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 CFR 1.53, the Secretary delegated authority to issue regulations to the Research and Special Programs Administrator. Penalties for HMnj violations range from $275 to $32,500.

There are 10 parts to the hazardous materials regulations:

<table>
<thead>
<tr>
<th>Parts</th>
<th>Subject covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>171</td>
<td>This includes definitions, incident reporting requirements, a listing of sections, material incorporated by reference, and procedural requirements.</td>
</tr>
<tr>
<td>172</td>
<td>This contains a listing of hazardous materials in a table and various communications requirements for shipping paper descriptions, marking and labeling of packages, placarding of vehicles and bulk packagings, and emergency response communication.</td>
</tr>
<tr>
<td>173</td>
<td>This contains 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.</td>
</tr>
<tr>
<td>174-177</td>
<td>These contain requirements applicable to the various transport modes. Part 174 applies to transportation by rail.</td>
</tr>
<tr>
<td>178</td>
<td>This is addressed primarily to container manufacturers and sets out detailed construction specifications for all types of packagings.</td>
</tr>
</tbody>
</table>
This addresses specifications for tank cars.

This provides for requirements for the continuing qualification and maintenance of packagings.

Each hazardous material is identified in 3 ways as show below. In addition, some materials are listed by Packing Group.

<table>
<thead>
<tr>
<th>Identification</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Proper Shipping Name</td>
<td>Liquified Petroleum Gas</td>
</tr>
<tr>
<td>2. Hazard Class or Division</td>
<td>2.1</td>
</tr>
<tr>
<td>3. Identification Number</td>
<td>UN1075</td>
</tr>
<tr>
<td>4. Packing Group(^1/)</td>
<td>—</td>
</tr>
</tbody>
</table>

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 inspection required 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 inspection.

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" 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: \(^2/\)

\(^1/\) 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.

\(^2/\) See, e.g., 49 C.F.R. §§ 174.84 and 174.85 for specific placement requirements.
## Placement of HM Cars

<table>
<thead>
<tr>
<th>Car Type</th>
<th>Where Placed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustible Liquid</td>
<td>No restrictions</td>
</tr>
<tr>
<td>Class &quot;Keep away from food&quot;</td>
<td>No restrictions</td>
</tr>
<tr>
<td>Class 9</td>
<td>No restrictions</td>
</tr>
<tr>
<td>Explosives (Division 1.1 and 1.2)</td>
<td>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.</td>
</tr>
<tr>
<td>Poisonous gas (Division 7.3, Hazard Zone A)</td>
<td>No restrictions</td>
</tr>
<tr>
<td>Poisonous liquid (Division 6.1, Hazard Zone A)</td>
<td>No restrictions</td>
</tr>
<tr>
<td>Radioactive (Class 7)</td>
<td>Cannot be next to: —engine, —any loaded, placarded car with a different type of placard, —undeveloped film, —an occupied caboose.</td>
</tr>
<tr>
<td>Loaded, Placarded tank car</td>
<td>Must not be nearer than 6th car from engine or occupied caboose; Cannot be next to: —&quot;Radioactive&quot; 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.</td>
</tr>
<tr>
<td>Tank cars with residue placard</td>
<td>Must be one car separation from engine or occupied caboose.</td>
</tr>
</tbody>
</table>

The switching of certain placarded cars containing a white square background must not:

1. Be allowed to move under its own momentum; or

2. Be coupled into or struck by any other rail car with more force then is necessary to complete the coupling.³/

3. 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

³/ See 49 C.F.R. § 174.83 for specific rules covering switching of placarded cars.
leaking tank cars and leaking packages, marking, switching, and handling of placarded cars and various types of hazardous materials.

**APPLICABILITY OF THE HAZARDOUS MATERIALS REGULATIONS TO LOADING, UNLOADING, AND STORAGE**

The regulations address regulated (i.e., 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 non-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) Transloading 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: (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 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.

Docket HM-181 - Hazard Communication, Classification and Packaging:

On December 21, 1990, the Research and Special Programs Administration, 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 will be based upon performance standards, wherein the 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 the new 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. customary units of measurement. On an interim basis, U.S. customary units are included in parentheses 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 would be 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 are 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 packagings 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 packagings are capable of withstanding the rigors of transportation. (Minimum thickness requirements would 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 would be enhanced and, in some instances, made 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 packagings used for flammable or poisonous liquids. (See § 172.24b.)

12. To correct a shortcoming in the U.N. system, criteria are 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 replace, 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.


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" will be allowed.

RSPA will allow mixing of old and new U.N.-based hazard communication requirements during the transition period. This mixing will be allowed as follows:

- A package may be manufactured to the old regulations, even if marked and labeled under the new regulations;

- A package may be manufactured to the new regulations, even if marked and labeled under the old regulations;

- If either shipping names or identification numbers are identical, a shipping paper may display the old shipping description even if the package is marked and labeled under
the new shipping description;

- If either shipping names or identification numbers are identical, a shipping paper may display the new shipping description even if the package is marked and labeled under the old shipping description;

- Either old or new placards may be used during the appropriate placarding transition period regardless of whether old or new shipping descriptions and package markings are used; and

- Either old or new handling requirements, including segregation and stowage, may be used during the applicable transition period.
The physical appearance of the placards are as follows:5/

5/ Wherever an * appears on the placards shown here, they must contain the compatibility designation as shown in the compatibility table in § 174.81.
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 inner 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 5.1**
Background color: yellow
Symbol, text, numerals and border: black
ORGANIC PEROXIDE
Background color: yellow
Symbol, text, numerals and border: black

HARMFUL
STOW AWAY FROM FOODSTUFFS
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:

<table>
<thead>
<tr>
<th>CLASS</th>
<th>PLACARD COLOR</th>
<th>PLACARDS</th>
<th>SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1 Explosives Div. 1.1 Div. 1.2 Div. 1.3 Div. 1.4 Div. 1.5 Div. 1.6</td>
<td>Orange</td>
<td>Explosives</td>
<td>Bursting Ball</td>
</tr>
<tr>
<td>Class 2 Gasses Div. 2.1 Div. 2.2 Special placard Div. 2.2 Div. 2.3</td>
<td>Red</td>
<td>Flammable Gas</td>
<td>Flame</td>
</tr>
<tr>
<td></td>
<td>Green</td>
<td>Nonflammable Gas</td>
<td>Cylinder</td>
</tr>
<tr>
<td></td>
<td>Yellow</td>
<td>O2</td>
<td>Burning Ball</td>
</tr>
<tr>
<td>Class 3 Flammable &amp; Combustible Liquids</td>
<td>Red</td>
<td>Flammable</td>
<td>Flame</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Combustible</td>
<td>Flame</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gasoline</td>
<td>Flame</td>
</tr>
<tr>
<td>Class 4 Flammable Solids Div. 4.1 Spontaneously combustible Div. 4.2</td>
<td>Red Stripe</td>
<td>Flammable Solid</td>
<td>Flame</td>
</tr>
<tr>
<td></td>
<td>White Top Red Bottom Diamond</td>
<td>Spontaneously Combustible</td>
<td>Flame</td>
</tr>
<tr>
<td>Dangerous when hot Div. 4.3</td>
<td>Blue</td>
<td>Dangerous When Wet</td>
<td>Flame</td>
</tr>
<tr>
<td>Class 5 Oxidizers Div. 5.1</td>
<td>Yellow</td>
<td>Oxidizer</td>
<td>Burning Ball</td>
</tr>
<tr>
<td>Organic Peroxide Div. 5.2</td>
<td>Yellow</td>
<td>Organic Peroxide</td>
<td>Burning Ball</td>
</tr>
<tr>
<td>Class 6 Poisonous Div. 6.1 (PG I&amp;II)</td>
<td>White</td>
<td>Poison</td>
<td>Skull &amp; Cross bones</td>
</tr>
<tr>
<td>Poisonous Div. 6.1 (PG III)</td>
<td>White</td>
<td>Keep Away From Food</td>
<td>Wheat &amp; X</td>
</tr>
<tr>
<td>Infectious Substances</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Class 7 Radioactive</td>
<td>Yellow Top White Bottom Diamond</td>
<td>Radioactive</td>
<td>Propeller</td>
</tr>
<tr>
<td>Class 8 Corrosive</td>
<td>White Top Black Bottom Diamond</td>
<td>Corrosive</td>
<td>Test Tube &amp; Hands</td>
</tr>
<tr>
<td>Class 9 Misc. Hazardous Material</td>
<td>Vertical Black and White Striped Top White bottom Diamond</td>
<td>Class 9</td>
<td>None</td>
</tr>
<tr>
<td>Mixed loads of hazard classes</td>
<td>Upper and Lower Triangles Red on White Background</td>
<td>Dangerous</td>
<td>None</td>
</tr>
</tbody>
</table>

HM-175A CRASHWORTHINESS PROTECTION REQUIREMENTS FOR TANK CARS:

1. Regarding the head protection systems for existing tank cars with capacities less than 18,500 gallons, RSPA has required that there be full-head protection.
Tank cars transporting Division 2.1 materials must be modified no later than July 1, 2001, the remainder of the cars to be modified by July 1, 2006. Regarding the transportation of Division 2.2 materials, all new tank cars will require full-head protection, as well as existing tank cars currently without head protection. If the existing tank cars have a half-head protection, it will not need to be modified. All existing tank cars transporting Division 2.2 materials must be equipped with head protection by July 1, 2006. Division 2.1 gases are flammable gases, and Division 2.2 gases are non-flammable, and oxygen.

Existing tank cars without head protection are required to have a full-head protection installed when used to transport a Class 2 material.

2. Full-head protection is required for tank cars constructed from aluminum or nickel plate, when used to transport any hazardous material. These will be phased in during a 10 year modification program.

3. 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 will be 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. There is a 10 year phase in period for existing tank cars.

4. 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.

5. The construction of new tank cars having an internal self-energized manway located below the liquid level of the lading is prohibited.

6. Effective July 1, 1996, the use of non-pressure tank cars will be prohibited for transporting materials poisonous by inhalation. These type of tank cars are primarily DOT 111A, which have known to be highly susceptible to rupture in a railroad derailment.

7. The use of 105A 100W, 111A 100W4, 112A 200W, and 114A 340W tank cars for transporting ethyl chloride and ethyl methyl ether will be 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.
8. The final rule permits 3 levels of protection 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.

9. To retard rust or corrosion, the final rule requires a protective coating on a carbon steel tank shell and tank jacket. 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.

10. 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).

11. In general the new regulations allow 5 years for modification for the tank cars which are built after the effective date of the final rule. For tank cars built prior to the effective date, the phase-in period is 10 years--at least 50% of the fleet must 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 must be modified as of July 1, 2001.

HM-201 DETECTION AND REPAIR OF CRACKS, PITS, CORROSION, LINING FLAWS AND OTHER DEFECTS OF TANK CAR TANKS:

This rulemaking sets 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, RSPA has issued this rulemaking.

1. The FRA has 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, RSPA proposed an inspection and test interval of 10 years, which would allow for two opportunities to inspect the equipment before predicted failure. Also, the rule covers corrosion and required inspection and testing schedules. The final rule requires that the tank car industry will not have to comply until 24 months after issuance of the rule for tank cars without metal jackets, and 48 months for cars having a metal jacket or a thermal protection system. Before the compliance date, tank cars may be given an inspection and hydrostatic test in accordance with the then current requirements. After the compliance date, each tank car must be given an inspection and test according to the requirements contained in this final rule or before the next scheduled tank hydrostatic pressure test date.

2. The FRA has 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.

3. 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.

4. 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.

5. A structural integrity inspection and test is required in areas known to develop cracks. Such inspection and test will 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.

6. Regarding service-life shell fitness, there is no overall limit on the amount of surface area with localized reduced shell thickness; rather, such limitations will 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 downrated to a 111. The procedure for conducting thickness measurements throughout the tank shell is left to the car owners written maintenance plans.

7. 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.

8. 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.

9. 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.

10. 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 creates a rebuttable presumption standard aimed specifically at loose closures on tank cars. That is, if a loose closure is discovered it is presumed that it was not designed properly or it was not tightened properly.

HM-169A COMPATIBILITY WITH REGULATIONS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY:

The purpose of this regulation is to harmonize the hazardous materials regulations with those of the International Atomic Energy Agency. In general, the final rule requires 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.

1. 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.

2. 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 would require 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.

3. 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.

4. It is made clear that the requirements in the regulation apply to both offerors and carriers of radioactive material.

5. Any radiation protection program already in place and approved by an appropriate Federal or State agency is deemed adequate to meet the radiation protection
requirements of the rule.

6. 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 the packages.

7. 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. The effective date of this provision is April 1, 1997.

8. The table which sets the maximum activity of a special form of radioactive material permitted in a certain package has been expanded by nearly 100 entries to include all radionuclides.

9. The final rule has established a single set of criteria for all packages of fissile materials.

10. 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.

HM-169L EDITORIAL CORRECTIONS AND CLARIFICATION’S:

In general, this rule makes technical corrections and minor regulatory changes. For example, the definition of a HazMat 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.

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.

1. The FRA’s methods for approving the transportation of hazardous materials in COFC and TOFC has been adopted, but eliminates any approval process.

2. 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.

4. 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.

INCIDENT REPORTING REQUIREMENTS

The RSPA 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. Each notice must include the following information: (1) Name of reporter; (2) Name and address of person represented by reporter; (3) Phone number where reporter can be contacted; (4) Date, time, and location of incident; (5) The extent of injury, if any; (6) Class or division, proper shipping name, and quantity of hazardous materials involved, if such information is available; and (7) Type of incident and nature of hazardous material involvement and whether a continuing danger to life exists at the scene. (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) 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. (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, Research and Special Programs Administration, Department of Transportation, Washington, DC 20590–0001. Submit an electronic Hazardous Material Incident Report to the Information System Manager, DHM–63, Research and Special Programs Administration, Department of Transportation, Washington, DC 20590–0001 at http://hazmat.dot.gov and (2) Retain a written or electronic copy of the Hazardous Materials Incident Report for a period of two years at the reporting person’s principal place of business. If the written or electronic Hazardous Materials Incident Report is maintained at other than the reporting person’s principal place of business, the report must be made available at the reporting person’s principal place of business within 24 hours of a request for the report by an authorized representative or special agent of the Department of Transportation. (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.

RULEMAKING PROCEDURES:

Effective July 15, 1996, RSPA promulgated a new streamlined procedure for issuing 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 RSPA does not receive an adverse comment or notice of intent to file opposition to the proposed rule.

AVAILABILITY OF RSPA DECISIONS:

In a notice dated September 14, 1995, RSPA 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.

HAZARDOUS MATERIALS TRANSPORTATION UNIFORM SAFETY ACT OF 1990:

In 1990 Congress made significant changes in the hazardous materials laws. A summary of the sections specifically covering railroad transportation follows.

Section 4. Federal Regulations Governing Transportation of Hazardous Materials

This section essentially rewrote 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.

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:

... 

(B) 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.

(C) 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. Penalties

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

(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.

7/ On February 28, 1991, RSPA issued final regulations covering this matter.

8/ See footnote 18.
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 RSPA. 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 RSPA, 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:

1. 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.

2. 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/carryer 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.

**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