The FRA has expanded the classifications of persons for reporting purposes:

- (1) Worker on Duty - Employee (Class A),
- (2) Employee not on Duty (Class B),
- (3) Passengers on Trains (Class C),
- (4) Non trespassers - On Railroad Property (Class D),

- (5) Trespassers (Class E),
- (6) Worker on Duty - Contractor (Class F)
- (7) Contractor - Other (Class G),
- (8) Worker on Duty - Volunteer (Class H),
- (9) Volunteer - Other (Class I), and
- (10) Non trespassers - Off Railroad Property (Class J).

3. FRA Form F 6180.57---Highway-Rail Grade Crossing Accident/Incident Report

- (a) The railroads must include the number of highway-rail grade crossing users (i.e., pedestrians and vehicle occupants) killed and injured; the total number of crossing users involved in the incident (including the driver); the number of railroad employees killed and injured; the total number of people on the train at the time of the incident (including passengers and train crew); the number of train passengers killed and injured.
- (b) The FRA has eliminated the distinction involving Amtrak and Autotrain accidents at crossings.
- (c) The FRA clarified a problem under the existing form as to whether or not the warning signal was operating. The problem arises where there is a passive device and the railroad reported it as not operating.
- (d) A narrative description is required in order to gather information on unusual causes or circumstances surrounding the grade crossing accidents.
- (e) There is a special study block set aside so that FRA can obtain information on particular trends or initiate corrections of identified problems.
- (f) There is a section requiring information on whether whistle bans were in effect and observed at the time of the accident/ incident.
- (g) The requirement to add the drivers age and gender on the form is optional with the railroad.
- (h) The form also contains a block which would allow for the collection of information regarding situations where motorists are trapped by other vehicle traffic at crossings.

4. FRA Form F 6180.78---Notice to Railroad Employee Involved in Rail Equipment Accident/Incident Attributed to Employee Human Factor

A railroad is required to notify an employee if he or she is determined by the railroad to be a contributing cause to an accident. This was discussed on a previous page in some detail, and this form is to be completed by the employee.

5. FRA Form F 6180.98---Record Keeping: Railroad Employee Injury and/or Illness Record

All injuries and illnesses to a railroad employee that arises from the operation of the railroad and causes the employee to be examined or treated by a qualified health care professional must be recorded on this form, or an alternative railroad-designated record form. It should be noted that this form is to record an injury or illness. It may become reportable if certain consequences later occur. For example, a minor cut may become infected and require medical treatment. The record of all injuries and illnesses must be maintained at each railroad establishment where such employees report to work. (That is, an establishment where workers report to work at an operating division, general office, or major installation such as a locomotive or car repair or construction facility). The railroad is required to provide an employee a copy of the record of the illness or injury.

6. FRA Form F 6180.97---Initial Rail Equipment Accident/Incident Record

This form is used to record equipment accidents and incidents which are not reportable to FRA, but are required to be recorded. Both reportable and accountable (i.e., recordable) rail equipment accidents and incidents must be listed on this form. The railroads can design and use its own form as an alternative to Form 6180.97, so long as the same information is provided.

Updating Forms 6180.97 and 6180.98

The railroad is required to record or report injuries, illnesses, accidents, and incidents no later than 7 working days after receiving information or acquiring knowledge of the occurrence. Additionally, if either record is maintained at a centralized location, but not through electronic means, then a paper copy of the record or report must be current within 35 days of the month to which it applies and be available at the appropriate establishment. If the record for an establishment is maintained at a central location through electronic means, such record must be available for review in a hard copy format within 4 business hours of the request.

7. Form FRA 6180.107—Alternative Record for Illnesses Claimed to Be Work-Related.

This form shall be used by a railroad to record each illness claimed to be work-related that is reported to the railroad— (i) For which there is insufficient information to determine whether the illness is work-related; (ii) For which the railroad has made a preliminary determination that the illness is not work-related; or (iii) For which the railroad has made a final determination that the illness is not work-related. (2) For any case determined to be reportable, the designation “illness claimed to be work-related” shall be removed, and the record shall be transferred to the reporting officer for retention and reporting in the normal manner. (3) In the event the narrative block (similar to Form FRA F 6180.98, block 39) indicates that the case is not reportable, the explanation contained on that block shall record the reasons the railroad determined that the case is not reportable, making reference to the most authoritative information relied upon. (4) Although the Form FRA F 6180.107 may not include all supporting documentation, such as

medical records, the Form FRA F 6180.107 shall note the name, title, and address of the custodian of those documents and where the supporting documents are located so that they are readily accessible to FRA upon request.

Logging Accountable Accident/Incident or Injury/Illness

The current regulation requires a railroad to log each reportable and each "accountable" rail equipment accident/incident and injury or illness not later than 7 days after receiving knowledge of the event. An "**accountable injury or illness**" includes "any condition, not otherwise reportable, of a railroad worker that is associated with an event, exposure, or activity in the work environment that causes or requires the worker to be examined or treated by a qualified health care professional..." An "**accountable rail accident/incident**" is defined as a "any event, not otherwise reportable, involving the operation of on-track equipment that causes physical damage to either the on-track equipment or the track upon which such equipment was operated and that requires the removal or the repair rail equipment from the track before any rail operations over the track can continue..." The shortlines, and the tourist and museum railroads petitioned to eliminate the "accountable" recording keeping requirements as it applies to them. The FRA has granted partial relief to those railroads which have 15 or fewer employees and those railroads which operate or own track exclusively of the general system. Those railroads will not be required to log "accountable" injuries/illnesses or accidents/incidents. However, they will be required to log "reportable" events.

Posting Monthly List Of Injuries and Illnesses

The railroad shall post a listing of all injuries and occupational illnesses in a conspicuous location at each railroad establishment within 30 days after the end of the month during which the injury and illness occurred. (This posting will be necessary only for those establishments that are in continual operation for a minimum of 90 calendar days or more. For those locations that are not in continual operation, the posting of the injuries and illnesses must be made at the next higher organizational level). The posting shall remain continually displayed for twelve months. § 225.25(h) sets out what must be contained in the information that is posted.

Retention of Records

The railroads are required to retain injury and illness records for 5 years, and the accident and incident records for 2 years.

Access To Records Reports

Any representative of a state agency participating in investigative and surveillance activities under the Federal railroad safety laws and regulations shall have access to all records, reports, logs, and supplementary information filed in accordance with the regulations.

The railroads shall have at least one location where both Federal and State inspectors will have centralized access to a copy of all records and reports.

Upon request, the railroad is required to provide the employee either a copy of the completed Form 6180.98, or the alternative railroad designed form, which is the employee injury and/or illness record. A railroad is required to grant access only to forms or reports required to be maintained or filed under the accident reporting regulations which pertain to that employee's on work-related injury or illness. In other words, the rule does not require the railroads to produce privileged documents. However, this does not mean that the employee, under the appropriate circumstances, would be unable to obtain such documents. For example, in an FELA action, an employee may seek production of records in a railroad's files, and if privilege is asserted, then this matter would be dealt with by the judge. It should be kept in mind that the Accident Reports Act does not preclude disclosure of documents; rather, it precludes the "use" of such documents in court.

Magnetic Media Transfer and Electronic Submission

Railroads are allowed to submit accident reporting data to FRA by two alternate means: (1) magnetic media (computer diskette or magnetic tape), or (2) electronically, over telephonic lines. Using either option, the railroad must submit monthly reporting data to FRA in a cumulative year-to-date file format. If the railroad utilizes the magnetic media, it must submit the disk or tape, the batch control form, and a notarized hard copy signed by the railroad's reporting officer. The notarization is required by statute.

The requirement for electronic submission is similar to the magnetic media submissions, except that the year-to-date information must be transmitted to an FRA-designated computer. Still the railroad must submit the notarized hard copy. If the magnetic media or electronic submission is in total agreement with the hard copies that are submitted for 3 consecutive reporting months, FRA will notify the railroad that the hard copy reports will no longer be required. Still, the notarization on the railroad injury and illness summary is required.

Telephonic reports of certain accidents/incidents and other events.

Types of accidents/incidents and other events to be reported:

(1) *Certain deaths or injuries.* Each railroad must report immediately, as prescribed in paragraphs (b) through (d) of this section, whenever it learns of the occurrence of an accident/incident arising from the operation of the railroad, or an event or exposure that may have arisen from the operation of the railroad, that results in the— (i) Death of a rail passenger or a railroad employee; (ii) Death of an employee of a contractor to a railroad performing work for the railroad on property owned, leased, or maintained by the contracting railroad; or (iii) Death or injury of five or more persons.

(2) *Certain train accidents or train incidents.* Each railroad must report immediately, as prescribed in paragraphs (b) through (d) of this section, whenever it learns of the occurrence of any of the following events that arose from the operation of the railroad: (i) A train accident that results in serious injury to two or more train crewmembers or passengers requiring their admission to a hospital; (ii) A train accident resulting in evacuation of a passenger train; (iii) A fatality at a highway-rail grade crossing as a result of a train accident or train incident; (iv) A train accident resulting in damage (based on a preliminary gross estimate) of \$150,000, to railroad and non railroad property; or (v) A train accident resulting in damage of \$25,000 or more to a passenger train, including railroad and non railroad property. **(3) *Train accidents on or fouling***

passenger service main lines. The dispatching railroad must report immediately, as prescribed in paragraphs (b) through (d) of this section, whenever it learns of the occurrence of any train accident reportable as a rail equipment accident/ incident under §§ 225.11 and 225.19(c)— (i) that involves a collision or derailment on a main line that is used for scheduled passenger service; or (ii) that fouls a main line used for scheduled passenger service.

The regulation sets out the method by which the railroad shall report and what shall be included in the contents of each report.

Tourist and Museum Railroads

The tourist and museum railroads sought an exemption from the reporting requirements. The FRA granted them partial relief. They will not be required to report non-train incidents, unless the non-train incidents involve in-service on track railroad equipment. They must still comply with the requirement of recording injuries and illnesses resulting from a train accident, a train incident, or a non-train incident that involves railroad equipment in operation but not moving. The tourist railroads, which operate on the general system of railroads, must post the monthly list of reportable injuries and illnesses for each establishment. Plant railroads and insular of the general system tourist railroads are not required to post.

Appendix A-Schedule of Penalties

Appendix B-Procedure For Determining Reporting Threshold

49 U.S.C. §§ 20901-20903, 21302-21304

49 C.F.R. §§ 225.1-.31

INTERNAL CONTROL PLAN

Railroads are required to prepare and maintain an Internal Control Plan, which requires various departments within a railroad to coordinate accidents/incidents information. The office which is responsible for reporting to the FRA shall have access to all claims records, medical records, payroll records, and be notified by claims and medical departments of each new case opened by a railroad worker. The ICP shall include the following 10 components:⁷³

(1) A policy statement indicating the railroad's commitment to complete an accurate reporting of all accidents/incidents, injuries, and occupational illnesses. The statement shall include, in absolute terms, that harassment or intimidation of any person that is calculated to discourage or prevent such person from receiving proper medical treatment or from reporting an accident, incident, injury or illness will not be permitted or tolerated and will result in disciplinary action against such person committing the harassment or intimidation.

⁷³ **Shortlines** are exempted from the requirements of 3 through 10. However, the shortlines must still adopt and comply with the intimidation and harassment requirements of subparts one and two which require the railroads to prepare a policy statement setting forth each railroad's commitment to complete and accurate reporting of all accidents, etc., and which contains harassment and intimidation provisions. Also, a copy of such plan must be delivered to each employee.

(2) All employees shall be provided a copy of the ICP. Any person complaining about a violation of the policy must be provided “whistle blower” protection.

(3) Copies of all internal forms and the computer reporting system.

(4) A description of the internal procedures used to process forms and computer data.

(5) Procedures applicable to the accident and incident information which is collected, and the reports prepared by each of the railroads various departments engaged in collecting and reporting accident and incident information.

(6) Procedures for collecting cost data.

(7) Procedures for ensuring adequate communication between the railroad department responsible for submitting accident/ incident reports to FRA and any other department within the railroad which collects, receives, processes and reports accidents and incidents.

(8) Procedures for updating accident and incident information prior to reporting to FRA.

(9) Name and title of the railroad officer responsible for auditing the reporting.

(10) An organization chart of the railroad.

The penalty schedule is amended to include that a railroad may be fined for both the failure to accurately report a violation, and any departure from the ICP. The civil penalty is \$2,500 or, if willful, \$5,000 for each violation.

49 C.F.R. § 225.33

NATIONAL TRANSPORTATION SAFETY BOARD

The National Transportation Safety Board ("NTSB") consists of 5 members (each one serving 5 years) has the authority to investigate all train accidents resulting in serious injury to any person or in damage to property of the railroad. It is an independent federal agency.

Any investigation of an accident by the Board shall have priority over all other investigations of such accident. If any accident is investigated by a federal agency or a state commission, the NTSB may, if convenient, make an investigation the same time.

The operator of a railroad shall notify the Board by telephoning the National Response Center by telephone 800-424-0201 at the earliest practicable time after the occurrence of any one

of the following railroad accidents:⁷⁴

(a) No later than 2 hours after an accident which results in:

(1) A passenger or employee fatality or serious injury to 2 or more crew members or passengers requiring admission to a hospital;

(2) The evacuation of a passenger train;

(3) Damage to a tank car or container resulting in release of hazardous materials or involving evacuation of the general public; or

(4) A fatality at a grade crossing.

(b) No later than 4 hours after an accident which does not involve any of the circumstances enumerated in paragraph (a) of this section but which results in:

(1) Damage (based on a preliminary gross estimate) of \$150,000 or more for repairs, or the current replacement cost to railroad and non-railroad property; or

(2) Damage of \$25,000 or more to a passenger train and railroad and non-railroad property.

(c) Accidents involving joint operations must be reported by the railroad that controls the track and directs the movement of trains where the accident has occurred.

(d) Where an accident for which notification is required by paragraph (a) or (b) of this section occurs in a remote area, the time limits set forth in that paragraph shall commence from the time the first railroad employee who was not at the accident site at the time of its occurrence has received notice thereof.

NTSB employees may only testify as to the factual information they obtained during the course of an investigation, including factual evaluations embodied in their factual accident reports. However, they shall decline to testify regarding matters beyond the scope of their investigation, and they shall not give any expert or opinion testimony.

Public access to information.

Copies of any communication, document, investigation, or other report or information in the NTSB's possession shall be made available to the public, except for certain trade secrets.

⁷⁴ The NTSB has issued a rule that requires the operator of a railroad to preserve intact and make no attempt to extract data from any event recorder or data pack from any event recorder, any speed tape, or any other recording medium that contains information in any way pertinent to the accident for which notification has been given, until the NTSB takes custody of the information.

Use of reports.

- (a) No part of any Board report relating to an accident investigation shall be admitted as evidence or used in any lawsuit.
- (b) An NTSB employee may use a copy of his factual accident report as a testimonial aid, and may refer to that report during his testimony or use it to refresh his memory.
- (c) An NTSB employee may not use the Board's accident report for any purpose during his testimony.

Manner in which testimony is given.

- (a) Testimony of NTSB employees may be made available for use in actions or suits for damages arising out of accidents through depositions or written interrogatories. NTSB employees are not permitted to appear and testify in court in such actions.
- (b) Normally, depositions will be taken and interrogatories answered at the NTSB's office to which the employee is assigned, and at a time arranged with the employee reasonably fixed to avoid substantial interference with the performance of his duties.
- (c) NTSB employees are authorized to testify only once in connection with any investigation they have made of an accident. Consequently, when more than one lawsuit arises as a result of an accident, it shall be the duty of counsel seeking the employee's deposition to ascertain the identity of all parties to the multiple lawsuits and their counsel, and to advise them of the fact that a deposition has been granted, so that all interested parties may be afforded the opportunity to participate therein.
- (d) Upon completion of the deposition of an NTSB employee, a copy of the transcript of the testimony will be furnished, at the expense of the party requesting the deposition, to the NTSB's Counsel.

Request for testimony.

- (a) A request for testimony of an NTSB employee relating to an accident by deposition or interrogatories shall be addressed to the General Counsel, who may approve or deny the request. Such request shall set forth the title of the case, the court, the type of accident (aviation, railroad, etc.), the date and place of the accident, the reasons for desiring the testimony, and a showing that the information desired is not reasonably available from other sources.
- (b) The General Counsel shall attach to his approval such reasonable conditions as he may deem appropriate in order that the testimony will be limited to the matters delineated in these rules, will not interfere with the performance of the duties of the employees, and will otherwise conform to the policies of this part.

(c) A subpoena shall not be served upon an NTSB employee in connection with the taking of his deposition.

Testimony of former NTSB employees.

It is not necessary to request NTSB approval for testimony of a former NTSB employee. However, the scope of testimony of former NTSB employees is limited to the matters delineated in these rules, and use of reports as prescribed in these rules.

Procedure in the event of a subpoena.

(a) If an NTSB employee has received a subpoena to appear and testify, a request for his deposition shall not be approved until the subpoena has been withdrawn.

(b) Upon receipt of a subpoena, the employee shall immediately notify the General Counsel and provide the data identifying the accident; the title of the case, the name of the judge, if available, and the title and address of the court; the type of accident (aviation, railroad, etc.); the date on which the employee is directed to appear; the name, address, and telephone number, if available, of the attorney representing the party who caused the issuance of the subpoena; the scope of the testimony, if known; and a statement as to whether a prior deposition on the same accident has been given.

(c) The General Counsel shall determine the course of action to be taken and will so advise the employee.

Testimony in State or local investigations.

NTSB employees may testify at a coroner's inquest, grand jury, or criminal proceeding conducted by a State or local government. Testimony shall be limited to the matters delineated in these rules.

Response to NTSB recommendations.

Whenever the Board submits a recommendation regarding transportation safety to the Secretary of the DOT, the Secretary shall respond within 90 days. The Secretary shall adopt the recommendations or set forth in detail the reasons for such refusal.

The Board shall publish in the Federal Register each recommendation and the response by the Secretary.

49 U.S.C. §§ 1901-1907; 49 C.F.R. part 840

FEDERAL CLAIMS COLLECTION ACT

The Federal Claims Collection Act ("FCCA") authorizes the FRA to either compromise or

cause collection action to be terminated or suspended on claims which do not exceed \$20,000, exclusive of interest. This authority, however, shall not be exercised with respect to a claim as to which there is an indication of fraud, the presentation of a false claim or misrepresentation on the part of the railroad.

Compromise shall be final and conclusive except if procured by fraud, misrepresentation, the presentation of a false claim, or mutual mistake of fact.

Nothing in the FCCA is to be construed as either increasing or diminishing the existing authority of FRA to litigate claims or to diminish existing authority to settle, compromise or close claims.

As it applies to penalties for railroad safety violations, the FCCA has been limited by the Federal Railroad Safety Act of 1970, the Safety Appliance Acts, Signal Inspection Act, and the Locomotive Inspection Act. Under FCCA, the Secretary of Transportation may not compromise any civil penalty for a violation of these safety Acts or regulations issued under these laws for less than \$250 for each violation.

31 U.S.C. § 3711

GLAZING STANDARDS AND MARKING OF WINDOWS

All newly built and most existing railroad equipment (i.e., locomotives, passenger cars, and cabooses) are required to have safety glazing materials installed in them in order to reduce the risk of death or serious injury resulting from flying objects, including bullets.

Each passenger car, except mail, baggage or express cars shall ensure that each emergency window is conspicuously and legibly marked with luminescent material on the inside of each car. Each railroad shall post clear and legible operating instructions at or near each such exit.

Each window intended for emergency access by emergency responder shall be marked with a retroflective, unique, and recognizable marking. The window access instructions shall be posted either at each such window or at the end of each car.

Appendix A – Certification of Glazing Material

Appendix B-Schedule of Penalties

49 C.F.R. §§ 223.1-223.17

BRIDGE STRUCTURE SAFETY

The FRA does not have specific regulations for bridge structure safety. Rather it has issued a policy statement setting forth guidelines for the development of effective programs for the management and safety of railroad bridges.

Even without specific bridge safety regulations, FRA maintains authority to perform safety inspections of any railroad facility and to issue emergency orders under 49 U.S.C. 20104, 49 U.S.C. 20107, and 49 C.F.R. part 209. This emergency order authority permits FRA to remove from service, or otherwise impose conditions on any railroad operation which, in the judgment of the agency, poses an emergency situation involving a hazard of death or personal injury.

FRA has recommended that each track owner or other entity which is responsible for the integrity of bridges which support its track adopt and implement an effective and comprehensive program to ensure the safety of its bridges. The bridge safety program should incorporate the following essential elements:

The program should include:

- (a) Clearly defined roles and responsibilities of all persons who are designated or authorized to make designations regarding the integrity of the track owner's bridges. The definitions may be made by position or by individual;
- (b) Provisions for a complete inventory of bridges that carry the owner's track, to include the following information on each bridge:
 - (1) A unique identifier, such as milepost location and a subdivision code;
 - (2) The location of the bridge by nearest town or station, and geographic coordinates;
 - (3) The name of the geographic features crossed by the bridge;
 - (4) The number of tracks on the bridge;
 - (5) The number of spans in the bridge;
 - (6) The lengths of the spans; and
 - (7) Types of construction of:
 - (i) Substructure;
 - (ii) Superstructure; and
 - (iii) Deck;
 - (8) Overall length of the bridge.

(9) Dates of:

- (i) Construction;
- (ii) Major renovation; and
- (iii) Strengthening;

(10) Identification of entities responsible for maintenance of the bridge or its different components;

- (c) Known capacity of its bridges as determined by rating by competent engineer or by design documents;
- (d) Procedures for the control of movement of high, wide or heavy loads exceeding the nominal capacity of bridges;
- (e) Instructions for the maintenance of permanent records of design, construction, modification, and repair;
- (f) Railroad-specific procedures and standards for design and rating of bridges;
- (g) Detailed bridge inspection policy, including:

(1) Inspector Qualifications.

- (i) Bridge experience or appropriate educational training.
- (ii) Training on bridge inspection procedures.
- (iii) Training on Railroad Workplace Safety.

(2) Type and frequency of inspection.

- (i) Periodic (at least annually).
- (ii) Underwater.
- (iii) Special.
- (iv) Seismic.

(v) cursory inspections of overhead bridges that are not the responsibility of the railroad.

(3) Inspection schedule for each bridge.

- (4) Documentation of inspections.
 - (i) Date.
 - (ii) Name of inspector.
 - (iii) Reporting Format.
 - (iv) Coherence of information.
- (5) Inspection Report Review Process.
- (6) Record retention.
- (7) Tracking of critical deficiencies to resolution;
- (h) Provide for the protection of train operations following an inspection, noting a critical deficiency, repair, modification or adverse event and should
 - (1) Include a listing of qualifications of personnel permitted to authorize train operations following an adverse event; and
 - (2) Detailed internal program audit procedures to ensure compliance with the provisions of the program.

BRIDGE SAFETY STANDARDS FOR MAINTENANCE OF WAY EMPLOYEES AND SIGNALMEN

Subpart A - General

49 C.F.R. § 214.1 Purpose and Scope

The purpose and scope of this part is the prevention of accidents and casualties to employees involved in certain railroad inspection, maintenance and construction activities.

- (b) This part prescribes minimum Federal safety standards for the railroad workplace safety subjects addressed herein. This part does not restrict a railroad or railroad contractor from adopting and enforcing additional or more stringent requirements not inconsistent with this part.

§ 214.3 Application

This part applies to railroads that operate rolling equipment on track that is part of the general railroad system or transportation.

§ 214. 5 Responsibility for Compliance

Any person (including a railroad and any manager, supervisor, official, or other employee or agent of a railroad or railroad contractor) who violates any requirement of this part or causes the violation of any such requirement is subject to civil penalty of at least \$650 and not more than \$25,000 per violation, except that penalties may be assessed against individuals only for willful violations, and where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury, or has caused death or injury, a penalty not to exceed \$105,000 per violation may be assessed.

§ 214.7 Definitions

Definitions are provided for anchorage, body belt, body harness, lanyard, lifeline, personal fall arrest system, railroad, railroad employee, competent person, deceleration device, equivalent, free fall, free fall distance, railroad bridge, self retracting lifeline/lanyard and snap-hook.

Subpart B - Bridge Worker Safety Standards

§ 214.101 Purpose and Scope

- (a) The purpose and scope of this Subpart is the prevention of accidents and casualties arising from the performance of work on railroad bridges.
- (b) This Subpart prescribes minimum railroad safety requirements for railroad employees performing work on bridges. Each railroad and railroad contractor may prescribe additional or more stringent operating rules, safety rules, and other special instructions not inconsistent with this Subpart.
- (c) These provisions apply to all railroad employees, railroads, and railroad contractors performing work on railroad bridges.
- (d) Any working conditions involving the protection of railroad employees working on railroad bridges not within the subject matter addressed by this Chapter, including respiratory protection, hazard communication, hearing protection, welding and lead exposure standards, shall be governed by the regulations of the U.S. Dept. of Labor, Occupational Safety and Health Administration.

§ 214.103 Fall Protection, Generally

- (a) Except as provided in paragraphs (b) through (d) of this section, a personal fall arrest system or safety net system shall be provided and shall be used where employees are working at least twelve feet above ground or water surface. All fall protection systems required by this section shall conform to the standards set forth in §214.105 of this Subpart. (The FRA in 2005 amended the regulation and now permits exceptions in sub-paragraph (b)(2), and paragraphs (c)

and (d) of this section, which previously only applied to the use of personal fall arrest systems and safety nets over dry land, to also apply to the use of life vests or buoyant work vests while working over water. This will have the effect, in a common example, of permitting a railroad track inspector, when on a bridge that is over water and equipped with effective handrails and walkways, to replace a joint bolt without having to wear a life vest or buoyant work vest, without the need to have a life preserver within ready access, and without the need for ring buoys and a boat or skiff in the water.)

(b) Installation of the fall arrest system is exempt where installation presents a greater hazard than does the work to be performed. In any action brought by the FRA to enforce the fall protection requirements, the railroad or railroad contractor shall have the burden of proving that the installation of such device poses the greater risk.

Also, this section shall not apply to, employees engaged in inspection of railroad bridges where the railroad or railroad contractor has a written program requiring training in, adherence to and use of safe procedures associated with climbing; the employee has been trained and qualified according to such program and has been voluntarily designated to perform inspections under that program; the employee is familiar with the appropriate climbing techniques associated with all bridge structures that he/she is responsible for inspecting; the employee is engaged solely in moving on or about the bridge or observing, measuring, and recording the dimensions and condition of the bridge; and the employee is provided all equipment necessary to meet the needs of safety.

(c) Additional fall protection is not required on bridges where walkways and railings of sufficient height, width, and strength to prevent a fall exists, provided that the employee does not work beyond the railings, over the side of the bridge, on ladders or other elevation devices, or where gaps or holes exist through which a body could fall. Where used in place of fall protection as provided for in § 214.105, walkways and railings meeting standards set forth in the American Railway Engineering Association's Manual For Railway Engineering satisfy this subsection; and this section is not violated where there are roadways attached to railroad bridges, provided that employees on the roadway deck work or move at a distance of six feet or more from the edge of the roadway deck, or from an opening through which a person could fall.

(d) This section shall not apply where employees are performing repairs or inspections of a minor nature that are completed by working exclusively between the outside rails, including, but not limited to, routine welding, spiking, anchoring, spot surfacing, and joint bolt replacement.

§ 214.105 Fall Protection Systems Standards and Practices

(a) **General requirements.** All fall protection systems required by this chapter shall conform to the following:

(1) Fall protection systems shall be used only for employee fall protection.

(2) Once subject to impact loading, the fall protection system must be immediately and permanently removed from service unless fully inspected and determined by a competent person to be undamaged and suitable for reuse.

(3) All fall protection system components shall be protected from abrasions, corrosion, or any other form of deterioration.

(4) All fall protection system components shall be inspected prior to each use for wear, damage, corrosion, mildew, and other deterioration. Defective components shall be permanently removed from service.

(5) Prior to use and after any component or system is changed, employees shall be trained in the application limits of the equipment, proper hook-up, anchoring and tie-off techniques, methods of use, and proper methods of equipment inspection and storage.

(6) The railroad or railroad contractor shall provide for prompt rescue of employees in the event of a fall.

(7) Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

(8) Connectors shall be drop forged or pressed or formed steel or made of equivalent-strength materials.

(9) Anchorages, including single- and double-head anchors, shall be capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used under the supervision of a qualified person as part of a complete personal fall protection system that maintains a safety factor of at least two.

(b) **Personal fall arrest systems.** All components of a personal fall arrest system shall conform to the following standards:

(1) Lanyards and vertical lifelines that tie off one employee shall have a minimum breaking strength of 5,000 pounds.

(2) Self-retracting lifelines and lanyards that automatically limit free fall distance to two feet or less shall have components capable of sustaining a minimum static tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

(3) Self-retracting lifelines and lanyards that do not limit free fall distance to two feet or less, rip-stitch, and tearing and deformed lanyards shall be capable of withstanding 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

(4) Horizontal lifelines shall be designed, installed, and used under the supervision of a competent person, as part of a complete personal fall arrest system that maintains a safety factor of at least two.

(5) Lifelines shall not be made of natural fiber rope.

(6) The personal fall arrest system shall limit the maximum arresting force on an employee to 900 pounds when used with a body belt.

- (7) The personal fall arrest system shall limit the maximum arresting force on an employee to 1,800 pounds when used with a body harness.
- (8) The personal fall arrest system shall bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet.
- (9) The personal fall arrest system shall have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of six feet, or the free fall distance permitted by the system, whichever is less.
- (10) The personal fall arrest system shall be arranged so that an employee cannot free fall more than six feet and cannot contact the ground or any lower horizontal surface of the bridge.
- (11) The personal fall arrest systems shall be worn with the attachment point of the body belt located in the center of the wearer's back, and the attachment point of the body harness located in the center of the wearer's back near shoulder level, or above the wearer's head.
- (12) When vertical lifelines are used, each employee shall be provided with a separate lifeline.
- (13) Devices used to connect to a horizontal lifeline that may become a vertical lifeline shall be capable of locking in either direction.
- (14) Dee-rings and snap-hooks shall be capable of sustaining a minimum tensile load of 3,600 pounds without cracking, breaking or taking permanent deformation.
- (15) Dee-rings and snap-hooks shall be capable of sustaining a minimum tensile load of 5,000 pounds.
- (16) Snap-hooks shall not be connected to each other.
- (17) Snap-hooks shall be dimensionally compatible with the member to which they are connected to prevent unintentional disengagement, or shall be locking snap-hook designed to prevent unintentional disengagement.
- (18) Unless of a locking type, snap-hooks shall not be engaged:
 - (i) Directly next to webbing, rope, or wire rope;
 - (ii) To each other;
 - (iii) To a dee-ring to which another snap-hook or other connector is attached;
 - (iv) To a horizontal lifeline; or

(v) To any object that is incompatibly shaped to dimensioned in relation to the snap-hook so that unintentional disengagement could occur.

(c) **Safety net systems.** Use of safety nets systems shall conform to the following standards and practices:

(1) Safety nets shall be installed as close a practicable under the walking/working surface on which employees are working, but shall not be installed more than 30 feet below such surface.

(2) Employees shall be protected by personal fall arrest systems when working surface to the net exceeds 30 feet.

(3) The safety net shall be installed such that any fall from the working surface to the net is unobstructed.

(4) Except as provided in this subsection, safety nets and installation shall be drop-tested at the job site after initial installation and prior to being used as a fall protection system, whenever relocated, after major repair, and at six-month intervals if left in one place. The drop-test shall consist of a 400 pound bag of sand 30 inches, plus or minus two inches, in diameter dropped into the net from the highest (but not less than 3 1/2 feet) working surface on which employees are to be protected.

When the railroad or railroad contractor demonstrates that a drop-test is not feasible and, as a result, the test is not performed, the railroad or railroad contractor, or designated competent person, shall certify that the net and its installation are in compliance with the provisions of this section by preparing a certification record prior to use of the net. The certification shall include an identification of the net, the date it was determined that the net was in compliance with this section, and the signature of the person making this determination. Such person's signature shall certify that the net and its installation are in compliance with this section. The most recent certification for each net installation shall be available at the job site where the subject net is located.

(5) Safety nets and their installations shall be capable of absorbing an impact force equal to that produced by the drop test specified in this section.

(6) The safety net shall be installed to prevent a falling body's contact with any surfaces or structures below the net when subjected to an impact force equal to the drop test specified in this section.

(7) Safety nets shall extend outward from the outermost projection of the work surface as follows:

(i) When the vertical distance from the working level to the horizontal plane of the net is 5 feet or less, the minimum required horizontal distance of the outer edge of the net beyond the edge of the working surface is 8

feet.

(ii) When the vertical distance from the working level to the horizontal plane of the net is more than 5 feet, but less than 10 feet, the minimum required horizontal distance of the outer edge of the net beyond the edge of the working surface is 10 feet.

(iii) When the vertical distance from the working level to the horizontal plane of the net is more than 10 feet, the minimum required horizontal distance of the outer edge of the net beyond the edge of the working surface is 13 feet.

(8) Defective nets shall not be used. Safety nets shall be inspected at least once a week for mildew, wear, damage, and other deterioration. Defective components shall be removed permanently from service.

(9) Safety nets shall be inspected after any occurrence that could affect the integrity of the safety net system.

(10) Tools, scraps, or other materials that have fallen into the safety net shall be removed as soon as possible, and at least before the next work shift.

(11) Each safety net shall have a boarder rope for webbing with a minimum breaking strength of 5,000 pounds.

(12) The maximum size of each safety net mesh opening shall not exceed 36 square inches and shall not be longer than 6 inches on any side measured center-to-center of mesh ropes or webbing. All mesh crossing shall be secured to prevent enlargement of the mesh opening.

(13) Connections between safety net panels shall be as strong as integral net components and shall be spaced not more than 6 inches apart.

§ 214.107 Working Over or Adjacent to Water

(a) Where the danger of drowning exists or the water is four or more feet deep, employees shall be provided with life jackets or buoyant work vests meeting the U.S. Coast Guard requirements stipulated in 46 C.F.R. §§ 160.047, 160.052, and 160.053. Life preservers complying with U.S. Coast Guard regulations in 46 C.F.R. §160.055 must also be available. This section shall not apply to employees using personal fall arrest systems or safety nets that comply with this Subpart.

(b) Life vests or buoyant work vests shall not be required when employees are conducting inspections that involve climbing structures above or below the bridge deck.

(c) Buoyant vests and life preservers shall be inspected before and after each use by properly trained individuals who have been designated by the railroad. Units with defects that reduce strength or buoyancy are not to be used.

(d) Ring buoys (complying with U.S. Coast Guard requirements at 46 C.F.R. §160.050) with at least 90 feet of line are to be readily available for emergency rescue operations with a distance between buoys of no more than 200 feet.

(e) Requires at least one life-saving skiff, inflatable boat, or equivalent device shall be immediately available determined by a competent person that environmental conditions, including water, water speed, and terrain, merit additional protection, the skiff or boat shall be manned.

§ 214.109 Scaffolding

(a) Scaffolding used in connection with railroad bridge maintenance, inspection, testing, and construction shall be constructed and maintained in a safe condition and meet the following minimum requirements:

(1) The strength of scaffolds and their components, except suspension ropes and guardrail systems, but including footings and anchorage, shall be able to support its own weight and at least four times the maximum intended load applied and transmitted to that scaffold or scaffold component.

(2) Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within two inches of the top edge, in any outward or downward direction, at any point along the top edge.

(3) Top edge height of top rails, or equivalent guardrail system member, shall be 42 inches, plus or minus three inches. Supports shall be at intervals not to exceed eight feet. Toe-boards shall be a minimum of four inches in height.

(4) Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the midrail or other member.

(5) Midrails shall be installed at a height midway between the top edge of the guardrail system and the walking/working level.

(b) Movement or alteration of a scaffold while it is occupied is prohibited. This paragraph does not apply to vertical movements of mobile scaffolds that are designed to move vertically while occupied.

(c) An access ladder or equivalent safe access shall be provided.

(d) All exposed surfaces shall be prepared and cleared to prevent injury due to laceration, puncture, tripping, or falling hazards.

(e) All scaffold design, construction, and repair shall be completed by competent individuals trained and knowledgeable about design criteria, intended use, structural limitations, and

procedures for proper repair.

(f) Manually propelled mobile ladder stands and scaffolds shall be capable of carrying the design load.

(1) All manually propelled mobile ladder stands and scaffolds be capable or carrying the design load.

(2) All ladder stands, scaffolds, and scaffold components shall have support capability of its own weight and at least four times the design working load applied and transmitted to that ladder stand, scaffold, or scaffold component.

(3) All exposed surfaces shall be free from sharp edges or burrs.

(4) The maximum work level height shall not exceed four times the minimum or least base dimensions of any mobile ladder stand or scaffold. When this requirement is not met by the basic mobile unit, either suitable outrigger frames must be used to achieve this least base dimension or the unit must be guyed or braced against tipping.

(5) The minimum work-level platform width for any work level shall not be less than 20 inches for mobile scaffolds (towers), a minimum step-width for ladder stands of 16 inches, and fabrication of ladder stand steps from slip-resistant treads.

(6) Guardrails and midrails shall conform to the requirements listed in paragraph (a) of this section.

(7) A climbing ladder or stairways for access and egress shall be affixed or built into the scaffold, and located so that its use will not have a tendency to tip the scaffold.

(8) Wheels or casters shall be designed to support four times the maximum intended load applied and transmitted to that component. All scaffold casters shall have a positive wheel and/or swivel lock to prevent movement, and ladder stands must have a swivel-type lock on at least two of the four casters.

§ 214.111 Personal Protective Equipment

With the exception of foot protection, the railroad or railroad contractor shall provide and the employees shall use appropriate personal protective equipment described in this Subpart in all operations where there is exposure to hazardous conditions, or where this Subpart indicates the need for using such equipment to reduce the hazards to railroad employees. The railroad or railroad contractor shall require the use of foot protection when the potential for foot injury exists.

§ 214.113 Head Protection

(a) Railroad employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be provided and

shall wear protective helmets.

(b) Helmets for the protection of railroad employees against impact and penetration of falling and flying objects shall conform to the national consensus standards for industrial head protection (American National Standards Institute, Z89.2-1986).

(c) Helmets for the head protection of railroad employees exposed to high voltage electrical shock and burns shall conform to the national consensus standards (American National Standard Institute, Z89.2-1986).

§ 214.115 Foot Protection

(a) The railroad or railroad contractor shall require railroad employees to wear foot protection equipment when potential foot injury may result from impact, falling or flying objects, electrical shock or burns, or other hazardous condition.

(b) Safety-toe footwear for railroad employees shall conform to the national consensus standards for safety-toe footwear (American National Standards Institute American National Standard for Men's Safety-Toe Footwear, Z41-1991).

§ 214.117 Eye and Face Protection

(a) Railroad employees shall be provided and shall wear eye and face protection equipment when potential eye or face injury may result from physical, chemical, or radiant agents.

(b) Eye and face protection equipment required by this section shall conform to the national consensus standards for occupational and educational eye and face protection (American National Standards Institute, Z87.1-1989, Practice for Occupational and Educational Eye and Face Protection.).

(c) Face and eye protection equipment required by this section shall be kept clean and in good repair. Use of equipment with structural or optical defects is prohibited.

(d) Railroad employees whose vision requires the use of corrective lenses, when required by this regulation to wear eye protection, shall be protected by goggles or spectacle of one of the following types:

(i) Spectacles whose perspective lenses provide optical correction, the frame of which includes shielding against objects reaching the wearer's eyes around the lenses;

(ii) Goggles that can be worn over corrective lenses without disturbing the adjustment of the lenses; or

(iii) Goggles that incorporate corrective lenses mounted behind the protective lenses.

VANDALISM⁷⁵

It is a federal crime to enter into any railroad train, car or locomotive with the intent to commit murder, robbery or any unlawful violence upon or against any passenger or crewman, or to commit any other crime against any person or property on the train.

It is unlawful to willfully derail, disable or wreck any railroad train, engine, motor unit or car used by any railroad that engages in interstate or foreign commerce.

It is also unlawful to willfully destruct or injure any property moving in interstate commerce by railroad.

18 U.S.C. §§ 1991-1992

15 U.S.C. § 1281

CLEAN, SAFE, AND SANITARY CAMP CARS

With respect to sleeping quarters (i.e., camp cars) the maintenance of way employees are given the same protection as workers covered under the Hours of Service Act. That is, all railroads are required to furnish sleeping quarters that provide an opportunity for rest which must be clean, safe and sanitary, and free from interruptions caused by noise under the control of the railroad.⁷⁶

The FRA has issued guidelines for clean, safe and sanitary camp cars. They are as follows:

1. Definitions Applicable To These Guidelines.

Camp cars means trailers and on-track vehicles, including outfit, camp, or bunk cars or modular homes mounted on flat cars, used to house or accommodate railroad employees. Wreck trains are not included.

Employee means any worker whose service is covered by the Hours of Service Act or

⁷⁵ To date, the railway labor unions have attempted unsuccessfully to make it a federal crime to shoot at or throw objects at trains.

⁷⁶ The congressional Conference Report states that the section on sleeping quarters is not intended to cause elimination of camp cars. Therefore, if carriers can present persuasive evidence that the existing regulations would cause the elimination of camp cars, then the FRA shall review the guidelines as related to BMWE and determine (a) whether the carrier's claims are in fact correct; (b) whether the problem, if any, is best handled through a change in the noise standard or by a case-by-case review of specific situations (with waivers granted and conditioned as appropriate); and (c) whether a reasonable alternative exists so that a railroad would not override the employee's legitimate concerns and needs for uninterrupted rest.

who is defined as an employee for purposes of section 2(a)(3) of that Act.

Lavatory means a basin or similar vessel used primarily for washing of the hands, arms, face, and head.

Non-water carriage toilet facility means a toilet facility not connected to a sewer.

Number of employees means the number of employees assigned to occupy the camp cars.

Personal service room means a room used for activities not directly connected with the production or service function performed by the carrier establishment. Such activities include, but are not limited to, first-aid, medical services, dressing, showering, toilet use, washing and eating.

Potable water means water that meets the quality standards prescribed in the U.S. Public Health Service Drinking Water Standards, published at 42 C.F.R. part 72, or is approved for drinking purposes by the State or local authority having jurisdiction.

Toilet facility means a fixture maintained within a toilet room for the purpose of defecation or urination, or both.

Toilet room means a room maintained within or on the premises containing toilet facilities for use by employees.

Toxic material means a material in concentration or amount of such toxicity as to constitute a recognized hazard that is causing or is likely to cause death or serious physical harm.

Urinal means a toilet facility maintained within a toilet room for the sole purpose of urination.

Water closet means a toilet facility maintained within a toilet room for the purpose of both defecation and urination and which is flushed with water.

Leq (8) means the equivalent steady sound level which in 8 hours would contain the same acoustic energy as the time-varying sound level during the same time period.

2. Housekeeping.

- (a) All camp cars should be kept clean to the extent that the nature of the work allows.
- (b) To facilitate cleaning, every floor, working place, and passageway should be kept free from protruding nails, splinters, loose boards, and unnecessary holes and openings.

3. Waste Disposal.

- (a) Any exterior receptacle used for putrescible solid or liquid waste or refuse should be so

constructed that it does not leak and may be thoroughly cleaned and maintained in a sanitary condition. Such a receptacle should be equipped with a solid tight-fitting cover, unless it can be maintained in a sanitary condition without a cover. This requirement does not prohibit the use of receptacles designed to permit the maintenance of a sanitary condition without regard to the aforementioned requirements.

(b) All sweepings, solid or liquid wastes, refuse, and garbage should be removed in such a manner as to avoid creating a menace to health and as often as necessary or appropriate to maintain a sanitary condition.

4. Vermin Control.

Camp cars should be so constructed, equipped, and maintained, so far as reasonably practicable, as to prevent the entrance or harborage of rodents, insects, or other vermin. A continuing and effective extermination program should be instituted where their presence is detected.

5. Water supply.

(a) **Potable water.** (1) Potable water should be adequately and conveniently provided to all employees in camp cars for drinking, washing of the person, cooking, washing of cooking or eating utensils, washing of food preparation or processing premises, and personal service rooms where such facilities are provided.

(2) Potable drinking water dispensers should be designed, constructed, and serviced so that sanitary conditions are maintained, should be capable of being closed, and should be equipped with a tap.

(3) Open containers such as barrels, pails, or tanks for drinking water from which the water must be dipped or poured, whether or not they are fitted with a cover, should not be used.

(4) A common drinking cup and other common utensils should not be used.

(b) The distribution lines should be capable of supplying water at sufficient operating pressures to all taps for normal simultaneous operation.

6. Toilet facilities.

(a) (1) Toilet facilities adequate for the number of employees housed in the camp car should be provided in convenient and safe location(s), and separate toilet rooms for each sex should be provided in accordance with table 1 of this paragraph. The number of facilities to be provided for each sex should be based on the number of employees of that sex for whom the facilities are furnished. Where toilet rooms will be occupied by no more than one person at a time, can be

locked from the inside, and contain at least one water closet or nonwater carriage toilet facility, separate toilet rooms for each sex need not be provided. Where such single-occupancy rooms have more than one toilet facility, only one such facility in each toilet room should be counted for the purpose of Table 1.

No. of employees	Minimum No. of toilet facilities ^{1/}
1 to 10.....	1
11 to 25.....	2
26 to 49.....	3
50 to 100.....	5
Over 100.....	<u>2</u>

^{1/}Where toilet facilities will not be used by women, urinals may be provided instead of water closets or non-water carriage toilet facilities, except that the number of water closets or facilities in such cases should not be reduced to less than 2/3 of the minimum specified.

^{2/}One additional fixture for each additional 25 employees.

.....

(2) When toilet facilities are provided in separate cars, toilet rooms should have a window space of not less than 6 square feet in area opening directly to the outside area or otherwise be satisfactorily ventilated. All outside openings should be screened with material that is equivalent to or better than 16-mesh. No fixture, water closet, non water carriage toilet facility or urinal should be located in a compartment used for other than toilet purposes.

(3) The sewage disposal method should not endanger the health of employees.

(b) Construction of toilet rooms.

(1). Each water closet should occupy a separate compartment with a door and walls or partitions between fixtures sufficiently high to assure privacy.

(2). Non water carriage toilet facilities should be located within 50 feet, but as far as practical on the same side of the track on which camp cars are sited.

(3). Each toilet facility should be lighted naturally, or artificially by a safe type of lighting available at all hours of the day and night. Flashlights can be substituted by the railroad when non water carriage toilet facilities are used.

(4). An adequate supply of toilet paper should be provided in each water closet, or non water carriage toilet facility, unless provided to the employees individually.

(5). Toilet facilities should be kept in a clean and sanitary condition. They should be cleaned regularly when occupied. In the case of non water carriage toilet facilities, they should be cleaned and changed regularly.

7. Lavatories.

- (a) Lavatories should be made available to all rail employees housed in camp cars.
- (b) Each lavatory should be provided with either hot and cold running water or tepid running water.
- (c) Unless otherwise provided by agreement, hand soap or similar cleansing agents should be provided.
- (d) Unless otherwise provided by agreement, individual hand towels or sections thereof, of cloth or paper, warm air blowers or clean individual sections of continuous cloth toweling, convenient to the lavatories, should be provided.
- (e) One lavatory basin per 6 employees should be provided in shared facilities.

8. Showering facilities.

- (a) Showering facilities should be provided in the following ratio: one shower should be provided for each 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift.
- (b) Shower floors should be constructed of non-slippery materials. Floor drains should be provided in all shower baths and shower rooms to remove waste water and facilitate cleaning. All junctions of the curbing and the floor should be sealed. The walls and partitions of shower rooms should be smooth and impervious to the height of splash.
- (c) An adequate supply of hot and cold running water should be provided for showering purposes. Facilities for heating water should be provided.
- (d) Showers.
 - 1. Unless otherwise provided by agreement, body soap or other appropriate cleansing agent convenient to the showers should be provided.
 - 2. Showers should be provided with hot and cold water feeding a common discharge line.
 - 3. Unless otherwise provided by agreement, employees who use showers should be provided with individual clean towels.

9. Kitchens, dining hall and feeding facilities.

- (a) In all camp cars where central dining operations are provided, the food handling facilities should be clean and sanitary.
- (b) When separate kitchen and dining hall cars are provided, there should be a closable door between the living or sleeping quarters into a kitchen or dining hall car.

10. Consumption of food and beverages on the premises.

(a) **Application.** This paragraph should apply only where employees are permitted to consume food or beverages, or both, on the premises.

(b) **Eating and drinking areas.** No employee should be allowed to consume food or beverages in a toilet room or in any area exposed to a toxic material.

(c) **Sewage disposal facilities.** All sewer lines and floor drains from camp cars should be connected to public sewers where available and practical, unless the cars are equipped with holding tanks that are emptied in a sanitary manner.

(d) **Waste disposal containers provided for the interior of camp cars.** An adequate number of receptacles constructed of smooth, corrosion resistant, easily cleanable, or disposable materials, should be provided and used for the disposal of waste food. Receptacles should be provided with a solid tightfitting cover unless sanitary conditions can be maintained without use of a cover. The number, size and location of such receptacles should encourage their use and not result in overfilling. They should be emptied regularly and maintained in a clean and sanitary condition.

(e) **Sanitary storage.** No food or beverages should be stored in toilet rooms or in an area exposed to a toxic material.

(f) **Food handling.**

(1) All employee food service facilities and operations should be carried out in accordance with sound hygienic principles. In all places of employment where all or part of the food service is provided, the food dispensed should be wholesome, free from spoilage, and should be processed, prepared, handled, and stored in such a manner as to be protected against contamination.

(2) No person with any disease communicable through contact with food or food preparation items should be employed or permitted to work in the preparation, cooking, serving, or other handling of food, foodstuffs, or materials used therein, in a kitchen or dining facility operated in or in connection with camp cars.

11. Lighting. Each habitable room in a camp car should be provided with adequate lighting.

12. First Aid. Adequate first aid kits should be maintained and made available for railway employees housed in camp cars for the emergency treatment of injured persons.

13. Shelter.

- (a) Every camp car should be constructed in a manner that will provide protection against the elements.
- (b) All steps, entry ways, passageways and corridors providing normal entry to or between camp cars should be constructed of durable weather resistant material and properly maintained. Any broken or unsafe fixtures or components in need of repair should be repaired or replaced promptly.
- (c) Each camp car used for sleeping purposes should contain at least 48 square feet of floor space for each occupant. At least a 7-foot ceiling measured at the entrance to the car should be provided.
- (d) Beds, cots, or bunks and suitable storage facilities such as wall lockers or space for foot lockers for clothing and personal articles should be provided in every room used for sleeping purposes. Except where partitions are provided, such beds or similar facilities should be spaced not closer than 36 inches laterally (except in modular units which cannot be spaced closer than 30 inches) and 30 inches end to end, and should be elevated at least 12 inches from the floor. If double-deck bunks are used, they should be spaced not less than 48 inches both laterally and end to end. The minimum clear space between the lower and upper bunk should be not less than 27 inches. Triple-deck bunks should not be used.
- (e) Floors should be of smooth and tight construction and should be kept in good repair.
- (f) All living quarters should be provided with windows the total of which should be not less than 10 percent of the floor area. At least one-half of each window designed to be opened should be so constructed that it can be opened for purposes of ventilation. Durable opaque window coverings should be provided to reduce the entrance of light during sleeping hours.
- (g) All exterior openings should be effectively screened with 16-mesh material. All screen doors should be equipped with self-closing devices.
- (h) In a facility where workers cook, live, and sleep, a minimum of 90 square feet per person should be provided. Sanitary facilities should be provided for storing and preparing food.
- (i) In camp cars where meals are provided, adequate facilities to feed employees within a 60-minute period should be provided.
- (j) All heating, cooking, ventilation, air conditioning and water heating equipment should be installed in accordance with applicable local regulations governing such installations.
- (k) Every camp car should be provided with equipment capable of maintaining a temperature of at least 68 degrees F. during normal cold weather and no greater than 78 degrees F., or 20 degrees below ambient, whichever is warmer, during normal hot weather.

14. Location. Camp cars occupied exclusively by individuals employed for the purpose of maintaining the right-of-way of a railroad should be located as far as practical from where

"switching or humping operations" of "placarded cars" occur, as defined in 49 C.F.R. § 228.101(c)(3) and (c)(4), respectively. Every reasonable effort should be made to locate these camp cars at least one-half mile (2,640 feet) from where such switching or humping occurs. In the event employees housed in camp cars located closer than one-half mile (2,640 feet) from where such switching or humping of cars takes place are exposed to an unusual hazard at such location, the employees involved should be housed in other suitable accommodations. An unusual hazard means an unsafe condition created by an occurrence other than normal switching or humping.

15. General provisions.

(a) Sleeping quarters are not considered to be "free of interruptions caused by noise under the control of the railroad" if noise levels attributable to noise sources under the control of the railroad exceed a Leq (18) value of 55 dba, with windows closed and exclusive of cooling, heating, and ventilating equipment.

(b) A railroad should, within 48 hours after notice of noncompliance with these recommendations, fix the deficient condition(s). Where holidays or weekends intervene, the railroad should fix the condition within 8 hours after the employees return to work. In the event such condition(s) affects the safety or health of the employees, such as water, cooling, heating or eating facilities, the railroad should provide alternative arrangements for housing and eating until the non-complying condition is fixed.

Appendix C- Guidelines For Clean, safe, and Sanitary Camp Cars
49 U.S.C. § 21106
49 C.F.R. part 228

FRA ENFORCEMENT POLICY⁷⁷

⁷⁷ For a long time, the railroad unions have complained about FRA's enforcement. Equipment may not be inspected even once a year by the FRA. Under the FRA's policies, even if a defect is discovered by a FRA inspector, the railroad is first given a chance to correct the violation. Only when the railroad does not correct the defect may the FRA take action. Furthermore, the fines are compromised under the Federal Claims Collection Act. For many years the fines collected only amounted to a few dollars per defect discovered by an inspector.

BACKGROUND

FRA employs over 300 inspectors, and their work is supplemented by approximately 100 inspectors from states participating in enforcement of the federal rail safety laws. These inspectors inspect the equipment, track, and signal systems and observe the operations of the nation's railroads. They also investigate complaints filed annually by those alleging noncompliance with the laws. When inspection or complaint investigation reveals noncompliance with the laws, each noncomplying condition or action is listed on an inspection report. Where the inspector determines that the best method of promoting compliance is to assess a civil penalty, he or she prepares a violation report, which is essentially a recommendation to the FRA Office of Chief Counsel to assess a penalty based on the evidence provided in or with the report. In determining which instances of noncompliance merit penalty recommendations, the inspector considers:

- (1) The inherent seriousness of the condition or action;
- (2) The kind and degree of potential safety hazard the condition or action poses in light of the immediate factual situation;
- (3) Any actual harm to persons or property already caused by the condition or action;
- (4) The offending person's (i.e., railroad's or individual's) general level of current compliance as revealed by the inspection as a whole;
- (5) The person's recent history of compliance with the relevant set of regulations, especially at the specific location or division of the railroad involved;
- (6) Whether a remedy other than a civil penalty (ranging from a warning on up to an emergency order) is more appropriate under all of the facts; and
- (7) Such other factors as the immediate circumstances make relevant.

The civil penalty recommendation is reviewed at the regional level by a specialist in the subject matter involved, who requires correction of any technical flaws and determines whether the recommendation is consistent with national enforcement policy in similar circumstances. Guidance on that policy in close cases is sometimes sought from Office of Safety headquarters. Violation reports that are technically and legally sufficient and in accord with FRA policy are sent from the regional office to the Office of Chief Counsel.

The Office of Chief Counsel's Safety Division reviews each violation report it receives from the regional offices for legal sufficiency and assesses penalties based on those allegations that survive that review. Historically, the Division has returned to the regional offices less than five percent of the reports submitted in a given year, often with a request for further work and resubmission.

Where the violation was committed by a railroad, penalties are assessed by issuance of a penalty demand letter that summarizes the claims, encloses the violation report with a copy of all

evidence on which FRA is relying in making its initial charge, and explains that the railroad may pay in full or submit, orally or in writing, information concerning any defenses or mitigating factors. The railroad safety statutes, in conjunction with the Federal Claims Collection Act, authorize FRA to adjust or compromise the initial penalty claims based on a wide variety of mitigating factors. Over its history, FRA has had to request that the Attorney General bring suit to collect a penalty on only a very few occasions.

Once penalties have been assessed, the railroad is given a reasonable amount of time to investigate the charges. Larger railroads usually make their case before FRA in an informal conference covering a number of case files that have been issued and investigated since the previous conference. In addition to allowing the two sides to make their cases for the relative merits of the various claims, these conferences also provide a forum for addressing current compliance problems. Smaller railroads usually prefer to handle negotiations through the mail or over the telephone, often on a single case at a time. Once the two sides have agreed to an amount on each case, that agreement is put in writing and a check is submitted to FRA's accounting division covering the full amount agreed on.

Cases brought under the Hazardous Materials Transportation Act, 49 App. U.S.C. 1801 et seq., are, due to certain statutory requirements, handled under more formal administrative procedures. *See*, 49 C.F.R. part 209, Subpart B.

Civil Penalties Against Individuals:

The Rail Safety Improvement Act of 2008 amended the penalty provisions of the railroad safety statutes to make them applicable to any “person (including a railroad and any manager, supervisor, official, or other employee or agent of a railroad)” who fails to comply with the regulations or statutes. However, the RSIA also provided that civil penalties may be assessed against individuals “only for willful violations.” FRA field inspector exercises discretion in deciding which situations call for a civil penalty assessment as the best method of ensuring compliance. The inspector has a range of options, including an informal warning, a more formal warning letter issued by the Safety Division of the Office of Chief Counsel, recommendation of a civil penalty assessment, recommendation of disqualification or suspension from safety-sensitive service, or, under the most extreme circumstances, recommendation of emergency action.

The threshold question in any alleged violation by an individual will be whether that violation was “willful.” (The RSIA, authorized suspension or disqualification of a person whose violation of the safety laws has shown him or her to be unfit for safety-sensitive service, does not require a showing of willfulness. Regulations implementing that provision are found at 49 C.F.R. part 209, subpart D.)

FRA considers a “willful” violation to be one that is an intentional, voluntary act committed either with knowledge of the relevant law or reckless disregard for whether the act violated the requirements of the law. Accordingly, neither a showing of evil purpose (as is sometimes required in certain criminal cases) nor actual knowledge of the law is necessary to prove a willful violation, but a level of culpability higher than negligence must be demonstrated.

Reckless disregard for the requirements of the law can be demonstrated in many ways. Evidence that a person was trained on or made aware of the specific rule involved - or, as is more likely, its corresponding industry equivalent - would suffice. Moreover, certain requirements are so obviously fundamental to safe railroading (e.g., the prohibition against disabling an automatic train control device) that any violation of them, regardless of whether the person was actually aware of the prohibition, should be seen as reckless disregard of the law.. Thus, a lack of subjective knowledge of the law is no impediment to a finding of willfulness. If it were, a mere denial of the content of the particular regulation would provide a defense. Having proposed use of the word “willful,” FRA believes it was not intended to insulate from liability those who simply claim - contrary to the established facts of the case - they had no reason to believe their conduct was wrongful.

A willful violation entails knowledge of the facts constituting the violation, but actual, subjective knowledge need not be demonstrated. It will suffice to show objectively what the alleged violator must have known of the facts based on reasonable inferences drawn from the circumstances. For example, a person shown to have been responsible for performing an initial terminal air brake test that was not in fact performed would not be able to defend against a charge of a willful violation simply by claiming subjective ignorance of the fact that the test was not performed. If the facts, taken as a whole, demonstrated that the person was responsible for doing the test and had no reason to believe it was performed by others, and if that person was shown to have acted with actual knowledge of or reckless disregard for the law requiring such a test, he or she would be subject to a civil penalty.

It should be noted that FRA will apply the same definition of “willful” to corporate acts as is set out here with regard to individual violations. Although railroads are strictly liable for violations of the railroad safety laws and deemed to have knowledge of those laws, FRA's penalty schedules contain, for each regulation, a separate amount earmarked as the initial assessment for willful violations. Where FRA seeks such an extraordinary penalty from a railroad, it will apply the definition of “willful” set forth above. In such cases - as in all civil penalty cases brought by FRA - the aggregate knowledge and actions of the railroad's managers, supervisors, employees, and other agents will be imputed to the railroad. Thus, in situations that FRA decides warrant a civil penalty based on a willful violation, FRA will have the option of citing the railroad and/or one or more of the individuals involved. In cases against railroads other than those in which FRA alleges willfulness or in which a particular regulation imposes a special standard, the principles of strict liability and presumed knowledge of the law will continue to apply.

The RSIA gives individuals the right to protest a direct order to violate the law and to document the protest. FRA will consider such protests and supporting documentation in deciding whether and against whom to cite civil penalties in a particular situation. Where such a direct order has been shown to have been given as alleged, and where such a protest is shown to have been communicated to the supervisor, the person or persons communicating it will have demonstrated their lack of willfulness. Any documentation of the protest will be considered along with all other evidence in determining whether the alleged order to violate was in fact given.

However, the absence of such a protest will not be viewed as warranting a presumption of willfulness on the part of the employee who might have communicated it. The statute says that a

person who communicates such a protest shall be deemed not to have acted willfully; it does not say that a person who does not communicate such a protest will be deemed to have acted willfully. FRA would have to prove from all the pertinent facts that the employee willfully violated the law. Moreover, the absence of a protest would not be dispositive with regard to the willfulness of a supervisor who issued a direct order to violate the law. That is, the supervisor who allegedly issued an order to violate will not be able to rely on the employee's failure to protest the order as a complete defense. Rather, the issue will be whether, in view of all pertinent facts, the supervisor intentionally and voluntarily ordered the employee to commit an act that the supervisor knew would violate the law or acted with reckless disregard for whether it violated the law.

FRA exercises the civil penalty authority over individuals through informal procedures very similar to those used with respect to railroad violations. However, FRA varies those procedures somewhat to account for differences that may exist between the railroad's ability to defend itself against a civil penalty charge and an individual's ability to do so. First, when the field inspector decides that an individual's actions warrant a civil penalty recommendation and drafts a violation report, the inspector or the regional director informs the individual in writing of his or her intention to seek assessment of a civil penalty and the fact that a violation report has been transmitted to the Office of Chief Counsel. This ensures that the individual has the opportunity to seek counsel, preserve documents, or take any other necessary steps to aid his or her defense at the earliest possible time.

Second, if the Office of Chief Counsel concludes that the case is meritorious and issues a penalty demand letter, that letter makes clear that FRA encourages discussion, through the mail, over the telephone or in person, of any defenses or mitigating factors the individual may wish to raise. That letter also advises the individual that he or she may wish to obtain representation by an attorney and/or labor representative. During the negotiation stage, FRA considers each case individually on its merits and gives due weight to whatever information the alleged violator provides.

Finally, in the unlikely event that a settlement cannot be reached, FRA sends the individual a letter warning of its intention to request that the Attorney General sue for the initially proposed amount and giving the person a sufficient interval (e.g., 30 days) to decide if that is the only alternative.

FRA believes that the intent of Congress would be violated if individuals who agree to pay a civil penalty or are ordered to do so by a court are indemnified for that penalty by the railroad or another institution (such as a labor organization).

Although informal, face-to-face meetings are encouraged during the negotiation of a civil penalty charge, the RSIA does not require that FRA give individuals or railroads the opportunity for a formal, trial-type administrative hearing as part of the civil penalty process. FRA does not provide that opportunity because such administrative hearings would be likely to add significantly to the costs an individual would have to bear in defense of a safety claim (and also to FRA's enforcement expenses) without shedding any more light on what resolution of the matter is fair than would the informal procedures set forth here. Of course, should an individual or railroad

decide not to settle, that person would be entitled to a trial de novo when FRA, through the Attorney General, sued to collect the penalty in the appropriate United States district court.

FRA's traditional practice has been to issue penalty schedules assigning to each particular regulation or order specific dollar amounts for initial penalty assessments. The schedule (except where issued after notice and an opportunity for comment) constitutes a statement of agency policy, and is ordinarily issued as an appendix to the relevant part of the Code of Federal Regulations. For each regulation or order, the schedule shows two amounts within the \$853 to \$27,904 range in separate columns, the first for ordinary violations, the second for willful violations (whether committed by railroads or individuals). The schedule amounts are meant to provide guidance as to FRA's policy in predictable situations, not to bind FRA from using the full range of penalty authority where extraordinary circumstances warrant.

The term "railroad" as used in safety laws means all forms of non-highway ground transportation that run on rails or electromagnetic guideways, including (1) commuter or other short-haul rail passenger service in a metropolitan or suburban area, as well as any commuter rail service which was operated by the Consolidated Rail Corporation as of January 1, 1979, and (2) high speed ground transportation systems that connect metropolitan areas, without regard to whether they use new technologies not associated with traditional railroads. Such term does not include rapid transit operations within an urban area that are not connected to the general railroad system of transportation.

The RSIA also made clear that FRA's safety jurisdiction is not confined to entities using traditional railroad technology. The new definition of "railroad" emphasized that all non-highway high speed ground transportation systems - regardless of technology used - would be considered railroads.

Thus, with the exception of self-contained urban rapid transit systems, FRA's statutory jurisdiction extends to all entities that can be construed as railroads by virtue of their providing non-highway ground transportation over rails or electromagnetic guideways, and will extend to future railroads using other technologies not yet in use. For policy reasons, however, FRA does not exercise jurisdiction under all of its regulations to the full extent permitted by statute. Based on its knowledge of where the safety problems were occurring at the time of its regulatory action and its assessment of the practical limitations on its role, FRA has, in each regulatory context, decided that the best option was to regulate something less than the total universe of railroads.

For example, all of FRA's regulations exclude from their reach railroads whose entire operations are confined to an industrial installation (i.e., "plant railroads"), such as those in steel mills that do not go beyond the plant's boundaries. (E.g., 49 C.F.R. 225.3(a)(1) (accident reporting regulations)). Some rules exclude passenger operations that are not part of the general railroad system (such as some tourist railroads) only if they meet the definition of "insular." (E.g., 49 C.F.R. § 225.3(a)(3) (accident reporting)) and 234.3(c) (grade crossing signal safety). Other regulations exclude not only plant railroads but all other railroads that are not operated as a part of, or over the lines of, the general railroad system of transportation. (E.g., 49 C.F.R. § 214.3 (railroad workplace safety)).

By “general railroad system of transportation,” FRA refers to the network of standard gage track over which goods may be transported throughout the nation and passengers may travel between cities and within metropolitan and suburban areas. Much of this network is interconnected, so that a rail vehicle can travel across the nation without leaving the system. However, mere physical connection to the system does not bring trackage within it. For example, trackage within an industrial installation that is connected to the network only by a switch for the receipt of shipments over the system is not a part of the system.

Moreover, portions of the network may lack a physical connection but still be part of the system by virtue of the nature of operations that take place there. For example, the Alaska Railroad is not physically connected to the rest of the general system but is part of it. The Alaska Railroad exchanges freight cars with other railroads by car float and exchanges passengers with interstate carriers as part of the general flow of interstate commerce. Similarly, an intercity high speed rail system with its own right of way would be part of the general system although not physically connected to it. The presence on a rail line of any of these types of railroad operations is a sure indication that such trackage is part of the general system: the movement of freight cars in trains outside the confines of an industrial installation, the movement of intercity passenger trains, or the movement of commuter trains within a metropolitan or suburban area. Urban rapid transit operations are ordinarily not part of the general system, but may have sufficient connections to that system to warrant exercise of FRA's jurisdiction (see discussion of passenger operations, below). Tourist railroad operations are not inherently part of the general system and, unless operated over the lines of that system, are subject to few of FRA's regulations.

The boundaries of the general system are not static. For example, a portion of the system may be purchased for the exclusive use of a single private entity and all connections, save perhaps a switch for receiving shipments, severed. Depending on the nature of the operations, this could remove that portion from the general system. The system may also grow, as with the establishment of intercity service on a new line. However, the same trackage cannot be both inside and outside of the general system depending upon the time of day. If trackage is part of the general system, restricting a certain type of traffic over that trackage to a particular portion of the day does not change the nature of the line - it remains the general system.

Even where a railroad operates outside the general system, other railroads that are part of that system may have occasion to enter the first railroad's property (e.g., a major railroad goes into a chemical or auto plant to pick up or set out cars). In such cases, the railroad that is part of the general system remains part of that system while inside the installation; thus, all of its activities are covered by FRA's regulations during that period. The plant railroad itself, however, does not get swept into the general system by virtue of the other railroad's activity, except to the extent it is liable, as the track owner, for the condition of its track over which the other railroad operates during its incursion into the plant. Of course, in the opposite situation, where the plant railroad itself operates beyond the plant boundaries on the general system, it becomes a railroad with respect to those particular operations, during which its equipment, crew, and practices would be subject to FRA's regulations.

In some cases, the plant railroad leases track immediately adjacent to its plant from the general system railroad. Assuming such a lease provides for, and actual practice entails, the

exclusive use of that trackage by the plant railroad and the general system railroad for purposes of moving only cars shipped to or from the plant, the lease would remove the plant railroad's operations on that trackage from the general system for purposes of FRA's regulations, as it would make that trackage part and parcel of the industrial installation. (As explained above, however, the track itself would have to meet FRA's standards if a general system railroad operated over it. *See*, 49 C.F.R. 213.5 for the rules on how an owner of track may assign responsibility for it.) A lease or practice that permitted other types of movements by general system railroads on that trackage would, of course, bring it back into the general system, as would operations by the plant railroad indicating it was moving cars on such trackage for other than its own purposes (e.g., moving cars to neighboring industries for hire).

FRA exercises **jurisdiction over tourist, scenic, and excursion railroad operations** whether or not they are conducted on the general railroad system. There are two exceptions: (1) operations of less than 24-inch gage (which, historically, have never been considered railroads under the Federal railroad safety laws); and (2) operations that are off the general system and "insular". FRA considers a tourist operation to be insular if its operations are limited to a separate enclave in such a way that there is no reasonable expectation that the safety of any member of the public except a business guest, a licensee of the tourist operation or an affiliated entity, or a trespasser would be affected by the operation. A tourist operation will not be considered insular if one or more of the following exists on its line:

- A public highway-rail crossing that is in use;
- An at-grade rail crossing that is in use;
- A bridge over a public road or waters used for commercial navigation; or
- A common corridor with a railroad, i.e., its operations are within 30 feet of those of any railroad.

FRA's Policy on Jurisdiction Over Passenger Operations

FRA has jurisdiction over all railroads except "rapid transit operations in an urban area that are not connected to the general railroad system of transportation." 49 U.S.C. § 20102. Within the limits imposed by this authority, FRA exercises jurisdiction over all railroad passenger operations, regardless of the equipment they use, unless FRA has specifically stated below an exception to its exercise of jurisdiction for a particular type of operation. This policy is stated in general terms and does not change the reach of any particular regulation under its applicability section. That is, while FRA may generally assert jurisdiction over a type of operation here, a particular regulation may exclude that kind of operation from its reach. Therefore, this statement should be read in conjunction with the applicability sections of all of FRA's regulations.

Intercity Passenger Operations

FRA exercises jurisdiction over all intercity passenger operations. Because of the nature of the service they provide, standard gage intercity operations are all considered part of the general railroad system, even if not physically connected to other portions of the system. Other intercity

passenger operations that are not standard gage (such as a magnetic levitation system) are within FRA's jurisdiction even though not part of the general system.

Commuter Operations

FRA exercises jurisdiction over all commuter operations. FRA considers commuter railroads to be part of the general railroad system regardless of connections. FRA will presume that an operation is a commuter railroad if there is a statutory determination that Congress considers a particular service to be commuter rail. For example, in the Northeast Rail Service Act of 1981, 45 U.S.C. § 1104(3), Congress listed specific commuter authorities. If that presumption does not apply, and the operation does not meet the description of a system that is presumptively urban rapid transit (see below), FRA will determine whether a system is commuter or urban rapid transit by analyzing all of the system's pertinent facts. FRA is likely to consider an operation to be a commuter railroad if:

- The system serves an urban area, its suburbs, and more distant outlying communities in the greater metropolitan area,
- The system's primary function is moving passengers back and forth between their places of employment in the city and their homes within the greater metropolitan area, and moving passengers from station to station within the immediate urban area is, at most, an incidental function, and
- The vast bulk of the system's trains are operated in the morning and evening peak periods with few trains at other hours.

Examples of commuter railroads include Metra and the Northern Indiana Commuter Transportation District in the Chicago area; Virginia Railway Express and MARC in the Washington area; and Metro-North, the Long Island Railroad, New Jersey Transit, and the Port Authority Trans Hudson (PATH) in the New York area.

Other Short Haul Passenger Service

The federal railroad safety statutes give FRA authority over “commuter or other short-haul railroad passenger service in a metropolitan or suburban area.” 49 U.S.C. § 20102. This means that, in addition to commuter service, there are other short-haul types of service that Congress intended that FRA reach. For example, a passenger system designed primarily to move intercity travelers from a downtown area to an airport, or from an airport to a resort area, would be one that does not have the transportation of commuters within a metropolitan area as its primary purpose. FRA would ordinarily exercise jurisdiction over such a system as “other short-haul service” unless it meets the definition of urban rapid transit and is not connected in a significant way to the general system.

Urban Rapid Transit Operations

One type of short-haul passenger service requires special treatment under the safety statutes: “rapid transit operations in an urban area.” Only these operations are excluded from FRA’s jurisdiction, and only if they are “not connected to the general railroad system.” FRA will presume that an operation is an urban rapid transit operation if the system is not presumptively a commuter railroad (see discussion above) the operation is a subway or elevated operation with its own track system on which no other railroad may operate, has no highway-rail crossings at grade, operates within an urban area, and moves passengers from station to station within the urban area as one of its major functions.

Where neither the commuter railroad nor urban rapid transit presumptions applies, FRA will look at all of the facts pertinent to a particular operation to determine its proper characterization. FRA is likely to consider an operation to be urban rapid transit if:

- The operation serves an urban area (and may also serve its suburbs),
- Moving passengers from station to station within the urban boundaries is a major function of the system and there are multiple station stops within the city for that purpose (such an operation could still have the transportation of commuters as one of its major functions without being considered a commuter railroad), and
- The system provides frequent train service even outside the morning and evening peak periods.

Examples of urban rapid transit systems include the Metro in the Washington, D.C. area, CTA in Chicago, and the subway systems in New York, Boston, and Philadelphia. The type of equipment used by such a system is not determinative of its status. However, the kinds of vehicles ordinarily associated with street railways, trolleys, subways, and elevated railways are the types of vehicles most often used for urban rapid transit operations.

FRA can exercise jurisdiction over a rapid transit operation only if it is connected to the general railroad system, but need not exercise jurisdiction over every such operation that is so connected. FRA is aware of several different ways that rapid transit operations can be connected to the general system. Its policy on the exercise of jurisdiction will depend upon the nature of the connection(s). In general, a connection that involves operation of transit equipment as a part of, or over the lines of, the general system will trigger FRA’s exercise of jurisdiction. Below, we review some of the more common types of connections and their effect on the agency’s exercise of jurisdiction. This is not meant to be an exhaustive list of connections.

Rapid Transit Connections Sufficient To Trigger FRA’s Exercise of Jurisdiction

Certain types of connections to the general railroad system will cause FRA to exercise jurisdiction over the rapid transit line to the extent it is connected. FRA will exercise jurisdiction over the portion of a rapid transit operation that is conducted as a part of or over the lines of the general system. For example, rapid transit operations are conducted on the lines of the general system where the rapid transit operation and other railroad use the same track. FRA will exercise its jurisdiction over the operations conducted on the general system. In situations involving joint use of the same track, it does not matter that the rapid transit operation occupies the track only at

times when the freight, commuter, or intercity passenger railroad that shares the track is not operating. While such time separation could provide the basis for waiver of certain of FRA's rules (*See*, 49 C.F.R. part 211), it does not mean that FRA will not exercise jurisdiction. However, FRA will exercise jurisdiction over only the portions of the rapid transit operation that are conducted on the general system. For example, a rapid transit line that operates over the general system for a portion of its length but has significant portions of street railway that are not used by conventional railroads would be subject to FRA's rules only with respect to the general system portion. The remaining portions would not be subject to FRA's rules. If the non-general system portions of the rapid transit line are considered a "rail fixed guideway system" under 49 C.F.R. part 659, those rules, issued by the Federal Transit Administration (FTA), would apply to them.

Another connection to the general system sufficient to warrant FRA's exercise of jurisdiction is a railroad crossing at grade where the rapid transit operation and other railroad cross each other's tracks. In this situation, FRA will exercise its jurisdiction sufficiently to assure safe operations over the at-grade railroad crossing. FRA will also exercise jurisdiction to a limited extent over a rapid transit operation that, while not operated on the same tracks as the conventional railroad, is connected to the general system by virtue of operating in a shared right-of-way involving joint control of trains. For example, if a rapid transit line and freight railroad were to operate over a movable bridge and were subject to the same authority concerning its use (e.g., the same tower operator controls trains of both operations), FRA will exercise jurisdiction in a manner sufficient to ensure safety at this point of connection. Also, where transit operations share highway-rail grade crossings with conventional railroads, FRA expects both systems to observe its signal rules. For example, FRA expects both railroads to observe the provision of its rule on grade crossing signals that requires prompt reports of warning system malfunctions. *See*, 49 C.F.R. part 234. FRA believes these connections present sufficient intermingling of the rapid transit and general system operations to pose significant hazards to one or both operations and, in the case of highway-rail grade crossings, to the motoring public. The safety of highway users of highway-rail grade crossings can best be protected if they get the same signals concerning the presence of any rail vehicles at the crossing and if they can react the same way to all rail vehicles.

Mere use of a common right-of-way or corridor in which the conventional railroad and rapid transit operation do not share any means of train control, have a rail crossing at grade, or operate over the same highway-rail grade crossings would not trigger FRA's exercise of jurisdiction. In this context, the presence of intrusion detection devices to alert one or both carriers to incursions by the other one would not be considered a means of common train control. These common rights of way are often designed so that the two systems function completely independently of each other. FRA and FTA will coordinate with rapid transit agencies and railroads wherever there are concerns about sufficient intrusion detection and related safety measures designed to avoid a collision between rapid transit trains and conventional equipment.

Where these very minimal connections exist, FRA will not exercise jurisdiction unless and until an emergency situation arises involving such a connection, which is a very unlikely event. However, if such a system is properly considered a rail fixed guideway system, FTA's rules (49 C.F.R. part 659) will apply to it.

Coordination of the FRA and FTA Programs

FTA's rules on rail fixed guideway systems (49 C.F.R. part 659) apply to any rapid transit systems or portions thereof not subject to FRA's rules. On rapid transit systems that are not sufficiently connected to the general railroad system to warrant FRA's exercise of jurisdiction (as explained above), FTA's rules will apply exclusively. On those rapid transit systems that are connected to the general system in such a way as warrant exercise of FRA's jurisdiction, only those portions of the rapid transit system that are connected to the general system will generally be subject to FRA's rules.

A rapid transit railroad may apply to FRA for a waiver of any FRA regulations. *See*, 49 C.F.R. part 211. FRA will seek FTA's views whenever a rapid transit operation petitions FRA for a waiver of its safety rules. In granting or denying any such waiver, FRA will make clear whether its rules do not apply to any segments of the operation so that it is clear where FTA's rules do apply.

Extraordinary Remedies

While civil penalties are the primary enforcement tool under the federal railroad safety laws, more extreme measures are available under certain circumstances. FRA has authority to issue orders directing compliance with the Federal Railroad Safety Act, the Hazardous Materials Transportation Act, the older safety statutes, or regulations issued under any of those statutes. *See*, 45 U.S.C. § 437(a) and (d), and 49 App. U.S.C. § 1808(a). Such an order may issue only after notice and opportunity for a hearing in accordance with the procedures set forth in 49 C.F.R. part 209, Subpart C. FRA inspectors also have the authority to issue a special notice requiring repairs where a locomotive or freight car is unsafe for further service or where a segment of track does not meet the standards for the class at which the track is being operated. Such a special notice may be appealed to the regional director and the FRA Administrator. *See* 49 C.F.R. part 216, Subpart B.

FRA may, through the Attorney General, also seek injunctive relief in federal district court to restrain violations or enforce rules issued under the railroad safety laws. *See*, 45 U.S.C. § 439 and 49 U.S.C. §1810.

FRA also has the authority to issue, after notice and an opportunity for a hearing, an order prohibiting an individual from performing safety-sensitive functions in the rail industry for a specified period. This disqualification authority is exercised under procedures found at 49 C.F.R. part 209, subpart D.

Criminal penalties are available for knowing violations of 49 U.S.C. § 5104(b), or for willful or reckless violations of the Federal hazardous materials transportation law or a regulation issued under that law. *See* 49 U.S.C. Chapter 51, and 49 C.F.R. §§ 209.131, 133. The Accident Reports Act, 45 U.S.C. § 39, also contains criminal penalties.

FRA's most sweeping enforcement tool is its authority to issue emergency safety orders “where an unsafe condition or practice, or a combination of unsafe conditions or practices, or

both, create an emergency situation involving a hazard of death or injury to persons * * *” 45 U.S.C. § 432(a). After its issuance, such an order may be reviewed in a trial-type hearing. See 49 C.F.R. §§ 211.47 and 216.21 through 216.27. The emergency order authority is unique because it can be used to address unsafe conditions and practices whether or not they contravene an existing regulatory or statutory requirement. Given its extraordinary nature, FRA has used the emergency order authority sparingly.

49 C.F.R. part 209 Appendix A

53 Fed. Reg. 52920, Dec. 29, 1988, as amended at 63 Fed. Reg. 11619, Mar. 10, 1998; 64 Fed. Reg. 62864, Nov. 17, 1999; 65 Fed. Reg. 42544, July 10, 2000; 69 Fed. Reg. 30592, May 28, 2004; 71 Fed. Reg. 77295, Dec. 26, 2006; 72 Fed. Reg. 51196, Sept. 6, 2007; 73 Fed. Reg. 79701, Dec. 30, 2008; 77 Fed. Reg. 24418, Apr. 24, 2012; 81 Fed. Reg. 43108, July 1, 2016; 82 Fed. Reg. 16131, Apr. 3, 2017

DISQUALIFICATION OF EMPLOYEES BY FRA

The FRA has authority to remove an employee from service for violations of the federal laws or regulations where it determines that the employee is not fit for performing safety-sensitive functions. If there is proof of a willful violation of parts 213 through 241, a rebuttable presumption is established that the person is unfit to perform safety-sensitive work.

Service of Process

In general, service of process upon a party shall be either personally or by registered or certified mail. However, service of requests for admission and motions may be made by first-class mail. Service upon a person's duly authorized representative constitutes service upon the individual.

Requests for Admission

The procedures for obtaining requests for admission of facts, the genuineness of documents, and the application of law to facts is specifically set out. A party may serve upon any other party written requests for admission of the genuineness of any relevant documents identified, the truth of any relevant matters of fact, and the application of law to the facts as set forth in the requests. The requests do not involve the participation of the presiding officer unless the parties cannot resolve compliance issues that may arise. Sworn answers to the requests for admission or objections to them must be served within 30 days after receipt of the requests. Failure to answer or object within that time period will result in an admission of the matter requested. Objections to requests may be challenged by filing a motion to compel with the presiding officer. Any matter admitted under this section is conclusively established unless the presiding officer permits withdrawal or amendment of the admission for good cause shown.

Subpoenas

Subpoenas issued in disqualification proceedings may be issued only by the presiding

officer, and only upon a showing that the information sought will materially advance the proceeding.

Depositions

Depositions may be taken only for **good cause** upon a motion filed with the presiding officer. "Good cause" exists when the information sought is relevant to the subject matter involved in the proceeding and (1) not obtainable from some other source that is more convenient, less burdensome, and less expensive, or (2) not unreasonably cumulative, unduly burdensome, or unduly expensive. The presiding officer, when granting a motion for deposition, must give 10 days' notice before the date of the deposition. All discovery, including depositions, must be completed within 90 days after the request for a hearing. An additional 30-day extension may be obtained upon clear and convincing evidence of the need.

Filing of Documents

All materials must be submitted in duplicate with the FRA's Assistant Chief Counsel for Safety in Washington, D. C., except that documents produced in accordance with a subpoena shall be presented at the place and time specified by the subpoena.

Consolidation

The FRA's Chief Counsel may consolidate the individual matter with any similar ones pending against the same person or against other employees, if it is a related matter.

Rules of Evidence

The Federal Rules of Evidence for United States Courts and Magistrates shall be used as general guidelines for the proceedings. However, all relevant and material evidence shall be received into the record.

Motions

All motions shall be in writing, filed with the presiding officer and served upon all the parties, except oral motions made during the course of any hearings. Unless otherwise specified by the presiding officer, any objection to a written motion must be filed within 10 days after receipt of the motion.

Disqualification Procedures

Purpose And Scope

The regulation prescribes the rules for the proceedings relating to the determination of a person's fitness for performing safety-sensitive functions. It does not preempt a railroad from initiating disciplinary actions against an employee. Any decisions made under this regulation shall have no effect on any disciplinary actions taken against an employee by the railroads.

Coverage

The following individuals are covered by the rule:

- (a) Railroad employees who are assigned to perform service subject to the Hours of Service Act whether or not the person has performed or is currently performing such service.
- (b) Railroad employees or agents who: (1) inspect, install, repair, or maintain track and roadbed; (2) inspect, repair, or maintain, locomotives, passenger cars, and freight cars; (3) conduct training and testing of employees when the training or testing is required by the FRA's safety regulations; or
- (c) Railroad managers, supervisors, or agents when they perform safety-sensitive functions listed above, or supervise and otherwise direct the performance of safety-sensitive functions listed above, or are in a position to direct the commission of violations of any railroad safety regulations.

Notice Of Proposed Disqualification

- (a) FRA, through the Chief Counsel, begins a disqualification proceeding by serving a notice of proposed disqualification on the employee charging him or her with having violated one or more rules, regulations, orders, or standards promulgated by FRA, which render the employee unfit to perform safety-sensitive functions.
- (b) The notice of proposed disqualification issued under this section shall contain:
 - (1) A statement of the rule(s), regulation(s), order(s), or standard(s) that the employee is alleged to have violated;
 - (2) A statement of the factual allegations that form the basis of the initial determination that the employee is not fit to perform safety-sensitive functions;
 - (3) A statement of the effective date, duration, and other conditions, if any, of the disqualification order;
 - (4) A statement of the employee's right to answer the charges in writing and furnish affidavits and any other documentary evidence in support of the answer;
 - (5) A statement of the employee's right to make an informal response to the Chief Counsel;
 - (6) A statement of the employee's right to request a hearing and the procedures for requesting a hearing;
 - (7) A statement of the employee's right to counsel or other designated

representative; and

(8) Notice of the consequences of the employee's failure to take any of the actions described in § 209.307(a)[reply within 30 days to notice of disqualification].

(c) The Chief Counsel shall enclose with the notice of proposed disqualification a copy of the material that is relied on in support of the charges. Nothing in this section precludes the Chief Counsel from presenting at a subsequent hearing any evidence of the charges set forth in the notice that the Chief Counsel acquires after service on the employee. The Chief Counsel, however, shall serve a copy of any such evidence on the employee at or before the prehearing conference. Failure to furnish such evidence to employee at or before the prehearing conference bars its introduction at the hearing.

(d) The Chief Counsel shall provide a copy of the notice of proposed disqualification to the railroad that employs the employee.

Reply

Within 30 days after receipt of service of notice of proposed disqualification, the individual must reply in writing to the charges, and he or she may submit documentary evidence in support of the reply. In addition to submitting a written reply, the employee may make an informal response to the Chief Counsel or request an evidentiary hearing. The Chief Counsel may extend the reply period for good cause shown. Failure of the employee to reply in writing to a notice of disqualification will be treated as a waiver of the employee's right to contest the charges.

Informal Response

An individual who elects to make an informal response may submit information, as he or she may desire, to answer the charges. In addition, in the informal written response, the employee may request a conference with the Chief Counsel. Based upon the written response, the Chief Counsel could dismiss the charges or issue any other appropriate action. No order shall be issued unless the employee consents to the imposition of the disqualification and waives in writing his or her right to a hearing. If the parties are unable to reach a settlement within 30 days of service of the employee's reply upon the Chief Counsel, the Chief Counsel shall terminate the negotiations by serving the employee written notice of termination of settlement negotiations. The employee does not waive his right to a hearing by filing a written response to the charges and requesting a conference with the Chief Counsel. Within 10 days after the receipt of notice of termination of settlement negotiations, the individual may exercise the right to a hearing. Failure to request a hearing within the 10 days will constitute a waiver of the employee's right to such a hearing. The Chief Counsel may extend the time for requesting a hearing upon good cause shown.

Request For A Hearing

An employee who requests a hearing must do so within 30 days after receipt of the notice of proposed disqualification or, if the employee pursues an informal response, the hearing must be

requested within 10 days after receipt of the notice of termination of settlement negotiations. The written request must be signed by the employee and include at a minimum the following information: name, address, and phone number of the individual and his or her representative, if any; a specific response to the charges, admitting, denying, or explaining each allegation contained in the notice of disqualification; and the description of the claims and defenses that the individual intends to raise at the hearing. A defense raised at the prehearing conference or the hearing, which was not identified in the employee's hearing request, will be subject to a motion to strike by the Chief Counsel. Absent compelling reasons, the motion will be granted. After notice of the proposed disqualification, no new charges may be added, nor may a more severe disqualification order be proposed. Upon receipt of a hearing request, the Chief Counsel shall arrange for the appointment of a presiding officer who will be an administrative law judge. The Chief Counsel and the employee in a case pending before a presiding officer may agree to settle or dismiss a case without the approval of the presiding officer.

Discovery

Discovery may be obtained by request for admission, request for production of documentary, or other tangible evidence and deposition. Discovery is not permitted during an employee's informal response to the notice of proposed disqualification. Discovery must be completed within 90 days after the employee requests a hearing. Upon motion for good cause shown, a 30-day extension may be granted by the presiding officer. In an extremely rare situation, an additional 30-day extension may be granted when there is clear and convincing evidence that the party was unable to complete discovery within a 120-day time period. If a party fails to comply with a discovery order or an order to compel, the presiding officer may impose sanctions by: (1) striking any appropriate part of the pleadings; (2) prohibit the party failing to comply from introducing evidence relating to the information sought; (3) draw an inference in favor of the requesting party; and (4) permit the requesting party to introduce secondary evidence concerning the information sought. These sanctions are limited and will avoid complete dismissal of the case based solely on the Chief Counsel's failure to participate in discovery. Similarly, a disqualification order will not be issued based solely on an employee's failure to participate in discovery.

Subpoenas

Only the presiding officer may issue a subpoena.

Official Record

This specifies what is to be contained in the official record --i.e. notice of proposed disqualification, reply, exhibits, hearing transcript, pleadings, stipulations, admissions, rulings, and orders.

Prehearing Conference

A pre-hearing conference must be conducted within 150 days of the employee's request for a hearing under § 209.311. This provides an opportunity to simplify the issues, enter into

stipulations, and exchange witness lists and exhibits that are approved by the presiding officer. It shall be conducted at least 10 days before the hearing.

Hearing

The presiding officer is required to begin the hearing within 180 days of the employee's request for a hearing, and give the parties at least 20 days' notice of the date of the hearing. The witnesses shall testify under oath and the hearing shall be open to the public. However, the presiding officer may close the hearing if it would be in the best interests to do so. The powers of the presiding officer are consistent with, and based upon, the powers outlined in the Administrative Procedure Act. The FRA has the burden of proof, by a preponderance of the evidence, as to the facts alleged in the notice of proposed disqualification, the employee's unfitness, and the reasonableness of the terms of the proposed disqualification. When the Chief Counsel proves that an individual committed a willful violation of one of the regulations, the employee is presumed to be unfit. However, this presumption is rebuttable. This does not shift the Chief Counsel's burden of proof. It does, however, impose on the employee the burden of going forward with the evidence to rebut the presumption. The FRA considers a "willful act" to be one that is intentional, voluntary and committed either with knowledge of the relevant law, or with reckless disregard for whether the act violated the requirements of the law. The generally accepted definition of "preponderance of the evidence" is that degree of evidence which is more likely to be true than untrue. It should be kept in mind that even a person who obeyed an order to perform an act that violates a safety regulation, he or she could still be held unfit, if the employee did not protest the action to the supervisor who gave the order. Therefore, it is important for the employee to protest any order that he or she believes to violate a safety law or regulation.

Initial Decision

The order of the presiding officer is an initial decision. It shall contain findings of fact and conclusions of law and the reasons therefore, which shall be based upon the evidence and argument presented in the record, the terms and conditions of any disqualification order, the date the decision shall become final 35 days after issuance of the decision, unless an appeal is filed and the party's appeal rights to the Administrator. The Chief Counsel shall provide a copy of the order to the employing railroad. The employee is also required to notify the employing railroad of the issuance of the order.

Finality Of The Decision

The initial decision shall become final 35 days after issuance, unless any party files an appeal. The timely filing of an appeal shall stay the order in the initial decision. Since an appeal of an initial decision is permissive, the initial decision, when final, is subject to judicial review in the United States District Court under 28 U.S.C. § 1331 and 5 U.S.C. §§ 701-706.

Appeal

An appeal under this regulation means that the employee must file a brief with the FRA

Administrator, not merely a notice of appeal. Any party may file an appeal with the Administrator within 35 days of issuance of the initial decision. For good cause shown, an extension of the filing may be granted by the Administrator. The appeal must set forth objections to the initial decision, discuss applicable laws or regulations, and any evidence relied on in the record should be clearly identified. The opposing party may file a reply brief within 25 days of the service of the appeal. There is no right to oral argument on appeal. It may be permitted only if the Administrator finds that it is necessary to develop the issues. Initial decisions that have been appealed to the Administrator and result in a decision and order of the Administrator constitutes final agency orders and they are subject to judicial review.

Assessment Considerations

This section establishes the rebuttable presumption that the employee is unfit to perform safety-sensitive functions. In determining lack of fitness the factors to be considered include, but are not limited to, the following:

- (1) The nature and circumstances of the violation, including whether the violation was intentional, technical, or inadvertent, was committed willfully, or was frequently repeated;
- (2) The adverse impact or the potentially adverse impact of the violation on the health and safety of persons and the safety of property;
- (3) The railroad's operating rules, safety rules, and repair and maintenance standards;
- (4) Repair and maintenance standards adopted by the industry;
- (5) The consistency of the conditions of the proposed disqualification with disqualification orders issued against other employees for the same or similar violations;
- (6) Whether the employee was on notice of any safety regulations that were violated or whether the respondent had been warned about the conduct in question;
- (7) The employee's past record of committing violations of safety regulations, including previous FRA warnings issued, disqualifications imposed, civil penalties assessed, railroad disciplinary actions, and criminal convictions therefor;
- (8) The civil penalty scheduled for the violation of the safety regulation in question;
- (9) Mitigating circumstances surrounding the violation, such as the existence of an emergency situation endangering persons or property and the need for the employee to take immediate action; and

(10) Such other factors as may be warranted in the public interest.

Enforcement Of Disqualification Order

This imposes a requirement on an employee who is subject to a disqualification order to disclose the order and provide a copy of it to his or her current employer or prospective employer within 5 days after receipt of the order. Any person who violates this requirement may be subject to another disqualification proceeding in which FRA will seek to bar permanently the individual from performing safety-sensitive functions and, if the violation is willful, the individual may be assessed a civil penalty up to \$10,000 per violation. Any railroad that is considering hiring an employee must inquire of the person's former employer as to whether he or she is presently subject to a disqualification order.

Prohibitions

An employee subject to a disqualification order shall not work for any railroad in any manner inconsistent with the order.

Penalties

An employee may be permanently disqualified from performing safety-sensitive functions, and if he or she willfully violates the order may be assessed a civil penalty of at least \$1,000 and not more than \$5,000. The railroad that violates the procedures under this regulation may be assessed a civil penalty of at least \$5,000 and not more than \$10,000 per violation. Each day of a violation constitutes a separate offense.

49 C.F.R. §§ 209.5-209.335 and parts 229-231.

PENALTIES AGAINST INDIVIDUALS

When an Employee Will Be Liable

As discussed under FRA's Enforcement Policies, a railroad worker can be fined for a federal safety violation only if it is "**willful**." To be considered willful by FRA, the violation has to be one that is an intentional voluntary act committed either with knowledge of the relevant law or reckless disregard for whether the act violated the requirements of the law. It is not necessary to show evil intent nor actual knowledge of the law to prove a willful violation. Rather, it requires knowledge of the facts constituting the violation, but actual, subjective knowledge need not be demonstrated. It will be sufficient to show that the alleged violator must have known of the facts based on reasonable emphasis drawn from the circumstances. For example, a person shown to have been responsible for performing an initial terminal brake test that was not in fact performed would not be able to defend against a willful claim simply by stating ignorance of the fact that the test was not performed.

The employee has a right to protest a direct order by a supervisor to violate the law. Where such a protest is shown to have been communicated to the supervisor, the employee

communicating it will have demonstrated lack of willfulness. This does not mean that a person who does not communicate such a protest will be deemed to have acted willfully. That will depend on the particular circumstances of the case.

The Procedures FRA Will Follow to Impose a Fine

1. When an FRA inspector discovers what he considers to be a violation by an employee, he will draft a violation report. This is essentially a recommendation to the Office of Chief Counsel to assess a penalty based upon the evidence in the report. The inspector will inform the employee in writing of his intent to seek assessment of a civil penalty and the fact that a violation report has been transmitted to the Office of Chief Counsel. This procedure will give the employee an opportunity to seek counsel, obtain documents, or take any other steps to aid in his or her defense.

2. Next, if the Office of Chief Counsel concludes that the case is meritorious it will issue a penalty demand letter. Such letter will summarize the claims, and enclose the violation report with a copy of all the evidence on which FRA is relying. The letter will make clear that FRA encourages discussions, through the mail, over the phone, or in person, of any defenses or mitigating factors the employer may wish to raise. That letter will also advise the employee that he or she may wish to obtain representation by an attorney and/or collective bargaining representative.

3. In the event that a compromise cannot be reached, FRA will send the individual a letter warning of its intention to request that the Attorney General sue for the initially proposed amount and giving the person 30 to 90 days to decide if the penalty shall be paid before the lawsuit commences.

The Amount of Penalties

The penalties which can be imposed by the FRA on an individual are between \$250 up to \$25,000 per violations, except for a grossly negligent violation or pattern of repeated violations which creates an imminent hazard of death or injury (or has actually caused death or injury), a penalty of up to \$100,000 per violation may be assessed. These penalties, under the safety statutes, are applicable to all except the Hours of Service Act violations. The Hours of Service Act penalty provision imposes a fine up to \$1,000 per violation.

In addition, the FRA may suspend or disqualify an individual whose violations of the safety laws is shown to make that individual unfit for the performance of safety sensitive functions. It should be noted that this does not require a showing of willfulness, as does the imposition of fines. The FRA also may remove an employee under its powers in the Emergency Order provisions of the Federal Railroad Safety Act.

49 U.S.C. § 21301

HIGHWAY- RAIL GRADE CROSSING SAFETY

There are approximately 211,000 highway-rail grade crossings in the U.S. Approximately 38,000 locations are where tracks and roadways cross at different levels. Except for trespassing

on railroad property, crossing collisions have caused more railroad –related deaths than any other single factor.

There is a requirement for each railroad that dispatches a train through a crossing to have a toll-free telephone emergency notification number for reporting problems at such public and private highway-rail grade crossings. Upon such notification, the said railroad must notify local law enforcement officers of the unsafe condition, and either investigate the report or have the railroad which maintains the crossing to investigate. The unsafe condition must be remedied promptly.

A. LEGISLATION

There are several laws covering highway rail grade crossings. The major ones are as follows:

Passenger Rail Investment and Improvement Act of 2008 (PRIIA)

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) reauthorizes Amtrak, and strengthens the US passenger rail network by tasking Amtrak, DOT, FRA, states, and other stakeholders in improving service, operations, and facilities. PRIIA focuses on intercity passenger rail, including Amtrak’s long-distance routes and the Northeast Corridor (NEC), state-sponsored corridors throughout the Nation, and the development of high-speed rail corridors.

American Recovery and Reinvestment Act of 2009 (ARRA)

The American Recovery and Reinvestment Act of 2009 was signed into law on February 17, 2009. It serves an effort to jumpstart our economy, and create jobs. It includes measures to modernize our nation's infrastructure, enhance energy independence, expand educational opportunities, preserve and improve affordable health care, and provide tax relief.

Rail Safety Improvement Act of 2008 (RSIA)

This law was the first authorization of FRA’s safety programs since 1994. RSIA directs FRA to, among other things, promulgate new safety regulations. These new regulations cover safety at highway-rail grade crossings.

23 U.S.C. §130

This law provides funding for projects at all public crossings, including roadways, bike trails and pedestrian paths. Fifty percent of a State's apportionment is dedicated for the installation of protective devices at crossings. The remainder of the funds can be used for any hazard elimination project, including protective devices. The funds can be used as incentive payments for local agencies to close public crossings, provided there are matching funds from the railroad. Also, the funds can be used for local agencies to provide matching funds for State-funded projects. Typically, the Section 130 projects are funded at 90% federal share, but up to 100%

federal share is allowed for projects such as closure of a grade crossing and the installation of traffic signs or signals.

States are required to maintain a survey of all crossings that may need separation, relocation, or protective devices, and implement a schedule of projects for this purpose. At a minimum, the schedule is to provide signs for all railway-highway crossings.

In addition, States are to maintain a crossing inventory database, including information about warning devices and signage for each public crossing. The inventory is maintained by the FRA.

On November 8, 2018, the GAO issued a report recommending that FHWA and FRA work together to evaluate whether they allow states enough flexibility to adequately address current and emerging grade-crossing safety issues. (GAO-19-80).

Model State Legislation

FRA has developed model legislation, made available to States, to address the following railroad safety issues.

- Sight Distance at Passive Highway-Rail Grade Crossings. (Model State law issued Jan. 7, 2011).
- Highway-Rail Grade Crossing Violations by Motorists. (Model State law issued Feb. 22, 2011).

B. TRESPASSER SAFETY

Nearly every 115 minutes in America, someone is hit by a train. Combined, highway-rail crossing and trespasser deaths account for 90 percent of all rail-related deaths. Unfortunately, most of these accidents are avoidable. Nationally, more than 550 trespass fatalities and nearly as many injuries occur each year.

As a result, FRA has published a public information campaign to educate the American people that they should "Always Expect A Train", with the goal to change the public's behavior by increasing awareness of the dangers at highway-rail crossings and trespassing on railroad property.

C. REGULATIONS:⁷⁸

1. DRIVING OF COMMERCIAL MOTOR VEHICLES

§ 392.10. Railroad grade crossings; stopping required. (a) With some exceptions,, the driver of a commercial motor vehicle shall not cross a railroad track or tracks at grade unless he/she first: Stops the commercial motor vehicle within 50 feet of, and not closer than 15 feet to, the tracks; thereafter listens and looks in each direction along the tracks for an approaching train; and

⁷⁸ See the discussion covering Blowing of Locomotive Horns

ascertains that no train is approaching. When it is safe to do so, the driver may drive the commercial motor vehicle across the tracks in a gear that permits the commercial motor vehicle to complete the crossing without a change of gears. The driver must not shift gears while crossing the tracks.

§392.12 On September 25, 2013, FMCSA and the Pipeline and Hazardous Materials Administration published a new regulation to prohibit a driver of a CMV or of a motor vehicle transporting certain hazardous materials or certain agents or toxins from entering onto a highway-rail grade crossing unless there is sufficient space to drive completely through the crossing without stopping.

2. SIGNAL SYSTEM SAFETY REGULATIONS

Part 212

§ 212.231 Highway-rail grade crossing inspector

State inspectors would be authorized to enforce grade crossing system safety regulations.

§ 212.233 Apprentice Highway - Rail Grade Crossing Inspector

Applicants must meet minimum requirements prior to being enrolled in the inspector training program.

Part 234

This rule prescribes standards for reporting failures. Railroads are permitted to impose more stringent requirements.

§ 234.1 Scope

Railroads must take specific and timely action to protect the public and railroad employees from malfunctioning highway rail-grade crossing warning systems by adhering to the maintenance, inspection, and testing standards proposed in these regulations.

This part imposes minimum maintenance, inspection, and testing standards for highway-rail grade crossing warning systems. This part also prescribes standards for the reporting of failures of such systems and prescribes minimum actions railroads must take when such warning systems malfunction. This part also requires particular identified States to develop State highway-rail grade crossing action plans. This part does not restrict a railroad from adopting and enforcing additional or more stringent requirements not inconsistent with this part.

§234.3 Application

- (a) A railroad that exclusively operates freight trains only on track which is not part of the general railroad system of transportation;
- (b) Rapid transit operations within an urban area that are not connected to the general

railroad system of transportation; and

(c) A railroad that operates passenger trains only on track inside an installation that is insular; i.e., its operations are limited to a separate enclave in such a way that there is no reasonable expectation that the safety of the public—except a business guest, a licensee of the railroad or an affiliated entity, or a trespasser—would be affected by the operation. An operation will not be considered insular if one or more of the following exists on its line:

- (1) A public highway-rail crossing that is in use;
- (2) An at-grade rail crossing that is in use;
- (3) A bridge over a public road or waters used for commercial navigation; or
- (4) A common corridor with a railroad, i.e., its operations are within 30 feet of those of any railroad.

§ 234.5 Definitions:

As used in this part:

Activation failure means the failure of an active highway-rail grade crossing warning system to indicate the approach of a train at least 20 seconds prior to the train's arrival at the crossing, or to indicate the presence of a train occupying the crossing, unless the crossing is provided with an alternative means of active warning to highway users of approaching trains. (This failure indicates to the motorist that it is safe to proceed across the railroad tracks when, in fact, it is not safe to do so.) A grade crossing signal system does not indicate the approach of a train within the meaning of this paragraph if—more than 50 percent of the flashing lights (not gate arm lights) on any approach lane to the crossing are not functioning as intended, or in the case of an approach lane for which two or more pairs of flashing lights are provided, there is not at least one flashing light pair operating as intended. Back lights on the far side of the crossing are not considered in making these determinations.

Appropriately equipped flagger means a person other than a train crewmember who is equipped with a vest, shirt, or jacket of a color appropriate for daytime flagging such as orange, yellow, strong yellow green or fluorescent versions of these colors or other generally accepted high visibility colors. For nighttime flagging, similar outside garments shall be retro reflective. Acceptable hand signal devices for daytime flagging include “STOP/SLOW” paddles or red flags. For nighttime flagging, a flashlight, lantern, or other lighted signal shall be used. Inasmuch as Part VI of the Federal Highway Administration’s Manual on Uniform Traffic Control Devices addresses standards and guides for flaggers and flagging equipment for highway traffic control, FRA recommends that railroads be aware of the standards and follow them to the greatest extent possible. Copies of the latest MUTCD provisions regarding flagging will be available from FRA, as well as FMCSA, as changes are made in this area.

234-6

Credible report of system malfunction means specific information regarding a malfunction at an identified highway-rail crossing, supplied by a railroad employee, law enforcement officer, highway traffic official, or other employee of a public agency acting in an official capacity.

False activation means the activation of a highway-rail grade crossing warning system caused by a condition that requires correction or repair of the grade crossing warning system. (This failure indicates to the motorist that it is not safe to cross the railroad tracks when, in fact, it is safe to do so.)

Highway-rail grade crossing means a location where a public highway, road, street, or

private roadway, including associated sidewalks and pathways, crosses one or more railroad tracks at grade.

Partial activation means activation of a highway-rail grade crossing warning system indicating the approach of a train, however, the full intended warning is not provided due to one of the following conditions:

- (1) At non-gated crossings equipped with one pair of lights designed to flash alternately, one of the two lights does not operate properly (and approaching motorists can not clearly see flashing back lights from the warning lights on the other side of the crossing);
- (2) at gated crossings, the gate arm is not in a horizontal position; or
- (3) at gated crossings, any portion of a gate arm is missing if that portion normally had a gate arm flashing light attached.

Train means one or more locomotives, with or without cars.

Warning system malfunction means an activation failure, a partial activation, or a false activation of a highway-rail grade crossing warning system.

§ 234.6 Penalties

(a) **Civil Penalty.** Any person who willfully violates any requirement or causes the violation of any requirement is subject to a civil penalty of at least \$650.00, but no more than \$25,000. For gross negligence or a pattern of repeated violations that has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty may be imposed up to \$100,000 for each violation. The definition of "Person" includes a railroad, its employees, and manufacturers and lessors of railroad equipment and independent contractors. Appendix A to the rule sets out a schedule of penalties for each type of violation. It should be noted that FRA does not consider it a violation if the railroad, exercising due diligence, could not have prevented the condition because it was not within the railroad's control.

(b) **Criminal penalty.** Whoever knowingly and willfully makes, causes to be made, or participates in the making of a false entry in reports required to be filed by this part, or files a false report or other document required to be filed by this part, except for any document filed pursuant to § 234.11, is subject to a \$5,000 fine and 2 years imprisonment as prescribed by 49 U.S.C. 522(a) and 21311(a).

§ 234.7 Accidents Involving Grade Crossing Signal Failure

Each railroad shall report to FRA every impact between on-track railroad equipment and any other moving vehicle involving activation failure. Notification shall be provided to the National Response Center within 24 hours of the occurrence. A complete accident report shall be filed thereafter with the FRA.

§ 234.9 Grade Crossing Signal System Failure Reports

This section requires each railroad to report within 15 days each activation failure of an active highway-rail grade crossing warning system. It requires that each activation failure, including those resulting in an accident/incident, as defined in § 225.5(1), be reported to FRA within 15 days on Form FRA F6180.83 in accordance with the instructions contained on the form. Application of this rule includes that the

report of each instance be complete and correct. The completed form shall be submitted to the FRA Regional Administrator of the region in which the railroad is headquartered.

An activation failure is as defined in § 234.5.

It shall not constitute an activation failure if on-track railroad equipment is not designed, equipped, and relied upon to activate the highway-rail grade crossing warning system.

§ 234.11 State highway-rail grade crossing action plans.

This section requires that the ten States that have had the most highway-rail grade crossing collisions, on average—during the calendar years 2006, 2007, and 2008—develop a State highway-rail grade crossing action plan and submit such a plan to FRA for review and approval not later than August 27, 2011. It further identifies what information shall be included and the process regarding FRA’s review and approval of each plan.

This section requires an action plan from the ten identified States by not later than the date indicated but does not require subsequent plans beyond that date.

SUBPART C. -- Response to Reports of Warning System Malfunction

§234.101 Employee Notification Rules

Each railroad shall issue rules requiring employees to report to a designated railroad person, by the quickest means available, any warning system malfunction.

§ 234.103 Timely Response to Report of Malfunction

This section requires that once a credible report of a malfunction of a highway-rail grade crossing warning system has been received, the railroad having maintenance responsibility for the warning system shall promptly investigate the report. Further, if such malfunction is found to be caused by a faulty component, such component shall be adjusted, repaired, or replaced without undue delay, as required by § 234.207.

A “credible report of a highway-rail grade crossing warning system malfunction” is defined in § 234.5 as a report from a railroad employee, law enforcement officer, highway traffic official, or other employee of a public agency acting in an official capacity. A “warning system malfunction” is defined in § 234.5 as an activation failure, a partial activation, or a false activation of a highway-rail grade crossing warning system.

234-12

This section also requires that the railroad provide alternative means of warning highway traffic and railroad employees in accordance with §§ 234.105, 234.106, or 234.107, until the malfunction has been investigated and repair or correction of the warning system is completed, or until the system is discontinued or dismantled.

This section specifies that nothing in these regulations forces a railroad to continually repair a warning system that, under State law, may be retired. However, a railroad must still comply with this subpart during retirement proceedings. This section requires that, until repair, correction,

discontinuance, or dismantling of the system is completed, the railroad must comply with this part.

In summary, each railroad must take prompt action to investigate any credible report of a malfunctioning highway-rail grade crossing warning system, and each malfunction shall be corrected without undue delay. This section does not require a railroad to continue to repair and maintain a highway-rail grade crossing warning system that might otherwise be discontinued under State laws. The railroad may elect to discontinue and disassemble the warning system, but until the warning system is physically removed, the railroad shall provide alternative means of warning the highway users and railroad employees.

§ 234.105 Activation Failure

Upon receipt of a credible report of warning system malfunction involving an activation failure, a railroad having maintenance responsibility for the warning system shall promptly initiate efforts to warn highway users and railroad employees at the subject crossing by taking the following actions:

- (a) Prior to any train's arrival at the crossing, notify the train crew of the report of activation failure and notify any other railroads operating over the crossing;
- (b) Notify the law enforcement agency having jurisdiction over the crossing, or railroad police capable of responding and controlling vehicular traffic; and
- (c) Provide for alternative means of actively warning highway users of approaching trains, consistent with the following requirements (see appendix B for a summary chart of alternative means of warning):
 - (1)(i) If an appropriately equipped flagger provides warning for each direction of highway traffic, trains may proceed through the crossing at normal speed.
 - (ii) If at least one uniformed law enforcement officer (including a railroad police officer) provides warning to highway traffic at the crossing, trains may proceed through the crossing at normal speed.
 - (2) If an appropriately equipped flagger provides warning for highway traffic, but there is not at least one flagger providing warning for each direction of highway traffic, trains may proceed with caution through the crossing at a speed not exceeding 15 miles per hour. Normal speed may be resumed after the locomotive has passed through the crossing.
 - (3) If there is not an appropriately equipped flagger or uniformed law enforcement officer providing warning to highway traffic at the crossing, each train must stop before entering the crossing and permit a crewmember to dismount to flag highway traffic to a stop. The locomotive may then proceed through the crossing, and the flagging crewmember may reboard the locomotive before the remainder of the train proceeds through the crossing.
 - (d) A locomotive's audible warning device shall be activated in accordance with railroad rules regarding the approach to a grade crossing.

§ 234.106 Partial Activation

This section requires that a railroad having maintenance responsibility for a warning system take prompt action to provide alternative means of warning highway users and railroad employees at a crossing where a credible report of a system malfunction involving a partial

activation has been received. This section further requires that specific actions be followed to provide that alternative warning.

When a railroad receives a credible report of a system malfunction involving a partial activation, it is required to take prompt action to notify train crews and other railroads operating over such crossing prior to the next train operation over the crossing. Further, the railroad is required to notify the law enforcement agency having jurisdiction over such crossing, or the railroad police who are capable of responding to control vehicular traffic at the crossing. Finally, the railroad must take action to assure that its employees, or a law enforcement agency, provide the required alternative means of warning for highway users at the crossing.

A credible report of a highway-rail grade crossing warning system malfunction is defined in § 234.5 as a report from a railroad employee, law enforcement officer, highway traffic official, or other employee of a public agency acting in an official capacity. A warning system malfunction is defined in § 234.5 as an activation failure, a partial activation, or a false activation of a highway-rail grade crossing warning system.

When the alternative warning that is provided consists of at least one uniformed law enforcement officer, or one uniformed railroad police officer, or an appropriately equipped flagger for each direction of highway traffic at the crossing, trains may proceed over the crossing at normal speed. If there is not an appropriately equipped flagger for each direction of highway traffic or at least one uniformed law enforcement officer or uniformed railroad police officer at the crossing, each train may proceed with caution through the crossing at a speed not exceeding 15 mph. A train may proceed at normal speed after its locomotive has passed over the crossing. Where a shoving movement is involved, a crewmember must be on the ground to flag the train through the crossing.

Note: The appropriately equipped flagger requirements are very narrow in scope in that only in the event the flagger(s) is being used as alternative warning to allow train movement through the crossing at normal speed do the appropriately equipped provisions apply.

In lieu of complying with the alternative warning requirements listed above, a railroad may temporarily take the warning system out of service if the railroad complies with all requirements of § 234.105, “Activation failure.”

At crossings where it has been determined that the warning system is not functioning as intended, § 234.207’s requirement for adjustment, repair, or replacement without undue delay applies.

This section also requires that the locomotive audible warning device be activated in accordance with railroad rules when approaching a crossing where a partial activation has been reported. The reference to railroad rules has to do with the manner in which the horn is sounded. This section preempts any State or local “whistle bans” with respect to use of the horn under the circumstances addressed in the section. (*See Technical Bulletin S-96-08.*)

§ 234.107 False Activation

This section requires that a railroad having maintenance responsibility for a warning system take prompt action to provide alternative means of warning for highway users and railroad employees at a specific crossing where a credible report of a system malfunction involving a false activation has been received. This section further requires that specific actions be followed to provide that alternative warning.

When a railroad receives a credible report of a system malfunction involving a false activation, it

is required to take prompt action to notify train crews and other railroads operating over such crossing prior to the next train operation over the crossing. Further, the railroad is also required to notify the law enforcement agency having jurisdiction over such crossing, or the railroad police who are capable of responding to control vehicular traffic at the crossing. Finally, the railroad must take action to assure that its employees, or a law enforcement agency, provide the required alternative means of warning for highway users at the crossing.

A credible report of a highway-rail grade crossing warning system malfunction is defined in § 234.5 as a report from a railroad employee, law enforcement officer, highway traffic official, or other employee of a public agency acting in an official capacity. A warning system malfunction is defined in § 234.5 as an activation failure, a partial activation, or a false activation of a highway-rail grade crossing warning system.

When the alternative warning that is provided consists of at least one uniformed law enforcement officer, or one uniformed railroad police officer, or an appropriately equipped flagger for each direction of highway traffic at the crossing, trains may proceed over the crossing at normal speed. If there is not an appropriately equipped flagger for each direction of highway traffic or at least one uniformed law enforcement officer or uniformed railroad police officer at the crossing, each train may proceed with caution through the crossing at a speed not exceeding 15 mph. A train may proceed at normal speed after its locomotive has passed over the crossing. Where a shoving movement is involved, a crewmember must be on the ground to flag the train through the crossing.

Note: The appropriately equipped flagger requirements are very narrow in scope in that only in the event the flagger(s) is being used as alternative warning to allow train movement through the crossing at normal speed do the appropriately equipped provisions apply.

In lieu of complying with the alternative warning requirements listed above, a railroad may temporarily take the warning system out of service if the railroad complies with all requirements of § 234.105, “Activation failure.”

At crossings where it has been determined that the warning system is not functioning as intended, § 234.207’s requirement for adjustment, repair, or replacement without undue delay applies.

This section also requires that the locomotive audible warning device be activated in accordance with railroad rules when approaching a crossing where a false activation has been reported. The reference to railroad rules has to do with the manner in which the horn is sounded. This section preempts any State or local “whistle bans” with respect to use of the horn under the circumstances addressed in the section. (*See Technical Bulletin S-96-08.*)

§ 234.109 Recordkeeping

This section requires the railroad to keep a record of each credible report of a warning system malfunction. This section specifies the information that is to be recorded and that each record shall remain on file and available for inspection by the FRA for a period of at least one year from the date of the last railroad activity in connection with such report.

Each railroad is required to keep a record of each credible report of a highway-rail grade crossing warning system malfunction. Such record may be kept on a form provided by the railroad or electronically. Each record shall contain the following information:

1. Location of crossing (by highway name and U.S. Department of Transportation

(DOT)/Association of American Railroads (AAR) crossing inventory number).

2. Time and date that the railroad received the report.

3. Action taken by railroad to comply with §§ 234.105, 234.106, or 234.107; (i.e., the appropriate train crews being notified, Stop and Flag order issued, proceed with caution maximum speed 15 mph order issued, flaggers at crossing, appropriate law enforcement notified, etc.).

4. Time and date of action taken to make final repair or correction (explanation of the type of repair or correction). If the system is dismantled and removed instead of repaired, the date of removal should be recorded.

Each record of a credible report of a warning system malfunction (i.e., an activation failure, a partial activation, or a false activation) shall be kept and made available for inspection by the FRA for one year from the last date of action taken on each report. Thus, if the warning system is repaired and put back in service, the record shall be kept for one year from the date of the last repair to reactivate the system. If the system is dismantled and removed, the record shall be kept for one year from the date of the removal. The records required by this section may be kept at division offices or at a central location somewhere on the railroad.

SUBPART D --Maintenance, Inspection and Testing

This subpart D is not intended to apply to grade crossing warning systems on out-of-service track.

§ 234.201 Location of plans

Plans and other information required for the proper maintenance and testing of highway--rail grade crossing warning systems shall be available for use at each warning system location. Plans would be required to be legible and correct to protect against errors in circuitry connections.

§ 234.203 Design of control circuits on closed circuit principle

All control circuits that affect the safe operation of the grade crossing warning system shall operate on a fail-safe principle.

§ 234.205 Operating characteristics of warning system apparatus

Operating characteristics of electromagnetic, electronic, or electrical apparatus of each crossing warning system should include: specifications setting forth pick-up values, release values, working values, and condemning limits of these values for all electromagnetic, electronic, or electrical devices used in highway-rail grade crossing warning systems.

§ 234.207 Adjustment, repair, or replacement of component

When any essential component of the warning system fails to perform its intended function, the cause shall be determined and the faulty component shall be required or replaced without undue delay. Until the repair is made, action under §234.105 or §234.107 should be taken.

§ 234.209 Interference with normal functioning of system

(a) The normal functioning of any system shall not be interfered with in testing or otherwise without first taking measures to provide for safety of highway traffic that depends on normal functioning of such system.

(b) Interference includes, but is not limited to:

(1) Trains, locomotives or other railroad equipment standing within the system's approach circuit, other than normal train movements or switching operations, where the warning system is not designed to accommodate those activities.

(2) Not providing alternative methods of maintaining safety for the highway user while testing or performing work on the warning systems or on track and other railroad systems or structures which may affect the integrity of the warning system.

§ 234.211 Security of warning system apparatus.

Highway-rail grade crossing warning system apparatus shall be secured against unauthorized entry.

§ 234.213 Grounds

Each circuit that affects the proper functioning of a highway-rail grade crossing warning system shall be kept free of any ground or combination of grounds that will permit a current flow of 75 percent or more of the release value of any relay or electromagnetic device in the circuit. This requirement does not apply to: circuits that include track rail; alternating current power distribution circuits that are grounded in the interest of safety; and common return wires of grounded common return single break circuits.

§ 234.215 Standby power system

A standby source of power shall be provided with sufficient capacity to operate the warning system for a reasonable length of time during a period of primary power interruption. The designated capacity shall be specified on the plans required by § 234.201 of this part.

§ 234.217 Flashing light unit

(a) Each flashing light unit shall be properly positioned and aligned and shall be visible to a highway user approaching the crossing.

(b) Each flashing light unit shall be maintained to prevent dust and moisture from entering the interior of the unit. Roundels and reflectors shall be clean and in good condition.

(c) All light units shall flash alternately. The number of flashes per minute for each light unit shall be 35 minimum and 65 maximum.

§ 234.219 Gate arm lights and light cable

Each gate arm light must be visible to approaching highway users and that lights and light wire shall be secured to the gate arm.

§ 234.221 Lamp voltage

Lamp voltage shall be maintained at no less than 85% of its prescribed rating for the lamp.

§ 234.223 Gate arm

Each gate arm, when in the downward position, shall extend across each lane of approaching highway traffic and shall be maintained in a condition sufficient to be clearly viewed by approaching highway users. Each gate arm shall start its downward motion not less than three seconds after flashing lights begin to operate and shall assume the horizontal position at least five seconds before the arrival of any normal train movement through the crossing. At those crossings equipped with four quadrant gates, the timing requirements of this section apply to entrance gates only.

§ 234.225 Activation of warning system

This section requires that each highway-rail grade crossing warning system be maintained to activate in accordance with the design of the warning system, but in no event shall it provide less than 20 seconds warning time for the normal operation of through train movements before the crossing is occupied by rail traffic.

Both the intended warning time and the "20 seconds" provision applies to the design and maintenance of warning systems to provide warning for the normal operation of through trains. Switching movements that occupy grade crossings, or trains that stop short of grade crossings and then occupy such grade crossings after the warning system has timed out, must operate according to railroad operating rules or special instructions. When there is no conflicting highway traffic, such movements are not required to wait 20 seconds.

§ 234.227 Train detection apparatus

The detection of a train or car is required when any part of a train detection circuit, in accordance with the design of the warning system, is occupied. When the presence of sand, rust, dirt, grease or other foreign matter is known to prevent effective shunting, appropriate action under §234.105 "Activation failure" must be taken.

§ 234.229 Shunting sensitivity

Each train detection circuit that controls a highway-rail grade crossing warning system must detect the presence of a shunt of 0.06 ohm resistance when the shunt is connected across the track rails of the circuit.

§ 234.231 Fouling wires.

Each set of fouling wires in a highway-rail grade crossing train detection circuit shall consist of at least two discrete conductors. Each conductor shall be of sufficient conductivity and shall be maintained in such condition to ensure proper operation of the train detection apparatus when the train detection circuit is shunted. Installation of a single duplex wire with single plug acting as fouling wires is prohibited. Existing installations having single duplex wires with a single plug for fouling wires may be continued in use until they require repair or replacement.

§ 234.233 Rail joints

Each rail joint located within the limits of a highway-rail grade crossing train detection circuit must be bonded to ensure electrical conductivity by a means other than joint bars, and the bonds shall be maintained to ensure electrical conductivity.

§ 234.235 Insulated rail joints

Each insulated rail joint used to separate train detection circuits of a highway-rail grade crossing must be maintained in a condition to prevent current from flowing between rails separated by the insulation in an amount sufficient to cause a failure of the train detection circuit.

§ 234.237 Reverse switch cut-out circuit

A switch, when equipped with a switch circuit controller connected to the point and interconnected with warning system circuitry, shall be maintained so that the warning system can only be cut out when the switch point is within one-half inch of full reverse position.

§ 234.239 Tagging of wires and interference of wires or tags with signal apparatus.

Each wire shall be tagged or otherwise so marked that it can be identified at each terminal. Tags and other marks of identification shall be made of insulating material and so arranged that tags and wires do not interfere with moving parts of the apparatus. This requirement applies to each wire at each terminal in all housings including switch circuit controllers and terminal or junction boxes. This requirement does not apply to flashing light units, gate arm light units, and other auxiliary light units. The local wiring on a solid state crossing controller rack does not require tags if the wiring is an integral part of the solid state equipment.

§ 234.241 Protection of insulated wire; splice in underground wire

Insulated wire shall be protected from mechanical injury. The insulation shall not be punctured for test purposes. A splice in underground wire shall have insulation resistance at least equal to that of the wire spliced.

§ 234.243 Wire on pole line and aerial cable

Wire on a pole line shall be securely attached to an insulator that is properly fastened to a

cross arm or bracket supported by a pole or other support. Wire shall not interfere with, or be interfered with by, other wires on the pole line. Aerial cable shall be supported by messenger wire. An open-wire transmission line operating at voltage of 750 volts or more shall be placed not less than 4 feet above the nearest cross arm carrying active warning system circuits.

§ 234.245 Signs

Each sign mounted on a highway-rail grade crossing signal post must be maintained in good condition and visible to the highway user.

Inspections and Tests

§ 234.247 Purpose of inspections and tests; removal from service of relay or device failing to meet test requirements.

(a) The inspections and tests set forth in §§ 234.249 through 234.271 are required at highway-rail grade crossings located on in service railroad tracks and shall be made to determine if the warning system and its component parts are maintained in a condition to perform their intended function.

(b) If a railroad elects not to comply with the requirements of §§ 234.249 through 234.271 because all tracks over the grade crossing are out of service or the railroad suspends operations during a portion of the year, and the grade crossing warning system is also temporarily taken out of service, a full inspection and all required tests must be successfully completed before railroad operations over the grade crossing resume.

(c) Any electronic device, relay, or other electromagnetic device that fails to meet the requirements of tests required by this part shall be removed from service and shall not be restored to service until its operating characteristics are in accordance with the limits within which such device or relay is designed to operate.

§ 234.249 Ground Tests

A test for grounds on each energy bus furnishing power to circuits that affect the safety of warning system operation shall be made when an energy bus is placed in service, and at least once a month thereafter.

§ 234.251 Battery Voltage

Standby power shall be tested at least once each month.

§ 234.253 Flashing light units and lamp voltage

(a) Each flashing light unit shall be inspected when installed and at least once every twelve months for proper alignment and frequency of flashes in accordance with installation specifications.

(b) Lamp voltage shall be tested when installed and at least once every 12 months thereafter.

(c) Each flashing light unit shall be inspected for proper visibility, dirt, and damage to

roundels and reflectors at least once each month.

§ 234.255 Gate arm and gate mechanism

Each gate arm and gate mechanism must be inspected, and gate arm movement be observed for proper operation, at least once each month. Test of hold-clear devices shall be required at least once every twelve months.

§ 234.257 Warning system operation

(a) Each highway-rail crossing warning system shall be tested to determine that it functions as intended when it is placed in service. Thereafter, it shall be tested at least once each month and whenever modified or disarranged.

(b) Warning bells or other stationary audible warning devices shall be tested when installed to determine that they function as intended. Thereafter, they shall be tested at least once each month and whenever modified or disarranged.

§ 234.259 Warning Time

A highway-rail grade crossing warning system must be tested for prescribed warning time at least once every year, and when the warning system is modified because of change in train speeds. Electronic devices may be used for the testing.

§ 234.261 Highway traffic signal preemption

Highway traffic signal preemption interconnections, for which a railroad has maintenance responsibility, shall be tested at least once each month.

§ 234.263 Relays

(a) Except as stated in paragraph (b) of this section, each relay that affects the proper functioning of a crossing warning system shall be tested at least once every four years.

(b)

(1) Alternating current vane type relays, direct current polar type relays, and relays with soft iron magnetic structure shall be tested at least once every two years.

(2) Alternating current centrifugal type relays shall be tested at least once every 12 months.

(c) Testing of relays requiring testing on four year intervals.

(d)....

§ 234.265 Timing relays and timing devices

Each timing relay and timing devices must be tested at least once every twelve months.

The timing would be required to be maintained at not less than 90% nor 110% of the predetermined time interval, which shall be shown on the plans or marked on the timing relay or timing device. Internal timing devices associated with motion detectors, motion sensors, and grade crossing predictors are not subject to the requirements of this section.

§ 234.267 Insulation resistance tests

(a) Insulation resistance tests shall be made when wires or cables are installed and at least once every ten years thereafter.

(a) Insulation resistance tests shall be made between all conductors and ground, between conductors in each multiple conductor cable, and between conductors in trunking. Insulation resistance tests shall be performed when wires, cables, and insulation are dry.

(c) Subject to paragraph (d) of this section, when insulation resistance of wire or cable is found to be less than 500,000 ohms, prompt action shall be taken to repair or replace the defective wire or cable. Until such defective wire or cable is replaced, insulation resistance tests shall be made annually.

(d) A circuit with a conductor having an insulation resistance of less than 200,000 ohms shall not be used.

(e) Required insulation resistance testing that does not conform to the required testing schedule of this section shall be completed in accordance with the following schedule:

- (1) Not less than 50% by the end of calendar year 1996;
- (2) Not less than a total of 75% by the end of calendar year 1997; and
- (3) One hundred percent by the end of calendar year 1998.

§ 234.269 Cut-out circuits

Each cut-out circuit shall be tested at least once every three months to determine that the circuit functions as intended. For purposes of this section, a cut-out circuit is any circuit which overrides the operation of automatic warning systems. This includes both switch cut-out circuits and devices which enable personnel to manually override the operation of automatic warning systems.

§ 234.271 Insulated rail joints, bond wires, and track connections

Each insulated rail joint, bond wire, and track connections must be inspected at least once every three months.

§ 234.273 Results of inspections and tests

(a) Results of inspections and tests made in compliance with this part shall be recorded on forms provided by the railroad, or by electronic means, subject to approval by the Associate Administrator for Safety. Each record shall show the name of the railroad, AAR/DOT inventory

number, place and date, equipment tested, results of tests, repairs, replacements, adjustments made, and condition in which the apparatus was left.

(b) Each record shall be signed or electronically coded by the employee making the test and shall be filed in the office of a supervisory official having jurisdiction. Records required to be kept shall be made available to FRA as provided by 49 U.S.C. 20107.

(b) Each record shall be retained until the next record for that test is filed but in no case for less than one year from the date of the test.

Section § 234.275 Processor-based systems

(a) *Applicable definitions.* The definitions in § 236.903 of this chapter shall apply to this section, where applicable.

(b) *Use of performance standard authorized or required.*

(1) In lieu of compliance with the requirements of this subpart, a railroad may elect to qualify an existing processor-based product under part 236, subparts H or I of this chapter.

(2) Highway-rail grade crossing warning systems, subsystems, or components that are processor-based and that are first placed in service after June 6, 2005, which contain new or novel technology, or which provide safety-critical data to a railroad signal or train control system that is governed by part 236, subpart H or I of this chapter, shall also comply with those requirements. New or novel technology refers to a technology not previously recognized for use as of March 7, 2005.

(3) Products designed in accordance with subparts A through D of this part, which are not in service but are in the developmental stage prior to December 5, 2005 (or for which a request for exclusion was submitted prior to June 6, 2005, pursuant to § 236.911 of this chapter), may be excluded from the requirements of part 236, subpart H of this chapter upon notification to FRA by March 6, 2006, if placed in service by December 5, 2008 (or March 7, 2008 for those products for which a request for exclusion was submitted to FRA prior to June 6, 2005). Railroads may continue to implement and use these products and components from these existing products. A railroad may at any time elect to have products that are excluded made subject to 49 C.F.R. part 236, subpart H, by submitting a Product Safety Plan as prescribed in § 236.913 of this chapter and otherwise complying with part 236, subpart H of this chapter.

(c) *Product safety plan justifications.* The Product Safety Plan in accordance with 49 C.F.R. 236.907 – or a PTC Development Plan and PTC Safety Plan required to be filed in accordance with 49 C.F.R. 236.1013 and 236.1015 – must explain how the performance objective sought to be

addressed by each of the particular requirements of this subpart is met by the product, why the objective is not relevant to the product's design, or how safety requirements are satisfied using alternative means. Deviation from those particular requirements is authorized if an adequate explanation is provided, making reference to relevant elements of the applicable plan, and if the product satisfies the performance standard set forth in § 236.909 of this chapter. (See § 236.907(a)(14) of this chapter.)

(d) Specific requirements. The following exclusions from the latitude provided by this section apply:

(1) Nothing in this section authorizes deviation from applicable design requirements for automated warning devices at highway-rail grade crossings in the Manual on Uniform Traffic Control Devices (MUTCD), 2000 Millennium Edition, Federal Highway Administration (FHWA), dated December 18, 2000, including Errata #1 to MUTCD 2000 Millennium Edition dated June 14, 2001 (<http://mutcd.fhwa.dot.gov/>).

(2) Nothing in this section authorizes deviation from the following requirements of this subpart:

- (i) § 234.207(b) (Adjustment, repair, or replacement of a component);
- (ii) § 234.209(b) (Interference with normal functioning of system);
- (iii) § 234.211 (Security of warning system apparatus);
- (iv) § 234.217 (Flashing light units);
- (v) § 234.219 (Gate arm lights and light cable);
- (vi) § 234.221 (Lamp voltage);
- (vii) § 234.223 (Gate arm);
- (viii) § 234.225 (Activation of warning system);
- (ix) § 234.227 (Train detection apparatus)—if a train detection circuit is employed to determine the train’s presence;
- (x) § 234.229 (Shunting sensitivity)—if a conventional track circuit is employed;
- (xi) § 234.231 (Fouling wires)—if a conventional train detection circuit is employed;
- (xii) § 234.233 (Rail joints)—if a track circuit is employed;
- (xiii) § 234.235 (Insulated rail joints)—if a track circuit is employed;
- (xiv) § 234.237 (Reverse switch cut-out circuit); or
- (xv) § 234.245 (Signs).

(e) *Separate justification for other than fail-safe design.* Deviation from the requirement of § 234.203 (Control Circuits) that circuits be designed on a fail-safe principle must be separately justified at the component, subsystem, and system level using the criteria of § 236.909 of this chapter.

(f) *Software management control for certain systems not subject to a performance standard.* Any processor-based system, subsystem, or component subject to this part, which is not subject to the requirements of part 236, subpart H or I of this chapter but which provides safety-critical data to a signal or train control system shall be included in the software management control plan requirements as specified in § 236.18 of this chapter.

49 U.S.C. § 20134
49 C.F.R. parts 212, 234-236

SIGNAL RULES^{79/80}

⁷⁹ Because of the complexity of the signal rules, each section of the federal regulation is summarized.

Part 233 — Signal System Reporting Requirements

49 C.F.R. § 233.1 Scope.

This section identifies the systems, methods, and appliances that are subject to the reporting requirements.

§ 233.3 Application.

This section makes this part applicable to each railroad subject to the Signal Inspection Act, 49 U.S.C. § 205.

It does not apply to rapid transit system or privately-owned system not transporting interstate commerce, automatic classification yards, or highway-rail grade crossing active warning devices.

§ 233.5 Application resulting from signal failure.

This section requires each carrier to report by toll-free telephone number 800-424-0201 within 24-hours of each accident/incident resulting from a false proceed signal indication or failure.

A false proceed signal indication or a false proceed failure is the failure of an appliance, device, method, or system to function or indicate as required by the RS&I that results in either a more favorable signal aspect than intended or a condition that is hazardous to the movement of a train.

§ 233.7 Signal failure reports.

This section requires each carrier to report to FRA within 24 hours each false proceed signal indication or failure. The tel. number is 800-424-0201.

§ 233.9 Report.

This section requires each carrier to file a signal systems report every five years.

§ 233.11 Civil penalty.

Any person (including a railroad and any manager, supervisor, official, or other employee or agent of a railroad) who violates any requirement of this part or causes the violation of any such requirement is subject to a civil penalty of at least \$650 and not more than \$25,000, except that: Penalties may be assessed against individuals only for willful violations, and where a

⁸⁰ At the RSAC meeting on April 24, 2019, the RSAC agreed to consider the certification of signal employees. The matter will be handled by a working group.

grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$100,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. (*See*, 49 C.F.R. Part 209, Appendix A).

§ 233.13 Criminal penalty.

Whoever knowingly and willfully—

- (a) Makes, causes to be made, or participates in the making of a false entry in reports required to be filed by this part; or
- (b) Files a false report or other document required to be filed by this part is subject to a \$5,000 fine and/or 2 years imprisonment as prescribed by 49 U.S.C. § 522(a) and § 209(e) of the Federal Railroad Safety Act of 1970, as amended (45 U.S.C. § 438(e)).

Part 235 — Instructions Governing Applications For Approval Of Discontinuance Or Material Modification Of A Signal System Or Relief From The Requirements Of Part 235

§ 235.1 Scope.

This part prescribes application for approval to discontinue or materially modify block signal systems, interlockings, traffic control systems, automatic train stop, train control, or cab signal systems, or other similar appliances, devices, methods, or systems, and provides for relief from part 236 of this title.

§ 235.5 Changes requiring filing of application.

- (a) Except as provided in § 235.7, applications shall be filed to cover the following:
 - (1) The discontinuance of a block signal system, interlocking, traffic control system, automatic train stop, train control, or cab signal system or other similar appliance or device;
 - (2) The decrease of the limits of a block signal system, interlocking, traffic control system, automatic train stop, train control, or cab signal system; or
 - (3) The modification of a block signal system, interlocking, traffic control system, automatic train stop, train control, or cab signal system.

§ 235.7 Changes not requiring filing of application.

This section lists each change which is not considered to be a discontinuance, decrease of limits, or material modification, and, therefore, does not require FRA approval.

§ 235.8 Relief from the requirements of part 236 of this title.

Relief from the requirements of the rules, standards and instructions contained in part 236 of this title will be granted upon an adequate showing by an individual carrier. Relief heretofore granted to any carrier shall constitute relief to the same extent as relief granted under the requirements of this part.

§ 235.9 Civil penalty.

Any person (including a railroad and any manager, supervisor, official, or other employee or agent of a railroad) who violates any requirement of this part or causes the violation of any such requirement is subject to a civil penalty of at least \$650 and not more than \$25 000 except that: Penalties may be assessed against individuals only for willful violations, and where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$100,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense.

§ 235.10 Contents of applications

This sets forth what information must be contained in an application.

§ 235.12 Additional required information-prints.

These sections set forth the information that is required when submitting an application. They itemize the information that is required on block signal applications and applications for relief from the RS&I.

§ 235.13 Filing procedure.

This section sets forth the procedure for filing a block signal application.

§ 235.14 Notice.

This section provides for the posting of a public notice in the Federal Register of the filing of each application or request for reconsideration.

§ 235.20 Protests.

This prescribes the method and procedure for filing a protest against granting a block signal application or an application for relief from the requirements of the RS&I.

Part 236 — Rules, Standards and Instructions Governing The Installation, Inspection, Maintenance And Repair Of Systems, Devices, And Appliances.

§ 236.0 Applicability of this Part.

This rule requires that a block signal system comply with the RS&I, or a manual block system complying with the provisions of this section, be installed where passenger trains operate at 60 or more miles per hour or freight trains which operate at 50 or more miles per hour. Further, an automatic train stop, train control, or cab signal system shall be installed where any train operates at 80 or more miles per hour.

This section details how a manual block system shall operate and requires that it be permanently in effect, i.e., all trains must be operated by manual block system rules.

Where any train is operated at a speed of 80 or more miles per hour, a PTC system shall be installed unless the FRA approves the continuance of an automatic cab signal, automatic train stop, or automatic train control system..

Nothing in this section authorizes the discontinuance of a block signal system, interlocking, traffic control system, automatic train stop, train control, or cab signal system without the approval of the FRA.

Subpart A — Rules and Instructions All Systems. General

§ 236.1 Plans, where kept.

As required for maintenance, plans shall be kept at all interlockings, automatic signals, and controlled points. Plans shall be legible and correct.

§ 236.2 Grounds.

Vital circuits shall be kept free of grounds equal to or in excess of 75% of the release value of relay or electromagnetic device in circuits. Track circuits, common return wires of single-wire, single-break signal control circuits grounded by design, and alternating current power distribution circuits grounded in the interest of safety are excluded.

§ 236.3 Locking of signal apparatus housing.

Housings of all signal apparatus shall be secured to prevent unauthorized entry.

§ 236.4 Interference with normal functioning of device.

Safety of train operation must be provided before interfering with the normal functioning of any device.

The intent of this rule is to insure carriers maintain the integrity of signal systems by prohibiting procedures or practices which defeat or nullify the minimum requirements of the RS&I.

§ 236.5 Design of control circuits on closed circuit principle.

This rule requires that control circuits which affect the safety of train operation be designed on the closed circuit principle.

It excludes circuits for roadway equipment of intermittent automatic train-stop system.

§ 236.6 Hand-operated switch equipped with switch circuit controller.

Hand-operated switch equipped with switch circuit controller connected to the point, or with facing-point lock and circuit controller, shall be so maintained that when point is open 1/4th inch or more on facing-point switch and 3/8th inch or more on trailing-point switch, track or control circuits will be opened or shunted or both, and if equipped with facing-point lock with circuit controller, switch cannot be locked. On such hand-operated switch, switch circuit controllers, facing-point locks, switch-and-lock movements, and their connections shall be securely fastened in place, and contacts maintained with an opening of not less than 1/16th inch when open.

§ 236.7 Circuit controller operated by switch-and-lock movement.

Circuit controller operated by switch-and-lock movement is required to be maintained so that normally open contacts will remain closed and normally closed contacts will remain open until switch is locked.

§ 236.8 Operating characteristics of electromagnetic, electronic, or electrical apparatus.

Operating characteristics of electromagnetic, electronic, or electrical apparatus in service shall be in accordance with the limits within which it is designed to operate.

Sections 236.101, .102, .105, .106, .107, .108, .109, .551, .552, .588, and .589 address those devices so important to safety of train operation that periodic tests are required to ascertain that operating characteristics remain unchanged.

§ 236.9 Selection of circuits through indicating or annunciating instruments.

Signal control and electric locking circuits shall not be selected through contacts of instruments designed for indicating or annunciating purposes in which an indicating element attached to the armature could in itself cause improper operation of the armature.

§ 236.10 Electric locks, force drop type; where required.

This rule requires that electric locks applied to new installations and new electric locks applied to existing installations be of the forced-drop type.

§ 236.11 Adjustment, repair, or replacement of component.

This requires a carrier to determine the cause when any component of a signal system essential to the safety of train operation fails to perform its intended function or is not in correspondence with known operating conditions. Faulty components must then be adjusted, repaired or replaced without undue delay.

§ 236.12 Spring switch signal protection, where required.

This rule prescribes signal protection for facing and trailing movements through spring switches in interlockings; and for spring switches installed after October 1, 1950, in automatic block signal, train stop, train control or cab signal territory where movements over the switch exceed 20 miles per hour.

This rule prescribes where spring switch protection is required. Sections 236.13 and 236.14 prescribe how it will operate.

§ 236.13 Spring switch; selection of signal control circuits through circuit controller.

The control circuits of signals governing facing movements over a main track spring switch shall be selected through the contacts of a switch circuit controller, or through the contacts of relay repeating the position of such circuit controller, which, when normally closed switch point is open ¼-inch or more, will cause such signals to display their most restrictive aspects, except that where a separate aspect is displayed for facing movements over the switch in the reverse position the signal shall display its most restrictive aspect when the switch points are open ¼-inch or more from either the normal or reverse position.

This rule applies only to automatic block signal and other protective systems. Sections 236.303 and 236.342 apply to spring switches in interlocking and traffic control systems.

§ 236.14 Spring switch signal protecting; requirements.

This prescribes how spring switch signal protection required by Rule 236.12 shall operate in automatic block signal territory (1) when it governs movements with the current of traffic from a siding to main track signaled for movements in one direction; (2) when it governs movements from a siding to a main track signaled for movements in either direction; and (3) when it governs movements from the end of double track territory signaled for movements in one direction with the current of traffic to single track territory. It permits the use of approach or time locking. This rule applies to automatic block signal territory only.

§ 236.15 Timetable instructions.

This rule requires automatic block, traffic control, train stop, train control, and cab signal territory be designated in timetable instructions.

It may be published in either timetable or special instructions in any manner carrier chooses. Interlockings are not required to be so designated.

§ 236.16 Electric lock, main track releasing circuit.

This rule sets forth the requirements for main track releasing circuit for electric lock on hand-operated switch.

When an electric lock releasing circuit is provided on the main track to permit a train or an engine to diverge from the main track without time delay, the circuit shall be of such length to permit occupancy of the circuit to be seen by a crewmember stationed at the switch. When the releasing circuit extends into the fouling circuit, a train or engine on the siding shall be prevented from occupying the releasing circuit by a derail either pipe-connected to switch point or equipped with an independently-operated electric lock.

§ 236.17 Pipe for operating connections; requirements.

- (a) Steel or wrought-iron pipe 1 inch or larger, or members of equal strength, shall be used for operating connections for switches, derails, movable-point frogs, facing-point locks, rail-locking devices of movable bridge protected by interlocking, and mechanically operated signals, except up-and-down rod which may be $\frac{3}{4}$ -inch pipe or solid rod. Pipe shall be fully screwed into coupling and both ends of each pipe shall be riveted to pipe plug with 2 rivets.
- (b) Pipeline shall not be out of alignment sufficiently to interfere with proper operation, shall be properly compensated for temperature changes, and supported on carriers spaced not more than 8 feet apart on tangent and curve of less than 2 degrees and not more than 7 feet apart on curve of 2 degrees or more. With lever in any position, couplings in pipeline shall not foul carriers.

236.18 Software management control plan.

- (a) Each railroad shall develop and adopt a software management control plan for its signal and train control systems. A railroad commencing operations after June 6, 2005, shall adopt a software management control plan for its signal and train control systems prior to commencing operations.
- (b) Within 30 months of the completion of the software management control plan, each railroad shall have fully implemented such plan.
- (c) For purposes of this section, “software management control plan” means a plan designed to ensure that the proper and intended software version for each specific site and location is documented (mapped) and maintained through the life-cycle of the system. The plan must further describe how the proper software configuration is to be identified and confirmed in the event of replacement, modification, or disarrangement of any part of the system.

Roadway Signals and Cab Signals

§ 236.21 Location of roadway signals.

This requires that a roadway signal be positioned and alined so that it is clearly associated with track it governs.

§ 236.22 Semaphore signal arm; clearance to other objects.

This rule requires 1/2 inch clearance between a semaphore arm and any object which may interfere with its operation.

§ 236.23 Aspects and indications.

This section prescribes how aspects shall be shown by signals and the authorized methods of qualifying aspects. It requires the use of lights for night aspects and prohibits the use of reflector lenses or other devices which depend on reflected light for visibility. It also establishes requirements for cab signal aspects. It prescribes that each aspect be identified by a name and specification of the action to be taken. Requires aspects to conform to the fundamental indications of stop, restricted speed and proceed. Information on aspects and indications shall be defined in the carrier's operating rule books or special instructions. Conditions such as lamp failure or false restrictive position of semaphore arm shall not cause display of a less restrictive aspect.

§ 236.24 Spacing of roadway signals.

This rule requires signals to be adequately spaced to provide proper distances for reducing speeds or stopping by use of other than an emergency brake application before reaching the point where reduced speed or stopping is required.

Carrier's braking distance charts shall be used to determine proper spacing. In event a carrier does not have a braking distance chart, braking tests may be required at suspected locations.

§ 236.26 Buffing device, maintenance.

This rule requires that buffing device be so maintained that it cannot cause a signal to display a less restrictive aspect than intended.

Operational test should be made to observe that oil or air buffers operate properly.

In the event the buffing device causes a signal to display a less restrictive aspect than intended, a false proceed report shall be filed with the FRA.

Track Circuits

§ 236.51 Track circuit requirements.

This rule establishes the standards for operation of track relays controlling home signals and track circuits of automatic train stop, train control or cab signal systems.

Track relay controlling home signals shall be in deenergized position, or device that functions as a track relay controlling home signals shall be in its most restrictive state, and the track circuit of an automatic train stop, train control, or cab signal system shall be deenergized in the rear of the point where any of the following conditions exist:

(a) When a rail is broken or a rail or switch-frog is removed except when a rail is broken or removed in the shunt fouling circuit of a turnout or crossover, provided, however, that shunt fouling circuit may not be used in a turnout through which permissible speed is greater than 45 miles per hour. It shall not be a violation of this requirement if a track circuit is energized:

(1) When a break occurs between the end of rail and track circuit connector; within the limits of rail joint bond, appliance or other protective device, which provides a bypath for the electric current, or

(2) As result of leakage current or foreign current in the rear of a point where a break occurs.

(b) When a train, locomotive, or car occupies any part of a track circuit, including fouling section of turnout except turnouts of hand-operated main track crossover. It shall not be a violation of this requirement where the presence of sand, rust, dirt, grease, or other foreign matter prevents effective shunting, except that where such conditions are known to exist adequate measures to safeguard train operation must be taken.

(c) Where switch shunting circuit is used:

(1) Switch point is not closed in normal position.

(2) A switch is not locked where facing-point lock with circuit controller is used.

(3) An independently-operated fouling-point derail equipped with switch circuit controller is not in derailing position.

§ 236.52 Relayed cut-section.

This rule requires that where energy of non-coded direct-current track circuit is supplied through contacts of adjoining non-coded track relay, energy circuit shall be opened and track circuit shunted when relay is deenergized.

§ 236.53 Track circuit feed at grade crossing.

At crossing-at-grade of a non-electrified railroad using non-coded direct-current track circuits with electrified railroad, this requires the battery end of direct-current track circuit be located at the crossing. This section is not applicable unless foreign current is proven to be present.

§ 236.54 Minimum length of track circuit.

When a track circuit shorter than maximum inner wheelbase of any locomotive or car operated over such track circuit is used for control of signaling facilities, other means shall be used to provide the equivalent of track circuit protection.

§ 236.55 Dead section; maximum length.

This section prohibits the use of dead section longer than the shortest outer wheel base of a carrier's locomotive, but in no case longer than 35 feet without protecting it with a special circuit.

§ 236.56 Shunting sensitivity.

Each track circuit controlling home signal or approach locking shall be so maintained that track relay is in deenergized position, or device that functions as a track relay shall be in its most restrictive state if, when track circuit is dry, a shunt of 0.06 ohm resistance is connected across the track rails of the circuit, including fouling sections of turnouts.

§ 236.57 Shunting and fouling wires.

Shunt wires and fouling wires are each required to be of sufficient conductivity and maintained in such condition that the track relay will be de-energized when the track circuit is shunted. Two completely separate conductors are required, except where switch circuit controller is used to both open control circuits and shunt the track circuit.

§ 236.58 Turnout, fouling section.

This rule requires that the fouling section of each turnout shall extend at least to a point on the turnout where a standing standard-sized car or locomotive will clear a movement of other standard-sized cars or locomotives on the main track, under all circumstances, including with consideration of such as overhang of cars, track curvature, etc. This minimum clearance is not applicable to crossovers between tracks as they are protected by a combination of switch position and track circuit detection.

§ 236.59 Insulated rail Joints.

Insulated rail joints shall be maintained in condition to prevent sufficient track circuit current from flowing between the rails separated by the insulation to cause a failure of any track circuit involved.

§ 236.60 Switch shunting circuit, use restricted.

This rule prohibits the installation of switch shunting circuit except where track or control circuit is also opened by the switch circuit controller.

Wires and Cable

§ 236.71 Signal wires on pole line and aerial cable.

Signal wires carried on pole lines are required to be securely tied in on insulators properly fastened to a crossarm or bracket which is supported by a pole or other support. Cable used aerially is required to be supported by messenger.

The intent of this rule is that all signal wires, including AC power supply carried on pole line, are required to be tied in on insulators that are securely fastened to a crossarm or bracket attached to a pole or other fixture, such that each signal wire is maintained clear of all other wires. Further, aerial cable is to be supported by a messenger wire such that the weight of the cable is not being supported by the cable itself.

§ 236.73 Open-wire transmission line; clearance to other circuits.

Open-wire transmission lines of 750 volts or more shall be placed at least 4 feet above the nearest cross-arm carrying signal or communication wires.

§ 236.74 Protection of insulated wire; splice in underground wire.

Insulated wire shall be protected from mechanical injury. This prohibits puncturing insulation for test purposes and requires that splice in underground wire have insulation resistance at least equal that of the wire spliced.

§ 236.76 Tagging of wires and interference of wires or tags with signal apparatus.

Each wire is required to be tagged or otherwise marked so it can be identified at each terminal. Tags or other marks of identification are required to be made of insulating material and wires and tags are prohibited from interfering with moving parts of signal apparatus.

Inspections and Tests: All Systems

§ 236.101 Purpose of inspections and tests; removal from service of relay failing to meet test requirements.

This section prescribes certain inspections and tests of vital importance be made. The inspections and tests must be performed in accordance with carrier specifications which are subject to FRA approval. The purpose of inspections and tests is to determine if operating characteristics of relays and electromagnetic devices are within specified values and that apparatus and equipment is being maintained in condition to assure safety of train operation. Electronic device, relay or other electromagnetic device which fails to meet requirement of specified tests must be removed from service and not restored to service until its operating characteristics are within proper limits.

§ 236.102 Semaphore or searchlight signal mechanism.

This requires inspection of semaphore signal mechanism at least once every 6 months. Tests of the operating characteristics are required to be made every 2 years. Searchlight signal mechanism shall be inspected, and the mechanical movement shall be observed while operating the mechanism to all positions, at least once every 6 months. Tests of the operating characteristics shall be made at least once every 2 years.

§ 236.103 Switch circuit controller or point detector.

Switch circuit controllers and point detectors are required to be inspected and tested at least once every 3 months.

Applies to all switch circuit controllers and point detectors in all systems required by §§ 236.6, 236.13, 236.51, 236.57, 236.202, 236.203, 236.334 and 236.342.

§ 236.104 Shunt fouling circuit.

Shunt fouling circuit is required to be inspected and tested at least once every 3 months.

Inspection should determine bonds and fouling wires are applied in compliance with §§ 236.51, 236.56, 236.57 and 236.58 at the proper places, intact and in good condition.

§ 236.105 Electric lock.

This rule requires that electric locks be tested once every 2 years. It excludes forced drop type electric locks.

§ 236.106 Relays.

Each relay used in vital circuits of wayside equipment shall be tested at intervals prescribed for its type of design.

Each relay, the functioning of which affects the safety of train operations, shall be tested at least once every 4 years, except:

- (a) Alternating current centrifugal type relay shall be tested at least once every 12 months;
- (b) Alternating current vane type relay and direct current polar type relay shall be tested at least once every 2 years; and
- (c) Relay with soft iron magnetic structure shall be tested at least once every 2 years.

§ 236.107 Ground tests.

This rule requires a test for grounds on energy bus supplying power to circuits which affect the safety of train operation. Test is required when the energy bus is placed in service and at least once every three months thereafter.

The provisions of this rule shall not apply to track circuit wires, common return wires of grounded common single-break circuits, or alternating current power distribution circuits grounded in interest of safety.

§ 236.108 Insulation resistance tests, wires in trunking and cable.

Tests of insulation resistance of wires and cable, including resistance between conductors in multiple conductor cable and in trunking, shall be made when installed and at least once every 10 years thereafter. Tests must be made when wires, cable and insulation are dry, however, wet conditions do not provide relief from Section 236.2[grounds]. Requires prompt action to replace or repair cable or wire found to have less than 500,000 ohms insulation resistance and annual tests until repairs are made. Cable or wire found to have less than 200,000 ohms insulation resistance shall be removed from use of signal circuits.

§ 236.109 Time releases, timing relays and timing devices.

This test requires that time releases and time relays be tested once every 12 months, and that timing be maintained at not less than 90% of the predetermined time interval, which shall be shown on the plans or marked on the either the time release or relay, or timing device.

§ 236.110 Results of tests.

This rule requires that the results of vital tests be recorded and filed in the office of the responsible supervisory official having jurisdiction. It specifies those results to be recorded, prescribes the general format to be used and requires that the recording be made by the employee who makes the test or identified by the number of the automated test equipment used.

Whenever there is a test of an automatic train stop, train control, or cab signal apparatus, the person performing such test shall record the results on preprinted or computerized forms provided by the railroad. Such forms shall show the name of the railroad, place and date, equipment tested, results of tests, repairs, replacements, adjustments made, and condition in which the apparatus was left. Each record shall be signed by the employee making the test and shall be filed in the office of a supervisory official having jurisdiction. Results of these tests shall be retained until the next record is filed but not less than 1 year.

Subpart B — Automatic Block Signal Systems Standards

§ 236.201 Track-circuit control of signals.

This rule requires that aspects of signals with indications more favorable than "Proceed at Restricted Speed" be controlled automatically by track circuits extending through the entire block. It applies to automatic block and traffic control systems.

§ 236.202 Signal governing movements over hand-operated switch.

Signal governing movements over hand-operated switch in the facing direction shall display its most restrictive aspect when the points are open 1/4 inch or more, in the trailing direction, 3/8 inch or more, except that where a separate aspect is displayed for facing movements over the switch in the normal and in the reverse position, the signal shall display its most restrictive aspect when the switch points are open 1/4 inch or more from either the normal or reverse position.

§ 236.203 Hand-operated crossover between main tracks; protection.

This section requires that hand-operated crossover between main tracks provide protection for train movements by either an arrangement of one or more track circuits and switch circuit controllers; facing-point locks on both switches operated from a single lever; or by electric locking of both switches of the crossover.

Signals governing movements over either switch must display their most restrictive aspect when either switch is not in proper position, the crossover is occupied by a train, locomotive, or car; where facing-point locks are used and either switch is unlocked; and, where electric locks are used, before the electric locking releases. Relief is provided for certain conditions adverse to shunting.

§ 236.204 Track signaled for movements in both directions, requirements.

This rule requires that on track signaled for movements in both directions a train shall cause one or more opposing signal ahead of it to display the most restrictive aspect. Signals are required to be spaced or arranged to provide stopping distance for opposing trains.

In absolute permissive block signaling when a train passes a head block signal it must cause the opposing head block signal to display an aspect not more favorable than "stop."

§ 236.205 Signal control circuits; requirements.

Control circuits are required to be installed so that each signal will display its most restrictive aspect when the block it governs is occupied by a train, locomotive, or car; a switch is not in proper position; an independently operated derail equipped with switch circuit controller is not in derailing position; when a track relay is in de-energized position or device that functions as a track relay is in its most restrictive state; or when a signal control circuit is de-energized.

This rule is applicable to the design and installation of control circuits, and does not apply to defective conditions which appear to affect this rule, such as circuit controller adjustments, missing shunt or fouling wires, dead section, track circuit adjustments, grounds, etc. This rule does not require that the most restrictive aspect be a red or a stop indication.

§ 236.206 Battery or power supply with respect to relay; location.

Battery or power supply for each signal control relay circuit, either open-wire circuit or common return circuit, shall be located at the end of the circuit farthest from the relay.

§ 236.207 Electric lock on hand-operated switch; control.

Electric lock on hand-operated switch is prohibited from being unlocked before control circuits of signals governing movement over switch are opened. Approach or time locking must be provided. This is applicable only to automatic block signal systems.

There are no requirements for the installation of electric locks in automatic block signal territory. However, if installed, such electric lock must comply with this rule.

Subpart C — Interlocking Standards

§ 236.301 Where signals shall be provided.

This section requires that a signal be provided to govern train movements into and through interlocking limits except over electrically locked hand-operated switch with either a pipe-connected derail or independently-operated electrically locked derail. This rule applies to interlocking only. It does not apply to controlled points in traffic control systems.

Electric locks installed under this rule must conform to requirements of §§ 236.314[electric lock for hand operated switch or derail], (without reference to the 20-mile exceptions) 236.760[locking; approach], 236.768[locking; time] without regard to speed.

§ 236.302 Track circuits and route locking.

Track circuits and route locking shall be provided and shall be effective when the first pair of wheels of a locomotive or a car passes a point not more than 13 feet in advance of the signal governing its movement, measured from the center of the mast, or if there is no mast, from the center of the signal.

This rule applies to interlocking only.

§ 236.303 Control circuits for signals, selection through circuit controller operated by switch points or by switch locking mechanism.

This rule is a standard that requires control circuits of signal aspects with indications more favorable than "proceed at restricted speed" be selected through switch circuit controller or relay controlled by circuit controller of each hand-operated, power-operated, or mechanically-operated switch; movable-point frog; or derail in the route governed. It requires each switch, movable point frog, or derail to be in proper position before such signal aspect can be displayed

It applies to both interlocking and traffic control systems. This rule is not applicable to control circuits of aspects indicating "proceed at restricted speed."

§ 236.304 Mechanical locking or same protection effected by circuits.

This requires that mechanical locking, or the equivalent protection by means of circuits, be

provided at each interlocking.

Each interlocking is required to be arranged either mechanically and/or electrically so that the operation of controlling devices or apparatus must succeed each other in proper sequence before any proceed indication can be displayed.

§ 236.305 Approach or time locking.

This section requires approach or time locking be provided in connection with signals displaying aspects with indications more favorable than proceed at restricted speed.

§ 236.306 Facing point lock or switch-and-lock movement.

Facing point lock or switch and lock movement is required for mechanically-operated switch, movable point frog or split point derail.

§ 236.307 Indication locking.

This section requires indication locking for operative approach signals of the semaphore type, power-operated home signals, power-operated switches, movable point frogs and derails, and for all approach signals, except light signals with all aspects controlled by polar or coded track circuits, or line circuits so installed that a single fault will not permit a more favorable aspect than intended to be displayed.

§ 236.308 Mechanical or electric locking or electric circuits; requisites.

This section prohibits display of conflicting aspects except on track used for switching movements only by one train at a time. Manual interlockings installed prior to October 1, 1950, are excluded provided simultaneous opposing movements are not permitted between stations on either side of the interlocking when it is unattended.

Mechanical locking, electric locking, or electric circuits are required to be installed so that signals cannot display aspects which permit conflicting movements.

Opposing signals on track used for switching movements only are excluded and may display aspects indicating "Proceed at Restricted Speed" when used by only one train at a time. This arrangement is prohibited for use by through trains. It is prohibited for more than one switch crew to perform movements on track used for switching only.

This rule applies to interlockings only.

§ 236.309 Loss of shunt protection; where required.

This section requires that loss of shunt of 5 seconds or less, regardless if it occurs on the approach circuit or on a track circuit within the limits of an automatic interlocking, must not permit established route to be changed. It also requires that loss of shunt of 5 seconds or less shall not permit the release of route locking.

It applies to all automatic interlockings whether or not they are connected to other signal systems. This includes automatic drawbridges, manual interlockings arranged for automatic operation when unattended and interlockings having both automatic and controlled routes, and to route locking of power-operated switch.

§ 236.310 Signal governing approach to home signal.

This requires that a signal be provided on main track to govern the approach with the current of traffic to any home signal. It excludes the first signal encountered when leaving yards or stations and authorized speed approaching home signal is not higher than slow speed. It provides for use of inoperative approach signal when authorized speed between home signals on route governed is 20 mph or less.

This rule applies to both interlocking and traffic control systems.

§ 236.311 Signal control circuits, selection through track relays, and through signal mechanism contacts and time releases at automatic interlocking.

This section requires that at all interlockings the control circuit for aspect with indication more favorable than "proceed at restricted speed" be selected through relays or devices that function as track relays of all track circuits in the route governed or through repeating relays for such track circuits. Additionally, at automatic interlocking, such control circuits shall be selected through relays or devices that function as track relays of track circuits in all conflicting routes or through repeating relays for such track circuits; through signal mechanism contacts or through relay contacts closed when conflicting signals display stop aspects; and through normal contacts of time releases or timing devices for conflicting routes or contact of relays repeating the normal position of contacts on such time releases or timing devices.

§ 236.312 Movable bridge, interlocking of signal appliances with bridge devices.

This requires that interlocking of movable bridge be so interconnected with bridge devices that bridge must be properly locked and track properly aligned before a signal governing movements over the bridge can display an aspect to proceed.

§ 236.314 Electric lock for hand-operated switch or derail.

This requires each hand-operated switch or derail within interlocking limits where train speeds exceed 20 mph be electrically locked. At manually operated interlocking it shall be controlled by the operator of the machine. Approach or time locking shall be provided.

Rules and Instructions

§ 236.326 Mechanical locking removed or disarranged; requirements for permitting train movements through interlocking.

This section prescribes the procedures for train operation through interlocking when the mechanical interlocking is being changed or is removed from the machine, or locking becomes disarranged or broken.

§ 236.327 Switch, movable point frog or split point derail.

Switch, movable point frog or split point derail equipped with lock rod shall be so adjusted that locking is prevented when the switch point is obstructed by 3/8 inch or more.

§ 236.328 Plunger of facing-point lock.

This requires that plunger of lever operated facing-point lock have at least an 8 inch stroke and, when unlocked, clear the lock rod not more than 1 inch.

This applies to both interlocking and traffic control system.

§ 236.329 Bolt lock.

This section requires that bolt lock be so maintained that governing signal over a switch or derail cannot display an aspect to proceed unless derail is in non-derailing position and switch is within 1/2 inch of its proper position.

§ 236.330 Locking dog of switch-and-lock movement.

This requires that locking dog of switch and lock movement extend through lock rod 1/2 inch or more in either normal or reverse position.

§ 236.334 Point detector.

Point detector shall be so maintained that contacts cannot be opened by manually applying force at the closed point when switch is locked in either normal or reverse position. Its circuit controller contacts shall not assume the position corresponding to switch point closure if the switch point is prevented by an obstruction from closing to within 1/4 inch where latch-out device is not used and 3/8 inch where latch-out device is used.

§ 236.335 Dogs, stops and trunnions of mechanical locking.

This requires that driving pieces, dogs, stops and trunnions be rigidly fastened to locking bars, that swing dogs have full and free movement and that top plates be securely fastened in place.

§ 236.336 Locking bed.

This section requires that various parts of the locking bed, locking bed supports, and tappet stop rail shall be rigidly secured in place and aligned to permit free operation of locking.

§ 236.337 Locking faces of mechanical locking; fit.

Locking faces shall fit squarely against each other when locked with minimum engagement of at least 1/2 the designed locking face.

§ 236.338 Mechanical locking required in accordance with locking sheet and dog chart.

This requires that mechanical locking in service be in accordance with locking sheet and dog chart. Section 236.1 requires locking sheet and dog chart to be kept at mechanical interlocking and be correct and legible.

§ 236.339 Mechanical locking, maintenance requirements.

This section requires that locking and connections be maintained so that motion of levers or latches, when locked, do not exceed prescribed tolerances.

Mechanical Machine.

When this rule was first adopted, more than 90 percent of mechanical interlocking machines installed were of two types: Saxby and Farmer (S&F) and Style A. Both have latch-operated locking. They are easily recognizable in that S&F machines have rocker arms that stand above the quadrants and Style A machines have rocker arms that stand below the quadrants. Other latch-operated machines are dwarf S&F, Johnson, and National. When locked, the latch block of each lever may not be raised so that the bottom is within 3/8th inch of top of quadrant.

Electromechanical Machine.

Electromechanical machines are combinations of electric machines and mechanical machines. When locked, electric levers operating in horizontal plane may not be moved more than 5/16 inch in normal position or more than 9/16 inch in reverse position. When locked, electric levers moving in an arc may not be moved more than 5 degrees. When locked, the mechanical levers must comply with requirements for mechanical machines.

Power Machine.

At some large manual interlockings, power (electric) interlocking machines manufactured by the Federal Railway Signal Company were installed. When locked, the latch block of each lever may not be raised so that the bottom thereof is within 7/32 inch of top of quadrant.

The majority of power interlocking machines installed at large manual interlockings were Model 2, Model 14, and Model 5. The levers of these machines must meet the same requirements as the electric levers of electromechanical machines.

§ 236.340. Electromechanical interlocking machine; locking between electrical and

mechanical levers.

This section requires that locking between electric and mechanical levers of electromechanical interlocking machine be maintained so that mechanical lever cannot be operated except when released by an electric lever.

§ 236.341.Latch shoes, rocker, links and quadrants.

This section requires that latch shoes, rocker links, and quadrants of S&F machines be maintained so that locking will not release when a downward force not exceeding a man's weight is exerted on the rocker with the lever in mid-stroke position.

§ 236.342 Switch circuit controller.

Switch circuit controller connected at the point to switch, derail, or movable point frog shall be maintained so that its contacts will not be in position corresponding to switch point closure when point is open 1/4 inch or more in either normal or reverse position.

Inspections and Tests

§ 236.376 Mechanical locking.

This requires testing of mechanical locking when new locking is installed, when there is a change in locking or when locking is restored after being disarranged. It requires a complete test of all mechanical locking at least once every 2 years. Test should be made to insure that levers equipped with electric locks mechanically lock all levers previously operated in that lineup. Check shall be made to determine that the locking is in accordance with the locking sheet and dog chart as required by § 236.338. Compliance with §§ 236.326, 236.335, 236.336, 236.337, 236.339, 236.340, and 236.341 is required.

§ 236.377 Approach locking.

Approach locking shall be tested when placed in service, modified or disarranged and at least once every 2 years, whichever shall first occur.

§ 236.378 Time locking.

Time locking to be tested when placed in service, modified, or disarranged and at least once every 2 years, whichever shall occur first.

§ 236.379 Route locking.

This section requires that route or any other type of switch locking be tested when placed in service, modified, or disarranged and at least once every 2 years, whichever shall first occur.

§ 236.380 Indication locking.

Indication locking shall be tested when placed in service , modified, or disarranged and at least once every 2 years, whichever shall first occur.

§ 236.381 Traffic locking.

This section requires that traffic locking be tested when placed in service, modified, or disarranged and at least once every 2 years, whichever shall first occur.

§ 236.382 Switch obstruction test.

A switch obstruction test shall be made when lock rod is placed in service or changed out and at least once a month thereafter.

§ 236.383 Valve locks and valve magnets.

Valve locks on valves of the non-cutoff type shall be tested at least once every 3 months and valves and valve magnets be tested at least once every year.

§ 236.384 Cross protection.

Cross protection shall be tested at least once every 6 months.

§ 236.386 Restoring feature on power switches.

This rule requires that restoring feature on power switches be tested once every 3 months.

§ 236.387 Movable bridge locking.

Movable bridge locking shall be tested at least once a year.

Subpart D — Traffic Control Systems

§ 236.401 Automatic block signal system and interlocking standards applicable to traffic control systems.

This section prescribes the following automatic block signal system and interlocking standards be applied to traffic control systems:

§ 236.201[Track-circuit control of signals]; § 236.202[Signal governing movements over hand operated switch]; § 236.203[Hand-operated crossover between main tracks; protection]; § 236.205[Signal control circuits; requirements]; § 236.206[Battery or power supply with

respect to relay; location]; § 236.303[Control circuits for signals, selection through circuit controller operated by switch points or by switch locking mechanism];§ 236.307 [Indication locking]; § 236.309 [Loss of shunt protection; where required]; § 236.310 [Signal governing approach to home signal]; § 236.311[Signal control circuits, selection through track relays, or devices functioning as track relays, and through signal mechanism contacts and time releases at automatic interlocking].

§ 236.402 Signals controlled by track circuits and control operator.

This standard requires that all home signal aspects more favorable than "proceed at restricted speed" be controlled by track circuits extending through the entire block. At a controlled point, the control circuits may be controlled by a control operator; and at manually operated interlockings, the home signals shall be controlled manually in cooperation with control operator.

§ 236.403 Signals at controlled point.

This requires signals at a controlled point to be so interconnected that aspects to proceed cannot be displayed simultaneously for conflicting movements, except they may display an aspect indicating "proceed at restricted speed" at the same time on track used for switching movements only, by one train at a time.

§ 236.404 Signals at adjacent control points.

Signals at adjacent controlled points shall be so interconnected that aspects to proceed on tracks signaled for movements at greater than restricted speed cannot be displayed simultaneously for conflicting movements.

This section permits restricted speed aspects to be displayed simultaneously for opposing or converging routes at adjacent control points provided the speed restrictions between the control points do not exceed 20 mph. The maximum authorized speed between adjacent controlled points where signals can simultaneously display aspects indicating proceed at restricted speed shall not exceed 20 mph regardless of more favorable aspects displayed and regardless whether or not track is signaled.

§ 236.405 Track signaled for movements in both directions, change of direction of traffic.

This prevents the changing of the direction of traffic from that which was obtained at the time the track was occupied between opposing signals at adjacent controlled points on track signaled for movement in both directions, except that when a train having left one controlled point reaches a section of track immediately adjacent to the next controlled point at which switching is to be performed, an aspect permitting movement at not exceeding restricted speed may be displayed into the occupied block.

§ 236.407 Approach or time locking; where required.

Approach or time locking shall be provided for each controlled signal where route or direction of traffic can be changed.

§ 236.408 Route locking.

This specifies where route locking shall be provided and where it shall become effective in the route entered.

At any location in traffic control territory where switches are power-operated, route locking must be provided and it must be effective when the first pair of wheels of a locomotive or car passes a point 13 feet in advance of the signal governing its movement. The 13 feet shall be measured from the center of the signal mast to the effective insulated joint. This rule does not apply to controlled signals or automatic signals that do not have power-operated switches in the route governed.

§ 236.410 Locking, hand-operated switch.

This requires that hand-operated switch in main track be locked either electrically or mechanically in normal position, or a signal be provided to govern train movements to the signaled track. It exempts those hand-operated switches on main track where train speeds do not exceed 20 mph, on signaled sidings without intermediate signals where train speeds do not exceed 30 mph, or where trains are not permitted to clear the signaled track. It requires approach or time locking and provides that locking may be released either automatically or by the control operator after the control circuits of signals governing movements over the switch have been opened directly or by shunting of track circuit. When a signal is used in lieu of a lock for movement from auxiliary track to signaled track, the signal shall not display aspect to proceed until control circuits of main track signals in either direction have been opened and the approach locking circuits for the approaches to the switch are unoccupied or a predetermined time interval has expired.

§ 236.426 Interlocking rules and instructions applicable to traffic control systems.

This rule prescribes the following interlocking rules and instructions be applied to traffic control systems:

§ 236.327[Switch, movable-point frog split point derail]; § 236.328[Plunger of facing-point lock]; § 236.330[Locking dog of switch-and-lock movement]; § 236-334[Point detector]; §236.342[Switch circuit controller].

§ 236.476 Interlocking inspections and tests applicable to traffic control systems.

This rule prescribes the following interlocking inspections and tests be made of traffic control systems:

§ 236.377 [Approach locking]; § 236.378 [Time locking]; § 236.379[Route locking]; §236.380[Indication locking]; § 236.382[Switch obstruction test]; § 236.383[Valve locks,

valves and valve magnets]; § 236.386[Restoring feature on power switches].

Subpart E — Automatic Train Stop, Train Control and Cab Signal Systems Standards

§ 236.501 Forestalling device and speed control.

This section permits the use of a forestalling device in automatic train stop systems and sets forth the minimum requirements for control of speed in automatic train control systems.

§ 236.502 Automatic brake application, initiation by restrictive block conditions stopping distance in advance.

This is a companion section to § 236.504 and requires that the automatic brake application be initiated at least stopping distance to the entrance of a block where any condition exists as described in § 236.205.

§ 236.503 Automatic brake application; initiation when predetermined rate of speed exceeded.

This is a companion section to § 236.501 and requires overspeed protection of all restrictive features used in automatic train control systems.

§ 236.504 Operation interconnected with automatic block-signal system.

This prescribes the use and operation of an automatic train stop or train control system. Either system shall be so interconnected with the signal system that the failure of the engineer to acknowledge a restrictive wayside signal will cause the train stop system to perform its intended function.

§ 236.505 Proper operative relation between parts along roadway and parts on locomotive.

This section requires that proper operation occur between parts along the roadway and parts on the locomotive under all conditions.

§ 236.506 Release of brakes after automatic application.

This prescribes the conditions under which the brakes may be released following an automatic brake application.

§ 236.507 Brake application; full service.

This is a companion rule to § 236.502 and requires the apparatus on the locomotive, when operated, to impose a full service application of the brakes.

§ 236.508 Interference with application of brakes by means of brake valve.

This prohibits use of apparatus that affects the proper functioning of the air brake system.

§ 236.509 Two or more locomotives coupled.

This requires automatic train stop, train control or cab signal apparatus be operative only on the locomotive from which the brakes are controlled.

§ 236.511 Cab signals controlled in accordance with block conditions stopping distance in advance.

This requires that automatic cab signals be continuously controlled and provide proper aspects and stopping distances to conditions described in § 236.205.

§ 236.512 Cab signal indication when locomotive enters block where restrictive conditions obtain.

This is a companion rule to § 236.514 and requires the cab signal indicate "Proceed at Restricted Speed" when a locomotive enters or is within a block in cab signal territory wherein a condition described in § 236.205 exists.

§ 236.513 Audible indicator.

When the cab signal aspect changes to a more restrictive indication, an audible indicator shall sound continuously until silenced by manual operation of an acknowledging device.

§ 236.514 Interconnection of cab signal system with roadway signal system.

This prohibits the cab signal from indicating a speed higher than that authorized by roadway signal indication except when the condition changes after the roadway signal has been passed.

§ 236.515 Visibility of cab signals.

This requires that the cab signal be so located that the locomotive crew can plainly see the aspect from their stations in the cab.

§ 236.516 Power supply.

Automatic cab signal, train stop, or train control device shall operate from a separate or isolated power supply.

Rules and Instructions: Roadway

§ 236.526 Roadway element not functioning properly.

This requires that when the roadway element, except track circuit, of an automatic train stop, train control, or cab signal system has failed to perform its intended function, the associated signal shall be caused manually to display the most restrictive aspect.

§ 236.527 Roadway element insulation resistance.

Insulation resistance between roadway inductor and ground shall be maintained at not less than 10,000 ohms. This applies to intermittent inductive automatic train stop systems.

§ 236.528 Restrictive condition resulting from open hand-operated switch; requirement.

When a facing point hand-operated switch is open 1/4 inch or more, a trailing-point hand-operated switch 3/8 inch or more, or hand-operated switch is not locked where facing point lock with circuit controller is used, the restrictive condition of continuous inductive automatic train stop or train control device of the continuous type, or restrictive cab signal indication of an automatic cab signal device on an approaching locomotive shall be maintained to within 300 feet of the points of the switch.

§ 236.529 Roadway element inductor; height and distance from rail.

Inductor of the inert roadway element type shall be maintained with the inductor pole faces at a height above the plane of the tops of the rails, and with its inner edge at a horizontal distance from the gage side of the nearest running rail, in accordance with specifications of the carrier.

§ 236.530 Ramp; height and distance from rail.

Inductor of the inert roadway element type shall be maintained with the inductor pole faces at a height above the plane of the tops of the rails, and with its inner edge at a horizontal distance from the gage side of the nearest running rail, in accordance with specifications of the carrier.

§ 236.531 Trip arm; height and distance from rail.

Trip arm of automatic train stop device, when in stop position, shall be installed and maintained at a height above the plane of the tops of the rails, and at a horizontal distance from its center line to gage side of the nearest running rail, in accordance with specifications of the carrier on file with FRA.

§ 236.532 Strap iron inductor; use restricted.

This restricts the use of strap iron inductors, short ramps or other roadway element with characteristics different from its standard type where speed higher than restricted speed is

permitted.

§ 236.534 Entrance to equipped territory; requirements.

Where trains are not required to stop at the entrance to equipped territory, except when leaving yards and stations and speed until entering equipped territory does not exceed restricted speed, the automatic train stop, train control or cab signal device shall be operative at least stopping distance from the entrance to such territory except where the approach thereto is governed by automatic approach signal.

Rules and Instructions: Locomotives

§ 236.551 Power supply voltage; requirement.

The tolerance within which the power supply voltage shall be maintained is 10% of rated voltage.

§ 236.552 Insulation resistance; requirement.

When performing periodic test in §236.588, this prescribes the minimum insulation resistance permitted between wiring and ground.

§ 236.553 Seal, where required.

This requires that a seal be maintained on any device other than brake pipe cut-out cock (double heading cock), by means of which the operation of pneumatic portion of automatic train stop or train control apparatus can be cut out.

§ 236.554 Rate of pressure reduction; equalizing reservoir or brake pipe.

This is a companion rule to § 236.508 and requires that the equalizing reservoir pressure or brake pipe pressure reduction during an automatic brake application be at a rate not less than that which results from a manual service application.

§ 236.555 Repaired or rewound receiver coil.

A receiver coil which has been repaired or rewound shall have the same operating characteristics which is possessed originally or as currently specified for new equipment.

§ 236.556 Adjustment of relay.

This prohibits the adjustment of a relay other than in a shop equipped for that purpose except when receiver coils, electro-pneumatic valve or other essential part of the equipment is replaced. Irregularities in power-supply voltage or other variable factors in the circuits shall not be compensated for by adjustment of the relay.

§ 236.557 Receiver; location with respect to rail.

(a) Receiver of intermittent inductive automatic train stop device of the inert roadway element type shall be maintained with bottom of the receiver at a height above the plane of the tops of the rails, and with its outer edge at a horizontal distance from the gage side of the nearest rail, in accordance with specifications of the carrier.

(b) Receiver of continuous inductive automatic cab signal, train stop, or train control device of locomotive equipped with on-board test equipment, shall be maintained with the bottom of the receiver at a height above the plane of the tops of the rails, and with its outer edge at a horizontal distance from the gage side of the nearest rail, in accordance with specifications of the carrier.

§ 236.560 Contact element, mechanical trip type; location with respect to rail.

Contact element of automatic train stop device of the mechanical trip type shall be maintained at a height above the plane of the tops of the rails, and at a horizontal distance from the gage side of the rail, in accordance with specifications of the carrier.

§ 236.562 Minimum rail current required.

The minimum rail current required to restore the locomotive equipment of continuous inductive automatic train stop or train control device to normal condition or to obtain a proceed indication of automatic cab signal device (pick-up) shall be in accordance with specifications of the carrier.

§ 236.563 Delay time.

This prescribes that the delay time of automatic train stop or train control system not exceed 8 seconds and that the spacing of signals to meet the requirements of § 236.24 take into consideration the delay time.

§ 236.564 Acknowledging time.

The acknowledging time of intermittent automatic train stop device shall not exceed 30 seconds.

§ 236.565 Provision made for preventing operation of pneumatic brake-applying apparatus by double-heading cock; requirements.

This section requires that where provision are made for preventing the operation of the pneumatic brake-applying apparatus of an automatic train stop or train control device when the double-heading cock is placed in double-heading position, it shall be so arranged that the

automatic brake valve is cut out in advance of or simultaneously with the train stop or train control apparatus.

§ 236.566 Locomotive of each train operating in train stop, train control or cab signal territory; equipped.

This requires that the locomotive, from which brakes are controlled, of each train operating in automatic train stop, train control or cab signal territory shall be equipped with apparatus responsive to the roadway equipment installed on all or any part of the route traversed, and such apparatus shall be in operation.

§ 236.567 Restrictions imposed when device fails and/or is cut out en route.

This section sets forth the procedures and restrictions that shall be followed when an automatic train stop, train control or cab signal device fails and/or is cut out en route. Where an automatic train stop, train control, or cab signal device fails and/or is cut out en route, train may proceed at restricted speed or if an automatic block signal system is in operation according to signal indication but not to exceed medium speed, to the next available point of communication where report must be made to a designated officer. Where no automatic block signal system is in use train shall be permitted to proceed at restricted speed or where automatic block signal system is in operation according to signal indication but not to exceed maximum speed to a point where absolute block can be established. Where an absolute block is established in advance of the train on which the device is operative train may proceed at not to exceed 79 miles per hour.

§ 236.568 Difference between speeds authorized by roadway signal and cab signal; action required.

In the event a cab signal authorizes a speed different from that authorized by a roadway signal, the most restrictive speed shall not be exceeded.

Inspections and Tests: Roadway

§ 236.576 Roadway element.

Roadway elements, except track circuits, including those for test purposes, shall be gaged monthly for height and alinement, and shall be tested at least every 6 months.

§ 236.577 Test, acknowledgment and cut-in circuits.

Test, acknowledgment and cut-in circuits shall be tested at least once every 12 months.

Inspection and Tests; Locomotive

§ 236.586 Daily or after trip test.

Except where tests prescribed by § 236.588[periodic test] are performed at intervals of not more than 2 months, each locomotive equipped with an automatic cab signal or train stop or train control device operating in equipped territory shall be inspected for damage to the equipment and tested at least once each calendar day or within 24 hours before departure upon each trip.

(b) Each equipped locomotive shall be tested to determine the locomotive equipment is responsive to the wayside equipment and shall be cycled to determine the device functions as intended.

(c) Each locomotive equipped with intermittent inductive automatic train stop or non-coded continuous inductive automatic train control device shall be tested to determine that the pickup of the device is within specified limits.

§ 236.587 Departure test.

(a) The automatic train stop, train control, or cab signal apparatus on each locomotive, except a locomotive or a multiple-unit car equipped with mechanical trip stop, shall be tested using one of the following methods:

- (1) Operation over track elements;
- (2) Operation over test circuit;
- (3) Use of portable test equipment; or
- (4) Use of on-board test device.

(b) The test shall be made on departure of the locomotive from its initial terminal unless that apparatus will be cut out between the initial terminal and the equipped territory. If the apparatus is cut out between the initial terminal and the equipped territory the test shall be made prior to entering equipped territory.

(c) If a locomotive makes more than one trip in any 24-hour period, only one departure test is required in such 24-hour period.

(d) If a departure test is made by an employee, other than the engineer, the engineer shall be informed of the results of such test and a record kept thereof.

Results of departure tests shall be retained for 92 days. Results of all other tests listed in this section shall be retained until the next record is filed but in no case less than one year.

Whoever performs the departure test shall certify in writing that such test was properly performed. The certification and the test results shall be posted in the cab of the locomotive and a copy of the certification and test results left at the test location for filing in the office of the supervisory official having jurisdiction.

If it is impractical to leave a copy of the certification and test results at the location of the test, the test results shall be transmitted to either (i) the dispatcher or (ii) one other designated individual at each location, who shall keep a written record of the test results and the name of the

person performing the test. These records shall be retained for at least 92 days.

§ 236.588 Periodic test.

Except as provided in § 236.586, periodic test of the automatic train stop, train control, or cab signal apparatus shall be made at least once every 92 days, and on multiple-unit cars as specified by the carrier, subject to approval by the FRA.

§ 236.589 Relays.

(a) Each relay shall be removed from service, subjected to thorough test, necessary repairs and adjustments made, and shall not be replaced in service unless its operating characteristics are in accordance with the limits within which such relay is designed to operate, as follows:

(1) Master or primary relays of torque type depending on spring tension to return contacts to de-energized position in non-coded continuous inductive automatic train stop or train control system, at least every 2 years; and

(2) all others, at least once every 6 years.

§ 236.590 Pneumatic apparatus.

Automatic train stop, train control or cab signal pneumatic apparatus shall be inspected and cleaned at least once every 736 days.⁸¹ The results of such inspection shall be recorded as provided by § 229.29(a). When a locomotive with automatic train stop, train control, or cab signal pneumatic apparatus receives out-of-use credit pursuant to § 229.33, the automatic train stop, train control, or cab signal apparatus shall be tested in accordance with § 236.588 prior to the locomotive being placed in service.

Subpart F — Dragging Equipment and Slide Detectors and Other Similar Protective Devices

Standards

§ 236.601 Signals controlled by devices; location.

Signals controlled by devices used to provide protection against unusual contingencies, such as landslides, dragging equipment, burned bridges or trestles and washouts shall be located so that stopping distance will be provided between the signal and the point where it is necessary to stop the train.

⁸¹ Any changes in the inspection and cleaning of the airbrakes under 49 C.F.R. § 229.29 will automatically apply to this section.

Subpart G — Definitions

§ 236.700 Definitions.

Definitions of the technical words used in the signal rules are contained in this subpart at §§236.702 through 236.838.

§ 236.701 Application, brake; full service.

An application of the brakes resulting from a continuous or a split reduction in brake pipe pressure at a service rate until maximum brake cylinder pressure is developed. As applied to an automatic or electro-pneumatic brake with speed governor control, an application other than emergency which develops the maximum brake cylinder pressure, as determined by the design of the brake equipment for the speed at which the train is operating.

Subpart H---Standards for Processor-Based Signal and Train Control Systems

§236.901. Purpose and Scope.

(a) *What is the purpose of this subpart?* The purpose of this subpart is to promote the safe operation of processor-based signal and train control systems, subsystems, and components that are safety-critical products, as defined in § 236.903, and to facilitate the development of those products.

(b) *What topics does it cover?* This subpart prescribes minimum, performance-based safety standards for safety-critical products, including requirements to ensure that the development, installation, implementation, inspection, testing, operation, maintenance, repair, and modification of those products will achieve and maintain an acceptable level of safety. This subpart also prescribes standards to ensure that personnel working with safety-critical products receive appropriate training. Each railroad may prescribe additional or more stringent rules, and other special instructions, that are not inconsistent with this subpart.

(c) *What other rules apply?*

(1) This subpart does not exempt a railroad from compliance with the requirements of Subparts A through G of this part, except to the extent a PSP explains to FRA Associate Administrator for Safety's satisfaction the following:

(i) How the objectives of any such requirements are met by the product;

(ii) Why the objectives of any such requirements are not relevant to the product; or

(iii) How the requirement is satisfied using alternative means. (See §

236.907(a)(14)).

(2) Products subject to this subpart are also subject to applicable requirements of parts 233, 234, and 235 of this chapter. See § 234.275 of this chapter with respect to use of this subpart to qualify certain products for use within highway-rail grade crossing warning systems.

(3) Information required to be submitted by this subpart that a submitter deems to be trade secrets, or commercial or financial information that is privileged or confidential under Exemption 4 of the Freedom of Information Act, 5 U.S.C. § 552(b)(4), shall be so labeled in

accordance with the provisions of § 209.11 of this chapter. FRA handles information so labeled in accordance with the provisions of § 209.11 of this chapter.

§236.903 Definitions

This defines a number of terms used in this part, including some new terms:

Product means a processor-based signal or train control system, subsystem, or component.

Product Safety Plan (or PSP) refers to a formal document which describes in detail all of the safety aspects of the product, including but not limited to procedures for its development, installation, implementation, operation, maintenance, repair, inspection, testing and modification, as well as analyses supporting its safety claims, as described in § 236.907.

Railroad Safety Program Plan (or RSPP) refers to a formal document which describes a railroad's strategy for addressing safety hazards associated with operation of products under this subpart and its program for execution of such strategy through the use of PSP requirements, as described in § 236.905.

§236.905 Railroad Safety Program Plan (RSPP)

The RSPP is the overall safety plan for the implementation of new or novel processor-based signal and train control systems on the railroad. It is intended to be a living document. Headquarters' technical staff will review RSPPs and petitions for modifications of RSPPs for sufficiency, and prepare recommendations for approval, conditional approval, or denial. Once approved, close coordination between the headquarters and field staff will be required to ensure that the document is properly maintained and utilized by the railroad.

A railroad subject to this subpart shall develop an RSPP, subject to FRA approval, that serves as its principal safety document for all safety-critical products. The RSPP must establish the minimum PSP requirements that will govern the development and implementation of all products subject to this subpart, consistent with the provisions contained in § 236.907.

The railroad's RSPP must address, at a minimum, the following subject areas: The RSPP must require a description of the preliminary safety analysis, including: (i) A complete description of methods used to evaluate a system's behavioral characteristics; (ii) A complete description of risk assessment procedures; (iii) The system safety precedence followed; and (iv) The identification of the safety assessment process.

§236.907 Product Safety Plan (PSP)

The PSP must include the following:

(1) A complete description of the product, including a list of all product components and their physical relationship in the subsystem or system;

- (2) A description of the railroad operation or categories of operations on which the product is designed to be used, including train movement density, gross tonnage, passenger train movement density, hazardous materials volume, railroad operating rules, and operating speeds;
- (3) An operational concepts document, including a complete description of the product functionality and information flows;
- (4) A safety requirements document, including a list with complete descriptions of all functions which the product performs to enhance or preserve safety;
- (5) A document describing the manner in which product architecture satisfies safety requirements;
- (6) A hazard log consisting of a comprehensive description of all safety-relevant hazards to be addressed during the life cycle of the product, including maximum threshold limits for each hazard (for unidentified hazards, the threshold shall be exceeded at one occurrence);
- (7) A risk assessment, as prescribed in § 236.909 and appendix B to this part;
- (8) A hazard mitigation analysis, including a complete and comprehensive description of all hazards to be addressed in the system design and development, mitigation techniques used, and system safety precedence followed, as prescribed by the applicable RSPP;
- (9) A complete description of the safety assessment and verification and validation processes applied to the product and the results of these processes, describing how subject areas covered in appendix C to this part are either: addressed directly, addressed using other safety criteria, or not applicable;
- (10) A complete description of the safety assurance concepts used in the product design, including an explanation of the design principles and assumptions;
- (11) A human factors analysis, including a complete description of all human-machine interfaces, a complete description of all functions performed by humans in connection with the product to enhance or preserve safety, and an analysis in accordance with appendix E to this part or in accordance with other criteria if demonstrated to the satisfaction of the Associate Administrator for Safety to be equally suitable;
- (12) A complete description of the specific training of railroad and contractor employees and supervisors necessary to ensure the safe and proper installation, implementation, operation, maintenance, repair, inspection, testing, and modification of the product;
- (13) A complete description of the specific procedures and test equipment necessary to ensure the safe and proper installation, implementation, operation, maintenance, repair, inspection, testing, and modification of the product. These procedures, including calibration requirements, shall be consistent with or explain deviations from the equipment manufacturer's recommendations;

(14) An analysis of the applicability of the requirements of subparts A through G of this part to the product that may no longer apply or are satisfied by the product using an alternative method, and a complete explanation of the manner in which those requirements are otherwise fulfilled (see § 234.275 of this chapter and § 236.901(c));

(15) A complete description of the necessary security measures for the product over its life-cycle;

(16) A complete description of each warning to be placed in the Operations and Maintenance Manual identified in § 236.919, and of all warning labels required to be placed on equipment as necessary to ensure safety;

(17) A complete description of all initial implementation testing procedures necessary to establish that safety-functional requirements are met and safety-critical hazards are appropriately mitigated;

(18) A complete description of:

(i) All post-implementation testing (validation) and monitoring procedures, including the intervals necessary to establish that safety-functional requirements, safety-critical hazard mitigation processes, and safety-critical tolerances are not compromised over time, through use, or after maintenance (repair, replacement, adjustment) is performed; and

(ii) Each record necessary to ensure the safety of the system that is associated with periodic maintenance, inspections, tests, repairs, replacements, adjustments, and the system's resulting conditions, including records of component failures resulting in safety-relevant hazards (see § 236.917(e)(3));

(19) A complete description of any safety-critical assumptions regarding availability of the product, and a complete description of all backup methods of operation; and

(20) A complete description of all incremental and predefined changes (see paragraphs (b) and (c) of this section).

§236.909 Minimum Performance Standard

The purpose of the minimum performance standard is to establish the level of performance that must be achieved, but not how it must be achieved. The objective is to make certain that new or novel processor-based signal and train control systems are at least as safe as the systems they would replace. Headquarters personnel accomplish the majority of this section. Field involvement is generally limited to reevaluating compliance with the operational and traffic volume restrictions designated in the PSP.

The safety analysis included in the railroad's PSP must establish with a high degree of confidence that introduction of the product will not result in risk that exceeds the previous condition. The railroad shall determine, prior to filing its petition for approval or informational

filing, that this standard has been met and shall make available the necessary analyses and documentation as provided in this subpart.

§236.911 Exclusions

The requirements of this subpart do not apply to products in service as of June 6, 2005. Railroads may continue to implement and use these products and components from these existing products.

§236.913 Filing and Approval of PSPs

Depending on the nature of the proposed product or change, the railroad shall submit either an informational filing or a petition for approval. Submission of a petition for approval is required for PSPs or PSP amendments concerning installation of new or next-generation train control systems. All other actions that result in the creation of a PSP or PSP amendment require an informational filing and are handled according to the procedures outlined in paragraph (c) of this section. Applications for discontinuance and material modification of signal and train control systems remain governed by parts 235 and 211 of this chapter; and petitions subject to this section may be consolidated with any relevant application for administrative handling.

§236.915 Implementation and Operation

With two exceptions, a railroad may operate in revenue service any product 180 days after filing with FRA the informational filing for that product. These exceptions are:

(1) If FRA approval is required for a product, the railroad shall not operate the product in revenue service until after the Associate Administrator for Safety has approved the petition for approval for that product pursuant to § 236.913.

(2) If after product implementation FRA elects, for cause, to treat the informational filing for the product as a petition for approval, the product may remain in use if otherwise consistent with the applicable law and regulations. FRA may impose special conditions for use of the product during the period of review for cause.

§236.917 Retention of Records

(a) *What life-cycle and maintenance records must be maintained?* (1) The railroad shall maintain at a designated office on the railroad:

- (i) For the life-cycle of the product, adequate documentation to demonstrate that the PSP meets the safety requirements of the railroad's RSPP and applicable standards in this subpart, including the risk assessment;
- (ii) An Operations and Maintenance Manual, pursuant to § 236.919; and
- (iii) Training records pursuant to § 236.923(b).

(2) Results of inspections and tests specified in the PSP must be recorded as prescribed in § 236.110.

(3) Contractors of the railroad shall maintain at a designated office training records pursuant to § 236.923(b).

(b) *What actions must the railroad take in the event of occurrence of a safety-relevant hazard?* After the product is placed in service, the railroad shall maintain a database of all safety-relevant hazards as set forth in the PSP and those that had not been previously identified in the PSP. If the frequency of the safety-relevant hazards exceeds the threshold set forth in the PSP (see § 236.907(a)(6)), then the railroad shall:

(1) Report the inconsistency in writing (by mail, facsimile, e-mail, or hand delivery to the Director, Office of Safety Assurance and Compliance, FRA, 1120 Vermont Ave., N.W., Mail Stop 25, Washington, D.C. 20590, within 15 days of discovery. Documents that are hand delivered must not be enclosed in an envelope.

(2) Take prompt countermeasures to reduce the frequency of the safety-relevant hazard(s) below the threshold set forth in the PSP; and

(3) Provide a final report to the FRA Director, Office of Safety Assurance and Compliance, on the results of the analysis and countermeasures taken to reduce the frequency of the safety relevant hazard(s) below the threshold set forth in the PSP when the problem is resolved.

§ 236.919 Operations and Maintenance Manual.

The railroad shall catalog and maintain all documents as specified in the PSP for the installation, maintenance, repair, modification, inspection, and testing of the product and have them in one Operations and Maintenance Manual, readily available to persons required to perform such tasks and for inspection by FRA and FRA-certified State inspectors.

§ 236.921 Training and qualification program, general.

Employers shall establish and implement training and qualification programs for products subject to this subpart. These programs must meet the minimum requirements set forth in the PSP and in §§ 236.923 through 236.929 as appropriate.

§ 236.923 Task analysis and basic requirements.

(a) *How must training be structured and delivered?* As part of the program required by § 236.921, the employer shall, at a minimum:

(1) Identify the specific goals of the training program with regard to the target population (craft, experience level, scope of work, etc.), task(s), and desired success rate;

(2) Based on a formal task analysis, identify the installation, maintenance, repair, modification, inspection, testing, and operating tasks that must be performed on a railroad's products. This includes the development of failure scenarios and the actions expected under such scenarios;

- (3) Develop written procedures for the performance of the tasks identified;
- (4) Identify the additional knowledge, skills, and abilities above those required for basic job performance necessary to perform each task;
- (5) Develop a training curriculum that includes classroom, simulator, computer-based, hands on, or other formally structured training designed to impart the knowledge, skills, and abilities identified as necessary to perform each task;
- (6) Prior to assignment of related tasks, require all persons mentioned in § 236.921(a) to successfully complete a training curriculum and pass an examination that covers the product and appropriate rules and tasks for which they are responsible (however, such persons may perform such tasks under the direct onsite supervision of a qualified person prior to completing such training and passing the examination);
- (7) Require periodic refresher training at intervals specified in the PSP that includes classroom, simulator, computer-based, hands-on, or other formally structured training and testing, except with respect to basic skills for which proficiency is known to remain high as a result of frequent repetition of the task; and
- (8) Conduct regular and periodic evaluations of the effectiveness of the training program specified in § 236.923(a)(1) verifying the adequacy of the training material and its validity with respect to current railroads products and operations

(b) *What training records are required?* Employers shall retain records which designate persons who are qualified under this section until new designations are recorded or for at least one year after such persons leave applicable service. These records shall be kept in a designated location and be available for inspection and replication by FRA and FRA-certified State inspector.

§ 236.925 Training specific to control office personnel.

Any person responsible for issuing or communicating mandatory directives in territory where products are or will be in use must be trained in the following areas, as applicable:

- (a) Instructions concerning the interface between the computer-aided dispatching system and the train control system, with respect to the safe movement of trains and other on-track equipment;
- (b) Railroad operating rules applicable to the train control system, including provision for movement and protection of roadway workers, unequipped trains, trains with failed or cut-out train control onboard systems, and other on-track equipment; and
- (c) Instructions concerning control of trains and other on-track equipment in case the train control system fails, including periodic practical exercises or simulations, and operational testing under part 217 of this chapter to ensure the continued capability of the personnel to provide for safe operations under the alternative method of operation.

§ 236.927 Training specific to locomotive engineers and other operating personnel.

(a) Training provided under this subpart for any locomotive engineer or other person who participates in the operation of a train in train control territory must be defined in the PSP and the following elements must be addressed:

(1) Familiarization with train control equipment onboard the locomotive and the functioning of that equipment as part of the system and in relation to other onboard systems under that person's control;

(2) Any actions required of the onboard personnel to enable, or enter data to, the system, such as consist data, and the role of that function in the safe operation of the train;

(3) Sequencing of interventions by the system, including pre-enforcement notification, enforcement notification, penalty application initiation and post-penalty application procedures;

(4) Railroad operating rules applicable to the train control system, including provisions for movement and protection of any unequipped trains, or trains with failed or cut-out train control onboard systems and other on-track equipment;

(5) Means to detect deviations from proper functioning of onboard train control equipment and instructions regarding the actions to be taken with respect to control of the train and notification of designated railroad personnel; and

(6) Information needed to prevent unintentional interference with the proper functioning of onboard train control equipment.

(b) Training required under this subpart for a locomotive engineer, together with required records, must be integrated into the program of training required by part 240 of this chapter.

(c) The following special requirements apply in the event a train control system is used to effect full automatic operation of the train:

(1) The PSP must identify all safety hazards to be mitigated by the locomotive engineer.

(2) The PSP must address and describe the training required with provisions for the maintenance of skills proficiency. As a minimum, the training program must:

(i) As described in § 236.923(a)(2), develop failure scenarios which incorporate the safety hazards identified in the PSP, including the return of train operations to a fully manual mode;

(ii) Provide training, consistent with § 236.923(a), for safe train operations under all failure scenarios and identified safety hazards that affect train operations;

(iii) Provide training, consistent with § 236.923(a), for safe train operations under manual control; and

(iv) Consistent with § 236.923(a), ensure maintenance of manual train operating skills by requiring manual starting and stopping of the train for an appropriate number of trips and by one or more of the following methods:

(A) Manual operation of a train for a 4-hour work period;

(B) Simulated manual operation of a train for a minimum of 4 hours in a Type I simulator as required; or

(C) Other means as determined following consultation between the railroad and designated representatives of the affected employees and approved by the FRA. The PSP must designate the appropriate frequency when manual operation, starting, and stopping must be conducted, and the appropriate frequency of simulated manual operation.

§ 236.929 Training specific to roadway workers.

(a) Training required under this subpart for a roadway worker must be integrated into the program of instruction required under part 214, subpart C of this chapter (“Roadway Worker Protection”), consistent with task analysis requirements of § 236.923. This training must provide instruction for roadway workers who provide protection for themselves or roadway work groups.

(b) (1) Instruction for roadway workers must ensure an understanding of the role of processor-based signal and train control equipment in establishing protection for roadway workers and their equipment.

(2) Instruction for roadway workers must ensure recognition of processor-based signal and train control equipment on the wayside and an understanding of how to avoid interference with its proper functioning.

(3) Instructions concerning the recognition of system failures and the provision of alternative methods of on-track safety in case the train control system fails, including periodic practical exercises or simulations and operational testing under part 217 of this chapter to ensure the continued capability of roadway workers to be free from the danger of being struck by a moving train or other on-track equipment.

49 U.S.C. §§ 20102; 20602-20605; 20902; 21302; 21304; 71 Fed. Reg. 11095(March 7, 2005) and 74 Fed. Reg. 25174 (May 27, 2009).

This final rule includes a job briefing requirement regarding the accessibility of the roadway worker in charge; the adoption of procedures for how roadway workers cross railroad track; a new exception for railroads conducting snow removal and weed spraying operations; a clarification of the existing “foul time” provision; three new permissible methods of establishing working limits on non-controlled track; the expanded use of individual train detection at controlled points; an amended provision governing train audible warnings for roadway workers; and, amendment of certain roadway worker training requirements.

FRA is also addressed other items. Among these items are: redundant signal protections; the electronic display of working limits authorities; amendments to the existing provision governing the qualification of roadway workers in charge; a new provision establishing minimum safety standards governing the use of “occupancy behind” or “conditional” working limit authorities; the phase-out of the use of definite train location and informational train line-ups; amendments to clarify the existing roadway worker protection and blue signal protection requirements for work performed within shop areas; the use of existing tunnel niches and clearing bays as a place of safety; and, the use of other railroad tracks as a place of safety. This final rule also deletes certain outdated incorporations by reference of personal protective equipment standards in FRA’s Bridge Worker Safety Standards at subpart B of part 214, and instead cross references the relevant OSHA’s regulations.
81 Fed. Reg. 37840

FRA’S POLICY ON JURISDICTION OVER LIGHT RAIL PASSENGER OPERATIONS

Under the Federal railroad safety laws, FRA has jurisdiction over all railroads except “rapid transit operations in an urban area that are not connected to the general railroad system of transportation.” 49 U.S.C. 20102. Within the limits imposed by this authority, FRA exercises jurisdiction over all railroad passenger operations, regardless of the equipment they use, unless FRA has specifically stated below an exception to its exercise of jurisdiction for a particular type of operation. This policy is stated in general terms and does not change the reach of any particular regulation under its applicability section. That is, while FRA may generally assert jurisdiction over a type of operation here, a particular regulation may exclude that kind of operation from its reach. Therefore, this statement should be read in conjunction with the applicability sections of all of FRA’s regulations.

Intercity Passenger Operations

FRA exercises jurisdiction over all intercity passenger operations. Because of the nature of the service they provide, standard gage intercity operations are all considered part of the general railroad system, even if not physically connected to other portions of the system. Other intercity passenger operations that are not standard gage (such as a magnetic levitation system) are within FRA’s jurisdiction even though not part of the general system.

Commuter Operations

FRA exercises jurisdiction over all commuter operations. Congress apparently intended that FRA do so when it enacted the Federal Railroad Safety Act of 1970, and made that intention very clear in the 1982 and 1988 amendments to that act. FRA has attempted to follow that mandate consistently. A commuter system’s connection to other railroads is not relevant under the rail safety statutes. In fact, FRA considers commuter railroads to be part of the general railroad system regardless of such connections.

FRA will presume that an operation is a commuter railroad if there is a statutory determination that Congress considers a particular service to be commuter rail. For example, in the Northeast Rail Service Act of 1981, (3), Congress listed specific commuter authorities. If that

45 U.S.C. § 1104 presumption does not apply, and the operation does not meet the description of a system that is presumptively urban rapid transit (*See*, below), FRA will determine whether a system is commuter or urban rapid transit by analyzing all of the system's pertinent facts. FRA is likely to consider an operation to be a commuter railroad if:

- The system serves an urban area, its suburbs, and more distant outlying communities in the greater metropolitan area;
- The system's primary function is moving passengers back and forth between their places of employment in the city and their homes within the greater metropolitan area, and moving passengers from station to station within the immediate urban area is, at most, an incidental function; and
- The vast bulk of the system's trains are operated in the morning and evening peak periods with few trains at other hours.

Examples of commuter railroads include Metra and the Northern Indiana Commuter Transportation District in the Chicago area; Virginia Railway Express and MARC in the Washington area; and Metro-North, the Long Island Railroad, New Jersey Transit, and the Port Authority Trans Hudson (PATH) in the New York area.

Other Short Haul Passenger Service

The federal railroad safety statutes give FRA authority over "commuter or other short-haul railroad passenger service in a metropolitan or suburban area." 49 U.S.C. § 20102. This means that, in addition to commuter service, there are other short-haul types of service that Congress intended that FRA reach. For example, a passenger system designed primarily to move intercity travelers from a downtown area to an airport, or from an airport to a resort area, would be one that does not have the transportation of commuters within a metropolitan area as its primary purpose. FRA would ordinarily exercise jurisdiction over such a system as "other short-haul service" unless it meets the definition of urban rapid transit and is not connected in a significant way to the general system.

Urban Rapid Transit Operations

One type of short-haul passenger service requires special treatment under the safety statutes: "rapid transit operations in an urban area." Only these operations are excluded from FRA's jurisdiction, and only if they are "not connected to the general railroad system." FRA will presume that an operation is an urban rapid transit operation if the system is not presumptively a commuter railroad (*See*, discussion above) the operation is a subway or elevated operation with its own track system on which no other railroad may operate, has no highway-rail crossings at grade, operates within an urban area, and moves passengers from station to station within the urban area as one of its major functions.

Where neither the commuter railroad nor urban rapid transit presumptions applies, FRA will look at all of the facts pertinent to a particular operation to determine its proper characterization. FRA is likely to consider an operation to be urban rapid transit if:

- The operation serves an urban area (and may also serve its suburbs),
- Moving passengers from station to station within the urban boundaries is a major function of the system and there are multiple station stops within the city for that purpose (such an operation

could still have the transportation of commuters as one of its major functions without being considered a commuter railroad), and
.-The system provides frequent train service even outside the morning and evening peak periods.

Examples of urban rapid transit systems include the Metro in the Washington, D.C. area, CTA in Chicago, and the subway systems in New York, Boston, and Philadelphia. The type of equipment used by such a system is not determinative of its status. However, the kinds of vehicles ordinarily associated with street railways, trolleys, subways, and elevated railways are the types of vehicles most often used for urban rapid transit operations.

FRA can exercise jurisdiction over a rapid transit operation only if it is connected to the general railroad system, but need not exercise jurisdiction over every such operation that is so connected. FRA is aware of several different ways that rapid transit operations can be connected to the general system. FRA's policy on the exercise of jurisdiction will depend upon the nature of the connection(s). In general, a connection that involves operation of transit equipment as a part of, or over the lines of, the general system will trigger FRA's exercise of jurisdiction. Below, FRA reviews some of the more common types of connections and their effect on the agency's exercise of jurisdiction. This is not meant to be an exhaustive list of connections.

Rapid Transit Connections Sufficient to Trigger FRA's Exercise of Jurisdiction

Certain types of connections to the general railroad system will cause FRA to exercise jurisdiction over the rapid transit line *to the extent it is connected*. FRA will exercise jurisdiction over the portion of a rapid transit operation that is conducted as a part of or over the lines of the general system. For example, rapid transit operations are conducted on the lines of the general system where the rapid transit operation and other railroad use the same track. FRA will exercise its jurisdiction over the operations conducted on the general system. In situations involving joint use of the same track, it does not matter that the rapid transit operation occupies the track only at times when the freight, commuter, or intercity passenger railroad that shares the track is not operating. While such time separation could provide the basis for waiver of certain of FRA's rules (*See*, 49 C.F.R. part 211), it does not mean that FRA will not exercise jurisdiction. However, FRA will exercise jurisdiction over only the portions of the rapid transit operation that are conducted on the general system. For example, a rapid transit line that operates over the general system for a portion of its length but has significant portions of street railway that are not used by conventional railroads would be subject to FRA's rules only with respect to the general system portion. The remaining portions would not be subject to FRA's rules. If the non-general system portions of the rapid transit line are considered a "rail fixed guideway system" under 49 C.F.R. part 659, those rules, issued by the Federal Transit Administration (FTA), would apply to them.

Another connection to the general system sufficient to warrant FRA's exercise of jurisdiction is a railroad crossing at grade where the rapid transit operation and other railroad cross each other's tracks. In this situation, FRA will exercise its jurisdiction sufficiently to assure safe operations over the at-grade railroad crossing. FRA will also exercise jurisdiction to a limited extent over a rapid transit operation that, while not operated on the same tracks as the conventional railroad, is connected to the general system by virtue of operating in a shared right-of-way involving joint control of trains. For example, if a rapid transit line and freight railroad were to operate over a movable bridge and were subject to the same authority concerning its use (*e.g.*, the same tower operator controls trains of both operations), FRA will exercise jurisdiction in

a manner sufficient to ensure safety at this point of connection. Also, where transit operations share highway-rail grade crossings with conventional railroads, FRA expects both systems to observe its signal rules. For example, FRA expects both railroads to observe the provision of its rule on grade crossing signals that requires prompt reports of warning system malfunctions. *See*, 49 C.F.R. part 234. FRA believes these connections present sufficient intermingling of the rapid transit and general system operations to pose significant hazards to one or both operations and, in the case of highway-rail grade crossings, to the motoring public. The safety of highway users of highway-rail grade crossings can best be protected if they get the same signals concerning the presence of any rail vehicles at the crossing and if they can react the same way to all rail vehicles.

Rapid Transit Connections Not Sufficient to Trigger FRA's Exercise of Jurisdiction

Although FRA could exercise jurisdiction over a rapid transit operation based on any connection it has to the general railroad system, FRA believes there are certain connections that are too minimal to warrant the exercise of its jurisdiction. For example, a rapid transit system that has a switch for receiving shipments from the general system railroad is not one over which FRA would assert jurisdiction. This assumes that the switch is used only for that purpose. In that case, any entry onto the rapid transit line by the freight railroad would be for a very short distance and solely for the purpose of dropping off or picking up cars. In this situation, the rapid transit line is in the same situation as any shipper or consignee; without this sort of connection, it cannot receive or offer goods by rail.

Mere use of a common right-of-way or corridor in which the conventional railroad and rapid transit operation do not share any means of train control, have a rail crossing at grade, or operate over the same highway-rail grade crossings would not trigger FRA's exercise of jurisdiction. In this context, the presence of intrusion detection devices to alert one or both carriers to incursions by the other one would not be considered a means of common train control. These common rights of way are often designed so that the two systems function completely independently of each other. FRA and FTA will coordinate with rapid transit agencies and railroads wherever there are concerns about sufficient intrusion detection and related safety measures designed to avoid a collision between rapid transit trains and conventional equipment.

Where these very minimal connections exist, FRA will not exercise jurisdiction unless and until an emergency situation arises involving such a connection, which is a very unlikely event. However, if such a system is properly considered a rail fixed guideway system, FTA's rules (49 C.F.R. part 659) will apply to it.

Coordination of the FRA and FTA Programs

FTA's rules on rail fixed guideway systems (49 C.F.R. part 659) apply to any rapid transit systems or portions thereof not subject to FRA's rules. On rapid transit systems that are not sufficiently connected to the general railroad system to warrant FRA's exercise of jurisdiction (as explained above), FTA's rules will apply exclusively. On those rapid transit systems that are connected to the general system in such a way as warrant exercise of FRA's jurisdiction, only those portions of the rapid transit system that are connected to the general system will generally be subject to FRA's rules.

A rapid transit railroad may apply to FRA for a waiver of any FRA regulations. *See*, 49 C.F.R. part 211. FRA will seek FTA's views whenever a rapid transit operation petitions FRA for

a waiver of its safety rules. In granting or denying any such waiver, FRA will make clear whether its rules do not apply to any segments of the operation so that it is clear where FTA's rules do apply.

Appendix A to part 211—Statement of Agency Policy Concerning Waivers Related to Shared Use of Trackage or Rights-of-Way by Light Rail and Conventional Operations

STEAM LOCOMOTIVE INSPECTION AND MAINTENANCE STANDARDS

Because there are very few steam locomotives in use today, only the table of contents of the regulations are listed below. The regulations are as detailed as those for freight locomotives.

Subpart A--General

- 49 C.F.R. §230.1 Purpose and scope.
- 230.2 Applicability.
- 230.3 Implementation.
- 230.4 Penalties.
- 230.5 Preemptive effect.
- 230.6 Waivers.
- 230.7 Responsibility for compliance.
- 230.8 Definitions.
- 230.9 Information collection.

General Inspection Requirements

- 230.11 Repair of non-complying conditions
- 230.12 Movement of non-complying steam locomotives.
- 230.13 Daily inspection.
- 230.14 Thirty-one (31) service day inspection.
- 230.15 Ninety-two (92) service day inspection.
- 230.16 Annual inspection.
- 230.17 One thousand four hundred seventy-two (1472) service day inspection.

Recordkeeping Requirements

- 230.18 Service days.
- 230.19 Posting of FRA Form No. 1 and FRA Form No. 3.
- 230.20 Alteration and repair report for steam locomotive boilers.
- 230.21 Steam locomotive number change.
- 230.22 Accident reports.

Subpart B--Boilers and Appurtenances

- 230.23 Responsibility for general construction and safe working pressure.

Allowable Stress

- 230.24 Maximum allowable stress.
- 230.25 Maximum allowable stress on stays and braces.

Strength of Materials

- 230.26 Tensile strength of shell plates.
- 230.27 Maximum shearing strength of rivets.
- 230.28 Higher shearing strength of rivets.

Inspection and Repair

- 230.29 Inspection and repair.
- 230.30 Lap-joint seam boilers.
- 230.31 Flues to be removed.
- 230.32 Time and method of inspection.
- 230.33 Welded repairs and alterations.
- 230.34 Riveted repairs and alterations.

Pressure Testing of Boilers

- 230.35 Pressure testing.
- 230.36 Hydrostatic testing of boilers.
- 230.37 Steam test following repairs or alterations.

Staybolts

- 230.38 Telltale holes.
- 230.39 Broken staybolts.
- 230.40 Time and method of staybolt testing.
- 230.41 Flexible staybolts with caps.

Steam Gauges

- 230.42 Location of gauges.
- 230.43 Gauge siphon.
- 230.44 Time of testing.
- 230.45 Method of testing.
- 230.46 Badge plates.
- 230.47 Boiler number.

Safety Relief Valves

- 230.48 Number and capacity.
- 230.49 Setting of safety relief valves.
- 230.50 Time of testing.

Water Glasses and Gauge Cocks

- 230.51 Number and location.
- 230.52 Water glass valves.
- 230.53 Time of cleaning.
- 230.54 Testing and maintenance.
- 230.55 Tubular type water and lubricator glasses and shields.
- 230.56 Water glass lamps.

Injectors, Feedwater Pumps, and Flue Plugs

- 230.57 Injectors and feedwater pumps.
- 230.58 Flue plugs.

Fusible Plugs

- 230.59 Fusible plugs.

Washing Boilers

- 230.60 Time of washing.
- 230.61 Arch tubes, water bar tubes, circulators and thermic siphons.

Steam Pipes

- 230.62 Dry pipe.
- 230.63 Smoke box, steam pipes and pressure parts.

Steam Leaks

- 230.64 Leaks under lagging.
- 230.65 Steam blocking view of engine crew.

Subpart C--Steam Locomotives and Tenders

- 230.66 Design, construction, and maintenance.
- 230.67 Responsibility for inspection and repairs.

Speed Indicators

230.68 Speed indicators.

Ash Pans

230.69 Ash pans.

Brake and Signal Equipment

230.70 Safe condition.

230.71 Orifice testing of compressors.

230.72 Testing main reservoirs.

230.73 Air gauges.

230.74 Time of cleaning.

230.75 Stenciling dates of tests and cleaning.

230.76 Piston travel.

230.77 Foundation brake gear.

230.78 Leakage.

230.79 Train signal system.

Cabs, Warning Signals, Sanders and Lights

230.80 Cabs.

230.81 Cab aprons.

230.82 Fire doors.

230.83 Cylinder cocks.

230.84 Sanders.

230.85 Audible warning device.

230.86 Required illumination.

230.87 Cab lights.

Throttles and Reversing Gear

230.88 Throttles.

230.89 Reverse gear.

Draw Gear and Draft Systems

230.90 Draw gear between locomotive and tender.

230.91 Chafing irons.

230.92 Draw gear and draft systems.

Driving Gear

230.93 Pistons and piston rods.

230.94 Crossheads.

230.95 Guides.

230.96 Main, side and valve motion rods.
230.97 Crank pins.

Running Gear

230.98 Driving, trailing, and engine truck axles.
230.99 Tender truck axles.
230.100 Defects in tender truck axles and journals.
230.101 Steam locomotive driving journal boxes.
230.102 Tender plain bearing journal boxes.
230.103 Tender roller bearing journal boxes.
230.104 Driving box shoes and wedges.
230.105 Lateral motion.

Trucks, Frames and Equalizing System

230.106 Steam locomotive frame.
230.107 Tender frame and body.
230.108 Steam locomotive leading and trailing trucks.
230.109 Tender trucks.
230.110 Pilots.
230.111 Spring rigging.

Wheels and Tires

230.112 Wheels and tires.
230.113 Wheels and tire defects.
230.114 Wheel centers.

Steam Locomotive Tanks

230.115 Feed water tanks.
230.116 Oil tanks.

NORTHEAST CORRIDOR RAILROADS -- REQUIREMENTS FOR AUTOMATIC TRAIN CONTROL AND ADVANCED CIVIL SPEED ENFORCEMENT SYSTEM

On July 22, 1998 the FRA issued an order requiring all trains operating on the Northeast Corridor between New Haven, Conn and Boston to be equipped to respond to a new advanced civil speed enforcement system (ACSES) in addition to the automatic train control (ATC) system already required on the NEC. On trains operating between Washington, D.C. and New York City, ACSES equipped trains may operate up to speeds of 135 mph. Trains north of N.Y. may operate up to 150 mph.

The ACSES is an improved system utilizing transponders to enforce speed restrictions. If the engineer fails to respond to the speed requirements provided by the ACSES, the train would automatically brake.

Amtrak's cab signal system will be expanded from 4 aspects to 9 aspects of speed indications.

Maximum operating speed of 80 mph is set over any highway-rail crossing where only conventional warning systems are in place, and 95 mph where 4-quadrant gates and presence detection are provided.

Unequipped freight operations are allowed between New Haven and Boston during low volume night hours.
63 Fed. Reg. 39343

BLOWING HORNS AT HIGHWAY-GRADE CROSSINGS

On April 27, 2005, the FRA issued a final rule requiring that horns be sounded at public grade crossings. The regulation sets a maximum sound level for locomotive horn, limits the sound directed to the site, prescribes when and how to sound the horn, and offers any community the opportunity to obtain a waiver from the requirement, if it establishes a quiet zone.

On March 7, 2016, FRA issued a Notice of Safety Inquiry to conduct a review of the horn regulations to determine whether FRA should amend the following regulations. (**Note: See discussion under "Current Pending Matters at FRA" re Blowing Horns**).

§229.129 Locomotive horn

Each locomotive shall have an audible warning device that produces a minimum sound level of 96 dB(A) and a maximum sound level of 104 dB(A), or a 111 dB(A) at a 100 feet forward of the locomotive in its direction of travel. The sound level of the device as measured at 100 from the locomotive to the right and left of the center of the locomotive shall not exceed the value measured at a 100 feet forward of the locomotive.

§222.7 Preemptive Effect

This regulation will preempt any state rule, regulation, or order covering the subject matter of horn blowing at crossings. The rule will not preempt State and local laws governing locomotive horn use at Chicago Region highway-rail grade crossings where railroads were excused from sounding the locomotive horn by the Illinois Commerce Commission, and where railroads did not sound the horn, as of December 18, 2003. In addition, State and local laws that govern routine locomotive horn use at private grade and pedestrian crossings outside quiet zones will not be preempted.

There is a limited preemption of state laws that require an audible warning at private and/or pedestrian crossings, where the state law has a different specified distance or time variance

from the federal rule. The rule does not address state laws requiring bell sounding, and therefore such requirements are not preempted.

§222.9 Definitions

The proposed rule defines the following terms:

Administrator, barrier curb, channelization device, Chicago region, effectiveness rate, FRA, Intermediate partial quiet zone, Intermediate quiet zone, locomotive horn, median, mountable curb, new partial quiet zone, non-traversable curb, partial quiet zone, pedestrian crossing, power out Indicator, pre-existing modified supplementary safety measure, pre-existing supplementary safety measure, pre-rule partial quiet zone, pre-rule quiet zone, quiet zone, quiet zone risk Index, relevant collision, risk Index with horns, public highway-rail grade crossing, railroad, supplementary safety measure, wayside horns, and whistle board.

§222.11 Penalties

The penalty is at least \$650 and not more than \$25,000 for each violation, except where there is a gross negligence, a willful violation, or a pattern of repeated violations that creates an imminent hazard of death or injury, in which case the penalty is not to exceed \$105,000 for each violation. Appendix H contains a list of the civil penalties for violations of this part.

§222.13 Responsibility for Compliance

In addition to railroads, this section would apply to a contractor for a railroad or a state governmental entity that performs a function under the rule.

§222.15 Petitions for Waivers

This section requires, where possible, both the railroad and the community involved to file a joint petition for a waiver.

§222.21 Use of Locomotive Horns

This requires the locomotive horns to be sounded at the approach to public highway-rail grade crossings. The sound shall be two long, one short, and one long blast and shall be repeated until the locomotive occupies the crossing. This pattern may be modified where necessary because of crossings being located close together.

The locomotive horn shall be sounded no less than 15, nor more than 20 seconds before the locomotive enters the crossing(with the exception of trains operating at speeds in excess of 60 mph, or if it has stopped just prior to the crossing). However, the engineer may sound the horn up to 25 seconds in advance of public grade crossings, if such action is taken in good faith.

If the train is traveling in excess of 60 mph in no event shall a locomotive horn be sounded more than 1/4 mile in advance of a public crossing. If the train is stopped in close proximity to the public grad crossing, the horn may be applied for less than 15 seconds where the crossing is equipped with automatic flashing lights and gates re fully lowered, or there is no conflicting highway movements approaching the crossing.

§222.23 Emergency and Other Uses of Locomotive Horns

Nothing in the proposed regulations is intended to prevent an engineer from sounding the horn(1) to provide warning to vehicle operators, pedestrians, trespassers or crews on other trains; (2) At a quiet zone in emergency situations.; (3) to announce the approach of the train to roadway workers; or (4)where active devices have malfunctioned.

§222.25 Horn Use at Private Crossings

The rule does not require the sounding of a horn at a private crossing, unless an alternative audible device is mandated by State law. If the crossing is located in a quiet zone, the quiet zone rules apply.

§222.27 Horn Use and Pedestrian Grade Crossings

The rule does not require the sounding of a horn at a pedestrian crossing, unless an alternative audible device is mandated by state law. If the crossing is located in a quiet zone, quiet zone rules apply.

§222.33 Trains Do Not Need to Sound Horns In Quiet Zones

Horns in quiet zones need not be sounded if the maximum authorized speed for that segment of track is 15 miles/hour or less and properly equipped flaggers (*See*, 49 C.F.R. §234.5) provide warning of approaching trains. This paragraph does not apply where active warning devices have malfunctioned and the use of the horn is required by 49 C.F.R. §§234.105[activation failure], 234.106[partial activation], or 234.107[false activation].

§222.35 Minimum Requirements for a Quiet Zone

The minimum length of a New Quiet Zone or a New Partial Quiet Zone shall be ½ mile in length. There are two methods to set up a quiet zone. This section would allow a state or local government to designate a quiet zone by implementing one or more supplementary safety measures identified in **Appendix A**. Appendix A sets out approved safety measures which FRA has determined are as effective as blowing a horn. A second method allows the communities to use **Appendix A and B** in combination to attain a proper quiet zone. Under this latter method, a State or local government may apply to FRA for acceptance of a quiet zone. The FRA has created different requirements for Pre-Rule Quiet Zones, Pre-Rule Partial Quiet Zones, New

Quiet Zones, and New Partial Quiet Zones. The Appendices sets out the different requirements. In general, each application must contain details concerning engineering improvements proposed to be included, together with information regarding supplementary and alternative safety measures for each crossing. The State or local government must demonstrate through data and analysis that the establishment of the improvements in the quiet zone will result in a reduction in risk within the entire quiet zone. Risk will be viewed by FRA in terms of the quiet zone as a whole, rather than at each individual crossing. The FRA may require additional conditions designed to ensure safety, or may reject the proposed quiet zone if the proposed safety measure does not fully compensate for the absence of the warning of the locomotive horn. The minimum length of a quiet zone shall be 1/2 miles. **Appendix C** describes categories of crossings which the FRA has determined do not present a significant risk and the locomotive horn is not required to be sounded.⁸²

Except as provided in §222.33 and in **Appendix C**, each crossing in a quiet zone must be equipped with active grade crossing warning devices comprising both flashing lights and gates which control traffic. The installation or upgrading of such devices is not regarded as implementation of supplementary safety measures, and is not credited toward the reduction and risk referred to in this section unless they conform to the **Supplemental Safety Measures in Appendix A**.

Each highway approach at which locomotive horns are not sounded shall be equipped with an advance warning sign advising the motorists that train horns are not sounded in the crossing. This does not apply to crossing equipped with wayside horns.

§222.37 Who May Establish a Quiet Zone

Only public authorities within a state (there may be more than one authority) may create a quiet zone. If two or more authorities, such as a county and a state, have jurisdiction over the crossings, the application for approval by FRA must be filed jointly.

The public authority may establish a quiet zone, irrespective of contrary State laws.

§222.38 Quiet Zone in the Chicago Region

This authorizes public authorities in the Chicago Region to create New Quiet Zones or New Partial Quiet Zones, provided it does not include a crossing that was excused from sounding a horn by the Illinois Commerce Commission as of Dec. 18, 2003.

§222.39 How a Quiet Zone is Established.

This section sets out how a quiet zone may be established by a public authority without the approval of the FRA. (1) It may be established in accordance with **Appendix A**; (2) the Quiet Zone Index is at or below the Nationwide Significant Risk Threshold; or (3) the Supplementary

⁸² On April 25, 2017 FRA issued its updated Nationwide Significant Risk Threshold to provide the public with the proper permissible risk resulting from prohibiting locomotive horn sounding. 78 Fed. Reg. 19138.

Safety Measures are sufficient to reduce the Quiet Zone Risk Index to a level at or below the Risk Index With Horns.

§222.41 Pre Rule Quiet Zones and Pre Rule Partial Quiet Zones

This allows communities to establish Pre-Rule Quiet Zones if the Supplementary Safety Measures have been implemented at the crossing, or if the Quiet Zone Risk Index is at or below the Nationwide Significant Risk Threshold. The communities can take up to 8 years from the date of the regulation to implement the safety improvements that would be required.

§222.42 Intermediate Quiet Zones

A public authority may continue locomotive horn sounding restrictions by establishing a New Quiet Zone or a New Partial Quiet Zone.

§222.43 Notices

This section requires notice to be provided to the railroads, the state agency responsible for highway and road safety, and FRA where the state or local government designates a quiet zone. There are other notification requirements as well spelled out in this section.

§222.45 Date a Railroad is Required to Cease Sounding a Horn

A railroad may cease sounding a horn at a crossing as specified in a Notice of Quiet Zone Continuation or Notice of Quiet Zone Establishment.

§222.47 Periodic Updates

The localities having quiet zones must confirm compliance with **Appendix A** within 4 1/2 yrs.-5 yrs where supplemental safety measures in place, , and compliance with **App. A and B** within 2 1/2 to 3 yrs. where SSMs not in place.

§222.49 Who Files the Grade Crossing Inventory Forms

The Grade Crossing Inventory Forms required by §§222. 39, 222.43, and 222.47 may be filed by the public authority if they are not submitted by the State and the railroad.

§222.51 Quiet Zone Duration

A quiet zone designated by a state or local government may remain in effect , unless it exceeds the Quiet Zone Risk Index in comparison to the Nationwide Significant Risk Index If the quiet zone exceeds the "significant risk threshold", the quiet zone will be terminated within 6 months after notice from the FRA.

§222.53 Supplementary and Alternative Safety Measures

This section simply states that **Appendix A and B** are to be followed by governments when establishing quiet zones.

§222.55 Approval of Supplementary or Alternative Safety Measures

The Associate Administrator of Safety may add new SSMs and standards to **Appendix A**, and new ASMs and standards to **Appendix B**.

§222.57 Review of Associate Administrator Actions

A public authority or other interested party may petition the Administrator to review the actions of the Associate Administrator of Safety.

§222.59 When can wayside horns be used

A wayside horn conforming to the requirements of appendix E of this part may be used in lieu of a locomotive horn at any highway-rail grade crossing equipped with an active warning system consisting of, at a minimum, flashing lights and gates.

Appendix A -- Approved Supplementary Safety Measures Community Guide

This Appendix is intended to help guide state and local governments in determining whether to designate a quiet zone or to apply for acceptance of a quiet zone. These are general guides to be followed and include requirements that the corridor must be at least 1 1/2 a mile in length, traffic counts, and at least 5 years of collision history. The minimum traffic control requirement for each public highway - rail grade crossing within a quiet zone is flashing lights, automatic gates, a bell and special advance warning sign (in accordance with the MUTCD). On each highway approach there shall be a sign which advises highway users that the train horn will not be sounded.

I will not go into the detail of the Appendix. However, the FRA has listed approved supplementary safety measures regarding the temporary closure of a public grade crossing, the installation of four-quadrant gate system, gates with medians or channelization devices. Channelization devices are defined as a continuous series of highly visible obstacles placed between opposing highway lanes designed to alert and to guide traffic around an obstacle or to direct traffic in a particular direction. They must be at least 2.5 feet high and placed every 7 feet.

In situations where the community cannot fully comply with the requirements for supplementary safety measures set out in this Appendix, then the community may apply to FRA utilizing Appendix B.

Appendix B -- Alternative Safety Measures

Where a governmental agency seeks to apply to FRA for acceptance of a quiet zone, this Appendix must be utilized. It sets out alternative safety measures to address situations where the governmental agency cannot fully comply with Appendix A. As a minimum, there shall be automated means of gathering photographic evidence of traffic law violations at the grade crossings.

Appendix C --Guide to Establishing Quiet Zone

Appendix D-- Determining Risk Levels

Appendix E-- Requirement for Wayside horns

Appendix F-- Diagnostic Team Considerations

Appendix G--Excess Risk Estimates for Public-Highway –Rail Grade

Crossings

Appendix H--Schedule of Civil Penalties

HIGH SPEED RAIL

In 2009, the FRA published the "High Speed Rail Strategic Plan" and launched the high speed rail program. Congress has appropriated \$10.1 billion to fund the program. The objectives are to build new high speed rail corridors to improve passenger rail transportation; upgrade existing intercity passenger corridors to improve service; and set the groundwork for future high speed services through corridor and state planning efforts.

A three tiered network is proposed: The **Core Express** will connect large urban areas up to 500 miles apart within 2-3 hours on dedicated track at 125-250 mph; **Regional** will connect mid-sized urban areas up to 500 miles apart on dedicated and shared track(90-125 mph); and **Emerging** will connect smaller communities on shared track(up to 90 mph). Currently the Core Express consists of the Northeast corridor, California and Las Vegas. This tier will not contain any rail-highway grade crossings. The Regional tier will be a contained corridor with PTC protection.

On November 20, 2018, FRA issued a final rule covering high speed rail safety. This NPRM proposes requirements in three main subject areas: (1) Tier III trainset safety standards; (2) alternative crashworthiness and occupant protection performance requirements for Tier I passenger equipment; and (3) the maximum authorized speed for Tier II passenger equipment. The following is a brief overview of the rule organized by subject area and a summary of its economic impact.

Tier III Trainset Safety Standards

This rule defines Tier III passenger train operations and outline minimum safety standards for the use of such trainsets in the United States, focusing on core structural and critical system design criteria. FRA intends for the Tier III trainset requirements to facilitate safe implementation of interoperable high-speed rail service, enable the use of common infrastructure, and promote efficiencies. The Tier III operating environment would be unique: Tier III passenger trains would operate in a shared right-of-way at speeds up to 125 mph and in an exclusive right-of-way without grade crossings at speeds up to 220 mph. The requirements would provide for the sharing of rail

infrastructure among various types of rail equipment, especially in more urban areas, while providing for dedicated passenger rail service at maximum speeds up to 220 mph. FRA's Passenger Equipment Safety Standards would therefore continue to allow high-speed passenger rail service to be interoperable with other types of rail service, the same way that Tier I and Tier II passenger train operations are currently interoperable.

The rule establishes requirements for Tier III trainset structure, window glazing, brake systems, interior fittings and surfaces, certain emergency systems (including window egress and rescue access requirements), and certain cab equipment. To support operational compatibility, the Tier III trainset crashworthiness and occupant protection requirements are predominantly based on the proposed alternative crashworthiness and occupant protection requirements for Tier I passenger equipment and are intended to safely apply to operations at speeds up to 220 mph in a dedicated environment as approved by FRA. Specialized RSAC task groups developed the requirements for braking systems and cab glazing by focusing on the development of performance-based requirements that could be implemented in a technology-neutral manner, wherever possible.

To develop their recommendations, the ETF and full RSAC considered the latest trainset designs and technology available globally, and adapted their recommendations for North American standards. The intent of the proposed requirements is to ensure that safety and reliability are paramount, while incorporating elements from the most advanced, service-proven technology. The proposed requirements would be supplemented by additional requirements FRA intends to propose in a subsequent rulemaking based on recommendations the ETF is developing, which remains active addressing the topics of inspection, testing, and maintenance (ITM), as well as safety planning for high-speed operations.

83 Fed. Reg. 59182

Alternative Crashworthiness Requirements for Tier I Passenger Trainsets

As noted above, FRA codifies a set of technical evaluation criteria the ETF developed as guidance to those seeking to use alternatively designed Tier I passenger trainsets to demonstrate the trainsets' crashworthiness and occupant protection performance is equal to the requirements in part 238. FRA intends for the alternative technical criteria to allow industry greater flexibility to use contemporary design techniques and more fully apply emerging technology, including crash energy management (CEM) technology, without requiring a waiver of compliance for operating the equipment. The technical criteria are based on established international standards and significant research and Start Printed Page 88008 testing both the industry and DOT's John A. Volpe National Transportation Systems Center (Volpe Center) conducted over the past 25 years. Codifying the technical criteria dovetails with alternative crashworthiness performance requirements FRA established in part 238 for the front-end structures of cab cars and multiple-unit (MU) locomotives, thereby broadening application of such requirements to other main structures.

Tier II Maximum Authorized Speed

On March 13, 2013, FRA issued a final rule (78 Fed. Reg. 16052) to amend the Federal Track Safety Standards to promote the safe interaction of rail vehicles and the tracks they operate on at speeds up to 220 mph. That final rule revised the track geometry and safety limits for various track classes, extended the limits for the highest track speeds from 200 to 220 mph (Class 9 track), and affirmed that the maximum authorized speed for Class 8 track is 160 mph. This rule would make the maximum authorized operating speed for Tier II passenger equipment consistent with the limits for Class 8 track. Under the proposal, existing Tier II operations FRA has approved to operate at speeds up to 150 mph would be required to provide sufficient testing and vehicle/track interaction performance data required under 49 C.F.R. 213.329 and 238.111 and obtain FRA approval before any operations occur at the new maximum authorized speed of 160 mph.

At this time, FRA is not proposing to amend the Tier II crashworthiness and occupant protection requirements, or other specific Tier II requirements, to make them more performance-based. The Tier II standards are more stringent than those for Tier I passenger equipment or proposed for Tier III passenger equipment principally because they were developed to support operations above 125 mph in a right-of-way shared with freight and other rail traffic. *See*, 64 FR 25629. To compensate for the increased risk of a collision, a more crashworthy trainset design was needed. FRA's focus in this NPRM, as informed by the RSAC process, has been principally to address the industry's need for more performance-based Tier I crashworthiness and occupant protection standards and to develop new Tier III standards to support the next generation of high-speed rail in an environment where operations above 125 mph are in a dedicated right-of-way (so as to avoid the risk of collision with other rail traffic at speeds above 125 mph). However, FRA makes clear that its approach to this NPRM does not mean FRA may not reexamine its Tier II requirements in the future.

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CURRENT PENDING RULEMAKINGS AT FRA

1. System Safety Plan and Risk Reduction Program

The FRA has issued a regulation covering a System Safety Plan(for passenger service). There are pending proposals for a Risk Reduction Plan(freight). Both are similar. In general, the railroads will be required to identify all risks and present a plan to address the risk. Each of the crafts will be permitted to comment on the railroads' proposals before being implemented.

As a part of these programs, the railroads are required to create a Fatigue Management Plan. It will include how medical conditions affect alertness and fatigue. Also, innovative scheduling practices in the reduction of employee fatigue will be considered.

2. Operations in Dark Territory

The 2008 law required regulations covering safety of operations in dark territory. This was submitted to RSAC for a determination. Because of opposition from the carriers, no agreement was reached. FRA announced that it intends to wait for the Risk Reduction Final Rule to be issued before proceeding further.

3. Engineer Certification

On May 8, 2019, FRA issued a Notice of Proposed Rulemaking in order to update the engineer certification regulation by adopting the conductor certification provisions into the regulation.

4. Safety Glazing

There are a number of changes to the glazing regulation, which are mostly technical. In this final rule, FRA revised and clarified existing regulations related to the use of glazing materials in the windows of locomotives, passenger cars, and cabooses. This final rule reduces paperwork and other economic burdens on the rail industry by removing a stenciling requirement for locomotives, passenger cars, and cabooses that are required to be equipped with glazing. The rule also clarifies the application of the regulations to older equipment and to the end locations of all equipment to provide more certainty to the rail industry. In addition, this final rule clarifies the definition of passenger car, updates the rule by removing certain compliance dates that are no longer necessary, and, in response to comments on the proposed rule, modifies the application of the regulations to passenger cars and cabooses in a railroad's fleet that are used only for private transportation purposes and to older locomotives used in incidental freight service. 81 Fed. Reg. 6775 (Feb. 9, 2016).

On November 21, 2018, new standards were issued for glazing in high speed rail equipment. 83 Fed. Reg. 59182.

5. Horns and Highway-Rail Grade Crossing

Changes are being proposed to address pedestrian crossings, and alternatives to train horns in unique situations. FRA issued a Notice of Safety Inquiry in 2016 seeking information whether the regulations should be amended. 81 Fed. Reg. 11734 (March 7, 2016).

6. Medical Standards

For several years the RSAC working group considered whether FRA should issue regulations requiring employees to meet specific medical standards. No consensus could be reached, and FRA has issued informational guidelines for a limited number of medical conditions, including cardiovascular disease, diabetes, sleep apnea and vision. There currently exists the issue of how to address opioids. DOT has mandated post accident and reasonable suspicion testing for opioids. It is considering whether to add hair testing. On December 5, 2016, FRA issued Safety Advisory 2016-03 requesting the following:

a. Establish training and educational programs to inform employees of the potential for performance impairment as a result of fatigue, sleep loss, sleep deprivation, inadequate sleep quality, and working at odd hours, and document when employees have received the training. Incorporate elements that encourage self-assessment, peer-to-peer communication, and co-worker identification accompanied by policies consistent with these recommendations. The Railroaders' Guide to Healthy Sleep website (<http://www.railroaderssleep.org>) has several educational resources to assist railroaders in improving their sleep health including an anonymous tool for self-screening for sleep disorders including OSA. This website is set up to disseminate educational information to railroad employees and their families about sleep disorders, the relevance of healthy sleep to railroad safety, and provide information about improving the quality of the railroaders' sleep. The website was developed in conjunction with the Division of Sleep Medicine at Harvard Medical School, WGBH Educational Foundation, and Volpe—The National Transportation Systems Center.

b. Ensure that employees' medical examinations include assessment and screening for possible sleep disorders and other associated medical conditions (including use of appropriate checklists and records). Develop standardized screening tools, or a good practices guide, for the diagnosis, referral and treatment of sleep disorders (especially OSA) and other related medical conditions to be used by company paid or recommended physicians during routine medical examinations; and provide an appropriate list of certified sleep disorder centers and related specialists for referral when necessary.

c. Develop and implement rules that request employees in safety-sensitive positions to voluntarily report any sleep disorder that could incapacitate, or seriously impair, their performance.

d. Develop and implement policies such that, when a railroad becomes aware that an employee in a safety-sensitive position has an incapacitating or performance-impairing medical condition related to sleep, the railroad prohibits that employee from performing any safety-sensitive duties until that medical condition appropriately responds to treatment.

e. Implement policies, procedures, and any necessary agreements to (1) Promote self-reporting of sleep-related medical conditions by protecting the medical confidentiality of that information and protecting the employment relationship, provided that the employee complies with the recommended course of treatment; (2) Encourage employees with diagnosed sleep disorders to participate in recommended evaluation and treatment; and (3) Establish dispute resolution mechanisms that rapidly resolve any issues regarding the current fitness of employees who have reported sleep-related medical conditions and have cooperated in evaluation and prescribed treatment.

7. Two Person Crew⁸³

As the result of the Canadian accident at Lac Megantic, in 2015 the FRA issued a Notice of Proposed Rulemaking, which would require two person crews on trains operating on main lines and mainline sidings. However, on May 23, 2019, FRA withdrew the NPRM and specifically ruled that states are preempted from adopting two person crew laws or regulations.

FRA issued an Emergency Order on December 3, 2013 requiring the New York's Metropolitan Transit Authority to provide two qualified railroad employees to operate trains where speed restrictions are in place until its signal system is updated. In view of the above, it is unclear whether this Emergency Order is still in effect.

There are bills pending in both houses of Congress and a number of states which would require two person crew members. To date, 6 states have enacted crew size requirements, but they may be preempted because of FRA's latest decision.

8. Inward and Outward Facing Cameras in Locomotives.

In March, 2014, RSAC accepted a task to develop a regulation addressing the installation and use of recording devices in controlling locomotives, including inward and outward facing cameras.

Railroads have begun installing cameras on locomotives. This is the result of a NTSB recommendation in 2010. The NTSB said that this would be "for use by management in carrying out efficiency testing and system-wide performance monitoring programs." (NTSB Safety Recommendation R-10-001).

In 2015 Congress required the FRA to issue regulations requiring each railroad which provides regularly scheduled intercity or commuter rail passenger transportation to install inward- and outward facing cameras in all controlling locomotives traveling over 30 mph. The recording device cannot be used to retaliate against an employee. 49 U.S.C. § 20168. On December 5, 2016, FRA issued Safety Advisory 2016-03 which, among other things, requested the railroads to "Accelerate the installation of inward- and outward-facing cameras in passenger trains in the cab of the controlling locomotive or cab car operating compartment per the FAST Act. FRA notes that the FAST Act includes provisions on standards for the cameras, use of the cameras, and preservation and protection of data from the cameras." 81 Fed. Reg. 87649.

It is important to note that a camera is not a safety device, and, therefore, is not a FRA violation for disabling or tampering with the camera. The problem, however, is that the railroad will discipline an employee who disables the camera .

9. Automation in the Railroad Industry

On March 29, 2018, the FRA issued a notice seeking the potential benefits, costs, risks, and challenges to implementing automated railroad operations. FRA wants to know how it can best support the industry's development and implementation of new and emerging technologies in

⁸³ While this matter has been technically finalized by FRA, subsequent actions may require FRA to reconsider.

automation that could lead to safety improvements and increased efficiencies in railroad operations.

83 Fed. Reg. 13583

10. Extra Long Trains

A number of railroads have begun operating very long trains exceeding even two miles. John Risch in April, 2017 sent a letter to FRA asking for an Emergency Order to end the unsafe practice. This was denied, but FRA stated that it would investigate the matter. In the meantime, the House Committee on Transportation and Infrastructure in November, 2017, requested the U.S. Government Accountability Office to investigate the safety risks to the crews and the public involved in such operations. The GAO is investigating, and SMART presented its views to them on April 12, 2018. We are awaiting the results of the study.

11. RSAC Working Groups

At the April, 2019, RSAC meeting, the following tasks were presented to various working groups: dispatcher certification, signalmen certification, passenger service amendments, tourist railroads, track geometry, and part 225 of accident reporting.

MISCELLANEOUS MATTERS AT FRA

1. RAIL SAFETY ADVISORY COMMITTEE PROCEDURES

Under the Federal Advisory Committee Act, agencies are given the authority to create advisory committees to make recommendations for proposed regulations. The FRA, under that Act, on March 25, 1996, created the Rail Safety Advisory Committee. It is comprised of 48 representatives from 27 organizations. Rail labor and rail management have equal numbers of members on the RSAC. It will operate by negotiating a consensus on any particular safety subject matter that is delegated to it by the administrator. Unless all the members of RSAC agree to a particular task, it will not be considered by RSAC nor will it become a recommendation. However, in all cases where a working group established by RSAC unanimously agree to a particular rule, it will be automatically forwarded to the FRA for consideration, even if there is no unanimous consent by the full RSAC.

2. HIGH SPEED RAIL

In 2009, the FRA published the "High Speed Rail Strategic Plan" and launched the high speed rail program. Congress appropriated \$10.1 billion to fund the program. The objectives are to build new high speed rail corridors to improve passenger rail transportation; upgrade existing intercity passenger corridors to improve service; and set the groundwork for future high speed services through corridor and state planning efforts.

A three tiered network had been proposed: The **Core Express** would have connected large urban areas up to 500 miles apart within 2-3 hours on dedicated track at 125-250 mph; **Regional**

will connect mid-sized urban areas up to 500 miles apart on dedicated and shared track(90-125 mph); and **Emerging** will connect smaller communities on shared track(up to 90 mph). This tier will not contain any rail-highway grade crossings. The Regional tier will be a contained corridor with PTC protection.

Currently the Core Express consists of the Northeast corridor, California and Las Vegas. However, on March 5, 2019, the Administration removed a \$900 million grant for the California-Las Vegas corridor. Last year, the Administration froze all environmental review, engineering and safety work.

On November 21, 2018, FRA promulgated a new regulation covering high speed rail standards. The final rule defines a new category of high-speed rail operations and makes it possible for high-speed rail to utilize existing infrastructure. These new ‘Tier III’ passenger trains will be allowed to operate over this shared track at conventional speeds, and as fast as 220 mph in areas with exclusive rights-of-way and without grade crossings.

The final rule establishes minimum safety standards for these trains, focusing on core, structural, and critical system design criteria. This specifies criteria for equipment, including trainset structure, side-window glazing, brake systems, interior fittings and surfaces, certain emergency systems and cab equipment.

83 Fed. Reg. 59183

3. HUMAN FACTORS

The FRA has stated that human factors constitute the largest category of train accident causes. In order to address this issue, FRA issued regulations intended to place accountability on railroad management, supervisors, in addition to employees. These rules are summarized in this book under the heading "Operating Rules".

The major provisions are:

Each railroad shall be required to have an operating rule requiring equipment to be left in the clear so that it cannot be struck by movements on adjacent track.

Each railroad will be required to have operating rules requiring certain basic provisions for positioning and locking hand-operated switches and fixed derails.

Employees will be required to conduct job briefings at specific intervals to ensure accurate communication of switch positions and proper handling of main track switches, and also prior to and during pushing or shoving movements.

In non-signalized territory, employees shall report to the train dispatcher that a hand-operated main track switch (that is used to clear the main track) has been restored to its normal position and locked (unless the dispatcher directs otherwise). This is to occur only after conducting a job briefing, and before departing the switch’s location. If the report of the switch position is correct,

the dispatcher shall repeat the reported switch position to the employee and ask whether it is correct, after which the employee must confirm that the information is correct.

Amendment to 49 C.F.R. Part 217: Railroad Operating Rules

Freight and passenger railroads are required to conduct quarterly reviews of employee testing, inspection, and accident data in order to focus existing internal procedures and protocols toward reducing accidents and non-compliance.

Each railroad must designate a fully qualified officer who will oversee such programs and ensure their validity. On larger railroads, such oversight will be performed at both the system and division level. While railroads will not be required to submit operating rule programs for approval, FRA has the authority to disapprove the program in whole or in part should serious deficiencies be discerned during audits and investigations. In such cases, railroads may avail themselves of an appeal process.

Additionally, Safety Advisory 2016-03 deals with operational training and instructs railroads as follows: "Not less than once every six months evaluate operational testing data as required by 49 C.F.R. 217.9. A railroad should consider increasing the frequency of operational testing where its reviews show any non-compliance with maximum authorized train speeds in passenger stations or terminals. Railroads should conduct a significant number of operational tests on trains required to operate into a station or terminal with stub end tracks."

Amendment to 49 C.F.R. Part 218: Railroad Operating Practices **Addition of Subpart F – Handling, Equipment, Switches and Fixed Derails**

Each railroad must instruct, train, test and qualify all employees on the operating rules that are required by this new subpart.

Each railroad is required to adopt and implement “good faith challenge procedures” by which an employee is provided a prompt opportunity to question whether an order to perform work violates one of the operating rules covered in this subpart. Employees are free to raise challenges without fear of discharge or discrimination due to recently enacted statutory protections.

Shoving or Pushing Movements

Shoving or pushing movements will be made safer by: (1) requiring job briefings; (2) requiring that an employee directing such movements not engage in any task unrelated to overseeing the operation; and (3) point protection will be provided only by qualified employees who make certain by confirmed visual means that the “track is clear” and the intended move can be made safely.

Remote Control Locomotive Operations (RCOs)

All RCO switching movements will be considered shoving movements, unless the operator controlling the movement rides the front end of the lead locomotive; and when starting such movements, either the operator or another crewmember must visually observe the direction the equipment moves.

RCO zones will continue to be permitted in lieu of point protection but only on the end where the locomotive is located. Any technology used for that purpose shall be demonstrated to be failsafe or it must provide redundancy to prevent unsafe failure.

As railroads have ventured into allowing RCOs to utilize technology, such as camera/monitor setups, to aid in providing point protection at highway-rail crossings, pedestrian crossings, and yard access crossings, FRA has established requirements for ensuring that those operations provide an equivalent level of protection to that of a direct visual determination.

73 Fed. Reg. 8442 (Feb. 13, 2008); 73 Fed. Reg. 3388(June 16, 2008)

4. SAFETY INTEGRATION PLANS

On March 2, 2002 the FRA and the Surface Transportation Board issued a rule governing mergers, consolidations, and acquisitions, which required the railroads to file Safety Integration Plans. The plans had to include, among other things, the safety impact of such transactions and how the railroads would deal with any safety problems.

67 Fed. Reg.11582-11607; 67 Fed. Reg. 68041-68045

5. CLOSE CALL REPORTING

FRA has instituted a Confidential Close Call Reporting System(C3RS). It is a voluntary, confidential 5 year demonstration project to report close calls without employees receiving disciplinary action. It was developed with the participation of rail labor and the railroads. The current participant railroads are the New Jersey Transit, and Amtrak(which was included in September, 2013).

On December 3, 2013, FRA mandated that New York's Metropolitan Transit Authority immediately implement a C3RS program. This action resulted from a catastrophic accident which occurred on December 3, 2013 in New York on a Metro-North passenger train.

The confidential information submitted by an employee is protected by the Privacy Act of 1974.

On November 25, 2013, FRA requested comments on ways to enhance the quality, utility, and clarity of the information collections. In addition, FRA is implementing an evaluation by asking the two groups currently in the program various questions in order to determine whether the program is succeeding, how it can be improved, and what is needed to spread the program throughout the industry.

6. DISPATCHER TRAINING

FRA submitted a report to the Congress on 01/5/95 regarding the functions of contemporary train dispatching offices. The report noted that traditional pools of candidates for recruitment of train dispatchers are no longer adequate to the need. In partnership with the American Train Dispatchers Department/BLE (ATDA), FRA identified the need for a model train dispatcher training program. Experts from Amtrak, the ATDA, the Burlington Northern/Santa Fe Railroad and FRA developed a list of elements for dispatcher training programs. Required competencies and training program elements have been abstracted from this effort for a model program.

In 5/01, the FRA Office of Research and Development published *Understanding How Train Dispatchers Manage and Control Trains* (DOT/FRA/ORD-01/02), which is available at <http://www.fra.dot.gov/downloads/Research/ord0102.pdf>.

With RSAC’s recent decision, dispatcher training will be part of the dispatcher certification deliberations in the working group to be created.

7. EMERGENCY DECLARATIONS, EMERGENCY ORDERS AND SAFETY ADVISORIES

In addition to FRA's other regulatory functions, it issues emergency declarations, emergency orders, and safety advisories.

An **Emergency Declaration** relates to a declaration regarding hazardous weather conditions which constitutes an emergency and activates the emergency relief provisions of 49 C.F.R. § 211.45. There have been 16 issued since the FRA was created.

An **Emergency Order** is an order issued as the result of a safety emergency which needs to be addressed promptly. There have been more than 50 issued by FRA.

A **Safety Advisory** sets forth information for the safe operation of railroads. There have been 50 issued by FRA. A list of Safety Advisories follows:

<u>DATE</u>	<u>TITLE</u>	<u>SAFETY ADVISORY NO.</u>
20 Nov. 2018	Railroads to develop “Best Practices” to ensure safety during temporary signal suspensions	SA Number 2018-11
27 July 2018	Addressing Electrode-Induced Rail Pitting From Pressure Electric Welding	SA Number: 2018-01
5 Dec 2016	Mitigation and Investigation of Passenger Rail Human Factor Related Accidents and operations in Terminals and Stations With Stub End Tracks	SA Number: 2016-03
28 Nov 2016	Identification and Mitigation of Hazards Through Job Safety Briefings and Hazard Recognition Strategies When RR Workers are Covered By OSHA regs.	SA Number: 2016-02

17 Mar 2016	Recommendations to railroads and railroad contractors regarding the need to review, update, and follow rules and procedures governing the safe movement of roadway maintenance equipment over highway-rail grade crossings.	SA NUMBER: 2016-01
4 Nov 2015	Reminder to track owners their track maintenance personnel, and their rail flaw detection equipment operators of the importance of complying with their rail management programs and engineering procedures that address rail with rail head surface conditions while performing rail flaw inspections and track inspections generally	SA NUMBER: 2015-05
25 Aug 2015	to emphasize the importance of timely repairing ballast defects and conditions on main tracks.	SA NUMBER: 2015-04
9 June 2015	Recommendations that passenger railroads take to prevent trains from speeding	SA NUMBER: 2015-03
17 Apr 2015	Information Requirements Related to the Transportation of Trains Carrying Specified Volumes of Flammable Liquids	SA NUMBER: 2015-02
17 Apr 2015	Recommendations to enhance the mechanical safety of the cars in trains transporting large quantities of flammable liquids.	SA NUMBER: 2015-01
24 Nov 2014	Reemphasizing the importance of clear communication and compliance with applicable rules and procedures regarding roadway worker authority limits on controlled track	SA NUMBER: 2014-02
5 May 2014	Recommendations for Tank Cars Used for the Transportation of Petroleum Crude Oil by Rail	SA NUMBER: 2014-01
11 Dec 2013	Operational tests and inspections for compliance with train speeds and restrictions.	SA NUMBER: 2013-08
20 Nov 2013	Safety and Security Plans for Class 3 Hazardous Materials Transported by Rail.	SA NUMBER: 2013-07

02 Aug 2013	Preventing Unintended Movement of Freight Trains and Vehicles on Mainline Track or Mainline Siding Outside of a Yard or Terminal	SA NUMBER: 2013-06
05 Aug 2013	Joint Failure on Continuous Welded Rail Track.	SA NUMBER: SA 2013-05
03 Jun 2013	Importance of Clear Safety Procedures for Temporary Removal From Service of Highway-Rail Grade Crossing Warning Systems and Wayside Signal Systems.	SA NUMBER: 2013-04
03 May 2013	Kicking Cars and Going Between Rolling Equipment During Flat Switching Operations.	SA NUMBER: 2013-03
14 Mar 2013	Low-Speed Wheel-Climb Derailments.	SA NUMBER 2013-02
28 Feb 2013	Passing Stop Signals Protecting Movable Bridges.	SA NUMBER: SA 2013-01
09 Jul 2012	Buckling-Prone Conditions in Continuous Welded Rail Track.	SA NUMBER: 2012-03
25 Apr 2012	Restricted Speed.	SA NUMBER: 2012-02
13 Apr 2012	Odorant Fade in Railroad Tank Cars.	SA NUMBER: 2012-01
05 Dec 2011	Bridge Walkway Hazards.	SA NUMBER: 2011-03
11 Oct 2011	Following Procedures When Going Between Rolling Equipment.	SA NUMBER: 2011-02
07 Apr 2011	Equipment Fouling Adjacent Tracks.	SA NUMBER: 2011-01
18 Oct 2010	Staying Alert and Situational Awareness.	SA NUMBER: 2010-03
01 Oct 2010	Signal Recording Devices for Highway-Rail Grade Crossing Active Warning Systems that are Interconnected with Highway Traffic Signal Systems.	SA NUMBER: 2010-02
25 May 2010	Safety Appliance Securement, Potential Failure of Welded and/or Notched Vertical Hand Brake Supports on FTTX Flatcars.	SA NUMBER: 2010-01
22 Jan 2010	Identification and Handling of Highway-Rail Grade Crossings with Vertical Profile Conditions.	SA NUMBER: 2009-03

16 Oct 2009	Inspection of Bottom Outlet Valves and Assemblies.	SA NUMBER: 2009-02
27 Mar 2009	Recommends inspection and, when necessary, repair of American Car and Foundry (ACF) Center Flow Covered Hopper Cars when appropriate.	SA NUMBER: 2009-01
03 Dec 2008	Refers to Vertical Handbrake Support Weld Failures.	SA NUMBER: 2008-02
16 Apr 2008	Addresses damage to intermediate air hose elbow connection on certain freight cars equipped with end-of-car cushion devices.	SA NUMBER: 2008-01
13 Dec 2007	Provides updated information to interested parties on the potential catastrophic failure of locomotive main reservoir tanks manufactured by R&R Metal Fabricators, Incorporated, and installed on General Electric Transportation System (GETS) locomotives.	SA NUMBER: 2007-04
11 Sep 2007	Railroad Bridge Safety—Explanation and Amplification of FRA's "Statement of Agency Policy on the Safety of Railroad Bridges."	SA NUMBER: 2007-03
26 Jan 2007	Provides interested parties guidance on the proper application of existing statutory and regulatory requirements concerning self-propelled specialized maintenance equipment.	SA NUMBER: 2007-02
18 Jan 2007	Addresses the safety of shoving or pushing movements in yards, including those involving remote control locomotives. This advisory also addresses the behavior of employees on or about tracks.	SA NUMBER: 2007-01
08 Jan 2007	Provides interested parties information related to the potential failure (cracking and breakage) of the center sills on 89-foot flat cars carrying containers in municipal solid waste (MSW) service.	SA NUMBER: 2006-06
22 Nov 2006	Recommends that each railroad operating passenger trains assess the rule, instructions, and procedures used to ensure that a train will not depart a station until all passengers successfully board or alight from the train, and ensure compliance with such requirements.	SA NUMBER: 2006-05
04 May 2006	Provides interested parties information related to the potential failure of the welded attachment of vertical	SA NUMBER: 2006-03

	load dividers on certain center beam lumber flat cars.	
08 Mar 2006	Provides recommended practices for the testing, classification, and reuse of second-hand rail. The purpose of the safety advisory is to reduce the number of rail defects that occur when second-hand rail is used.	SA NUMBER: 2006-02
08 Mar 2006	Provides the industry additional information on the potential catastrophic failure of certain railroad freight car side frame castings manufactured by National Castings of Mexico's (NCM) Sahagun, Mexico facility and Buckeye Steel Castings' (Buckeye).	SA NUMBER: 2006-01
06 Oct 2005	Advises shippers, consignees, and railroads of the dangers of allowing cars of "time-sensitive" chemicals to remain undelivered beyond their anticipated date of placement and to recommend enhanced procedures to avoid such occurrences.	SA NUMBER: 2005-04
02 May 2005	Facilitates improved cooperation in the investigation of collisions at highway-rail grade crossings.	SA NUMBER: 2005-03
20 Apr 2005	Provides information on the potential catastrophic failure of locomotive main reservoir tanks manufactured by R&R Metal Fabricators, Incorporated, and installed on General Electric Transportation System (GETS) locomotives.	SA NUMBER: 2005-02
10 Jan 2005	Advising all railroads to review their operating rules and take certain other action necessary to ensure that train crews who operate manual (hand-operated) main track switches in non-signaled territory restore the switches to their normal position after use.	SA NUMBER: 2005-01
01 Oct 2004	Addresses suggested measures that railroads and employees should utilize to prevent work related errors and on-the job accidents as a result of sleep disorders.	SA NUMBER: 2004-04
11 Aug 2004	Addresses the importance of clear, precise, unambiguous railroad safety procedures to ensure the safety of highway-rail grade crossing warning systems or wayside signal systems that are temporarily removed from service.	SA NUMBER: 2004-03
10 Aug 2004	Addresses the importance of having clear safety and response procedures for use in the event of reports of railroad signal system problems.	SA NUMBER: 2004-02

03 May 2004	Addresses recommended safety practices and reviews existing requirements for the protection of roadway workers from traffic on adjacent tracks and to heighten awareness to prevent the inadvertent fouling of track when on-track safety is not provided.	SA NUMBER: 2004-01
18 Nov 2003	Additional information on the potential catastrophic failure of 100-ton truck bolsters manufactured by National Castings of Mexico's (NCM) Sahagun, Mexico facility with Association of America Railroads (AAR) Identification Numbers B-2410 and 8-2409 and National Patterns 52122 and 52202.	SA NUMBER: 2003-03
04 Sep 2003	Advising all persons involved in loading and unloading products from railroad tank cars that they cannot rely on internal excess flow valves to stop the flow of product except under the limited conditions for which these valves were designed and installed.	SA NUMBER: 2003-02
16 Jan 2002	Importance of Clear Safety Procedures - Highway-rail grade crossing warning systems	SA NUMBER: 2002-01
26 Apr 2001	In-service failures of railroad airbrake system trainline angle cocks manufactured by Elicon-National.	SA NUMBER: 2001-03
12 Mar 2001	Structural integrity of cast steel draft sills, manufactured by American Steel Foundries, and installed in certain covered hopper cars.	SA NUMBER: 2001-02
01 Feb 2001	Recommended minimal guidelines for the operation of remote control locomotives.	SA NUMBER: 2001-01
27 Oct 2000	Safety practices to reduce the risk of serious injury or death both to railroad employees engaged in switching operations and to the general public.	SA NUMBER: 2000-03
25 May 2000	Addressing recommended replacement of certain components in Harmon Industries' "Electra Code 4" and "Electro Code 4 Plus" intermediate signal units.	SA NUMBER: 2000-02
11 May 2000	Safety concerns involving Model B]. relays, manufactured by General Railway Signal (GRS), between the years 1960 and 1985, and their potential to stick and remain in the energized position.	SA NUMBER: 2000-01

16 Jun 1999	Safety practices related to the lifting or jacking of railroad equipment in order to remove trucks or repair other components on a piece of railroad equipment which require individuals to work beneath railroad equipment while it is raised.	SA NUMBER: 99-01
24 Dec 1998	Safe use of prescription and over-the-counter drugs by safety-sensitive railroad employees.	SA NUMBER: 98-03
28 May 1998	Vision standards of certified locomotive engineers in order to reduce the risk of accidents arising from vision impaired engineers.	SA NUMBER: 98-01
28 May 1998	Vision standards of certified locomotive engineers in order to reduce the risk of accidents arising from vision impaired engineers.	SA NUMBER: 98-01
18 Sep 1997	Safety practices to reduce the risk of accidents arising from the authorization of train movements past stop indications of absolute signals.	SA NUMBER: 97-03
18 Sep 1997	Safety practices to reduce the risk of casualties from runaway locomotives, cars, and trains caused by a failure to properly secure unattended rolling equipment left on sidings or other tracks.	SA NUMBER: 97-02
02 Sep 1997	Flash Flooding.	SA NUMBER: 97-1
30 Jun 1997	Safety practices to evaluate the integrity of all railroads program of operational tests and inspections and to ensure that safety-critical information is accurately conveyed and acknowledged for operations in Direct Train Control (DTC) territory.	SA NUMBER: 97-01
30 Jan 1997	Recommended safety practices for certain locomotives equipped with emergency MU fuel line cut-off devices located inside the locomotive control compartment at a location which enables the cut-off device to be activated unintentionally.	SA NUMBER: 97-01
03 Dec 1996	Recommended safety practices for Direct Train Control (DTC) operations. Unnumbered (Issued 12-3-96).	(Unnumbered)

8. COMPLIANCE MANUALS AND TECHNICAL BULLETINS

FRA also issues Compliance Manuals and Technical Bulletins.

A **Compliance Manual** issued by FRA sets forth guidelines to inspectors for enforcement of the FRA regulations. There have been 22 Compliance Manuals issued, covering various FRA regulations. These include:

Hours of Service Compliance Manual; Freight Operations

Track and Rail and Infrastructure Integrity Compliance Manual: Volume IV-Chap.1-
Bridge Safety Standards

Training, Qualification, and Oversight for Safety-Related Railroad Employees Compliance
Manual

Camp Car Rules Compliance Manual

Track and Rail and Infrastructure Integrity Compliance Manual: Volume III-Chap. 1-
General Provisions of the Railroad Workplace Safety Rule

Track and Rail Infrastructure Integrity Compliance Manual: Volume III-Chap.3-
Application of the Roadway Worker Protection Rule

Track and Rail Infrastructure Integrity Compliance Manual: Volume III-Chap.4-
Roadway Maintenance Machine Safety

Operating Practices Compliance Manual

Track and Rail Infrastructure Integrity Compliance Manual: Volume I-Chap.1-
Introduction/General Guidance

Track and Rail Infrastructure Integrity Compliance Manual: Volume I-Chap. 2
Field Reporting Procedures and Forms

Track and Rail Infrastructure Integrity Compliance Manual: Volume I-Chap. 3-
Automated Track Inspection Program(ATIP) Geometry Car Operation

Track and Rail Infrastructure Integrity Compliance Manual: Volume II-Chap. 1-
Track Safety Standards-Classes 1 through 5

Track and Rail Infrastructure Integrity Compliance Manual: Volume II-Chap.2-
Track Safety Standards-Classes 6 through 9

Track and Rail Infrastructure Integrity Compliance Manual: Volume I-Chap. 4-
Exceptions to Standards

Motive Power and Equipment Compliance Manual

Signal and Train Control Compliance Manual : Volume I

Signal and Train Control Compliance Programs and Policies

Signal and Train Control Compliance Manual : Volume II-
Regulations, Technical Applications, and Defect Codes

Hazardous Materials Compliance Manual

Track Inspector Rail Defect Reference Manual

General Manual

Railroad Workplace Safety Compliance Manual: Bridge Worker Safety

Occupational Noise Exposure for Railroad Operating Employees 49 C.F.R. part 227 and
Locomotive Cab Noise Standard 49 C.F.R. part 229.121

Part 219 Alcohol/Drug Program Compliance Manual

A **Technical Bulletin** is one which gives the railroads technical guidance on how to comply with various FRA regulations. There have been 166 issued by FRA. Below is a list of each Technical Bulletin issued by FRA:

<u>DATE</u>	<u>TITLE</u>	<u>TECHNICAL BULLETIN NO.</u>
18 Oct 2013	HMG-127 One Time Movement Approval Procedures	TB NUMBER: HMG-127
13 Sep 2013	Guidance Regarding the Application of Vehicle/Track Interaction Safety Standards; High-Speed and High Cant Deficiency Operations; Final Rule; Track Classes 6-9	TB NUMBER: 1-13-02
06 Aug 2013	Guidance Regarding the Application of Vehicle/Track Interaction Safety Standards; High-Speed and High Cant Deficiency Operations; Final Rule, Track Classes 1-5	TB NUMBER: T-13-01
31 Oct 2012	One Time Movement Approval Procedures	TB NUMBER: HMG-127
25 Jun 2012	Guidance Regarding the Appropriate Process for the Inspection of Highway-Rail Grade Crossing Warning System Pre-emption Interconnection with Highway Traffic Signals	TB NUMBER: 5-12-01
09 May 2011	Modifications to Chapter 4, Accident Investigation Guidelines, of the August 2009 General Manual	TB NUMBER: G-11-01
09 Apr 2010	This technical bulletin corrects pagination errors in the printed copies of the General Manual as revised in August 2009	TB NUMBER: G-10-02
05 Apr 2010	Advises of changes to the General Manual	TB NUMBER: G-10-01

24 Mar 2010 Enforcement Guidance Regarding Securement of Equipment with Title 49 Code of Federal Regulations (C.F.R.) Section 232.103n	TB NUMBER: MP&E 10-01
11 Mar 2009 New Source/Defect Codes for Electronically Controlled Pneumatic Brake Equipment Inspections and New Inspection Report Requirements on Out-Shopped Locomotives and Cars	TB NUMBER: MP&E 09-02
11 Feb 2009 Clarification Regarding the Necessary Approval for Signal- Related Results of Inspections and Tests	TB NUMBER: S-09-02
11 Feb 2009 Rail Records Inspection Codes	TB NUMBER: 1-09-01
02 Feb 2009 Informational Guidance Regarding the Calculation of Units and Proper Use of Activity Codes	TB NUMBER: MP&E 09-01
22 Jul 2008 Clarification Regarding the Application of the Requirements Associated with Warning Time Testing of Highway-Rail Grade Crossing Active Warning Systems	TB NUMBER: 5-08-02
03 Apr 2008 Roadway Worker Protection: This Technical Bulletin supersedes Technical Bulletin G-07-02, issued August 13, 2007.	TB NUMBER: G-08-03
08 Aug 2007 Software Management Control Plan - Defect Codes	TB NUMBER: S-07-01
25 Jul 2007 Application and Enforcement Guidance Related to Interpretation of Rule Provision Governing Fire Extinguisher Placement on New On-Track Roadway Maintenance Machines	TB NUMBER: T-07-02
01 May 2007 Enforcement of Rail Grinders	TB NUMBER: T-07-01
25 Apr 2007 Guidance for Record Keeping of Annual Periodic Inspection of the Hand or Parking Brake on Passenger Cars and Unpowered Vehicles Used in Passenger Trains, 49 C.F.R. Section 238.307(d)(2)	TB NUMBER: MP&E 07-02
03 Apr 2007 Inbound Inspection & Record-keeping Requirements Related to Extended Haul Trains	TB NUMBER: MP&E 07-01
25 Aug 2006 Correction and Further Clarification to "Introduction to Software Configuration Management"	TB NUMBER: S-06-01
23 Jun 2006 The purpose of this guidance document is to remind tank car users of upcoming regulatory requirements for improved tank car safety features and to state EPA's	TB NUMBER: HMG-109

enforcement policy on this topic.

16 Aug 2005 Hours of Service Interpretation - Yardmaster Duties	TB NUMBER: OP 05-01
06 Jun 2005 Application and Enforcement Guidance Related to Interpretation of Movable Bridge Interlocking of Signal Appliances with Bridge Devices	TB NUMBER: S-05-01
21 Mar 2005 Guidelines for Preparing New MP&E Violation Report FRA F- 6180.109	TB NUMBER: MP&E 05-01
10 Jan 2005 Roadway Worker Protection Technical Bulletins	TB NUMBER: G-05-01
10 Jan 2005 Exclusive track occupancy, generally	TB NUMBER: G-05-02
10 Jan 2005 Lone worker, generally	TB NUMBER: G-05-03
10 Jan 2005 On-track safety (OTS) training for train service employees	TB NUMBER: G-05-04
10 Jan 2005 Good faith challenge	TB NUMBER: G-05-05
10 Jan 2005 Identifiable location for exclusive occupancy	TB NUMBER: G-05-06
10 Jan 2005 Roadway worker in charge, generally	TB NUMBER: G-05-07
10 Jan 2005 Audible warning from train for work over large area	TB NUMBER: G-05-08
10 Jan 2005 Plant trackage and OTS for railroad employees	TB NUMBER: G-05-09
10 Jan 2005 Train approach warning and place of safety	TB NUMBER: G-05-10
10 Jan 2005 Dual power switch locations and individual train detection	TB NUMBER: G-05-11
10 Jan 2005 OTS documentation	TB NUMBER: G-05-12
10 Jan 2005 OTS while establishing working limits	TB NUMBER: G-05-13
10 Jan 2005 Operation of certain equipment on non controlled track	TB NUMBER: G-05-14
10 Jan 2005 Audible warning from train and duration	TB NUMBER: G-05-15
10 Jan 2005 Annual training and periodic qualification	TB NUMBER: G-05-16
10 Jan 2005 Roadway worker in charge and multiple groups	TB NUMBER: G-05-17
10 Jan 2005 Qualification of other than roadway workers providing OTS	TB NUMBER: G-05-18
10 Jan 2005 Contractor an-track safety training	TB NUMBER: G-05-19

10 Jan 2005 Effective securing device/other instruments	TB NUMBER: G-05-20
10 Jan 2005 Other than maintenance of way crafts performing duties	TB NUMBER: G-05-21
10 Jan 2005 Exclusive track occupancy and emergencies	TB NUMBER: G-05-22
10 Jan 2005 Retention of exclusive occupancy records by dispatcher	TB NUMBER: G-05-23
10 Jan 2005 Adjacent tracks and small unit of major work	TB NUMBER: G-05-24
10 Jan 2005 Revision to OTS procedures and field manual	TB NUMBER: G-05-25
10 Jan 2005 Shoving moves and whistle sounding	TB NUMBER: G-05-26
10 Jan 2005 Whistle sounding and on or about the track	TB NUMBER: G-05-27
10 Jan 2005 Portable radios and train approach warning	TB NUMBER: G-05-28
10 Jan 2005 Controlled points vs. manual interlockings	TB NUMBER: G-05-29
10 Jan 2005 Quiet" power tools	TB NUMBER: G-05-30
24 Dec 2004 Application and Enforcement Guidance Related to Interpretation of Periodic Testing Intervals	TB NUMBER: S-04-01
13 Dec 2004 Air Flow Indicator Calibration Guidance	TB NUMBER: MP&E 04-01
28 Sep 2004 The purpose of this guidance document is to highlight key changes from the Research and Special Programs Administration's (RSPA) final rule "Hazardous Materials Regulations of the International Atomic Energy Agency;" HM-230.	TB NUMBER: HMG-107
03 Feb 2004 Suitable Food and Lodging at Designated Terminals; Hours of Service Act Interpretation	TB NUMBER: OP 04-03
03 Feb 2004 Commingled Service Provisions; Hours of Service Interpretations	TB NUMBER: OP 04-04
03 Feb 2004 Commingled Service: Attending Railroad Investigations or Hearings	TB NUMBER: OP 04-17
03 Feb 2004 Deadhead Transportation to a Point of Final Release; Hours of Service Interpretations	TB NUMBER: OP 04-24
03 Feb 2004 Coverage of Inside Hostlers and their Helpers Under the Hours of Service Act	TB NUMBER: OP 04-26
03 Feb 2004 Hours of Service Interpretation - Awaiting Deadhead Transportation	TB NUMBER: OP 04-30

06 Jan 2004	The purpose of this guidance document is to state and explain the FRA Office of Safety Assurance and Compliance policy on seal removal and replacement on rail equipment involved in hazardous materials transportation.	TB NUMBER: HMG-106
06 Jan 2004	The purpose of this guidance document is to discuss the requirements for hazardous materials security plans, training, and background checks required by the Research and Special Programs Administration's final rule in docket HM-232.	TB NUMBER: HMG-105
06 Jan 2004	The purpose of this Notice is to clarify issues surrounding AAR Association of American Railroads) Class 207 cars.	TB NUMBER: HMG-104
06 Jan 2004	The purpose of this guidance document is to clarify the train placement rules in 49 C.F.R. 174.85 that allow "specially equipped cars with tie-down devices for securing vehicles" to be entrained next to placarded rail cars transporting	TB NUMBER: HMG-103
06 Jan 2004	The purpose of this guidance document is to rescind Technical Bulletin HM-99-4, regarding the establishment of conditions under which tank cars with certain nonconforming conditions would move without the issuance of a movement approval.	TB NUMBER: HMG-102
06 Jan 2004	The purpose of this guidance document is to discuss and clarify the FRA's (Federal Railroad Administration's) implementation of 49 C.F.R. 174.50 through the issuance of approvals that, with approval of the Associate Administrator for Safety, FRA	TB NUMBER: HMG-101
09 Oct 2003	Daily Inspection Procedures (229.21) applicable to Remote Control Locomotives	TB NUMBER: MP&E 02-01
09 Jan 2003	Early Application of New Power Brake Regulations 232.1(c) – Guidance	TB NUMBER: MP&E 03-01
26 Jul 2001	Power Brake Regulation, 49 C.F.R. part 232, Subpart D	TB NUMBER: MP&E 01-03
21 Jun 2001	Guidance for Inspection for Locomotive Draft Gear Pocket Center Sill	TB NUMBER: MP&E 01-02
31 May 2001	Effective Date of New Power Brake Regulation 49 C.F.R. 232	TB NUMBER: MP&E 01-01
17 Jan 2001	Clarification of Application, Interpretation and Enforcement of 49 C.F.R. 232 49 C.F.R. Section 234.273	TB NUMBER: 5-99-06

05 Dec 2000 Clarification of Application of 49 C.F.R. Sections 236.023	TB NUMBER: S-99-01
07 Aug 2000 Manufacture and repair of operating platforms and operating platform safety railings on tank cars without underframes	TB NUMBER: MP&E 00-06
22 Jun 2000 Draft Gear Arrangements and Cushioning Devices 215.127 & 215.129	TB NUMBER: MP&E 00-03
22 Jun 2000 Daily Inspection Record Retention - § 229.21(a)	TB NUMBER: MP&E 00-04
22 Jun 2000 Slipping & Tripping Hazards in Locomotive Air Compressor Compartments	TB NUMBER: MP&E 00-05
12 Jan 2000 Safety Enforcement Guidance for Inspecting and Testing Brakes on Cars while on Shop or Repair Track	TB NUMBER: MP&E 00-01
07 Jan 2000 part 232. Inspection Activity Codes	TB NUMBER: MP&E 00-02
16 Aug 1999 Clarification of Application, Interpretation and Enforcement of 49 C.F.R. Sections 234.213, 236.2, 234.249 and 236.107	TB NUMBER: 5-99-03
16 Aug 1999 The S&TC Technical Resolution Committee meeting in Omaha, Nebraska the week of August 16, 1999, acted on a request for clarification of the application of 49 C.F.R. Section 236.407. route can be changed through the use of a hand-operated switch	TB NUMBER: 5-99-04
26 Jan 1999 Clarification for Initial Terminal Road Train Air Brake - Tests Section 232.12(d)(1)	TB NUMBER: MP&E 99-01
03 Aug 1998 Self Propelled vehicles Considered to Be Locomotives	TB NUMBER: MP&E 98-71
15 Jun 1998 Double Stack Cars (Structural Failure) DTTX 720000 through 720789	TB NUMBER: MP&E 98-01
15 Jun 1998 Event Recorder Periodic Inspection	TB NUMBER: MP&E 98-02
15 Jun 1998 Locomotive Auxiliary Lights - Questions and Answers	TB NUMBER: MP&E 98-03
15 Jun 1998 MP&E Enforcement Manual Revision - Chapter 2, Page 3	TB NUMBER: MP&E 98-04
15 Jun 1998 Standard Level & Low Level Auto Rack Cars Safety Appliance Arrangements	TB NUMBER: MP&E 98-05
15 Jun 1998 Bottom Rod Safety Support	TB NUMBER: MP&E 98-06
15 Jun 1998 Errors in DOT Safety Appliance Standards Booklet, Published Sept 1977	TB NUMBER: MP&E 98-07
15 Jun 1998 Air Brake System - Reservoir Connecting Pipes	TB NUMBER: MP&E 98-08

15 Jun 1998 Steam Locomotive Reports	TB NUMBER: MP&E 98-09
15 Jun 1998 Accepted Wheel Gaging Methods	TB NUMBER: MP&E 98-10
15 Jun 1998 Testing of Handbrakes on Locomotives Equipped with an Air Release Valve	TB NUMBER: MP&E 98-11
15 Jun 1998 Hydrostatic Testing of Steam Locomotive Boilers	TB NUMBER: MP&E 98-12
15 Jun 1998 Interpretation of Sill Step Application, 49 C.F.R. 231.1(d)(2) & 23127(c)(2)	TB NUMBER: MP&E 98-13
15 Jun 1998 Safety Appliance Securement	TB NUMBER: MP&E 98-14
15 Jun 1998 Use of Air Flow Method as an Alternative To Air Brake Leakage Tests	TB NUMBER: MP&E 98- 15
15 Jun 1998 DODX 4000 Series Flat Cars	TB NUMBER: MP&E 98-16
15 Jun 1998 Applicable Safety Appliance Regulation Governing Bulkhead Flat Cars	TB NUMBER: MP&E 98-17
15 Jun 1998 Aluminum Safety Appliances	TB NUMBER: MP&E 98-18
15 Jun 1998 Safety Appliance Arrangements on Differential 100-Ton Covered Hopper Cars	TB NUMBER: MP&E 98-19
15 Jun 1998 General Motors EMD Locomotives, Model P-40PH2C	TB NUMBER: MP&E 98-20
15 Jun 1998 Vertical Isolation Pads in 125-Ton Trucks on Articulated Double Stack Cars	TB NUMBER: MP&E 98-21
15 Jun 1998 Adjustable Handhold/Ladder Tread	TB NUMBER: MP&E 98-22
15 Jun 1998 Covered Hopper Cars Running Board Extensions	TB NUMBER: MP&E 98-23
15 Jun 1998 Stub Sill Failure on Tank Cars	TB NUMBER: MP&E 98-24
15 Jun 1998 Burro Crane Requirements	TB NUMBER: MP&E 98-25
15 Jun 1998 Handbrakes - Articulated Cars	TB NUMBER: MP&E 98-26
15 Jun 1998 Locomotive Handbrakes - Stencil Requirement for Canadian Railroads	TB NUMBER: MP&E 98-27
15 Jun 1998 Handling of Special Car Inspections	TB NUMBER: MP&E 98-28
15 Jun 1998 Freight Car Derailed/Damaged on Short Line Railroads	TB NUMBER: MP&E 98-29

15 Jun 1998 Two Hour Rule For Train Air Brakes	TB NUMBER: MP&E 98-30
15 Jun 1998 Safety Chains on Tank Cars	TB NUMBER: MP&E 98-31
15 Jun 1998 Sample Car Inspection - Location of Brake Components	TB NUMBER: MP&E 98-32
15 Jun 1998 Amtrak Baggage and Mail Handling Cars	TB NUMBER: MP&E 98-33
15 Jun 1998 Interpretation of 49 C.F.R. 215.5 Definitions (e)(4)	TB NUMBER: MP&E 98-34
15 Jun 1998 Multi-Unit Articulated Flat Cars - Crossover Platform	TB NUMBER: MP&E 98-35
15 Jun 1998 Judgement in the Enforcement of the Safety Appliance Standards	TB NUMBER: MP&E 98-36
15 Jun 1998 Inspection Requirements for Locos that operate from either Canada or Mexico	TB NUMBER: MP&E 98-37
15 Jun 1998 Passenger Train Short Looping & Head End Enforcement Policy	TB NUMBER: MP&E 98-38
15 Jun 1998 Closeout Letters - Penalties	TB NUMBER: MP&E 98-39
15 Jun 1998 1000 Mile Interpretations - 49 C.F.R. 232.12(b)	TB NUMBER: MP&E 98-40
15 Jun 1998 Locomotive Brake Cylinder Pressure	TB NUMBER: MP&E 98-41
15 Jun 1998 TX"National Uni-Truck" (single-axle)	TB NUMBER: MP&E 98-42
15 Jun 1998 Defective Couplers	TB NUMBER: MP&E 98-43
15 Jun 1998 Initial Terminal Brake Tests of Non-Commuter Trains	TB NUMBER: MP&E 98-44
15 Jun 1998 Interpretation of Initial Terminal Air Brake Tests at Remote Locations	TB NUMBER: MP&E 98-45
15 Jun 1998 Handling of Defective Cars at Intermediate Inspection Locations	TB NUMBER: MP&E 98-46
15 Jun 1998 Bunks - Amtrak Series 32000 Sleeper Cars	TB NUMBER: MP&E 98-47
15 Jun 1998 Securement of Handrail to Locomotive Carbody North American Cab Structure	TB NUMBER: MP&E 98-48
15 Jun 1998 Dimensions Applicable to Handles of	TB NUMBER: MP&E 98-49

Uncoupling Levers

15 Jun 1998 Movement of Defective Locomotives	TB NUMBER: MP&E 98-50
15 Jun 1998 Definition of Left and Right	TB NUMBER: MP&E 98-51
15 Jun 1998 Initial Terminal Brake Tests of MU Commuter Trains	TB NUMBER: MP&E 98-52
15 Jun 1998 Handbrake Chains	TB NUMBER: MP&E 98-53
15 Jun 1998 Load Meter Testing for Locomotives Equipped with AC Traction motors	TB NUMBER: MP&E 98-54
15 Jun 1998 Brake Hoses on Cars Equipped with 15' End-of-Car Cushioning Units	TB NUMBER: MP&E 98-55
15 Jun 1998 Sloan Model 3050-A and 3200-A Angle Cocks	TB NUMBER: MP&E 98-56
15 Jun 1998 Freight Car Pre-Departure Inspection: Enforcement Guidance -§ 215.13	TB NUMBER: MP&E 98-57
15 Jun 1998 part 215 Appendix D, Pre-Departure Inspection Enforcement Guidance	TB NUMBER: MP&E 98-58
15 Jun 1998 Train Brake Inspection	TB NUMBER: MP&E 98-59
15 Jun 1998 Locomotive Emergency MU Fuel Cut-Off Switch	TB NUMBER: MP&E 98-60
15 Jun 1998 Measuring Piston Travel	TB NUMBER: MP&E 98-61
15 Jun 1998 Two-Way End-of-Train Device Flowchart	TB NUMBER: MP&E 98-62
15 Jun 1998 Two-Way End-of-Train Device Questions and Answers	TB NUMBER: MP&E 98-63
15 Jun 1998 Auxiliary Lights Interfering With Safety Appliances	TB NUMBER: MP&E 98-64
15 Jun 1998 Assignment of Compliance Inspection Activities	TB NUMBER: MP&E 98-65
15 Jun 1998 Employee Use of Railroad Commercial Telephones	TB NUMBER: MP&E 98-66
15 Jun 1998 Complaint Investigation, Thoroughness in Investigating	TB NUMBER: MP&E 98-67

15 Jun 1998 Locomotives Used in Switching Service - Location End Handholds	TB NUMBER: MP&E 98-68
15 Jun 1998 Safety Appliance Arrangements on Flat Cars	TB NUMBER: MP&E 98-69
15 Jun 1998 MP&E Technical Bulletins - Rescind / Re-issue	TB NUMBER: MP&E 98-70
10 Jan 1997 Revision of Interpretation and Application of 49 C.F.R. Section 234.221	TB NUMBER: S-96-07
23 Dec 1996 Application of 49 C.F.R. Sections 234.105, 234.106 and 234/107	TB NUMBER: 5-96-08
23 Dec 1996 Interpretation and Application of 49 C.F.R. Section 234.257	TB NUMBER: 5-96-10
21 Nov 1996 Interpretation and Application of 49 C.F.R. Sections 234.245	TB NUMBER: S-96-09
21 Nov 1996 Revision of Interpretation and Application of 49 C.F.R. Section 236.110	TB NUMBER: 5-96-05
21 Nov 1996 Manually Operated Warning Systems	TB NUMBER: S-96-06
14 May 1996 Revision of Interpretation and Application of 49 C.F.R. Section 236.330	TB NUMBER: S-96-01
14 May 1996 Revision of Interpretation and Application of 39 C.F.R. Section 236.380	TB NUMBER: 5-96-02
14 May 1996 Concerns in Conjunction with 49 C.F.R. 236.567	TB NUMBER: S-96-03

MISCELLANEOUS

1. RAILROAD SECURITY-SENSITIVE MATERIAL TRACKING

(a) Communications

(1) In general. In conjunction with the research and development program established under section 1168 of this title and consistent with the results of research relating to wireless and other tracking technologies, the Secretary, in consultation with the Administrator of the Transportation Security Administration, shall develop a program that will encourage the equipping of railroad cars transporting security-sensitive materials, as defined in section 1151 of this title, with technology that provides—

(A) car position location and tracking capabilities; and

(B) notification of railroad car depressurization, breach, unsafe temperature, or release of hazardous materials, as appropriate.

(2) Coordination. In developing the program required by paragraph (1), the Secretary shall—

(A) consult with the Secretary of Transportation to coordinate the program with any ongoing or planned efforts for railroad car tracking at the Department of Transportation; and

(B) ensure that the program is consistent with recommendations and findings of the Department of Homeland Security's hazardous material railroad tank car tracking pilot programs.

(b) Funding....

6 U.S.C. § 1202

2. RAILROAD REVITALIZATION AND REGULATORY REFORM ACT

One section of the Act permits any railroad to apply for financial assistance for facilities. The Secretary of Transportation shall act upon any such application within 6 months after receipt of all required information pertinent to such application. The Secretary may approve such application if he determines that to do so would be in the public interest. Special emphasis in the application is placed on track improvement. (49 U.S.C. § 825(b)(1) (C) and (D). In making this latter determination the Secretary shall consider (a) the availability of funds from other sources, (b) the interest of the public in supplementing such other funds as may be available, and (c) the public benefit to be realized from the project to be financed in relation to the public costs of such financing. The Secretary shall give highest priority to those applications for projects which will enhance the ability of the applicant carrier to provide essential freight service. Moreover, among applications which would return equal public benefits, the Secretary shall assign highest priority to applications for assistance for providing safety improvements and signals, including underpasses and overpasses at railroad crossings at which injury or death has frequently occurred or is likely to occur.

49 U.S.C. § 825(A) and (b)

3. AUTHORIZING FOR INVESTIGATION AND TESTING OF SAFETY DEVICES

The Secretary of Transportation is authorized to investigate, test, and report on the use and need of appliances or systems intended to promote the safety of railway operations. The appliances or systems to be tested may be furnished to the Secretary for that purpose free of charge to the Government. Additionally, the Secretary is authorized to employ such persons as are familiar with the subject to be investigated and tested.

49 U.S.C. § 20504

4. AMTRAK DUMPING OF HUMAN WASTE

In 1990, Congress exempted Amtrak from any federal, state or local law which would prevent the railroad from discharging human waste. In doing so, Congress required that all new

inter-city rail passenger cars manufactured on or after the date of enactment of this law, shall be built to provide for the discharge of human waste only at servicing facilities. Subject to the appropriation of funds from Congress, Amtrak is required to retrofit its inter-city cars that were manufactured after May 1, 1971, that provide for the discharge of human waste either at (1) servicing facilities, or (2) along railroad right-of-way (except stations) only after the wastes have been treated. The retrofit program shall be completed within 6 years. Within 1 year of the date of enactment, Amtrak is required to submit a plan to Congress, which sets forth the schedule and projected costs of completion of the retrofit program. The effective date of this legislation applies retroactively to 1976. Therefore, it attempts to exempt Amtrak from all regulatory actions relating to dumping by any governmental entity dating from 1976.

Pub. L. No. 101-610, § 601(a)(1)

5. RAILROAD POLICE OFFICERS

A railroad police officer who is employed by a railroad has been given the same authority to enforce the laws of any jurisdiction in which the rail carrier owns property to the same extent as a police officer properly certified or commissioned under the laws of that jurisdiction. This means that a police officer hired by the railroad has the power to arrest other railroad employees. Under the regulation adopted by FRA, the railroad must notify every state where the railroad police officers may operate.

Pub. L. No. 101-647, § 2205; 49 C.F.R. part 207

6. CLEAN AIR ACT

Clean Air Act Amendments of 1990 contained one specific provision relating to the railroads. The Environmental Protection Agency is required to issue standards for new locomotive engines within 5 years from the date of enactment to achieve the greatest possible reduction to ozone or carbon monoxide emission levels, considering cost, safety, and energy factors. The states are preempted from regulating new locomotives or new engines used in locomotives as related to emissions. (This does not correct the problem which exists with emissions from older locomotives.)

Pub. L. No. 101-549, § 222

7. AMERICANS WITH DISABILITIES ACT

What is Prohibited

Employers cannot discriminate against persons with disabilities in regard to any employment

practice, or any terms and conditions of employment, including job recruitment and advertising, hiring, promotion, transfer, layoff, termination, rehiring, rate of pay, job assignments, leaves of absence, fringe benefits, training and social activities. 29 C.F.R. § 1630.4.

What is Protected

The ADA prohibits discrimination against "qualified individuals with disabilities." § 1630.4. A "qualified individual with a disability" is "an individual with a disability who satisfies the requisite skill, experience, education and other job-related requirements of the employment position such individual holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position." 29 C.F.R. § 1630.2 (m).

What Does "Disability" Mean under the ADA?

The term "disability" means, with respect to an individual-

- (A) a physical impairment that substantially limits one or more of the major life activities of such individual;
- (B) a record of such an impairment; or
- (C) being regarded as having such an impairment.

Either one of these three prerequisites will trigger the statute.

What is a Physical Impairment That Substantially Limits a Major Life Activity?

1. What is a Physical Impairment?

Physical impairment is any physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of several body systems, or any mental or psychological disorder. 29 C.F.R. § 1630.2.

The disorder or condition must relate to a diagnosable physical or mental impairment. Attempts to alleviate the disorder through medical means do not remove a person's disabled standing, such as a person with a hearing problem who alleviates the problem with a hearing aid. 29 C.F.R. part 1630, Appendix, § 1630.2 (h). However, having a physical impairment alone does not trigger the statute, since the impairment must substantially limit a major life activity.

2. What constitutes a substantial limit on major life activities?

After the determination is made that there is a physical or mental impairment, the next test becomes whether the impairment substantially limits a major life activity. *See*, 42 U. S. C. § 12102 (2) (a). Major life activities are fundamental actions which the average person in the general population can perform with little or no difficulty. These activities include caring for one's self, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning,

sitting, standing, lifting, reaching, and working. 29 C.F.R. § 1630.2(i). When one of these activities is "substantially limited" by an impairment, the statute is triggered.

What Amounts to Discrimination Under the ADA?

Once the determination is made that an individual has a protected disability, as a general rule, "[n]o covered entity shall discriminate against a qualified individual with a disability because of the disability of such individual in regard to job application procedures, the hiring, advancement, or discharge of employees, employee compensation, job training, and other terms, conditions, and privileges of employment." 42 U.S.C. § 12112(a). Generally, the determination becomes whether the individual meets the requirements for the job, like adequate training, licenses, and skills. If the disabled individual is qualified, the employer must make a "reasonable accommodation" for the physical impairment so the individual can perform the essential job functions.

What is a Reasonable Accommodation?

If the employee is found to be qualified, but cannot perform an essential function of the job, the ADA still requires the employer to make "reasonable accommodations to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, unless such covered entity can demonstrate that the accommodation would impose an undue hardship on the operation of the business of such covered entity." 42 U.S.C. § 12112 (b) (5) (A). Moreover, the employer cannot deny "employment opportunities to a job applicant or employee who is an otherwise qualified individual with a disability, if such denial is based on the need of such covered entity to make reasonable accommodation to the physical or mental impairments of the employee or applicant" 42 U.S.C. § 12112 (b) (5) (B).

The term "reasonable accommodation" includes reassignment to a vacant position. 42 U.S.C. § 12111 (a). However, an employer is not required to reassign a disabled employee where the change involves a promotion or bumping another employee out of a position to create a vacancy for the individual with the disability. See, 49 C.F.R. part 1630, Appendix, § 1630.2 (o). *Eckles v. Conrail, et. al.*, 94 F.3d 1041 (7th Cir. 1996), cert. denied March 24, 1997.

42 U.S.C. § 1210; 29 C.F.R. part 1630

8. FEDERAL HIGHWAY ADMINISTRATION REGULATIONS COVERING HEALTH QUALIFICATIONS AND TESTS FOR DRIVERS OF RAILROAD OWNED TRUCKS

Under regulations of the Federal Highway Administration, a railroad worker who drives a motor vehicle for the carrier, must meet minimum physical qualifications in addition to a written exam, road test, and have an acceptable driving record. This includes an extensive annual medical physical exam. Part of the requirements allow the railroads to impose an alcohol and drug test on the employee.

The motor vehicles covered by this part include only those having a gross weight, including its load, of more than 10,000 pounds.

9. EXECUTIVE ORDERS:

(a). EXECUTIVE ORDER 12866: REGULATORY PLANNING AND REVIEW⁸⁴

Regulatory Philosophy and Principles. The executive order sets forth a statement containing regulatory philosophy and principles to which agency should adhere.

Review of Existing Regulations. Agencies are required to submit to the Office of Management Budget a program for periodic review of existing significant regulations to determine whether to modify or eliminate them. Rules to be reviewed must be included in the agency's Plan. Agencies must also identify legislatively mandated regulations that are unnecessary or outdated.⁸⁵

Public Participation. Before issuing an NPRM, agencies are encouraged to seek involvement of those intended to benefit or be burdened. Agencies should provide a meaningful opportunity to comment, including a 60-day comment period in most cases. Where appropriate, agencies must use consensual mechanisms.

OMB Review. All significant rulemakings must be submitted to OMB for review before issuance. Time frames for completion of such review are established in the Order.

Assessment of Economically Significant Rulemakings. Agencies are required to prepare an assessment, including analyses, of benefits and costs, quantified to the extent feasible, of the anticipated action and potentially effective and reasonable feasible alternatives, including an explanation of why the planned action is preferable.

Disclosure of Contacts. Procedures are established for disclosure of communications with people outside of the executive branch.

(b). Executive Order 13563 (January 18, 2011) (This order is supplemental to and reaffirms the principles that were established in Executive Order 12866 of September 30, 1993)

The regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation. It must be based on the best available science. It must allow for public participation and an open exchange of ideas. It must promote predictability and reduce uncertainty. It must identify and use the best, most innovative, and least burdensome tools for achieving regulatory ends. It must take into

⁸⁴ Additionally, Executive Order 13777, issued on February 24, 2017 requires each agency to create a Regulatory Reform Task Force to evaluate existing, and make recommendations for their repeal, replacement, or modification.

⁸⁵ In 2019, FRA intends to review 49 CFR parts 200 (Informal rules of practice for passenger service); 207 (RR police officers); 209 (Safety enforcement procedures); 210 (Noise emission compliance)

account benefits and costs, both quantitative and qualitative. It must ensure that regulations are accessible, consistent, written in plain language, and easy to understand. It must measure, and seek to improve, the actual results of regulatory requirements.

(c) Executive Order 13211-- Requires Federal agencies to prepare a Statement of Energy Effects for any “significant energy action.” (66 FR 28355, May 22, 2001).

(d). Executive Order 13609-- Agencies must consider whether the impacts associated with significant variations between domestic and international regulatory approaches are unnecessary or may impair the ability of American businesses to export and compete internationally.

(e) Executive Order 13610--Directs agencies to conduct retrospective analyses of existing rules to examine whether they remain justified and whether they should be modified or streamlined in light of changed circumstances, including the rise of new technologies.

(f) Executive Order 13132 -- The E.O.'s objective is to guarantee the Constitution's division of governmental responsibilities between the federal government and the states. It furthers the policies of the Unfunded Mandates Reform Act.

(g) Executive Order 13175 –This requires that agencies establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications.

(h) Executive Order 13771 —It directs agencies to repeal two existing regulations for every new regulation, and to do so in such a way that the total cost of regulations does not increase.

(i) DOT Order 2100.5: Regulatory Policies and Procedures

Coverage. This order applies to all DOT rulemakings, including those that establish conditions for financial assistance, but excludes formal rulemakings and those related to military or foreign affairs functions, agency management or personnel, and Federal procurement. Special provisions are also made for “emergency” rulemakings.

Objectives. It sets forth objectives for DOT rulemaking (e.g., necessity, clarity).

Regulations Council. It establishes a Department Regulations Council, chaired by the Deputy Secretary, vice-chaired by the General Counsel, and made up of the heads of the Secretary of Transportation offices and the operating administrations. The Council can review and make recommendations concerning regulatory review programs (*See*, ¶ G), significant rulemakings (*See*, ¶ E), and the Regulatory Policies and Procedures. It can also set up task forces or require studies if necessary.

Initiating Office Responsibilities. It establishes responsibilities for the

offices initiating regulations to do such things as coordinate their proposals with other operating administrations within the Department.

Significant Rulemaking Review. It requires the submission of all significant rulemakings to the Office of the Secretary for approval by the Secretary. (A significant regulation is essentially one that is costly or controversial.)

Economic Analyses. It requires an economic analysis for all proposed (including ANPRMs) and final rulemaking actions, not just for major (very costly) rulemakings. For major rulemakings, the document is a “Regulatory Analysis”; for non-major, it is a “Regulatory Evaluation.” Where the impact is so minimal that a full Evaluation is not warranted, a statement to that effect and the basis for it is included in the rulemaking document.

Reviews. It requires the periodic review of existing regulations to determine whether they should be revised or revoked.

Public Participation. It sets forth some specific procedures to ensure a full opportunity for public participation; for example, it provides for a comment period of at least 45 days on non-significant regulations and 60 days on significant regulations, unless the rulemaking document states the reasons for a shorter time period. It also requires that, to the maximum extent possible, even when not statutorily mandated, opportunity for the public to comment on proposed rules should be provided, if it could be expected to result in useful information.

Agenda. It requires the development and issuance of a semi-annual regulations agenda.

(j) DOT ORDER 2100.2: PUBLIC CONTACTS IN RULEMAKING (1970)

The Order essentially discourages oral communications from the time just prior to the issuance of a notice until the time the final rule is issued. If such contacts occur, they must be summarized in writing and placed in the public rulemaking docket. (If the contact occurs before the issuance of the NPRM, it may be summarized in the preamble to the NPRM).

(k) OMB MEMORANDUM-Guidance on Compliance with the Congressional

Review Act

On April 11, 2019, the Office of Management and Budget issued a Guidance on Compliance with the Congressional Review Act. It sets forth guidelines that agencies must follow when issuing rules. The word "rule" encompasses more than just a regulation. It includes, also, guidance documents, general statements of policy, and interpretive rules. If a rule is determined to have a major economic impact by an agency, it must be forwarded to the Office of Information and Regulatory Affairs to make a determination whether the rule is major. The major designation triggers a report by the GAO and a delayed effective date to give Congress at least 60 days within which to reject the rule.

10. JURISDICTION OF ENVIRONMENTAL PROTECTION AGENCY AND OSHA OVER HAZARDOUS

Under the provisions of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. § 9601 et. seq.), as amended by the Superfund Amendment and Reauthorization Act of 1986 (P.L. No. 99-499), the Environmental Protection Agency has jurisdiction over railroads where a railroad has released or threatened to release into the environment hazardous substances, pollutants or contaminants. When such an event occurs, the EPA may respond by cleaning up and removing the said substances, for which the railroad is responsible. In addition, the EPA has authority to impose fines under the said Act.

The Federal OSHA also has jurisdiction over hazardous waste operations and emergency response in the railroad industry. The OSHA regulations appear in 29 C.F.R. part 1910. Specifically, § 1910.120 covers protection of employees involved in hazardous waste operations and emergency response. These protections include training, personal protective equipment, monitoring, materials handling, decontamination procedures, etc.⁸⁶

Pub. L. No. 99-499; 42 U.S.C. § 9601 et. seq.

11. FAMILY MEDICAL LEAVE ACT

Employers covered:

Railroads are covered by FMLA if they employ 50 or more employees for 20 or more workweeks in a current or preceding calendar year.

Employee Eligibility:

Must have been employed for at least 12 months, and the 12 months does not have to be consecutive, and may be over a 7 year period.

The employee must work where the railroad employs at least 50 employees within a 75 mile radius, and have worked there for at least 1,250 hours during the 12 month period immediately preceding the date the leave starts.

Note: Vacation, holiday and sick time does not count towards the 1,250 hours.

⁸⁶ OSHA was discussed in a previous section in greater detail.

The employee must provide the railroad 30 day advance notice of the leave when practicable. If foreseeable less than 30 days, notice should be given the same day or next business day. If not foreseeable, must give notice as soon as practicable.

Basic Entitlements:

Requires employers to provide unpaid, job protected leave to employees for the following reasons:

- Incapacity due to pregnancy, prenatal medical care or child birth;
- Care for the employee's child after birth, or placement for adoption or foster care;
- Care for the employee's spouse, son or daughter, or parent, who has a **serious health condition**;
- or
- For a serious health condition that makes the employee unable to perform the employee's job.

Note: A "serious health condition" is defined in the FMLA as an illness, injury, impairment , or physical or mental conditions that involve either:

- An overnight stay in the hospital;
- Incapacity lasting more than 3 consecutive days requiring continuous medical treatment;
- Chronic conditions that requires periodic treatments at least 2 per year by a health care provider;
- Pregnancy causing incapacity;
- Long term or permanent capacity; or
- Absences due to multiple treatments that left untreated would result in incapacity lasting more than 3 consecutive days.

Basic Rights:

- Up to 12 weeks of unpaid leave

Note: FMLA does not supersede the Railway Labor Act.
Cannot force the employee to use vacation time.

- The employer must continue to pay for group health plan benefits.
- Upon recovery, the employee must be returned to his/her original job or equivalents.
- Employer cannot deny advancement or discriminate against an employee because of FMLA absences.

Employer cannot count FMLA time under an attendance control policy.

FMLA Leave Year:

The employer must choose one of 4 methods to define the 12 month period during which an employee may take the 12 weeks of leave:

- The calendar year;
- Another fixed 12 month period;

- The 12 month period counted forward from the date the employee first uses FMLA leave; or,
- A rolling 12 month period counted backward from each date an employee uses FMLA leave.

Note: The employer must apply the chosen leave year method to its entire workforce.

29 C.F.R. part 825

29 U.S.C. § 2601-2654

12. OPERATION LIFESAVER

The Operation Lifesaver program offers free rail safety presentations to schools, civic and community groups and driver education students, as well as training for professional drivers and emergency first responders. Its goal is to end collisions, deaths and injuries at highway-rail grade crossings and on rail property through a nationwide network of volunteers who work to educate people about rail safety. There are state coordinators located in every state.

13. GAO STUDY OF FRA (DECEMBER 9, 2013)

"RAIL SAFETY:IMPROVED HUMAN CAPITAL PLANNING COULD ADDRESS EMERGING SAFETY OVERSIGHT CHALLENGES"

The Government Accountability Office Found:

- FRA estimates that its inspectors have the ability to annually inspect less than 1 percent of the railroad activities covered by its regulations.
- 30 states partner with FRA and provide certified safety inspectors who are authorized to enforce FRA's regulations.
- FRA has been slow to implement risk reduction planning.
- FRA uses the National Inspection Plan to inspect(i.e., uses past accident and other data to target inspection activities), and the Staffing Allocation Model to help in inspection(i.e., it estimates the best allocation of the different types of inspectors in its regions to best allocate the different types of inspectors in each region).
- All FRA regional administrators expressed concerns that SAM does not allow adequate flexibility needed to accommodate each region's changing resource needs.

FRA's Safety Challenges:

GAO identified 3 safety challenges of FRA—how it will (1) implement oversight of PTC;(2) adjust to changing rail traffic flows; and (3) ensure that it has enough inspectors for its workload.

GAO noted that while FRA has a long term safety plan, its ability to meet such goals are hampered by a lack of a strategic human capital plan.

GAO Recommendations:

GAO made two recommendations: that FRA develop (1) a plan for finalizing its rulemaking and interim steps to implement its oversight of safety risk reductions programs, and (2) a strategic human capital plan that identifies and prioritizes FRA's human capital needs.

14. OPERATORS OTHER THAN AMTRAK

This rule implements a pilot program for competitive selection of eligible petitioners in lieu of Amtrak to operate not more than three long-distance routes (as defined in 49 U.S.C. 24102), and operated by Amtrak on the date of enactment of the Passenger Rail Reform and Investment Act of 2015 (title XI of the Fixing America's Surface Transportation (FAST) Act, Pub. L. 114-94, 129 Stat. 1312, 1660-1664 (2015)). The rule establishes a petition, notification, and bid process by which FRA will evaluate, and ultimately select, bids to provide passenger rail service over particular long-distance routes. The final rule also, among other things, addresses FRA's execution of a contract with the winning bidder awarding the right and obligation to provide intercity passenger rail service over the route, along with an operating subsidy, subject to the 49 U. S. CC. 24405 grant conditions and such performance standards as the Secretary of Transportation (Secretary) may require.

15. REGULATORY FLEXIBILITY ACT

It is the purpose of this Act (5 U.S.C. 601-612) to establish as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration.

For each rule an agency promulgates and does not certify as having no significant impact on a substantial number of small entities, the Act requires the agency to prepare and make available for public comment a final regulatory flexibility analysis (FRFA) that describes the impact of the rule on small businesses, nonprofit enterprises, local governments, and other small entities.

16. EMERGENCY ESCAPE BREATHING APPARATUS

The 2008 law required FRA to adopt a rule requiring emergency breathing apparatus for employees who might be exposed to a hazardous materials accident. A Notice of Proposed Rulemaking was issued in 2010, but FRA issued only a Guidance Document covering this safety

device. 75 ed. Reg. 61386 (Oct. 5, 2010).

17. SPEED LIMITS

FRA Safety Advisory December 5, 2016 requested railroads to instruct their employees during training classes and safety briefings on the importance of compliance with maximum authorized train speed limits and other speed restrictions when entering passenger stations and terminals. 78 Fed. Reg. 76191.

18. USE OF ELECTRONIC DEVICES

It is illegal to use electronic devices while on duty. There are a few exceptions, such as to report an emergency, to document a safety hazard, or a violation of a law or regulation, after an accident. Also, cell phone use is permitted if allowed by a railroad in writing. If you are deadheading, the regulation will allow use so long as it does not interfere with any safety performance.

Some carriers have additional requirements. For example, NS does not allow an employee to use a cell phone with crew members in a crew room, or in the back of a van while deadheading.

Keep in mind that it is a violation just by having a phone on, even though it never rings or makes a noise.

49 C.F.R. part 220; 75 Fed. Reg. 59580 (Sept. 27, 2010)

19. STUB END TRACKS

As the result of an incident on New Jersey Transit in 2016, FRA issued a Safety Advisory which requested railroads to adopt procedures requiring communication between crew members and the locomotive engineer before and during operation into a station or terminal and/or implement technology to appropriately control and/or stop the train short of the stub end track. These actions could include:

- a. Making modifications to automatic train control (ATC), cab signal, or other signal systems capable of providing warning and enforcement to ensure trains comply with applicable speed limits and stop short of stub end tracks.
- b. If a railroad does not utilize an ATC, cab signal, or other signal system capable of providing warning and enforcement at applicable passenger terminals and stations with stub end tracks platforms (or if a signal system modification would interfere with the implementation of PTC or is otherwise not viable), making all passenger train movements at the identified locations while in communication with a second qualified crew member. This will provide constant communication with the locomotive engineer and allow the second crewmember to take immediate appropriate action if the locomotive engineer is not responding or is unable to stop short of stub end tracks. This could also include making a safety stop at predetermined location and if the locomotive engineer does not make an appropriate safety stop the second qualified crew member can take appropriate action to stop the train.

81 Fed. Reg. 87649 (Dec. 5, 2016).

20. SELECTED FRA REPORTS AND STUDIES SINCE 2008

1. Report to Congress on DOT's long-term (minimum 5-year) strategy for improving rail safety, including annual plans and schedules for achieving specified statutory goals, to be submitted with the *President's* annual budget. *Submitted with the President's budget for fiscal year 2011.*

1. Evaluate and review current local, State, and Federal laws regarding, trespassing on railroad property, vandalism affecting railroad safety, and violations of highway-rail grade crossing warning devices. *Submitted in 2009.*

2. Report to Congress detailing the results of DOT research about use of personal electronic devices in the locomotive cab by safety-related railroad employees. *Submitted May 27, 2010*

3. Report to Congress on DOT study on the expected safety effects of reducing inspection frequency of diesel-electric locomotives in limited service by railroad museums. *Submitted on Jul. 27, 2010.*

5. Study of methods to improve or correct passenger station platform gaps. *Submitted on Jan 10, 2011.*

6. Report to Congress on the results of DOT research about exposure of railroad employees and others to radiation. *Submitted on Jan; 27, 2011.*

7. Report to Congress on model plans and recommendations, to be developed through a task force to be established by DOT, to help railroads respond to passenger rail accidents *Submitted on Apr. 20, 2011.*

8. Report to Congress on the results of DOT research about track inspection intervals, etc. *Submitted on May 2, 2011.*

9. Report to Congress on DOT research about the effects of repealing a provision exempting Consolidated Rail Corporation, etc, from certain labor-related laws (45 U.S.C. § 797j) . *Submitted on May 26, 2011.*

10. Study to evaluate whether it is in the public interest to withhold from discovery or admission, in certain judicial proceedings for damages, the reports and data compiled to implement, etc., a required risk reduction program. *Submitted on Oct. 21, 2011.*

11. Report to Congress on the progress of railroads' implementation of PTC. Submitted in August 2012.

12. Report to Congress on (a) "the effectiveness of any [hours of service] ot.proj pursuant to a waiver" under 49 U.S.C. § 21108(a), (b) the status of all other waivers grant under that provision, and (c) recommendations for amendments to the hours of service laws. *Submitted on Oct. 20, 2014* (Mandate fulfilled unless a railroad conducts an additional pilot project under Sec 110 of RSIA. If that occurs, another report to Congress will become due.)

13 Report to Congress on certification of certain crafts or classes of railroad employees or contractors. Submitted on Nov. 4, 2015.

21. GUIDANCE DOCUMENTS

The FRA produces guidance documents to assist in clarifying and complying statutory and regulatory compliance; and communicating on certain issues. There have been more than 150 such documents issued by FRA. On February 5, 2019, DOT issued a notice to review existing guidance and determine whether they need to be updated, revised, or repealed.

22. FRA STRATEGY to PREVENT TRESPASSING

On February 19, 2019, the FRA issued a report entitled “National Strategy to Prevent Railroad Trespassing.” FRA’s strategy includes four strategic focus areas: data gathering and analysis, community site visits, funding, and partnerships with stakeholders.

Data gathering and analysis of trespass incidents and close-calls will enable FRA to target its resources to trespassing “hot spots.” Conducting community site visits will help FRA to learn more about the specific local circumstances that contribute to trespassing and work with partners to help implement and evaluate targeted mitigation strategies. Requesting and providing funding will support community-based efforts to deter trespassing. Finally, building strong and enduring partnerships with communities, law enforcement, railroads, and other organizations with a shared interest in saving lives will enable FRA to leverage and concentrate available resources, expertise, and local knowledge to combat trespassing.

Short term targets for success include stakeholder engagement and implementation of strategies that save lives at trespassing “hot spots.” Over the long term, FRA will measure the success of this National Strategy by how much trespassing incidents and casualties are reduced nationwide.