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**UNITED STATES OF AMERICA
SURFACE TRANSPORTATION BOARD**

STB Ex Parte No. 677 (Sub No. 1)

***COMMON CARRIER OBLIGATION OF RAILROADS – TRANSPORTATION OF
HAZARDOUS MATERIALS***

**COMMENTS OF
NORFOLK SOUTHERN RAILWAY COMPANY**

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Railway Company***

Dated: July 10, 2008

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

EX PARTE 667 (SUB-NO. 1)

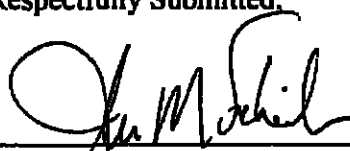
**COMMON CARRIER OBLIGATIONS OF RAILROADS – TRANSPORTATION
OF HAZARDOUS MATERIALS**

**WRITTEN STATEMENT OF
NORFOLK SOUTHERN RAILWAY COMPANY**

Norfolk Southern Railway Company ("NS") submits these comments in the above captioned proceeding. NS incorporates by reference NS's comments in Ex Parte 677. NS now submits the following additional comments.

- A. Government has special rules for the transportation of toxic inhalation hazards ("TIH") and has proposed additional rules. The most significant new rules and proposed rules are attached as Appendix A-C.
- B. These new and proposed rules will impose additional costs on a railroad when it handles any TIH.
- C. These rules will do more than simply increase the cost of handling TIH commodities. They will have adverse impacts on the rail network and cascading impacts on shippers of all commodities, including coal, intermodal, automotive, steel, paper, lumber, military equipment, and grain.
- D. NS has been studying the potential impacts of some of these rules and sees real, adverse impacts on operations and increased costs on both TIH and non-TIH traffic.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "John M. Scherb", is written over a horizontal line.

James A. Hixon
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Company***

Dated: July 10, 2008

APPENDIX A



Federal Register

Thursday,
December 21, 2006

Part V

Department of Homeland Security

Transportation Security Administration

49 CFR Parts 1520 and 1580
Rail Transportation Security; Proposed
Rule

DEPARTMENT OF HOMELAND SECURITY

Transportation Security Administration

49 CFR Parts 1520 and 1580

[Docket No. TSA-2006-26514]

RIN 1852-AA51

Rail Transportation Security

AGENCY: Transportation Security Administration, DHS.

ACTION: Notice of proposed rulemaking.

SUMMARY: This proposal would enhance the security of our Nation's rail transportation system. The Transportation Security Administration (TSA) proposes security requirements for freight railroad carriers, intercity, commuter, and short-haul passenger train service providers, rail transit systems; and rail operations at certain, fixed-site facilities that ship or receive specified hazardous materials by rail. This rule proposes to codify the scope of TSA's existing inspection program and to require regulated parties to allow TSA and Department of Homeland Security (DHS) officials to enter, inspect, and test property, facilities, and records relevant to rail security. This rule also proposes that regulated parties designate rail security coordinators and report significant security concerns to DHS.

TSA further proposes that freight rail carriers and certain facilities handling hazardous materials be equipped to report location and shipping information to TSA upon request and to implement chain of custody requirements to ensure a positive and secure exchange of specified hazardous materials. TSA also proposes to clarify and extend the sensitive security information (SSI) protections to cover certain information associated with rail transportation.

This proposal would allow TSA to enhance rail security by coordinating its activities with other Federal agencies, which would also avoid duplicative inspections and minimize the compliance burden on the regulated parties. This proposed rule is intended to augment existing rail transportation laws and regulations that the Department of Transportation (DOT) administers. In today's edition of the Federal Register, the Pipeline and Hazardous Materials Safety Administration (PHMSA) is publishing an NPRM proposing to revise the current requirements in the Hazardous Materials Regulations applicable to the safe and secure transportation of

hazardous materials transported in commerce by rail.

DATES: Submit comments by February 20, 2007.

ADDRESSES: You may submit comments, identified by the TSA docket number to this rulemaking, using any one of the following methods:

Comments Filed Electronically: You may submit comments through the docket Web site at <http://dms.dot.gov>. You may also submit comments through the Federal eRulemaking portal at <http://www.regulations.gov>.

Comments Submitted by Mail, Fax, or In Person: Address or deliver your written, signed comments to the Docket Management System, U.S. Department of Transportation, Room Plaza 401, 400 Seventh Street, SW, Washington, DC 20590-0001; Fax: 202-493-3251.

See SUPPLEMENTARY INFORMATION for format and other information about comment submissions.

FOR FURTHER INFORMATION CONTACT: For questions related to rail security: Lisa Pena, Transportation Sector Network Management, Freight Rail Security, TSA-28, Transportation Security Administration, 601 South 12th Street, Arlington, VA 22202-4220, telephone (571) 227-4414, facsimile (571) 227-1923; e-mail lisa.pena@dhs.gov.

For legal questions: David H. Kasminoff, Office of Chief Counsel, TSA-2, Transportation Security Administration, 601 South 12th Street, Arlington, VA 22202-4220, telephone (571) 227-3583, facsimile (571) 227-1378, e-mail david.kasminoff@dhs.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

TSA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from this rulemaking action. See ADDRESSES above for information on where to submit comments.

With each comment, please include your name and address, identify the docket number at the beginning of your comments, and give the reason for each comment. The most helpful comments reference a specific portion of the rulemaking, explain the reason for any recommended change, and include supporting data. You may submit comments and material electronically, in person, by mail, or fax as provided under ADDRESSES, but please submit your comments and material by only one means. If you submit comments by mail or delivery, submit them in two copies, in an unbound format, no larger

than 8 1/2 by 11 inches, suitable for copying and electronic filing.

If you want TSA to acknowledge receipt of comments submitted by mail, include with your comments a self-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it to you.

TSA will file in the public docket all comments received by TSA, except for comments containing confidential information and sensitive security information (SSI).¹ TSA will consider all comments received on or before the closing date for comments and will consider comments filed late to the extent practicable. The docket is available for public inspection before and after the comment closing date.

Handling of Confidential or Proprietary Information and Sensitive Security Information (SSI) Submitted in Public Comments

Do not submit comments that include trade secrets, confidential commercial or financial information, or SSI to the public regulatory docket. Please submit such comments separately from other comments on the rulemaking. Comments containing this type of information should be appropriately marked as containing such information and submitted by mail to the address listed in FOR FURTHER INFORMATION CONTACT section.

Upon receipt of such comments, TSA will not place the comments in the public docket and will handle them in accordance with applicable safeguards and restrictions on access. TSA will hold them in a separate file to which the public does not have access, and place a note in the public docket that TSA has received such materials from the commenter. If TSA receives a request to examine or copy this information, TSA will treat it as any other request under the Freedom of Information Act (FOIA) (5 U.S.C. 552) and DHS' FOIA regulation found in 6 CFR part 5.

Reviewing Comments in the Docket

Please be aware that anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

¹ Sensitive Security Information (SSI) is information obtained or developed in the conduct of security activities, the disclosure of which would constitute an unwarranted invasion of privacy, reveal trade secrets or privileged or confidential information, or be detrimental to the security of transportation. The protection of SSI is governed by 49 CFR part 1520.

You may review the applicable Privacy Act Statement published in the Federal Register on April 11, 2000 (65 FR 19477), or you may visit <http://dms.dot.gov>. See also TSA's Systems of Records Notice 006, 68 FR 49503 (August 18, 2003).

You may review the comments in the public docket by visiting the Dockets Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Dockets Office is located on the plaza level of the Nassif Building, at the Department of Transportation address previously provided under ADDRESSES. Also, you may review public dockets on the Internet at <http://dms.dot.gov>.

Availability of Rulemaking Document

You can get an electronic copy using the Internet by (1) Searching the Department of Transportation's electronic Docket Management System (DMS) web page (<http://dms.dot.gov/search>);

(2) Accessing the Government Printing Office's web page at <http://www.gpoaccess.gov/fr/index.html>, or

(3) Visiting TSA's Security Regulations web page at <http://www.tsa.gov> and accessing the link for "Research Center" at the top of the page.

In addition, copies are available by writing or calling the individual in the FOR FURTHER INFORMATION CONTACT section. Be sure to identify the docket number of this rulemaking.

Abbreviations and Terms Used in This Document

ACI—Automatic Equipment Identification
Amtrak—National Railroad Passenger Corporation
CBP—Bureau of Customs and Border Protection
FRA—Federal Railroad Administration
FTA—Federal Transit Administration
GPS—Global Positioning System
HMR—Hazardous Materials Regulations
HSPD—Homeland Security Presidential Directive
HTUA—High Threat Urban Area
IED—Improvised Explosive Device
MOU—Memorandum of Understanding
OA—State Safety Oversight Agency
PHMSA—Pipeline and Hazardous Materials Safety Administration
PIH—Material Poisonous by Inhalation (PIH is another term for TIH)
RFID—Radio Frequency Identification
RSC—Rail Security Coordinator
SAFETEA-LU—Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users
SD—Security Directive
SSI—Sensitive Security Information
STB—Surface Transportation Board

TIH—Toxic Inhalation Hazard (TIH is another term for PIH)
UASI—Urban Areas Security Initiative

Outline of Proposed Rulemaking

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- V. Rulemaking Analysis and Notices
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 - C. Paperwork Reduction Act
 - D. International Trade Impact Assessment
 - E. Unfunded Mandates Reform Act Analysis
 - F. Executive Order 13132 (Federalism)
 - G. Environmental Analysis
 - H. Energy Impact Analysis

I. Background and Purpose

A. Summary of Proposed Requirements

TSA proposes security regulations that would cover a broad spectrum of the rail transportation sector, including freight railroad carriers, passenger railroad carriers, rail transit systems, and rail operations at certain facilities that ship or receive specified categories and quantities of hazardous materials. TSA proposes these regulations to enhance the security of rail transportation and to address potential security threats to rail transportation. TSA intends for these proposed regulations to build upon existing Department of Transportation (DOT) procedures and requirements.

TSA's proposal is also intended to augment a DOT proposal to revise the

current requirements in the Hazardous Materials Regulations applicable to the safe and secure transportation of hazardous materials transported in commerce by rail. In this regard, in today's edition of the Federal Register, PHMSA is publishing an NPRM proposing to require railroad carriers to compile annual data on specified shipments of hazardous materials, use the data to analyze safety and security risks along rail transportation routes where those materials are transported, assess alternative routing options, and make routing decisions based on those assessments. PHMSA's proposal would also clarify its current security plan requirements to address en route storage, delays in transit, delivery notification, and impose additional security inspection requirements for hazardous materials shipments.

TSA's rule proposes to apply several general requirements to all freight and passenger railroad carriers, certain facilities that ship or receive specified hazardous materials by rail, and rail transit systems:

- **Rail Security Coordinator.** Covered entities must designate a rail security coordinator (RSC) and at least one alternate RSC to be available to TSA on a twenty-four hour, seven day per week basis to serve as primary contact for receipt of intelligence information and other security-related activities.
- **Reporting.** Covered entities must immediately report incidents, potential threats, and significant security concerns to TSA.

- **TSA Inspection.** Covered entities must allow TSA and DHS officials working with TSA to enter and conduct inspections, tests, and such other duties to carry out TSA's statutory responsibilities. This may include copying of records.
- **Sensitive Security Information.** This rule clarifies and extends the protection afforded to sensitive security information (SSI) in rail transportation and further identifies covered persons to include railroad carriers, certain rail operations at facilities, and rail transit systems.

The rule also proposes to apply additional requirements to freight railroad carriers and certain facilities that ship or receive specified hazardous materials by rail.

• **Location and Shipping Information.** Covered entities must provide to TSA, upon request, the location and shipping information of rail cars within their physical custody or control that contain a specified category and quantity of hazardous material. The information must be provided to TSA no later than one hour after receiving the request.

• **Chain of Custody and Control**
Covered entities must provide for a secure chain of custody and control of rail cars containing a specified quantity and type of hazardous material.

TSA proposes three categories and quantities of specified hazardous materials to which the proposed requirements in this NPRM would apply. The definitions are taken from DOT's Hazardous Materials Regulations (49 CFR Parts 171–180), as follows.

(1) A rail car containing more than 2,268 kg (5,000 lbs) of a Division 1.1, 1.2, or 1.3 (explosive) material, as defined in 49 CFR 173.50;

(2) A tank car containing a material poisonous by inhalation as defined in 49 CFR 171.8, including Division 2.3 gases poisonous by inhalation, as set forth in 49 CFR 173.113 (c) and Division 6.1 liquids meeting the defining criteria in 49 CFR 173.132(a)(1)(iii) and assigned to hazard zone A or hazard

zone B in accordance with 49 CFR 173.133(a), other than residue, and

(3) A rail car containing a highway route-controlled quantity of a Class 7 (radioactive) material, as defined in 49 CFR 173.403.

Appendix B to proposed part 1580, reproduced as Table 1 below, presents a brief summary of the proposed security measures required for the different categories of rail transportation entities that this rule would govern.

TABLE 1.—TSA RAIL SECURITY NPRM SUMMARY

Proposed security measure and rule section	Freight railroad carriers NOT transporting specified hazardous materials	Freight railroad carriers transporting specified hazardous materials (1580.100(b))	Rail operations at certain facilities that ship (i.e., offer, prepare, or load for transportation) hazardous materials	Rail operations at certain facilities that receive or unload hazardous materials within HTUA	Passenger railroad carriers and rail transit systems	Certain other rail operations (private, business/office, circus, tourist, historic, excursion)
Allow TSA to inspect (1580.5)	X	X	X	X	X	X
Appoint rail security coordinator (1580.101 freight; 1580.201 passenger).	X	X	X	X	X	Only if notified in writing that security threat exists
Report significant security concerns (1580.105 freight; 1580.203 passenger)	X	X	X	X	X	X
Provide location and shipping information for rail cars containing specified hazardous materials if requested (1580.103).		X	X	X		
Chain of custody and control requirements for transport of specified hazardous materials that are or may be in HTUA (1580.107)		X	X	X		

B Basis for the Proposed Rule

In developing this rule, TSA sought to identify and address threats to rail transportation. With respect to passenger rail, TSA recognizes that passenger railroad carriers, commuter operations, and subway systems are high consequence targets in terms of potential loss of life and economic disruption. They carry large numbers of people in a confined environment, offer the opportunity for specific populations to be targeted at particular destinations, and often have stations located below or adjacent to high profile government buildings, major office complexes, and iconic structures. Terrorist bombings since 1995 highlight the need for improved government access to, and monitoring of, transportation of passengers by rail. Terrorists have attacked the Tokyo subway system (1995); areas in and around the Moscow subway system (2000, 2001, and 2004); Madrid commuter trains (2004); the London Underground system (2005); and the train system in Mumbai

(formerly known as Bombay), India (2006)

TSA also considered the threats that face freight rail transportation. Due to the open infrastructure of the rail transportation system, freight trains can be particularly vulnerable to attack. Currently, rail carriers and shippers lack positive chain of custody and control procedures for rail cars as they move through the transportation system (e.g., as entities load the rail cars at originating facilities, as carriers transport the cars over the tracks, and as entities unload the cars at receiving facilities). This can present a significant vulnerability. Whenever entities stop rail cars in transit and interchange them without appropriate security measures, their practices can create security vulnerabilities. Freight trains transporting hazardous materials are of even more concern, because an attack on those trains (e.g., through the use of improvised explosive devices (IEDs))²

² An IED is a device fabricated in an improvised manner that incorporates in its design explosives or destructive, lethal, noxious, pyrotechnic, or

could result in the release of hazardous materials

TSA is taking a risk-based approach by focusing on shipments of certain hazardous materials at this time. Thus, this rulemaking is focused on establishing chain of custody and control procedures for rail cars that pose the greatest security vulnerability. While an IED attached to any rail car (such as a car transporting coal or household appliances) would obviously cause major damage to that car, and its contents upon detonation, the more likely scenario is that terrorists would target a rail car containing certain hazardous materials in order to inflict the most damage in terms of loss of life and property, and economic effect.

To determine which hazardous materials to identify in this proposed regulation, TSA looked to the hazardous materials that the Pipeline and Hazardous Materials Safety Administration (PHMSA) identified in

incendiary chemicals. It generally includes a power supply, a switch or timer, and a detonator or initiator

its HM-232 rule.³ From the list in HM-232, TSA identified three categories⁴ of hazardous materials that pose the greatest risk: materials that are poisonous by inhalation (PIH),⁵ explosive, and radioactive. In this proposed rule, TSA applies specific requirements to certain carriers and facilities that deal with these materials.

PHMSA considers the phrases "material poisonous by inhalation," "poisonous inhalation hazard," and "toxic inhalation hazard" to be synonymous and interchangeable. However, PHMSA referred to such material in the HM-232 rule text exclusively by the term "material poisonous by inhalation." See 49 CFR 172.800(a)(3). In this NPRM, TSA uses a subset of the HM-232 list as the criterion for portions of this rule, and so this rule uses the term PIH (and also "material poisonous by inhalation") to maintain consistency with the PHMSA HM-232 rule.

Each of these three hazardous materials presents serious risks. The release of PIH materials in a densely populated urban area would have catastrophic consequences. Such a release would endanger significant numbers of people. An example of this was seen in the January 8, 2005, rail accident in Graniteville, South Carolina. A Norfolk Southern Railway Company freight train carrying chlorine was unexpectedly diverted from the main track onto a rail spur. The train struck a standing train on the rail spur, derailing three locomotives and sixteen rail cars and rupturing a tank car carrying chlorine. Even in this sparsely populated area, the collision resulted in fatal injuries to eight citizens and one railroad employee, injuries to 630 people, and the evacuation of 5,400 local residents. Damages to equipment and track totaled more than \$2.3 million. While the accident was not the result of a terrorist attack, it nonetheless illustrates the danger of transporting PIH materials and the damage that can result from a release.

Although the number of rail shipments carrying explosives and radioactive materials is relatively low, a release of these materials could cause serious and devastating harm. If

terrorists detonated certain explosives⁶ at critical points in the transportation cycle, they could cause significant loss of life, damage to infrastructure, and harm to the national economy. If terrorists perpetrated an attack against a rail car transporting certain radioactive materials,⁷ they could endanger a significant number of people as well as disrupt the supply chain as a result of contamination.

The proposed rule will address the above-identified threats to rail transportation. The provisions in this proposed rule, including those allowing for TSA inspections and those requiring the designation of Rail Security Coordinators and the reporting of suspicious incidents, will improve TSA's ability to inspect rail operations and communicate with railroads and rail facilities. This will provide TSA and DHS with better information and monitoring capabilities concerning potential transportation security incidents involving rail travel. Also, the requirements related to hazardous materials, such as additional monitoring and protection of certain rail cars and increased availability of location and tracking information for certain rail cars, will decrease the vulnerabilities of these hazardous materials shipments to attack. Through these measures, TSA will significantly increase its domain awareness regarding rail security. TSA will continue to work with all involved entities to improve rail security.

II. Statutory and Regulatory Authorities

A. TSA Authorities To Regulate Rail Security

TSA has the primary federal role in enhancing security for all modes of transportation. Under the Aviation and Transportation Security Act (ATSA)⁸ and delegated authority from the Secretary of Homeland Security, TSA has broad responsibility and authority for "security in all modes of transportation" * * * including security responsibilities * * * over modes of transportation that are exercised by the Department of Transportation."⁹

³ Explosives in Class I are divided into six divisions. However, as discussed in section III A of this preamble, TSA proposes to apply subpart B to part 1500 only to rail cars containing more than 2,268 kg (5,000 lbs) of a Division 1.1, 1.2 or 1.3 explosive material.

⁴ See 49 CFR 173, subpart II.

⁵ Pub. L. 107-71, 115 Stat. 507 (November 19, 2001).

⁶ See 40 U.S.C. 114(d). The TSA Assistant Secretary's current authorities under ATSA have been delegated to him by the Secretary of Homeland Security. Section 403(2) of the Homeland Security Act (HSA) of 2002, Pub. L. 107-296, 115 Stat. 2315 (2002), transferred all functions of TSA, including those of the Secretary of Transportation and the

TSA has additional authorities as well. TSA is specifically empowered to develop policies, strategies, and plans for dealing with threats to transportation.¹⁰ As part of its security mission, TSA is responsible for assessing intelligence and other information to identify individuals who pose a threat to transportation security and to coordinate countermeasures with other Federal agencies to address such threats.¹¹ TSA enforces security-related regulations and requirements,¹² ensures the adequacy of security measures for the transportation of cargo,¹³ oversees the implementation and ensures the adequacy of security measures at transportation facilities,¹⁴ and carries out other appropriate duties relating to transportation security.¹⁵ TSA has broad regulatory authority to achieve ATSA's objectives, and may issue, rescind, and revise such regulations as are necessary to carry out TSA functions.¹⁶ TSA is also charged with serving as the primary liaison for transportation security to the intelligence and law enforcement communities.¹⁷

TSA's authority with respect to transportation security is comprehensive and supported with specific powers related to the development and enforcement of regulations, SDs, security plans, and other requirements. Accordingly, under this authority, TSA may assess a security risk for any mode of transportation, develop security measures for dealing with that risk, and enforce compliance with those measures.

On December 17, 2003, the President issued Homeland Security Presidential Directive 7 (HSPD-7, Critical Infrastructure Identification, Prioritization, and Protection), which "establishes a national policy for Federal departments and agencies to identify and prioritize United States critical infrastructure and key resources and to protect them from terrorist attacks."¹⁸ In recognition of the lead

Under Secretary of Transportation of Security related to TSA to the Secretary of Homeland Security. Pursuant to DHS Delegation Number 7080.2, the Secretary delegated to the Assistant Secretary (then referred to as the Administrator of TSA), subject to the Secretary's guidance and control, the authority vested in the Secretary with respect to TSA, including that in section 403(2) of the HSA.

¹⁰ 49 U.S.C. 114(f)(3).

¹¹ 49 U.S.C. 114(f)(1)-(5) (h)(1)-(4).

¹² 49 U.S.C. 114(f)(7).

¹³ 49 U.S.C. 114(f)(10).

¹⁴ 49 U.S.C. 114(f)(11).

¹⁵ 49 U.S.C. 114(f)(15).

¹⁶ 49 U.S.C. 114(i)(1).

¹⁷ 49 U.S.C. 114(j)(1) and (5).

¹⁸ HSPD-7, Paragraph 1.

² See Section II B of this preamble for a detailed discussion of the HM-232 rule.

⁴ TSA also identified specified quantities of those hazardous materials. See Section I B of this preamble or 49 CFR 1580.100(b) for a list of the quantities.

⁵ PIH materials are gases or liquids that are known or presumed on the basis of tests to be so toxic to humans as to pose a hazard to health during transportation. See 49 FR 50088, 49 CFR 171.8 173.115, and 173.132.

role that DHS has for transportation security, and consistent with the powers that ATSA grants to TSA, the directive provides that the roles and responsibilities of the Secretary of DHS include coordinating protection activities for "transportation systems, including mass transit, aviation, maritime, ground/surface, and rail and pipeline systems" ¹⁹ In furtherance of this coordination process, HSPD-7 provides that DHS and DOT will "collaborate on all matters relating to transportation security and transportation infrastructure protection" ²⁰

To ensure that this collaboration occurs, DHS and DOT entered into a Memorandum of Understanding (MOU) on September 28, 2004. In accordance with the September 2004 MOU, both Departments share responsibility for rail and hazardous materials transportation security. The two Departments consult and coordinate on security-related rail and hazardous materials transportation requirements to ensure consistency with overall security policy goals and objectives and to ensure that the Federal agencies do not confront the regulated industry with inconsistent security guidance or requirements. The close coordination that has led to these proposed regulations is consistent with the MOU.

On August 9, 2006, PHMSA and TSA signed an annex to the September 28, 2004 DOT-DHS Memorandum of Understanding (MOU) on Roles and Responsibilities. The purpose of the annex is to delineate clear lines of authority and responsibility and promote communication, efficiency, and non-duplication of effort through cooperation and collaboration in the area of hazardous materials transportation security based on existing legal authorities and core competencies. The annex acknowledges that DHS has lead authority and primary responsibility for security activities in all modes of transportation, and notes that TSA is the lead Federal entity for transportation security, including hazardous materials security. Similarly, on September 28, 2006, FRA and TSA signed an annex to address each agency's roles and responsibilities for rail transportation security. The FRA-TSA annex recognizes that TSA acts as the lead Federal entity for transportation security generally and rail security in particular. The annex also recognizes that FRA has authority over every area of railroad safety (including security), and that FRA enforces PHMSA's

hazardous material regulations. The FRA-TSA annex includes procedures for coordinating (1) planning, inspection, training, and enforcement activities; (2) criticality and vulnerability assessments and security reviews; (3) communicating with affected stakeholders; and (4) use of personnel and resources.

TSA's proposed requirements are designed to strengthen the existing regulatory scheme. TSA developed these proposed regulations, which are consistent with DOT's regulations, through close coordination with DOT. The discussion below explains the current and proposed DOT requirements and how TSA's proposed rule would fit into the regulatory framework DOT has established.

B Department of Transportation Regulation of Rail Security

DOT regulates and oversees rail security through three of its modal administrations: The Pipeline and Hazardous Materials Safety Administration (PHMSA), the Federal Railroad Administration (FRA), and the Federal Transit Administration (FTA).

The Federal hazardous materials transportation law (Federal hazmat law),²¹ authorizes the Secretary of Transportation to establish regulations for the safe transportation, including security, of hazardous materials in intrastate, interstate, and foreign commerce.²² The Secretary of Transportation has delegated this authority to PHMSA.²³ See 49 CFR 1.53; see 49 CFR parts 171-180. PHMSA has issued several rulemakings addressing rail security under this authority.

On March 25, 2003, PHMSA published a final rule, referred to as HM-232, which requires covered persons to develop and implement security plans. Covered persons include those who offer certain hazardous materials for transportation in commerce and those who transport

certain hazardous materials in commerce.²⁴ The HM-232 final rule requires persons who offer for transportation or transport the following hazardous materials to develop and implement security plans: (1) A highway route-controlled quantity of a Class 7 (radioactive) material; (2) more than 25 kg (55 lbs) of a Division 1.1, 1.2, or 1.3 (explosive) material; (3) more than 1 L (1.06 qt) per package of a material poisonous by inhalation in hazard zone A; (4) a shipment in a bulk packaging with a capacity equal to or greater than 13,248 L (3,500 gal) for liquids or gases or greater than 13.24 cubic meters (468 cubic feet) for solids; (5) infectious substances listed as select agents by the Centers for Disease Control and Prevention (CDC) in 42 CFR part 73; and (6) a shipment that requires placarding.²⁵ In effect, then, the HM-232 final rule applies the security plan requirement to a shipper or carrier of a hazardous material in an amount that requires placarding and to select agents HM-232 requires covered persons to perform an assessment of the transportation security risks associated with the materials they handle and to implement methods for addressing those risks. At a minimum, the security plan must address personnel security, prevention of unauthorized access, on route security, and training of employees.

Other PHMSA regulations seek to reduce the risks to safety and security of leaving loaded rail cars unattended for long periods of time. Pursuant to 49 CFR 174.14 and 174.16, a carrier must forward each shipment of hazardous materials "promptly and within 48 hours (Saturday, Sundays, and holidays excluded)" after the carrier accepts the shipment at the originating point or the carrier receives the shipment at any yard, transfer station, or interchange point. Where there is only biweekly or weekly service, the carrier must forward a shipment of hazardous materials in the first available train. Additionally, carriers are prohibited from holding, subject to forwarding orders, tank cars

²¹ 49 U.S.C. 5101 et seq., as amended by sec. 1711 of the Homeland Security Act of 2002, (Pub. L. 107-266, Nov. 25, 2002) and Title VII of the Safe, Accountable, Flexible and Efficient Transportation Equity Act: Legacy for Users (SAFETEA-LU) (Pub. L. 109-59, Aug. 10, 2005).

²² A hazardous material is defined as a substance or material, or a group or class of material, (including an explosive, radioactive material, infectious substance, flammable or combustible liquid, solid, or gas; toxic, oxidizing, or corrosive material; and compressed gas) when transported in a particular amount or form that the Secretary of Transportation determines may pose an unreasonable risk to health and safety or property. See 49 U.S.C. 5102(2) and 5103(a).

²³ PHMSA is the Federal agency charged with protecting the Nation from the risks to life, health, property, and the environment inherent in the commercial transportation of hazardous materials by all modes of transportation, including pipelines.

²⁴ 68 FR 14510. See 49 CFR 172.800, 172.802, and 172.804. PHMSA amended HM-232 with HM-240 (DOT Docket No. PHMSA-2005-22208, 70 FR 7115b (December 5, 2005)). HM-240 revised terminology, definitions, and requirements for consistency with the Hazardous Materials Safety and Security Reauthorization Act of 2003, Title VII of Pub. L. 108-59, 117 Stat. 1144 (August 10, 2003).

²⁵ Under the Hazardous Materials Regulations, placards are required for hazardous materials that pose significant transportation risks. Placards use colors, symbols, numbers and text. This is part of DOT's system of hazard communication. The system notifies emergency responders and those who must handle the packages in the course of their employment how to handle the items in transportation and in the event of an accident.

¹⁹ HSPD-7, Paragraph 15.

²⁰ HSPD-7, Paragraph 22(h).

loaded with Division 2.1 (flammable gas), Division 2.3 (poisonous gas) or Class 3 (flammable liquid) materials.

PHMSA, in consultation with the Federal Railroad Administration (FRA) and TSA, has recently proposed to revise the current requirements in the hazardous materials regulations (HMR) applicable to the safe and secure transportation of hazardous materials transported in commerce by freight rail (Route Analysis NPRM). Among other things, PHMSA is proposing to require freight railroad carriers to compile annual data on specified shipments of hazardous materials, use the data to analyze safety and security risks along rail transportation routes where those materials are transported, assess alternative routing options; and make routing decisions based on those assessments.

FRA, the agency within DOT responsible for railroad safety, administers the Federal railroad safety laws, which provide FRA with authority over "every area of railroad safety."²⁰ 49 U.S.C. 20103(a). The agency has issued a wide range of safety regulations. In addition, FRA enforces PHMSA's hazardous materials regulations, including the HM-232 provisions requiring security plans. See 49 CFR 1.49.

The FTA provides financial assistance to support a variety of locally planned, constructed, and operated public transportation systems throughout the United States. Under 49 CFR part 659, FTA manages State Safety Oversight for Rail Fixed Guideway Systems.²¹ The regulation requires states to oversee the safety and security of rail fixed guideway systems²² through designated

Oversight Agencies (OAs).²³ The OAs must require the transit agencies to develop and implement written system safety program plans and system security plans²⁴ and to conduct annual reviews of their plans.²⁵ Additionally, the OAs must require transit agencies to develop and document a process for the performance of on-going internal safety and security reviews in their system safety program plans.²⁶ Finally, the OA must require each rail transit system under its responsibility to notify the OA within two hours of an accident or other incident meeting specified parameters, including loss of life, injuries requiring immediate medical attention, property damage to rail transit vehicles or facilities of \$25,000 or more, evacuation due to life safety, collision at a grade crossing, a main line derailment, or a collision between rail transit vehicles.²⁷

III. TSA's Proposed Rail Security Requirements

TSA has designed this rule so that it would build on DOT's existing regulatory scheme. This rule would augment existing and proposed PHMSA requirements, address security vulnerabilities in the freight rail regulatory scheme, and complement the DOT regulatory scheme regarding passenger rail and mass transit.

A. Comparison of TSA's Proposed Rule With the DOT Regulatory Scheme

First, TSA's NPRM would expand the scope of pre-shipment inspections of rail cars containing hazardous materials. Existing PHMSA regulations require freight railroad carriers to perform a safety inspection at the ground level of each rail car containing hazardous materials.²⁸ The proposed PHMSA Route Analysis rule would require carriers to also inspect for signs of tampering with rail cars (including closures and seals) during the pre-shipment inspection (e.g., look for IEDs,

suspicious items, or any other items that do not belong).²⁹

TSA's NPRM would expand these inspections even further. Existing and proposed DOT regulations include pre-shipment inspections for railroad carriers, however, they do not require security-specific inspections for rail hazardous materials shippers. TSA's proposal would require certain rail hazardous materials shippers to physically inspect a rail car from a security perspective (including closures and seals) before transferring custody of a rail car to a freight railroad carrier. Shippers would have to inspect for signs of tampering; for any other signs that the security of the car may have been compromised, and for suspicious items that do not belong, including the presence of an IED.

Second, TSA's NPRM would address other security vulnerabilities that currently exist in the freight rail regulatory scheme. Current regulations do not include chain of custody requirements and, therefore, current regulations do not address security vulnerabilities for hazmat cars in transit or at interchanges. To address this issue, TSA proposes chain of custody requirements, including requirements for monitored and protected transfer locations, and documented transfers. In addition, current regulations do not contain requirements for rail car location reporting and, therefore, do not address the Federal Government's need for prompt, critical information if it becomes necessary to reroute, stop, or otherwise protect shipments and populations to address specific security threats or incidents. To address this issue, TSA proposes rail car location and information reporting requirements.

Third, this NPRM would complement the existing DOT regulatory scheme for passenger and rail mass transit. This NPRM would enhance oversight of rail fixed guideway systems. FTA's regulations, at 49 CFR part 659, direct rail transit agencies and OAs to conduct security reviews. FTA does not oversee these reviews. This proposed rule would augment these requirements. TSA inspectors would provide the FTA and responsible State agencies with a field presence, which has not existed previously, to monitor and assess

²⁰ The term "Federal railroad safety laws" means the provisions of law generally at 49 U.S.C. subtitle V, part A or 49 U.S.C. chapter 51 or 57 and the rules, regulations, orders, and standards issued under any of those provisions. See Pub. L. 103-272 (1994).

²¹ In 1991, Congress required, for the first time, that FTA establish a program providing for the State-conducted oversight of the safety and security of rail systems not regulated by FRA. See Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. 102-240, Sec. 3029, 49 U.S.C. 5330. FTA published its final rule adopting a new part 659, Rail Fixed Guideway Systems, State Safety Oversight, on December 27, 1995 (60 FR 67034); the final rule went into effect on January 1998. FTA published a revision of the final rule on April 29, 2005 (70 FR 22502) to add clarifying sections, further specify what the State must require to monitor safety and security on non-FRA rail systems, and incorporate into the body of the regulation material previously incorporated by reference.

²² FTA defines a rail fixed guideway system in 49 CFR 659.5 to mean any light, heavy, rapid rail system, monorail, inclined plane, funicular, trolley, or automated guideway that (1) is not regulated by FRA, and (2) is included in FTA's calculation of fixed guideway route miles or receives funding

under FTA's formula program for urbanized areas (49 U.S.C. 5336), or (3) has submitted the information to FTA indicating its intent to be included in FTA's calculation of fixed guideway route miles to receive funding under FTA's formula program for urbanized areas (49 U.S.C. 5336).

²³ See 49 CFR 659.1.

²⁴ See 49 CFR 659.17 and 659.21. For a list of the required elements for each plan, see 49 CFR 659.10 and 659.23.

²⁵ See 49 CFR 659.25.

²⁶ See 49 CFR 659.27.

²⁷ See 49 CFR 659.33.

²⁸ Pursuant to 49 CFR 174.9, a carrier must inspect at ground level for required markings, labels, placards, securement of closures, and lashing. A "ground level" inspection is an inspection performed with the railroad employee inspecting the rail car while standing level with the car, without the employee climbing on top of the car.

²⁹ PHMSA intends for these requirements to address those situations where unauthorized individuals attempt to cause a security incident by tampering with rail cars (e.g., introducing an IED) to a car to detonate an explosion or to cause a hazardous materials release.

compliance with security requirements.³⁶

TSA's NPRM would also complement the existing DOT regulatory scheme for passenger and rail mass transit by allowing TSA inspections, requiring the designation and use of RSCs, and requiring the reporting of threats and significant security concerns. TSA's proposed requirements would enhance the agency's ability to maximize its domain awareness and recognize possible national trends involving security issues. As a complement to FRA's exercise of its safety authority over covered passenger rail operations involving "every area of railroad safety" (see 49 U.S.C. 20103(a)), and FTA's oversight of rail fixed guideway systems (see 49 U.S.C. 5330 and 49 CFR part 650), TSA would assess threats to security, monitor the state of awareness and readiness throughout the passenger rail and rail mass transit sectors, determine the adequacy of an owner or operator's security measures, and identify security gaps.

B. Scope and Applicability

Consistent with ATSA's broad authorities and with the fact that terrorists may target any part of the rail transportation system, this NPRM would impose requirements on all types of rail operations, including freight railroad carriers; intercity, commuter, and short-haul railroad passenger train service, and rail transit systems. The rule would also apply to rail hazardous materials shippers that offer, prepare, or load for transportation in commerce by rail one or more of the specified categories and quantities of hazardous materials. Also, the rule would apply to rail hazardous materials receivers that receive or unload the specified hazardous materials by rail in a High Threat Urban Area (HTUA).³⁷ In addition, the rule would cover the operation of private rail cars that are on or connected to the general railroad system of transportation and tourist, scenic, historic, and excursion operations, whether on or off the general railroad system of transportation.

³⁶ Moreover, since TSA's inspection authority over rail transit systems is not limited to rail fixed guideway systems receiving or seeking to receive funds under FTA's formula program for urbanized areas and is therefore broader than the scope of coverage of FTA's regulation (49 CFR part 650), TSA may be able to share information on assessments of the security of rail transit systems not currently subject to CIA security reviews.

³⁷ The applicability of certain provisions of this proposed rule depends on which hazardous materials are involved and whether the materials are located in HTUAs. For a discussion of these issues, see sections IV A 5 and III A.6. of the preamble.

With respect to freight railroad carriers and rail hazardous materials facilities, an important issue relating to the scope of the rule is which activities are transportation-related and, therefore, within TSA's jurisdiction. This section of the preamble discusses the scope of the applicability of the proposed rule to freight railroad operators, rail hazardous materials shippers, rail hazardous materials receivers, and passenger railroad carriers. It also identifies activities that are transportation-related and, therefore, within the scope of the proposed rule. TSA defines the term "transportation," as related to security purposes, more broadly than PHMSA defines the term, as related to safety purposes.

1. Freight Railroad Carriers

This NPRM proposes requirements that apply to all freight railroad carriers, except for those carriers whose entire operations are confined to an industrial installation. The proposed rule would not apply to, for example, a plant railroad carrier in a steel mill that serves only the needs of the plant itself and does not go beyond the plant's boundaries. Of course, even where a railroad carrier operates outside the general system of transportation, other railroad carriers that are part of that general system may enter the first railroad carrier's property. For example, a major railroad carrier may enter a chemical or auto plant via an industrial lead to pick up or set out rail cars. In such cases, the railroad carrier that is part of the general system would remain part of the general system while inside the installation, and TSA's proposed regulations would continue to cover all of its activities. Moreover, although TSA would not directly regulate the transportation operations of the railroad carrier located inside the installation that take place solely for the carrier's own corporate purpose, TSA would assert its security authority over all security matters involving that point of connection, to the extent the general system railroad carrier is engaging in transportation activities with the installation railroad carrier at a point of connection to the general system.

The applicability of the proposed freight railroad carrier requirements vary depending on whether the carrier transports specified categories and quantities of hazardous materials and whether these materials are or may be located in HTUAs. The regulation would, however, require all freight railroad carriers (regardless of whether they transport any hazardous materials), as well as freight railroad carriers

hosting passenger operations,³⁸ to allow TSA inspections, have an RSC, and report significant security concerns.

TSA's statutory authority over the security of freight rail transportation is co-extensive with FRA's authority over freight railroad safety; accordingly, TSA is proposing to make subject to this rule all freight railroad carriers that are subject to the jurisdiction of FRA. With respect to freight railroads, 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. See 49 U.S.C. 20102. Moreover, by delegation from the Secretary of Transportation, FRA has authority to enforce the Federal hazmat laws, especially with regard to rail transportation of hazardous materials, and has both regulatory and enforcement authority under the Federal railroad safety laws. See 49 CFR 1.49.³⁹

2. Rail Operations at Certain Fixed-Site Facilities

The requirements of this NPRM will apply to rail hazardous materials shippers and receivers. Specifically, TSA proposes that shippers and receivers be subject to TSA inspection, have RSCs, report significant security concerns, provide location and shipping information for specified hazardous materials, and provide a secure chain of custody and control for specified hazardous materials. For purposes of this NPRM, TSA uses the following definitions: Rail hazardous materials shippers are facilities that are connected to the general railroad system of transportation and offer, prepare, or load for transportation by rail one or more of the specified categories and quantities of the hazardous materials listed in § 1580.100(b) of the NPRM. Rail hazardous materials receivers are facilities that are connected to the general railroad system of transportation and that receive or unload from transportation by rail one or more of the specified categories and quantities of the hazardous materials listed in § 1580.100(b) of the NPRM. Both definitions exclude facilities that the Federal government operates.

TSA's statutory authority under ATSA extends to rail hazardous materials shippers and receivers. In addition to the authorities described in

³⁸ The term "hosting" refers to the situation where a passenger operation receives trackage rights to operate over track that another freight or passenger railroad carrier owns or operates.

³⁹ See 49 CFR part 209, Appendix A for FRA's detailed jurisdiction policy statement.

Section II.A. of this preamble, TSA carries out such other duties and exercises such other powers relating to transportation security, as the Assistant Secretary considers appropriate, to the extent authorized by law.⁴⁰ More specifically, TSA is empowered to ensure the adequacy of security measures for the transportation of cargo.⁴¹ ATSA does not limit TSA's authority to protecting the security of cargo only while it is on a particular conveyance, but rather extends it to the entire transportation system, including facilities.

This proposed rule covers only those hazardous materials facilities that (1) Are connected to the general rail system of transportation, and (2) offer, prepare, load, receive, and/or unload for or from transportation by rail, specified hazardous materials. Hazardous materials shippers load rail cars that freight railroad carriers pick up for transport. The rail cars may travel anywhere in the general transportation system, including in and near high population areas, critical infrastructure, and other critical areas. Sometimes loaded rail cars will remain for some time at the shipper's facility awaiting pickup from the carrier. Whether being loaded at facilities or awaiting pickup at facilities, these rail cars could endanger surrounding areas. Under ATSA, TSA has authority to ensure the adequacy of security measures at the transportation-related areas of these facilities. This includes authority to inspect those areas used for transportation security activities. This would include, for example, control rooms or offices where security activities are initiated or monitored.

TSA used a risk-based approach in determining the rail hazardous materials facilities to which this rulemaking would apply. The highest risk exists from the rail transport of the specified hazardous materials when those rail cars are in or near an HTUA. TSA decided to use the HTUA listing to define those areas for which this rulemaking would provide additional security measures. A rail car departing any rail hazardous materials facility could enter an HTUA. TSA notes that, as to rail hazardous materials facilities receiving or unloading hazardous materials, the highest risk is at those facilities that are located within an HTUA. Therefore, TSA proposes that the regulation cover all rail hazardous materials facilities that receive or

unload, within an HTUA, one or more of the specified hazardous materials.⁴²

3. Passenger Rail (including Rail Transit Systems)

TSA's authority is not limited to FRA's jurisdiction over passenger rail and, therefore, includes rail transit systems. TSA's authority is also not circumscribed by FTA's jurisdiction. Therefore, the proposed rule would apply to all passenger railroad carriers within FRA's statutory jurisdiction (including tourist, scenic, historic, and excursion operations), and all rail transit systems (including light rail, heavy rail, rapid transit, monorail, inclined planes, funiculars, cable cars, trolleys, and automated guideways) within FTA's statutory jurisdiction, and other passenger rail systems.

TSA proposes to apply this rule to all railroad carriers that operate passenger train service, provide commuter or other short-haul passenger train service in a metropolitan or suburban area, or host the operations of such passenger train service. Under the provisions of the proposed rule, TSA would regulate as a passenger railroad carrier any public authority that indirectly provided passenger train service by contracting out the actual operation to another railroad carrier or independent contractor. Although the public authority would ultimately be responsible for designating and using an RSC, allowing TSA to conduct inspections or tests, and reporting significant security concerns, the railroad carrier or other independent contractor that operates the authority's passenger rail service would be required to fulfill all applicable responsibilities with respect to rail transportation security planning, including implementation.

The proposed rule would cover freight railroad carriers that host the operations of passenger train service over its lines, but that neither provide nor operate passenger train service itself. The proposal would also cover passenger railroad carriers that, in addition to operating or providing their own passenger train service, host the operations of other passenger railroad operations. TSA recognizes that under the proposed rule, the host freight and passenger railroad carriers would already be subject to the provisions of the rule (e.g., subject to TSA inspection,

required to have rail security coordinators, and required to report significant security concerns) independent of their additional role as hosts to passenger train service. Nevertheless, based upon the unique operational relationship between the host railroad carrier and the passenger operation, as well as the specific nature of a particular security situation, one of the railroad carriers may be better suited to assume primary compliance responsibility under the proposed rule. TSA expects that a railroad carrier that operates passenger train service over the line of a host railroad carrier would review all of the RSC and security concern reporting requirements of the host railroad carrier and that both the host carrier and the passenger operation would coordinate their respective roles in fulfilling these requirements. Accordingly, if there were a significant security concern involving a hosted passenger operation, TSA would accept one jointly-submitted report from both carriers, rather than separate reports from each carrier.

TSA recognizes that host railroad carriers already bear certain significant safety and security responsibilities. For example, pursuant to FRA emergency preparedness regulations, host railroad carriers must have procedures for making emergency responder notifications, be capable of rendering assistance to the involved passenger railroad carriers during emergency situations, and address any physical and operating characteristics of their rail lines that may affect the safety of these railroad operations (such as evacuating passengers from a train stalled in a tunnel or on an elevated structure). See 49 CFR part 239.

TSA's proposal to cover rail transit systems would build upon DOT's existing regulatory scheme. A rail transit system is generally subject to the jurisdiction of FTA, FRA, or both; the determining factor for jurisdiction is whether the transit system is connected to the general railroad system of transportation. For rail transit systems that are not connected to the general system, the applicable DOT requirements include FTA's State Safety Oversight for Rail Fixed Guideway Systems regulations.⁴³ For transit systems that are connected to the general railroad system, FRA may exercise jurisdiction (see 49 CFR part 209, Appendix A for a detailed

⁴⁰ 49 U.S.C. 114(f)(15).

⁴¹ 49 U.S.C. 114(f)(10).

⁴² Note that PHMSA's regulations do not apply after the delivering carrier departs the facility. See 49 CFR 171.1(c)(2) and 171.8. TSA's proposal to cover the transportation-related areas of the rail hazardous materials facilities that receive or unload the subject rail cars in the HTUA would extend beyond that time.

⁴³ See discussion in Section III C. of this preamble.

discussion).⁴⁴ For those rapid transit systems that are connected to the general system in such a way to 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. For those rapid transit systems that are not sufficiently connected to the general railroad system to warrant FRA's exercise of jurisdiction, FTA's rules will apply.

TSA's authority over rail transit systems is not limited to rail fixed guideway systems receiving or seeking to receive funds under FTA's grant program, and is therefore broader than the scope of coverage of FTA's regulation (49 CFR part 659). Accordingly, TSA's authority extends to all rail transit systems regardless of whether the system is subject to regulation by FTA, FRA, or neither agency.

4 Other Rail Operations

Some of the requirements in this NPRM would apply to tourist, scenic, historic, and excursion passenger rail systems. Specifically, these types of operations would be subject to inspection by TSA and DHS officials and would be required to report significant security concerns. See proposed 49 CFR 1580.5 and 1580.203. In addition, these operations would be subject to the NPRM's requirement to designate and use an RSC if TSA notifies the operation in writing that a security threat exists concerning that operation. See proposed 49 CFR 1580.201. TSA is including this requirement, because tourist, scenic, historic, and excursion operations are potential terrorist targets, and so there may be some situations where TSA wishes to inspect these operations to assess their security.

With two exceptions, FRA exercises jurisdiction over tourist, scenic, and excursion railroad operations whether or not they are conducted on the general railroad system. The exceptions are: (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 railroad system of transportation and "insular."⁴⁵ See

Appendix A to 49 CFR part 209. A tourist operation is not part of the general system when the operation is conducted on track used exclusively for tourist operation purposes. If a tourist operation conducted off the general system is insular, FRA does not exercise jurisdiction over it, and none of FRA's rules apply. If a tourist operation conducted off the general system is not insular, FRA exercises jurisdiction over the operation, and some of FRA's rules (*i.e.*, those that specifically apply beyond the general system to such operations) will apply.⁴⁶

TSA also proposes that the operators of private cars, including business or office cars and circus trains that are on or connected to the general railroad system of transportation, allow TSA to inspect and be required to report significant security concerns. TSA believes that a private car operation that hauls passengers should perform a basic level of security preparedness planning consistent with the planning of other passenger train operations. TSA recognizes the fact that private rail cars do not haul as many passengers as these other operations and, therefore, these rail cars constitute a less attractive target for terrorists. Moreover, TSA recognizes that host railroads, such as National Railroad Passenger Corporation (Amtrak) and commuter railroads, often haul private cars, and these hosts would already be required to have RSCs, who can serve as a point of contact with TSA while the host is hauling the private cars.

Finally, TSA seeks comment on whether there are financial, operational, or other factors that are unique to the operation of tourist, scenic, historic, and excursion passenger rail systems or the operation of private rail cars and if so, what those factors are.

5. Specified Hazardous Materials

Certain provisions of this proposed rulemaking (*i.e.*, the ones allowing TSA inspections, requiring the designation of RSCs, and requiring reporting of significant security concerns) apply to freight railroad carriers regardless of

or an affiliated entity, or a trespasser would be affected by the operations. A tourist 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.*, the operations are within 30 feet of those of any railroad.

⁴⁶ For example, FRA's rules on accident reporting, steam locomotives, and grade crossing signals apply to these non-insular tourist operations (see 49 CFR 225.3, 230.2 and 234.3), as do all of FRA's procedural rules (49 CFR parts 209, 211, and 216) and the Federal railroad safety statutes themselves.

whether they transport hazardous materials. However, some provisions of the NPRM (*i.e.*, the ones requiring entities to provide location and shipping information and to provide a secure chain of custody and control) apply only to the rail hazardous materials shippers and receivers and freight railroad carriers that handle specified categories and quantities of hazardous materials. Generally, the specified chemicals are those that are "poisonous by inhalation," certain explosives, and radioactive materials. Proposed section 1580.100(b), lists these materials and applicable quantities.

(1) A rail car containing more than 2,268 kg (5,000 lbs) of a Division 1.1, 1.2, or 1.3 (explosive) material, as defined in 49 CFR 173.50.

(2) A tank car containing a material poisonous by inhalation as defined in 49 CFR 171.8, including Division 2.3 gases poisonous by inhalation, as set forth in 49 CFR 173.115(c) and Division 6.1 liquids meeting the defining criteria in 49 CFR 173.132(a)(1)(iii) and assigned to hazard zone A or hazard zone B in accordance with 49 CFR 173.133(a), other than residue, and

(3) A rail car containing a highway route-controlled quantity of a Class 7 (radioactive) material, as defined in 49 CFR 173.403.

DOT's Hazardous Materials Regulations define the term "material poisonous by inhalation" in 49 CFR 171.8. Materials poisonous by inhalation, also called poison inhalation hazard (PIH) materials, are gases or volatile liquids that are toxic to humans when inhaled. Specific classification criteria for PIH gases are in 49 CFR 173.115(c) and 173.118(a), classification criteria for PIH liquids are in 49 CFR 173.132(a)(1)(iii) and 173.133(a).

PHMSA defines "radioactive material" to mean a material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in the table in 49 CFR 173.430 or values derived according to the instructions in 49 CFR 173.433. See 49 CFR 173.403. A highway route controlled quantity refers to a quantity in a single package that exceeds one of the following amounts: 3,000 times the A1 value of the radionuclides, as specified in 49 CFR 173.435 for special form Class 7 (radioactive) material, 3,000 times the A2 value of the radionuclides, as specified in 49 CFR 173.435 for normal form Class 7 (radioactive) material; or 1,000 TBq (27,000 Ci), whichever is less.

Under the HMR, an "explosive" refers to "any substance or article, including a device, which is designed to function by

⁴⁴ FTA's rules on rail fixed guideway systems do not apply to any rapid transit systems or portions thereof subject to FRA's rules.

⁴⁵ Insularity is an issue only with regard to tourist operations over trackage outside of the general system used exclusively for such operations. 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

explosion (i.e., an extremely rapid release of gas and heat) or which, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion, unless the substance or article is otherwise classed under the [HMR].” See 49 CFR 173.50. The term includes a pyrotechnic substance or article, unless the substance or article is otherwise classed under the HMR. Explosives in Class 1 are divided into six divisions. However, based upon the relative explosive hazards of the explosives in these divisions, TSA proposes to apply subpart B of part 1580 to explosives in rail cars containing more than 2,268 kg (5,000 lbs) only in Divisions 1.1, 1.2, and 1.3. Division 1.1 consists of explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously. Division 1.2 consists of explosives that have a projection hazard but not a mass explosion hazard. Division 1.3 consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard. See 49 CFR 173.50.

TSA, PIIMSA, and FRA have assessed the security vulnerabilities associated with the transportation of different types and classes of hazardous materials. In this NPRM, TSA has applied enhanced security requirements to the specified hazardous materials based on specific transportation scenarios. These scenarios depict how individuals could deliberately use hazardous materials to cause significant casualties and property damage. The materials and the quantities specified in proposed § 1580.100(h) present a significant rail transportation security risk and an attractive target for terrorists because of the potential for them to use these materials as weapons of mass effect. TSA continues to evaluate the security risks associated with the transportation of hazardous materials and may propose additional regulations including regulations pertaining to other materials or quantities of materials in the future.

The proposed rule excludes tank cars containing only residual amounts of the hazardous material. From a security perspective, it appears that the consequences of the release of residual PIH materials would be significantly less than the consequences of an incident involving a loaded tank car. TSA seeks comment on whether it should apply the requirements in this NPRM to fewer or additional hazardous materials or should extend the requirements to include tank cars containing residua. TSA also seeks

comment on whether there are other hazardous materials that could cause significant loss of life, transportation system disruption, or economic disruption and whether TSA should apply the requirements of this NPRM to those other materials. TSA will continue to evaluate whether it should expand or reduce the list of hazardous materials and whether it should make tank cars containing residua subject to the rule.

6. High Threat Urban Areas (HTUAs)

The proposed requirements for reporting shipping and location information and for providing a secure chain of custody are applicable to the transportation of specified hazardous material that is or may be in an HTUA. TSA is using the term HTUA and its definition to describe and delineate those geographic areas that warrant special consideration with respect to transportation security. In this NPRM, TSA derived its lists of HTUAs from the Urban Areas Security Initiative (UASI) program. TSA includes a list of HTUA in Appendix A to this NPRM. As well, the list is available on the DHS Web site http://www.dhs.gov/dhspublic/interweb/assetlibrary/FY06_UASI_Eligibility_List.pdf.

First implemented in 2003, UASI is a risk-based methodology that is consistent with DHS's national risk management efforts for homeland security. DHS identified UASI areas as HTUAs if they had populations greater than 100,000 and had reported threat data during the past fiscal year. Currently, DHS has identified 46 HTUAs based on risk assessments considering three variables: (1) Threat, or the likelihood of a type of attack that might be attempted; (2) vulnerability, or the likelihood that an attacker would succeed; and (3) consequence, or the impact of an attack occurring. Each HTUA consists of a city limit or combined adjacent city limits, plus a 10-mile buffer zone extending from the city border(s). Appendix A to this proposed rule contains the 46 Urban Areas that were eligible to apply for the FY 2006 UASI Program. TSA proposes to use the FY 2006 list of Urban Areas for this rule. TSA has evaluated the security issues for rail transportation of specific hazardous material and believes that the results of the FY 2006 UASI risk model are an appropriate methodology for this rulemaking. As proposed, if DHS makes any changes in subsequent years to the FY 2006 list, those changes will not affect the TSA list in Appendix A unless TSA subsequently amends the list.

DHS evaluated these HTUAs for two separate, but complementary, types of risk: asset-based risk and

geographically-based risk. Considered together, these two calculations provide an estimate of total terrorism risk. This is accomplished using a common risk model that is internally consistent across all homeland security grant allocations. Under this model, asset-based risk is a function of the combined risks of terrorism in potential targets within a geographic area. In comparison, geographically-based risk is derived from certain prevailing attributes or characteristics intrinsic to a geographical area, such as a border, that may contribute to its risk of terrorism.

In May 2005, DHS held a meeting with stakeholders to solicit input and feedback on the risk formula. Attendees included key representatives from 12 States and urban areas, as well as representatives from national and international associations of police, emergency managers, city chiefs, and fire chiefs. The current risk model reflects the recommendations of the stakeholders who attended the May 2005 meeting. Additional information about the risk methodology is available at the following Web site: http://www.ojp.usdoj.gov/odp/docs/FY_2006_UASI_Program_Explanation_Paper_011805.doc.

TSA is currently conducting vulnerability assessments of the transportation of PIH materials through the UASI HTUAs. Through these assessments, TSA has identified operational practices and conditions that may compromise transportation security. TSA has addressed some of the major practices and conditions in this rulemaking, including the lack of positive and secure exchange of custody and control of rail cars containing hazardous materials and the lack of secure storage of those materials at transportation facilities.

TSA is soliciting comment on the adoption of the DHS HTUAs for this proposed rule, and seeks comment on appropriate criteria to use to determine those areas where freight railroad carriers and rail hazardous materials shippers and receivers should be subject to additional security requirements. If TSA decides in the final rule to use HTUAs as the basis for imposing additional security requirements, TSA will continue studying the patterns of rail transportation across the nation and may revise the list of HTUAs established by DHS for FY 2006, as appropriate.

C. Requirements

1. Sensitive Security Information (SSI)

Section 114(s) of title 49 of the United States Code requires TSA to promulgate

regulations governing the protection of sensitive security information (SSI). SSI includes information that would be detrimental to transportation security if publicly disclosed. TSA's SSI regulation, 49 CFR part 1520, establishes certain requirements for the recognition, identification, handling, and dissemination of SSI, including restrictions on disclosure and civil penalties for violations of those restrictions.

Although 49 CFR part 1520 primarily covers aviation and maritime security-related information, vulnerability assessments and threat information related to all modes of transportation are considered SSI under 49 CFR 1520.5(b)(5) and 1520.5(b)(7) and must be protected and handled in accordance with 49 CFR part 1520. However, because certain other information created in connection with this proposed rule would be detrimental to transportation security if publicly disclosed, TSA is proposing to amend 49 CFR part 1520 to more directly protect information related to the rail sector. This rulemaking would add railroad carriers, rail hazardous materials shippers, rail hazardous materials receivers, and rail transit systems as covered persons under part 1520 and explicitly require them to restrict the distribution, disclosure, and availability of SSI to persons with a need to know, and refer all requests for SSI by other persons to TSA or the applicable component or agency within DOT or DHS.

The NPRM would amend part 1520 to clarify that any review, audit, or other examination of the security of a railroad, railroad carrier, rail facility, rail hazardous materials shipper, rail hazardous materials receiver, rail transit system, or rail transit facility that is directed, created, held, funded, or approved by DOT or DHS, or that will be provided to DOT or DHS in support of a Federal security program, is SSI. The NPRM would also amend part 1520 to cover certain details of security inspections or investigations involving rail transportation security, specific details of rail transportation security measures; security training materials for persons carrying out rail transportation security measures required or recommended by DHS or DOT, lists of identifying information of personnel having unescorted access to a rail secure area; and lists identifying critical rail infrastructure assets. TSA seeks comment on whether it should protect as SSI under part 1520 any other information that may be created under this rule.

2. TSA Inspections

TSA is proposing that all entities covered by this proposed regulation allow TSA to inspect their facilities without advance notice. TSA will conduct inspections in a reasonable manner consistent with TSA guidance for its inspectors. In enacting ATSA, Congress recognized the importance of security for all forms of transportation and related infrastructure and, in establishing TSA, conferred upon it responsibility for security in all modes of transportation. The United States rail network is a vital link in the Nation's transportation system and is critical to the economy, national defense, and public health. Amtrak, the Alaska Railroad Corporation, commuter railroads, and rail transit systems provide passenger rail service to millions of passengers yearly. Approximately 40 percent of all intercity freight goes by rail, including 84 percent of the coal that electric utilities use to produce power.

Maintaining a safe and secure rail transportation system is essential. TSA must be able to inspect at any time in order to carry out its security-related statutory and regulatory authorities, including the following authorities in 49 U.S.C. 114(f):

- (2) assess threats to transportation;
- (7) enforce security-related regulations and requirements;
- (9) inspect, maintain, and test security facilities, equipment, and systems;
- (10) ensure the adequacy of security measures for the transportation of cargo;
- (11) oversee the implementation, and ensure the adequacy, of security measures at airports and other transportation facilities; and
- (15) carry out such other duties, and exercise such other powers, relating to transportation security as the Assistant Secretary considers appropriate, to the extent authorized by law.

As noted above, under this proposal, TSA's inspection authority also covers rail hazardous materials facilities that offer, prepare, or load for transportation by rail certain specified categories and quantities of hazardous materials, as well as facilities that receive or unload these materials from transportation by rail in a HTUA. In this regard, TSA's authority over transportation security explicitly covers the transportation of cargo.⁴⁷ The law does not limit TSA to protecting the security of cargo only while it is on a particular vehicle of transportation, but extends to the entire

transportation system. The statute references TSA's responsibility to protect security facilities and transportation facilities.⁴⁸ Thus, to the extent that a hazardous materials site covered by the applicability section of this proposed regulation has specific facilities for transportation, such as loading areas, TSA's authority to inspect these facilities is explicit.

More importantly, because the transportation system may be compromised by the introduction of an IED or other destructive instrument, the authority for transportation security necessarily includes authority to inspect, as necessary, the facilities that offer, prepare, load, receive, or unload certain hazardous materials that travel in rail transportation, if that packaging might be vulnerable to compromise. Limiting TSA's authority to inspect the security of cargo only after it is being transported would negate TSA's ability to protect the transportation system effectively. Accordingly, TSA's authority extends to rail hazardous materials facility points of entry of cargo going into the transportation system.

3. Designation of Rail Security Coordinators (RSCs)

Except as noted below in §§ 1580.101 and 1580.201, TSA is proposing to require each railroad carrier, rail hazardous materials shipper, rail hazardous materials receiver, and rail transit system covered within the scope of part 1580 (see proposed § 1580.1), at the corporate level, to designate and use an RSC to serve as the point of contact with TSA on security matters and communications with TSA concerning the railroad carrier, rail hazardous materials shipper, rail hazardous materials receiver, or rail transit system's security initiatives. The RSC and any alternate RSC(s) should be officials with overall responsibility, management, and/or oversight of security operations and/or police operations. The RSC may therefore have responsibility for several rail hazardous materials facilities covered by the proposed rule which are owned and operated by one corporation. TSA would require either the RSC, or an alternate RSC, to be available to TSA on a 24-hour a day basis. In addition, TSA would require the RSC, or an alternate RSC, to provide current contact information to TSA and to coordinate security practices and procedures with appropriate law enforcement and emergency response agencies. As part of TSA's coordinated approach to rail security, TSA would provide the names

⁴⁷ 49 U.S.C. 114(f)(10) empowers the Assistant Secretary of Homeland Security for TSA to "ensure the adequacy of security measures for the transportation of cargo."

⁴⁸ 49 U.S.C. 114(f)(6) and 114(f)(11).

and contact information of the RSCs to DOT and its modal administrations for use in their investigative, inspection, and compliance activities.

When appropriate to carry out a regulatory requirement, including the provisions of an SD, the RSC would also be responsible for working with other entities to coordinate implementation of security measures. Those other entities involved in the security of the rail operation might include freight railroad carriers, hauling passenger operations, owners of rail stations used by passenger operations, law enforcement agencies, and emergency response agencies. TSA understands that many railroads operate through a very large number of local and State jurisdictions, and it would be impracticable for the railroad to meet with every one. This NPRM would not require the RSC to do so. TSA expects that the railroad would reach out to those most likely to need to respond to a security incident.

At a minimum, TSA anticipates that the railroad carriers, rail hazardous materials shippers, rail hazardous materials receivers, and rail transit systems would be able to quickly and accurately assess a security situation and then notify the appropriate law enforcement and emergency response agencies. In addition, TSA expects that the coordination effort would include the following elements: the offering of information to the appropriate agencies (as applicable) on the locations of railroad carrier facilities, rail hazardous materials shipper and receiver facilities, and rail transit facilities, access to railroad carrier, rail hazardous materials shipper, rail hazardous materials receiver, and rail transit agency equipment; and communications interface. Where a railroad carrier, rail hazardous materials shipper, rail hazardous materials receiver, or rail transit system requested TSA's assistance or notified TSA that its RSC was having difficulty coordinating security practices or procedures, TSA would intervene, as appropriate, to assist.

To the maximum extent feasible, TSA anticipates that railroad carriers, rail hazardous materials shippers, rail hazardous materials receivers, and rail transit systems would not need to establish a new company or corporate division or infrastructure to carry out the responsibilities of the RSC and would not need to hire new employees to serve exclusively as RSCs. Rather, TSA expects that the proposal would result in only an incremental increase in the job duties of existing employees who have related functions. Moreover, in many instances, the related job

functions involve compliance with existing Federal requirements.

TSA anticipates that certain rail hazardous materials shippers and receivers, particularly the smaller ones, would employ the services of the individual who serves as the manager of safety, health, and environment. This individual traditionally oversees regulatory compliance with the requirements of Federal agencies such as the Occupational Safety and Health Administration and the Environmental Protection Agency. Other rail hazardous materials shippers and receivers, particularly the larger companies, may employ an individual to serve exclusively in the role of the RSC. In the case of rail hazardous materials facilities that are also subject to the maritime security regime required by the Maritime Transportation Security Act of 2002, as codified in 46 U.S.C. Chapter 701, the individual who serves as the Federal Maritime Security Coordinator or the Facility Security Officer may also fulfill the duties of the RSC. See 33 CFR parts 101–106.

TSA anticipates that Class I and larger Class II railroad carriers⁴¹ would likely employ the services of the chief of the railroad police. Smaller railroad carriers would likely select the operating officer responsible for safety compliance and liaison with FRA. In this regard, FRA requires freight and passenger railroad carriers to telephonically report to the National Response Center certain types of accidents/incidents, such as the death of a rail passenger or railroad carrier employee, a train accident that results in serious injury to two or more train crewmembers or passengers requiring their admission to a hospital, or a train accident resulting in a preliminary damage estimate of \$150,000 to railroad and non-railroad property. See 49 CFR

225.9. PHMSA regulations require immediate reports by the person in physical possession of the hazardous materials to the National Response Center of certain types of hazardous materials incidents, such as the death or serious injury of a person as a direct result of a hazardous material or fire, breakage, spillage, or suspected radioactive contamination occurring that involves a radioactive material. See 49 CFR 171.15. In addition, under 49 CFR 659.33, a rail transit agency must notify the OA within two hours of certain incidents involving a rail transit vehicle or occurring on rail transit property.

TSA has crafted this RSC proposal as a performance standard, and TSA expects that each railroad carrier, rail hazardous materials shipper, rail hazardous materials receiver, and rail transit system will provide its RSC with the information necessary to perform its job duties. The proposal does not include a training requirement. However, TSA seeks comment on whether the final rule or another rulemaking should include such a requirement. In this regard, TSA seeks comment on what training methods railroad carriers, rail hazardous materials facilities, and rail transit facilities could use to meet this requirement. For example, should TSA require specific training as it does in aviation for aircraft operator Ground Security Coordinators? See 49 CFR 1544.233. Should TSA require training once or mandate it on a recurrent basis? Should TSA develop specific guidance or a curriculum for such a training program?

Under the proposed rule, the requirement to designate and use an RSC does not apply to the operation of private rail cars, including business/office cars and circus trains, or to tourist, scenic, historic, or excursion operations, whether on or off the general railroad system of transportation, unless TSA notifies the owner or operator in writing that a security threat exists concerning that operation. Such notifications, and lists of specific private rail car owners and operators that TSA has required to appoint an RSC, would be protected as SSI threat information under § 1520.5(b)(7).

In reaching the decision to exclude the above types of operations, TSA considered their relative security risk, which TSA treated as a function of three variables: *threat*, or the likelihood of a type of attack that might be attempted, *vulnerability*, or the likelihood that an attacker would succeed; and *consequence*, or the impact of an attack occurring. While TSA believes that a

⁴¹ For purposes of accounting and reporting, the Surface Transportation Board (STB) groups freight railroad carriers into the following three classes:

Class I. Carriers having annual carrier operating revenues of \$250 million or more after applying the railroad revenue deflator formula.

Class II. Carriers having annual carrier operating revenues of less than \$250 million but in excess of \$250 million after applying the railroad revenue deflator formula.

Class III. Carriers having annual carrier operating revenues of \$250 million or less after applying the railroad revenue deflator formula.

See 49 CFR 1201, Subpart A. The railroad revenue deflator formula is based on the Railroad Freight Price Index developed by the Bureau of Labor Statistics. The formula is as follows:
Current Year's Revenues x (1001 Average Index/Current Year's Average Index)

The STB is an economic regulatory agency that Congress charged with the fundamental missions of resolving railroad rate and service disputes and reviewing proposed railroad mergers. See 15 U.S.C. Termination Act of 1985, Pub. L. 104–88, 100 Stat. 803 (December 31, 1988).

private car operation should be held to the same basic level of security preparedness planning as other passenger train operations. TSA intends to take into account the financial burden that TSA would impose if it required private car owners and operators to conform to the requirements of proposed §§ 1580.101 and 1580.201. Moreover, TSA recognizes that host railroads such as Amtrak and commuter railroads often haul private cars, and these hosts often impose their own security requirements on the operation of the private cars. Pursuant to proposed § 1580.201, TSA would already require host railroads to have an RSC to serve as the primary contact for intelligence information and security-related activities and communications with TSA; the private car passengers would benefit from this requirement even if private rail car owners and operators did not designate their own RSCs. In addition, in the case of non-revenue passengers, including employees and guests of railroad carriers who travel in business and office cars and passengers travelling on circus trains, the railroad carriers would provide for their safety and security in accordance with existing operating procedures and protocols relating to normal freight train operations.

With respect to tourist, scenic, historic, and excursion operations, TSA analyzed the security risk and also considered the financial, operational, and other factors unique to such railroad carriers. At this time, TSA concludes that these operations do not need to appoint RSCs, unless TSA notifies them to do so.

4 Location and Shipping Information for Certain Rail Cars

This rule proposes that freight railroad carriers transporting the specified categories and quantities of hazardous materials and certain rail hazardous materials shippers and receivers must provide information to TSA, upon request, on the location of rail cars. This requirement grew out of an August 18, 2004 notice and request for comments that PHMSA and TSA issued. The notice, entitled "Hazardous Materials: Enhancing Rail Transportation Security for Toxic Inhalation Hazard Material," addressed the need for enhanced security requirements for the rail transportation of hazardous materials posing a PIH hazard. See 69 FR 50988. The purpose of the location reporting requirement is not to track a rail tank car to ascertain if it is off course, but rather to determine how close it may be to a target city or other potential target. Based upon the

intelligence information received, TSA may wish to know, for example, how many rail tank cars carrying a particular TIH material are headed toward, or currently located within 10 miles of, a specified potential target.

The August 2004 Notice indicated that DOT and DHS were considering whether they should require communication or tracking requirements, such as satellite tracking of rail cars and real-time monitoring of tank car or track conditions for rail shipments of PIH materials. In addition, the Notice suggested that DOT and DHS were considering reporting requirements in the event that PIH shipments are not delivered within specified time periods.

Currently, there are no regulations that include communication, location, or tracking requirements for hazardous materials shipments by rail. While offerors and transporters of PIH materials may elect to implement communication, location, or tracking measures as part of the security plans they develop in accordance with subpart I of part 172 of the HMR, such measures are not mandatory.

Some commenters to the August 2004 Notice questioned whether the tracking of rail shipments of PIH materials has a security benefit. They suggested that the probability that a rail car will be moved off the rail network is extremely remote and, further, that tracking rail cars to determine if they are off course has no value from a security perspective. Although some commenters expressed concerns about the reliability of tracking systems and the ease with which some systems could be compromised, several commenters suggested that since the railroad industry already has the capability to track rail cars, the existing system should be supplemented, not replaced, and any mandated tracking requirements should provide for flexibility in choosing different technologies.

DHS believes that information concerning the location of certain hazardous materials should be readily available to industry and the Federal Government, particularly during elevated threat situations. Such information would be critical to decisions concerning possible rerouting, stopping, or otherwise protecting shipments and populations to address specific security threats or incidents. Freight railroad carriers currently have the capability to locate a rail car's last reported location using the Automatic Equipment Identification (AEI) tag and

reader system,⁵⁰ as well as current location using two-way radio or cellular telephone. Rail hazardous materials facilities already maintain sufficient information concerning the contents and location of hazardous materials under their physical custody and control, whether for proprietary reasons or to comply with DOT hazardous materials regulations, and can provide the information to the Federal Government in an expeditious manner.

Based upon TSA's consideration of the security vulnerabilities associated with the transportation of different types and classes of hazardous materials, the proposed rule would add location and shipping information requirements, focusing upon the three types and quantities of hazardous materials that TSA has concluded pose a significant transportation security risk.

This rule would require covered freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers to report the location and shipping information of these rail cars when TSA requests such information.⁵¹ Certain PIH location and shipping information is already protected as SSI under a 49 CFR 1520.5(b)(16) determination by TSA. TSA will evaluate the location and shipping information provided under this rule on a case-by-case basis, and may determine that such information is SSI under 49 CFR 1520.5(b)(16). TSA is seeking comment on whether TSA should amend § 1520.5(b) to routinely cover such information as SSI. Data elements to be included in these rail car reports include the rail car's identification, lading, location, and transportation status. As noted above, TSA anticipates that this information is readily available from existing car location management and waybill databases.

The proposed rule would establish a performance standard that requires the regulated entity to be able to provide the requested information in the timeframe specified, without mandating a particular technology or system protocol for obtaining it. Accordingly, as discussed further in the Section-by-Section Analysis for § 1580.103 below, while certain larger freight railroad carriers would choose to meet the requirement by using AEI Tags, smaller carriers that rarely haul rail cars

⁵⁰ AEI tags are discussed in the Section by Section Analysis of proposed 49 CFR 1580.103.

⁵¹ TSA's proposed requirement that carriers shippers, and receivers submit car location and shipping information to TSA for rail security purposes would be in addition to any Bureau of Customs and Border Protection (CBP) information submission requirements.

containing the specified hazardous materials may elect to obtain the requested location and shipping information merely by calling the train crew on a two-way radio or cellular telephone. Rail hazardous materials facilities, depending on the number of rail cars currently containing one or more of the listed hazardous materials, may employ a sophisticated computer program (as appropriate) or simply assign an employee to physically count the rail cars containing the product and gather the requested information for each rail car. If the carrier, shipper, or receiver provides the location and shipping information to TSA within one hour of receiving the request and does so using one of the five approved methods, the carrier or facility would be in full compliance with the proposed regulation.

TSA recognizes that the ability of the freight railroad industry to track billions of dollars of equipment and cargo is crucial for good customer service and efficient rail operations, and seeks comment from rail tank car manufacturers, rail tank car owners, freight railroad carriers, and the insurance industry on the feasibility and potential future uses of Global Positioning Systems³² (GPS) to track rail cars. TSA requests information on the anticipated economic impact on rail car owners and freight railroad carriers in terms of the costs of manufacture, installation, maintenance, and service of GPS tracking systems and devices. In addition, TSA seeks information on the anticipated security benefits that would result from equipping rail tank cars with technologies that incorporate chemical sensors and open hatch detection into GPS-based location and messaging systems to immediately notify concerned parties of potential leaks or unauthorized access of the rail car. TSA also requests comment on the business use considerations, including the anticipated benefits for fleet management, protection of business proprietary data, and whether freight railroad carriers using GPS tracking systems would likely receive insurance premium reductions.

5. Reporting Significant Security Concerns

The threats to transportation security present a new paradigm for intelligence collection, analysis, and application. For most of its history, the United States has focused its intelligence resources on

the military and political establishments of foreign states. In the aftermath of the September 11, 2001 attacks, the focus areas for intelligence collection activities have expanded markedly.

Detecting terrorist activities entails piecing together seemingly unrelated or minor observations, encounters, and incidents and analyzing information from other sources to identify indications of planning and preparation for an attack. The terrorist threat and the rail mode's vulnerability have unfortunately been well demonstrated by multiple attacks throughout the world. In this environment, reports from railroad carriers, rail hazardous materials shippers and receivers, and rail transit systems are essential to the detection of indications of terrorist planning and preparation activities. Seemingly disconnected or disparate reports of suspicious or unusual activities, if timely and effectively analyzed in the context of broader information derived from the intelligence community, may provide the insight necessary to prevent a terrorist attack.

Essential to achieving this objective is the enhancement and expansion of the means to detect indicators of terrorist surveillance, planning, and preparation activities and to identify suspicious persons at and near rail cars, stations, terminals, facilities, and other infrastructure. A critical component of this effort is timely reporting of incidents and other matters of security concern.

TSA would require all entities covered by this NPRM to report significant security concerns to TSA. Significant security concerns encompass incidents, suspicious activities, and threat information including, but not limited to the following incidents: interference with the train crew; bomb threats—both specific and non-specific; reports or discovery of suspicious items which result in the disruption of operations; suspicious activity occurring onboard a train that results in a disruption of operations, discharge, discovery, or seizure of a firearm or other deadly weapon on a train or in a station or terminal; information relating to the possible surveillance of a train or rail facility; correspondence received by the railroad carrier or rail transit system operator indicating a potential threat to rail transportation; disruption of train operations, including derailments and accidents, the cause of which appears suspicious or the result of suspected criminal activity, and any major breaches of security at a rail facility. These requirements will ensure that systems are put in place that will

increase domain awareness and allow TSA to be aware of possible national trends. These requirements would not supersede existing requirements to report incidents to State or local first responders or other authorities.

a. Passenger Railroad Carriers and Rail Transit Systems. To inform and enable detailed, cross-functional analysis of developing threats, proposed § 1580.203 would require the passenger railroad carrier and rail transit system to immediately report potential threats and significant security concerns to TSA. TSA recognizes that rail transit agencies operate under an existing regulatory requirement to report certain types of incidents to State OAs. Pursuant to 49 CFR 659.33, the rail transit agency must notify the OA within two hours of an incident involving a rail transit vehicle or occurring on rail transit property where, among other parameters, a fatality results, injuries require medical attention for two or more persons away from the scene, or property damage equals or exceeds \$25,000. These matters may also prompt the reporting requirement under this proposed rule.

Any limited overlap of information that this reporting requirement would create would be neither an unnecessary duplication of effort nor a burdensome requirement. Proposed § 1580.203 covers a much broader scope of security concerns than the existing reporting requirements at 49 CFR 659.33 or pursuant to FTA grant programs. The distinction reflects the different focus of TSA and the State OAs. State OAs seek to track and record significant incidents, whether malicious or accidental, that result in loss of life, multiple significant injuries, or substantial property damage. The purpose is to create a historical record for later assessment of whether corrective action should be taken. TSA seeks to obtain a stream of information for analysis purposes. With broader collection of information, the Transportation Security Intelligence Service and DHS Office of Intelligence and Analysis will be better able to identify trends or patterns that may indicate terrorist planning and preparation activities. The proposed requirement for the reporting of potential threats and significant security concerns would provide essential material for this vital effort.

Additionally, rail transit agencies may have reporting requirements deriving from grant programs that FTA administers. These programs may require rail transit agencies to provide accounting and statistical reports on a variety of matters to the National Transit Database on a specified basis, such as monthly. Again, any partial overlap of information covered in the two reporting requirements would not result in an unnecessary duplication of effort.

³² A Global Positioning System is a satellite-based system that can pinpoint any position on earth—any time and in any weather—and then use receivers to process the satellite signals to determine a location.

or a burdensome requirement. Through the National Transit Database, FTA seeks to maintain a comprehensive profile of public transportation systems in the United States. FTA gathers information on the full spectrum of activities involved in transit operations, including accounting matters, passenger volume, distances covered, safety records, and criminal activity. Proposed § 1580.203 would require a much more focused report intended to generate an information stream essential to identify trends or patterns that may indicate terrorist activity including surveillance, planning, and preparation. The resulting data, analyzed in the context of transportation and homeland security intelligence products and of material generated by the broader intelligence community, would provide the foundation for focused detection, deterrence, and prevention activities.

Proposed § 1580.203 would apply to tourist, scenic, historic, and excursion operations as well as other passenger rail operations. In deciding whether to apply this provision to these passenger railroad operators, TSA considered the protocols, such as immediately reporting a concern or incident to appropriate law enforcement authorities, that any prudent owner or operator of a tourist, scenic, historic, or excursion railroad should follow if faced with a security threat or concern. The proposed reporting requirement merely adds DHS as an additional recipient of this information. TSA seeks comments from these passenger railroad carriers and their associations to determine if there are financial, operational, or other factors that may be unique to such passenger railroad operations that justify modifying or eliminating the proposed reporting requirement applicable to these operations.

b. Freight Rail Including Rail Hazardous Materials Shippers and Rail Hazardous Materials Receivers. Proposed § 1580.105 would require freight railroad carriers and covered rail hazardous materials shippers and receivers to immediately report potential threats and significant security concerns to TSA. In the face of unpredictable and rapidly changing threats to rail carriers and facilities, detection, prevention, and deterrence depend upon strong intelligence focused on the terrorist as well as the means for carrying out the threat.

Proposed § 1580.105 covers a much broader scope of security concerns than other existing reporting requirements, such as the FRA requirement in 49 CFR 225.9 that railroad carriers report certain types of accidents/incidents telephonically to the National Response

Center.³³ The distinction reflects the different focus of TSA and FRA. FRA seeks to track and record significant incidents, whether malicious or accidental, that result in loss of life, multiple significant injuries, or substantial property damage. The purpose is to create a historical record for later assessment of whether corrective action should be taken. In contrast, TSA seeks to obtain a stream of information that it can analyze to identify trends or patterns that may indicate terrorist planning and preparation activities. The broader collection of information will better enable the Transportation Security Intelligence Service and DHS Office of Intelligence and Analysis to identify trends or patterns that may indicate terrorist planning and preparation activities. The proposed requirement for immediate reporting of potential threats and significant security concerns would provide essential material for this vital effort.

6 Chain of Custody and Control

This NPRM proposes that certain freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers eliminate practices that leave hazardous materials unattended, thereby creating the potential for significant transportation security incidents. TSA's analysis indicates that there is a security vulnerability to HTUAs from freight railroad carriers leaving unattended rail cars, and in some cases entire trains, carrying one or more of the specified hazardous materials, for eventual pickup by another railroad carrier or by the consignee rail hazardous materials receiver. There is also a security vulnerability when rail hazardous materials shippers load rail cars with hazardous materials and leave the cars unattended, for pickup by the railroad carrier. Often these cars are left unattended in a non-secure area and thus may be vulnerable to tampering. These situations create opportunities for individuals to compromise the security of rail cars transporting PIH, explosive, or radioactive material, such as through the introduction of an IED.

As discussed above, the highest risk occurs when a rail car is in or near an area of high population density. In applying a risk-based approach, TSA is proposing that the chain of custody requirements apply to railroad carriers

when they conduct a transfer within an HTUA, or when they conduct a transfer with rail cars that may subsequently enter an HTUA. Finally, railroad carriers would apply these measures when delivering a car to a rail hazardous materials receiver within an HTUA. In this way, the rail car would be protected during transportation from someone attaching an IED or otherwise compromising the car when it could be used to endanger the HTUA.

TSA is applying its risk-based approach for rail hazardous materials shippers and receivers as well. Rail hazardous materials facilities that offer, prepare, or load the specified hazardous materials typically receive residue cars from railroad carriers. TSA is not proposing to apply the enhanced custody and control procedures to residue cars at this time, although TSA is requesting comment on whether the rule should do so. See section III A of this preamble. The proposed rule would require hazardous materials shippers to apply the enhanced custody and control procedures starting at the time they load the car. At this point, the facility can be reasonably assured that the car has not been compromised. After this point, the facility would have to protect the car from unauthorized access and apply the other measures in proposed § 1580.107, to provide assurance that the car will not present a risk when it is transported. These provisions would apply to rail hazardous materials shippers that offer, prepare, or load the specified hazardous materials, regardless of whether the facility is in an HTUA. Once the car leaves the facility, it would be difficult or impossible to determine whether the car would pass through an HTUA before reaching its destination, and so all of these cars must be protected.

TSA would require rail hazardous materials facilities within HTUAs that receive or unload cars with the specified hazardous materials to apply the enhanced chain of custody and control measures from the time they accept the car from the railroad carrier until the time they unload the car. This continues the protection of HTUAs from rail cars containing the specified hazardous materials.

The requirements of proposed § 1580.107 are further described in the Section-by-Section Analysis, below.

³³ The FRA reporting requirement set forth in 49 CFR 225.9 is discussed in greater detail in section III B above. As also noted in section III D, PHMSA requires immediate reports to the National Response Center of certain types of hazardous materials incidents. See 49 CFR 171.15.

IV. Section-By-Section Analysis of Proposed Rule

Part 1520—Protection of Sensitive Security Information

Section 1520.3 Terms Used in This Part

This rule proposes to amend 49 CFR 1520.3 by adding a number of new definitions. TSA is adding these definitions to the SSI regulation to clarify terms that appear in proposed part 1580. This includes "rail hazardous materials shipper," "rail hazardous materials receiver," "rail facility," "rail secure area," "rail transit facility," "rail transit system or rail fixed guideway system," "railroad," and "railroad carrier." In addition to explaining the meaning of these terms by referencing proposed 49 CFR 1580.3 and the United States Code (USC) (as applicable), the definitions make clear that they apply in the context of rail transportation.

The rule would also clarify the scope of the definition of "vulnerability assessment" to specifically include rail security assessments. The proposed revision would expressly include the examination of a railroad, railroad carrier, rail facility, rail hazardous materials facility, rail transit system, or rail transit facility.

TSA would add these six additional categories of rail security entities and facilities to the definition of "vulnerability assessment" to clarify that all types of rail-related vulnerability assessments constitute SSI. TSA seeks comment on whether this proposal is appropriate in its coverage of which vulnerability assessments warrant SSI treatment. TSA may revise this definition based upon comments received.

Section 1520.5 Sensitive Security Information

TSA proposes to modify the language in 49 CFR 1520.5(b)(6)(i) related to inspections and investigations of alleged regulatory violations. The proposal would expand the current provision so that it applies in the context of all forms of rail transportation, including freight and passenger railroad carriers, rail hazardous materials shippers, rail hazardous materials receivers, and rail transit systems.

Section 1520.5(b)(8) of the current SSI regulation defines details of aviation or maritime security measures as SSI, whether applied directly by the Federal government or another person. The proposed revision to 49 CFR 1520.5(b)(8) would expand this provision to cover specific details of transportation security measures

applied in rail transportation, whether applied directly by the Federal Government or another person.

Section 1520.5(b)(10) of the current SSI regulation states that training materials created or obtained to train persons who carry out aviation or maritime security measures required or recommended by DHS or DOT are SSI. The proposed revision to 49 CFR 1520.5(b)(10) would expand this provision to cover training materials for persons who carry out rail transportation security measures. These types of materials contain descriptions of security measures or countermeasures that a terrorist or other criminal could use to determine how to defeat security procedures.

Section 1520.5(b)(11) of the current SSI regulation is intended to safeguard lists of information about the identities of individuals who hold certain positions with aviation or maritime security responsibilities. The proposed revision to 49 CFR 1520.5(b)(11)(i)(A) would expand this provision to safeguard lists of information about the identities of individuals having unescorted access to a rail secure area at a rail hazardous materials shipper or receiver. Terrorists or other criminals might attempt to target these types of individuals in order to obtain unauthorized access to a rail secure area. Accordingly, lists of information that identify these individuals as having unescorted access to a rail secure area must be protected as SSI.

Section 1520.5(b)(12) of the current SSI regulation designates as SSI certain lists of critical aviation or maritime infrastructure assets prepared by Federal, State, or local government agencies. Specifically, the current provision covers any list identifying systems, facilities, or other assets, whether physical or virtual, so vital to the transportation system that the incapacity or destruction of such assets would have a debilitating impact on transportation security. The proposed revision to 49 CFR 1520.5(b)(12) would expand this provision to safeguard lists of critical infrastructure assets information concerning the rail transportation system, including rail hazardous materials shipper and receiver facilities. The expanded definition, however, would continue to cover this information as SSI only if the list is either prepared by DHS or DOT or is prepared by a State or local government agency and is submitted to DHS or DOT.

Section 1520.7 Covered Persons

Persons covered under 49 CFR 1520.7 of the current SSI regulation include:

airport operators, aircraft operators; foreign air carriers, indirect air carriers; persons who received SSI as part of a legal enforcement action; persons for whom a vulnerability assessment had been directed, created, held, funded, or approved by DHS or DOT; and persons employed by, contracted to, or acting for any of the persons listed above.

The proposed revision to 49 CFR 1520.7 would expand the coverage of the SSI regulation by adding a new paragraph (n) to address railroad carriers, rail hazardous materials shippers, rail hazardous materials receivers, and rail transit systems subject to the requirements of proposed part 1580. In this regard, TSA notes that the scope of proposed part 1580 addresses: (1) Freight and other non-passenger railroad carriers operating rolling equipment; (2) rail hazardous materials shippers (as that term is defined in proposed 49 CFR 1580.3); (3) rail hazardous materials receivers (as that term is defined in proposed 49 CFR 1580.3); (4) railroad carriers that operate or provide intercity passenger train service or commuter or other short-haul railroad passenger service in a metropolitan or suburban area (as described by 49 U.S.C. 20102), including public authorities operating passenger train service; (5) passenger or freight railroad carriers hosting the operation of passenger train service; (6) tourist, scenic, historic, and excursion rail operators, whether operating on or off the general railroad system of transportation; (7) private cars, including business/office cars and circus trains, on or connected to the general railroad system of transportation; and (8) rail transit systems, including heavy rail transit, light rail transit, automated guideway, cable car, inclined plane, funicular, and monorail systems. However, these entities and rail operations would have access to SSI only to the extent that they have a "need to know" the information under § 1520.11.

Part 1580—Rail Transportation Security Subpart A—General

Section 1580.1 Scope

TSA proposes that parts of this rule apply to all types of rail operations, including freight railroad carriers; intercity, commuter, and short-haul railroad passenger train service; and rail mass transit systems. Further, in addition to applying to all freight railroad carriers, the proposal also includes additional requirements for railroad carriers that transport hazardous materials. The NPRM would also apply to rail operations at certain

fixed-site transportation facilities, including (1) rail hazardous materials shippers that offer, prepare, or load for transportation in commerce by rail one or more of the specified hazardous materials and (2) rail hazardous materials receivers located within an HTJA that receives or unloads from transportation in commerce by rail one or more of the specified hazardous materials. The NIRM also covers the operation of private rail cars on or connected to the general railroad system of transportation and tourist, scenic, historic, and excursion operations, whether on or off the general railroad system of transportation.

Section 1580.3 Terms Used in This Part

This section contains a set of definitions to introduce the regulations TSA intends these definitions to clarify the meaning of important terms as they are used in the proposed rule. Some of the definitions involve new or fundamental concepts, which require further discussion.

The term "general railroad system of transportation" is derived from FRA's "Statement of Agency Policy Concerning Enforcement of the Federal Railroad Safety Laws," which appears in Appendix A to 49 CFR part 209, as in effect on October 1, 2005. FRA uses the term to describe 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.

The term "heavy rail transit" means service provided by self-propelled electric railcars, typically drawing power from a third rail, operating in separate rights-of-way in multiple cars, also referred to as subways, metros, or regional rail. The term "light rail transit" means service provided by self-propelled electric railcars, typically drawing power from an overhead wire, operating in either exclusive or non-exclusive rights-of-way in single or multiple cars and with shorter distance trips and frequent stops, also referred to as streetcars, trolleys, and trams. "Rail transit system" or "Rail Fixed Guideway System" means any light, heavy, or rapid rail system, monorail, inclined plane, funicular, trolley, or automated guideway. Two examples of a "rail fixed guideway system," consistent with FTA's use of the term in 49 CFR part 659, are heavy rail transit and light rail transit. However, TSA is using the term more broadly than FTA uses it in part 659. Specifically, TSA's authority over "rail fixed guideway systems," or rail transit systems, is not linked to whether

the system is regulated by FRA and is not limited to systems that receive or seek to receive funds under FTA's grant program. Accordingly, as the terms "heavy rail transit" and "light rail transit" are used in proposed part 1580, TSA's authority extends to all rail transit systems regardless of whether the system is subject to regulation by FTA or FRA or neither agency.

The term "rail hazardous materials receiver" means any facility that has a physical connection to the general railroad system of transportation and receives in transportation by rail or unloads from transportation by rail one or more of the categories and quantities of hazardous materials set forth in 49 CFR 1580.100(b), but does not include a facility owned or operated by a department, agency, or instrumentality of the Federal Government. For a facility to fall within the definition of a "rail hazardous materials receiver" there must be a physical connection to the general railroad system of transportation, such as track used by a railroad carrier to enter the facility to drop off rail cars.

The term "rail hazardous materials shipper" means any facility that has a physical connection to the general railroad system of transportation and offers, prepares, or loads for transportation by rail one or more of the categories and quantities of hazardous materials set forth in 49 CFR 1580.100(b), but does not include a facility owned or operated by a department, agency, or instrumentality of the Federal Government. The term includes companies that load or otherwise prepare tank cars for rail transportation in commerce. For a facility to fall within the definition of a "rail hazardous materials shipper," there must be a physical connection to the general railroad system of transportation, such as track used by a railroad carrier to enter the facility to pick up rail cars. A facility is not a "rail hazardous materials shipper" if it only unloads or receives one or more of the categories and quantities of hazardous materials set forth in 49 CFR 1580.100(b).

The term "rail secure area" means a secure location(s) identified by an owner or operator of a rail hazardous materials shipper or rail hazardous materials receiver where security-related pre-transportation or transportation functions are performed or rail cars containing the categories and quantities of hazardous materials set forth in 49 CFR 1580.100(b) are prepared, loaded, stored, and/or unloaded. The standards for a secure area are the same for all rail hazardous

materials shippers and receivers regardless of whether the facility is offering or receiving the hazardous material. Secure areas must have physical security measures in place, which could include fencing, lighting, or monitoring by a signaling system (such as a video system, sensing equipment, or mechanical equipment). If the owner or operator employs a signaling system, an employee or authorized representative of the owner or operator must be located either in the immediate area of the rail car or at a remote location within the facility (such as a control room) in order to observe the system.

The terms "transportation or transport" mean, in the context of freight rail, the movement of property, including loading, unloading, and storage. In the context of passenger rail, the terms mean the movement of people, boarding, and disembarking incident to that movement. As noted earlier, TSA has broad authority under ATSA to regulate the security of all modes of transportation, including rail transportation. In this regard, TSA's statutory authority is not limited by PHMSA's determination as to which functions are pre-transportation or transportation functions for purposes of the applicability of the hazardous materials laws and regulations (see 49 CFR 171.8). Under its broad authority, when TSA develops policies, strategies, and plans to address threats to transportation, it must consider the security of the entire transportation system. Because of the vulnerability of the transportation system to the introduction of an IED or other destructive instrument, TSA's security authority extends beyond freight railroad carriers (regardless of whether they transport hazardous materials) and also includes rail hazardous materials shippers before they offer the rail cars—while the rail cars are being stored incidentally to movement and during preparation and loading—and rail hazardous materials facilities after delivery, during unloading, and while the rail cars are being stored. In addition, TSA's security authority over passenger railroad carriers and rail transit systems is no less extensive than FRA's statutory authority over railroad safety matters or FTA's authority over State-conducted oversight of the safety and security of rail fixed guideway systems.

Section 1580.5 Inspection Authority

Pursuant to 49 U.S.C. 114, TSA has authority to inspect for compliance with applicable statutory and regulatory requirements. This proposed rule

notifies the public of TSA's broad statutory authority to inspect and codifies the scope of TSA's existing inspection program as it relates to rail security.

Sections 1580 5(a) and (b) state that railroad carriers, covered rail hazardous materials shippers or receivers, and transit systems must allow TSA and DHS officials working with TSA (such as representatives from DHS's Office of Infrastructure Protection) to make inspections or tests at any time or place to carry out its statutory or regulatory authorities. Proposed 49 CFR 1580 5(h) would require the carrier, shipper, receiver, or transit system to allow any authorized TSA and DHS officials to enter and be present within any area or conveyance without access media or identification media issued or approved by a railroad carrier, rail hazardous materials shipper, rail hazardous materials receiver, or transit system owner or operator, in order to inspect or test compliance, or perform other such duties as TSA may direct. This section would also set forth affirmative duties on railroad carriers, rail hazardous materials shippers, rail hazardous materials receivers, and transit system owners and operators to cooperate with and allow the inspections and tests and the copying of records, irrespective of the media on which they are stored. As to the location of the inspections, TSA must be able to inspect at every location where TSA is carrying out activities under ATSA.

In addition to inspecting for compliance with specific regulations, TSA can conduct general security assessments. TSA's authority with respect to transportation security is comprehensive and supported with specific powers to assess threats to transportation security; monitor the state of awareness and readiness throughout the rail sector; determine the adequacy of an owner or operator's transportation-related security measures; and identify security gaps. TSA, for example, could inspect and evaluate for emerging or potential security threats based on intelligence indicators to determine whether the owner or operator's strategies and security measures are likely to deter these threats. If TSA identifies security deficiencies, TSA could initiate appropriate action to enhance rail security such as counseling the railroad carrier, rail hazardous materials shipper, rail hazardous materials receiver, or rail transit system owner or operator, coordinating with other Federal, State, or local agencies to correct the deficiency, or conducting rulemakings to require enhanced security measures.

If TSA, in the course of an inspection identifies evidence of non-compliance with a DOT regulation, TSA would provide the information to the appropriate DOT modal administration for action.⁵⁴ In this regard, TSA would not directly enforce DOT security rules and would not initiate safety inspections.

An inherent part of TSA and DHS officials' performing security assessments and inspecting for regulatory (including SD) compliance is obtaining copies of records. It is necessary, so that TSA can preserve the records for further review and, on occasion, use the records as evidence. TSA does not anticipate encountering difficulty on this issue, but is including explicit language in the proposed rule, clarifying that TSA has the authority to obtain and review copies of records, in order to avoid any confusion or misunderstanding.

TSA is aware that it must conduct its inspection activity in a reasonable manner, considering all of the relevant circumstances surrounding the rail operation. However, covered entities must provide TSA with access to inspect at any time, without notice, because unexpected urgent situations may arise. To the extent practicable, TSA will make arrangements for records reviews ahead of time and will schedule the inspections for normal business hours, to ensure that appropriate owner/operator personnel are available to assist and that the inspection does not interfere or cause undue disruption. Nevertheless, TSA will have to conduct some inspections and tests unannounced, to determine whether the owner or operator is in compliance when it does not know that TSA may be inspecting. Further, in the case of passenger rail (for example), TSA may sometimes inspect and test during peak traffic periods to ensure that owners and operators are in compliance with the security requirements, even during the busiest times. These peak periods would be those times when the largest portion of the traveling public is being protected by the security measures. Finally, specific threats, heightened periods of

alot, or other emergency situations may necessitate that TSA engage in inspection and test activities outside of normal business operating hours.

Proposed 49 CFR 1580 5(b) refers to copying of records, not just documents. Records may be kept in a number of formats, such as paper, microfilm, and electronic. All of these formats fall within the scope of proposed § 1580.5(b).

Regarding TSA and DHS officials working with TSA, TSA intends to use properly trained personnel to conduct inspections. These individuals would receive training on safety procedures to follow while aboard a conveyance or inside a terminal or facility, in addition to training on technical security requirements. Individuals performing these inspections would carry Federal government credentials identifying themselves as having official authority to inspect, and any covered entity wishing to authenticate the identity of an individual purporting to represent TSA would be able to contact appropriate TSA officials at TSA's headquarters and field locations. TSA maintains an operations center that stakeholders may contact on a 24 hour a day 7 days a week basis if they have concerns.

Proposed 49 CFR 1580 5(c) requires persons regulated under this rule to allow TSA representatives, and DHS officials working with TSA, the flexibility to gain access to any conveyance, facility, terminal, or infrastructure asset without holding access or identification media issued by the owner or operator, when the officials need to conduct a security assessment, compliance inspection, or test. The act of obtaining such media would provide personnel at the inspection or test location with an opportunity to identify and recognize TSA and DHS officials, thereby reducing or negating the value of the visit. As noted above, at times, TSA/DHS may find it necessary to make unannounced, anonymous visits to an area or conveyance, but would do so under very controlled conditions using personnel who are trained both in security and in railroad, hazardous materials facility, and transit workplace safety protocols.

Subpart B-Freight Rail Including Freight Railroad Carriers, Rail Hazardous Materials Shippers, Rail Hazardous Materials Receivers, and Private Cars

Section 1580.100 Applicability

TSA proposes to apply this subpart to all freight railroad carriers and to apply additional requirements to railroad

⁵⁴ Since FRA enforces the Federal hazardous materials transportation law as it pertains to the shipment or transportation of hazardous materials by rail (49 U.S.C. 5101 et seq., as amended by section 1711 of the Homeland Security Act of 2002, (Pub. L. 107-296, Nov. 25, 2002) and Title VII of the 2005 Safe, Accountable, Flexible and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), (Pub. L. 109-59, Aug. 10, 2005)), if TSA determined that a railroad carrier or rail hazardous materials shipper had failed to develop and implement a security plan required by 49 CFR 172.800, TSA would inform FRA of the non-compliance.

carriers that transport specified hazardous materials. The subpart would also apply to rail hazardous materials facilities that offer, prepare, or load for transportation in commerce by rail one or more of the enumerated categories and quantities of hazardous materials specified in 49 CFR 1580.100(b) and certain rail hazardous materials facilities located within an HTUA that receive in transportation by rail or unload from transportation by rail one or more of the enumerated categories and quantities of hazardous materials specified in 49 CFR 1580.100(b). In addition, this subpart would also cover the operation of private rail cars on or connected to the general railroad system of transportation.

Section 1580.101 Rail Security Coordinator

It is important that TSA have a point of contact with the operator for the exchange of vital security information. The proposed rule requires that each covered freight railroad carrier, rail hazardous materials shipper, and rail hazardous materials receiver have one RSC and one or more alternate RSCs. This would allow different people to be on call at different times, but would necessitate that at least one individual be available to TSA on a 24 hour a day 7 day a week basis. TSA anticipates that the freight railroad carriers generally will designate at the corporate level a lead RSC for the entire railroad operation and select other individuals who will assist in carrying out the job duties. In the case of rail hazardous materials shippers and receivers, TSA recognizes that the large companies may have many facilities that would be subject to this rule and would expect that the companies would designate one RSC at the corporate level and would choose other corporate employees to help implement the requirements of this rule at the covered facilities.

The proposal would permit an individual serving as an RSC to perform other duties in addition to those that TSA requires. That individual need not serve full-time as the RSC. TSA anticipates that this will particularly be the case for smaller freight railroads or rail hazardous materials facilities. Regardless of who is serving as the RSC on a given day, however, the carrier or facility would remain responsible if any official to whom the RSC security functions are delegated fails to perform them properly.

Section 1580.103 Location and Shipping Information for Certain Rail Cars

TSA proposes to require the following entities to provide TSA, upon request, with the location and other shipping information of rail cars containing the hazardous materials specified in 49 CFR 1580.100(b): (1) Freight railroad carriers transporting the specified hazardous materials, (2) rail hazardous materials shippers offering, preparing, or loading for transportation in commerce by rail the specified hazardous materials, and (3) rail hazardous materials facilities receiving in commerce by rail or unloading from transportation by rail the specified hazardous materials. As discussed below, TSA believes that carriers, shippers, and receivers have the capability of using existing systems and technologies to report on the locations and shipping information of certain high profile hazardous materials. TSA anticipates that reporting requests will be rare and often coincide with elevated threat situations or in response to a security incident.

Paragraph (h) states that each affected freight railroad carrier, rail hazardous materials shipper, and rail hazardous materials receiver must develop procedures to determine the location and shipping information required under paragraph (c) of this section for rail cars under their physical custody and control containing the specified hazardous materials. The procedures must enable the carrier or facility to provide the information to TSA within one hour of receiving the request. Because TSA's proposal is a performance-based system, TSA does not require carriers or facilities to use any specific technology to acquire the location of rail cars. However, TSA anticipates that covered entities will meet the standard by using existing technology, including radio frequency identification (RFID) tags,⁵⁴ network computer systems, and telecommunication systems such as cellular telephones. TSA also expects that certain freight rail carriers and rail hazardous materials facilities will adapt procedures currently used to comply with shipping paper retention requirements under DOT's hazardous materials regulations.⁵⁵

⁵⁴ RFID tags are small electronic devices designed to contain information that can be retrieved at a distance using a specialized reader. They are known in the industry as AEI tags.

⁵⁵ In pertinent part, the Federal hazard law and regulations require rail shippers of hazardous materials to retain a copy of the shipping paper for a period of 2 years after the shipping paper is provided to a freight rail carrier and carriers to retain a copy of a shipping paper for a period of

With respect to freight railroad carriers to which this rule would apply, TSA notes that the industry may provide the Federal Government with the required location and shipping information using AEI tags.⁵⁷ The railroad industry uses a rail car and locomotive tracking system that employs AEI tags on most freight cars and locomotives in the United States and Canada. Freight railroad carriers use AEI information for confirming train consists and are beginning to use the AEI information to identify specific rail cars that have been flagged by wayside equipment defect detectors. AEI tagging is the current industry standard for rail cars.

Tracking and other types of communications systems enable freight railroad carriers to monitor a shipment while en route to its destination and to identify various service irregularities. Some types of tracking systems employ GPS or GPS-type positioning information and coded or text messaging transmitted over a terrestrial communications system. The railroad industry and FKA are cooperating on the development of Positive Train Control (PTC) systems. PTC systems include digital data link communications networks, positioning systems, on-board computers with digitized maps and in-cab displays, throttle-brake interfaces on locomotives, wayside interface units, and control center computers and displays. PTC systems can track the precise location of all trains and the individual cars that make up the train and will be capable of remote intervention with train operations. DHS is currently evaluating the feasibility, costs, and benefits of proposals to develop certain communication and tracking capabilities for rail hazardous materials shipments. As discussed in section III C 4 above, TSA is seeking comments on the feasibility of the freight rail industry using GPS tracking systems to determine the location of rail tank cars, including information on the anticipated costs and benefits of employing GPS technology for this purpose.

⁵⁷ One year after the date the shipping paper is received from the shipper. See 49 U.S.C. 5110, 49 CFR 172.201(a) and 174.24.

⁵⁸ An AEI tag system uses a series of track side readers that record the movement of rail cars as they pass by the reader. The readers then upload the car information to the railroad carrier's central data processing center, and the railroad carrier transmits this information to an industry-sponsored central database. This central database in turn supplies the car location information to other railroad carriers, rail car owners, and rail hazardous materials facilities.

Under paragraph (b), TSA would limit the potential scope of the requested location and shipping information to rail cars "within the physical custody and control" of the freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver; actual ownership of the rail car or the track on which the rail car is located is not relevant to determining which entity must provide the information to TSA. Accordingly, TSA would ask freight railroad carriers to provide information only for cars that have been accepted for, or are already in transportation, the term "accepted" means that the carrier has physically taken possession of a hazardous material for purposes of transporting it. TSA would ask rail hazardous materials facilities to report on rail cars physically located on their property that a railroad carrier has not offered or accepted for transportation.

Paragraph (c) of this section enumerates the minimum amount of information that the freight railroad carrier, the rail hazardous materials shipper, and the rail hazardous materials receiver must be able to provide to TSA upon request. This information consists of the rail car's location, railroad milepost, and track designation (such as main track, secondary track, or division and subdivision); the time the freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver determined the rail car's location, the rail car's routing, a list of the total number of rail cars containing the designated hazardous material, broken down by proper shipping name, hazard class or division number, and identification number; each rail car's initial and number; and transportation status.

In the case of freight railroad carriers, TSA would ordinarily request the rail car's location broken down by city, county, and State as well as the railroad carrier's designated milepost location. By contrast, in the case of hazardous material facilities, since TSA would already have the facility's address, TSA would likely focus its request on discerning the total number of rail cars located at that facility and the types of hazardous materials contained in those rail cars. When TSA requests a freight railroad carrier to provide a rail car's routing information, TSA intends to ask for information on the entire route, including point of origination, destination, and interchange points with other freight railroad carriers.

For each rail car containing one or more of the hazardous materials listed in proposed 49 CFR 1580.100(b), TSA would require the car report to contain

the proper shipping name, hazard class or division, and UN identification number assigned to the material in accordance with the Hazardous Materials Table in 49 CFR 172.101 (DOT's HMRA), as well as the rail car's unique identifying initial and number.

"Transportation status" refers to whether the car is being prepared for transportation, in transportation, or out of transportation. By reviewing this location and shipping information and available intelligence information, TSA will be able to determine whether it needs to implement or order additional security measures to address a particular threat or threat assessment.

The proposed rule provides freight railroad carriers, rail hazardous materials shippers, or rail hazardous materials receivers with a maximum of one hour to report the location and shipping information for the specified rail car(s) to TSA or DHS officials. TSA recognizes that the potential magnitude of the information request, as well as unique operational considerations of the railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver, may justify additional time to respond. Accordingly, this proposal permits the carrier, shipper, or receiver to seek additional time to respond to a specific request. TSA/DHS will evaluate each request on a case-by-case basis.

While the proposed rule text provides a one-hour timeframe, TSA also requests comment on an alternative time proposal. Instead of a maximum of one hour, the alternative proposal would set the maximum time period for providing information at five (5) minutes or thirty (30) minutes, depending on the nature of the request. Freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers would have a maximum of five (5) minutes from the time of a TSA request to provide the location and shipping information for a specific rail car containing the specified categories and quantities of hazardous materials. Freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers would have a maximum of thirty (30) minutes from the time of a TSA request to provide the location and shipping information for all rail cars under its physical custody and control that contain one or more of the specified categories and quantities of hazardous materials.

We note that in an emergency, such as a specific threat against a particular train or a general threat involving the metropolitan area through which the train is operating, it may be critical for TSA to have this information very quickly to address threats to persons

and property. The more quickly we can receive this information, the more quickly we can direct that protective measure be implemented. We believe that existing and emerging technology can be used to achieve these timeframes. We request comments on how these shorter timeframes could be achieved, including the cost of compliance, and we are considering adopting these shorter time frames in the final rule.

The proposal also requires that freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers submit the data in a specific format but allows a choice of five different reporting options (unless another reporting method is approved in writing by TSA). TSA proposes to establish the one hour reporting timeframe and permit only a limited number of commonly used information reporting formats based upon the importance of timely information that TSA can quickly understand under exigent circumstances. However, TSA remains open to the possibility of being less prescriptive in the final rule. TSA seeks comment on what reporting timeframe would be reasonable. TSA also seeks comment on what reporting formats would allow carriers, shippers, and receivers to provide the information to the Federal Government in a user friendly, efficient, and cost effective manner yet consistent with the security need to receive and analyze the information quickly and accurately.

Section 1580.105 Reporting Significant Security Concerns

This rule proposes to require freight railroad carriers, rail hazardous materials shippers that offer, prepare, or load for transportation in commerce by rail one or more of the categories and quantities of hazardous materials set forth in proposed 49 CFR 1580.100(b), and rail hazardous materials receivers that receive in commerce by rail or unload one or more of the categories and quantities of hazardous materials set forth in proposed 49 CFR 1580.100(b) to immediately report potential threats or significant security concerns encompassing incidents, suspicious activities, and threat information. Incidents, activities, and information include, but are not limited to:

- (1) Interference with the engineer, conductor, or other crewmember of a freight railroad train, such as an attempt to gain entry to the locomotive cab.
- (2) Bomb threats, whether specific as to target, location, and timing, or non-specific.
- (3) Reports or discovery of suspicious items that result in the disruption of rail

operations, such as evacuation of a conveyance or facility or the temporary halting of rail service due to the discovery of a large package inside a freight train locomotive. This disruption could also occur at a rail hazardous materials facility, which discovers a suspicious item within a rail secure area and delays the departure of a freight railroad carrier. Any individual may make the report or discovery; it need not come from an employee or authorized representative of the freight railroad carrier or rail hazardous materials facility.

(4) Suspicious activity occurring onboard a freight train or inside the facility of a freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver that results in a disruption of rail or facility operations, such as evacuation of a conveyance or facility or the temporary halting of rail service due to the discovery of a suspected IED. Again, this disruption could also occur at a rail hazardous materials facility that discovers a suspicious individual trespassing within a rail secure area and delays the departure of a freight railroad carrier.

(5) Suspicious activity observed at or around freight rail cars, facilities, or infrastructure used in the operation of the freight railroad, rail hazardous materials shipper, or rail hazardous materials receiver, whether observed by employees or authorized representatives of the railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver, or other individuals.

(6) Discharge, discovery, or seizure of a firearm or other deadly weapon on a freight train, in a station, terminal, storage facility or yard, rail secure area, or other location used in the operation of the freight railroad, rail hazardous materials shipper, or rail hazardous materials receiver, regardless of whether an individual legally possesses the firearm or deadly weapon.

(7) Indications of tampering with freight rail cars, whether located inside or outside the confines of a rail hazardous materials facility including signs that the security of the car may have been compromised or that an IED may be present.

(8) Information relating to the possible surveillance of a freight railroad train or facility, storage yard, rail hazardous materials shipper or receiver facility, or other location used in the operation of the freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver, regardless of whether the source of the information is an employee or authorized representative of the freight railroad

carrier, rail hazardous materials shipper, or rail hazardous materials receiver, or other individual.

(9) Correspondence received by the freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver indicating a potential threat to freight rail transportation or the rail hazardous materials facility.

(10) Other incidents involving breaches of the security of the freight railroad carrier or rail hazardous materials shipper or receiver's operations or facilities that could reasonably represent potential threats or significant security concerns.

The proposal would require freight railroad carriers and covered rail hazardous materials shippers and receivers to report the above types of concerns and threats to DHS/TSA in a manner that TSA prescribes. TSA seeks comment on the available methods of transmitting this information to TSA (such as electronically, telephonically), including anticipated costs of compliance. With respect to each concern or threat, the freight railroad carrier or covered rail hazardous materials shipper or receiver would have to report the following information, to the extent it was available and applicable, to DHS/TSA:

(1) Name of the reporting entity and contact information for communication by telephone and e-mail.

(2) The affected freight train, station, terminal, rail hazardous materials facility, or other rail facility or infrastructure.

(3) Identifying information on the affected freight train, including train line and route.

(4) The origination and route termination locations for the affected freight train.

(5) Current location of the affected freight train, with as much specificity as circumstances and available information permits.

(6) Description of the threat, incident, or activity affecting the freight train or rail facility or rail hazardous materials shipper or receiver.

(7) Names and other available biographical data of individuals purported to be involved in the threat, incident, or activity.

(8) Source of the threat information. Possible sources of the information might include a Federal (with the exception of DHS/TSA), State, or local government agency; a foreign government, to the extent there is no legal prohibition on the reporting of such information; an employee or authorized representative of the freight railroad carrier, rail hazardous materials shipper; or rail hazardous materials

receiver, another freight railroad carrier, rail hazardous materials shipper or receiver, passenger railroad carrier, or rail transit system, or a private individual.

Section 1580.107 Chain of Custody and Control Requirements

In this section, TSA proposes to require a secure chain of physical custody for rail cars containing one or more of the categories and quantities of hazardous materials set forth in proposed 49 CFR 1580.100(b). This section would impose analogous requirements on freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers.

In paragraph (a), TSA proposes that a rail hazardous materials shipper, regardless of whether it is physically located within an HTUA listed in Appendix A to part 1580, must satisfy the following requirements before it can transfer physical custody of a rail car containing the specified hazardous materials to a freight railroad carrier. First, the rail hazardous materials shipper must perform a physical security inspection of the rail car to ensure that no one has tampered with it or other compromised its security, including inspecting for IEDs and other items that do not belong. Second, the rail hazardous materials shipper must store or keep the rail car in an area with physical security measures in place during pre-transportation functions, including loading and temporary storage, until the freight railroad carrier assumes physical custody of the car. The physical security measures include such things as fencing, lighting, or video surveillance. Third, the rail hazardous materials shipper must document the transfer of custody to the freight railroad carrier, either in writing or electronically.

In paragraph (b), TSA proposes that a freight railroad carrier, regardless of whether the carrier is physically accepting the rail car at a rail hazardous materials shipper facility located outside or within an HTUA, must satisfy two requirements. First, the carrier must document the transfer of custody, either in writing or electronically. Second, the carrier must perform the security inspection that DOT is proposing to require under a new paragraph to 49 CFR 174.9.

In paragraph (c), TSA proposes requirements for certain rail car transfers occurring within an HTUA listed in Appendix A to part 1580. Specifically, TSA would require each delivering freight railroad carrier transferring physical custody of rail cars carrying one or more of the materials

listed in proposed 49 CFR 1580.100(h) to a receiving freight railroad carrier to ensure that the receiving carrier takes physical possession of the rail car before the delivering carrier leaves the interchange point. Both the delivering and receiving freight railroad carriers would be responsible for compliance under this paragraph for adopting and implementing procedures to ensure that the rail car is attended at all times during the physical transfer of custody. The procedures would include performance of the security inspection that DOT is proposing to require in 49 CFR 174.9. In addition, both freight railroad carriers must document the transfer of custody, either in writing or electronically. Paragraph (d) would apply the same requirements of paragraph (c) whenever a freight railroad carrier transfers or receives a rail car containing one or more of these materials if the rail car may subsequently enter an HTUA.

For purposes of paragraphs (c) and (d), the requirement "to ensure that the rail car is not left unattended at any time during the physical transfer of custody" means that the delivering and receiving freight railroad carriers would ensure that an employee or authorized representative of either of the railroad carriers attend to that rail car by being physically present and having an unobstructed view of the rail car prior to the delivering railroad carrier leaving the interchange point. While TSA expects that the attending employee would be the train conductor or a security guard, TSA is not specifying that any particular category of individuals needs to perform this job function and is not specifying that a freight carrier would have to use a hazmat employee (as the term is used in 49 CFR 171.8) to perform this job function. Moreover, to allow freight railroad carriers a maximum degree of flexibility in adopting and implementing procedures to meet the car attendance performance standard, this section does not specify a maximum number of rail cars permitted per attending employee (or authorized representative) or define how close that individual must be to the rail car while attending it. However, for purposes of compliance with this section, the freight railroad carriers must work together to implement procedures to ensure that individuals attend the rail car until the physical transfer of custody is complete. The requirement that an employee or authorized representative attend rail cars would be met where personnel are provided by or on behalf of a department, agency, or instrumentality

of the Federal Government to monitor or provide security for the rail car.

Paragraphs (c) and (d) would also require the receiving freight railroad carrier to perform a security inspection, which, as noted above, DOT is proposing in its NPRM. DOT's HMR currently require freight railroad carriers to conduct a safety inspection of each car containing hazardous materials at ground level. See 49 CFR 174.9. However, safety-related inspections do not specifically address the possibility that a terrorist could introduce a foreign object on the tank car or the rail car chassis, the most pernicious being an IED. In the rulemaking that PHMSA is developing concurrent to TSA's NPRM, PHMSA is proposing to increase the scope of the safety inspection to include a security inspection component for all rail cars carrying placarded loads of hazardous materials. The primary focus of the enhanced inspection would be to recognize an IED.

To guard against the possibility that an unauthorized individual could tamper with rail cars containing hazardous materials to precipitate an incident during transportation, such as detonation or release using an IED, PHMSA is proposing to require that freight railroad carriers' pre-trip inspections of placarded rail cars include an inspection for signs of tampering with the rail car, including its seals and closures, and any item that does not belong, suspicious items, or IEDs. TSA will provide guidance to freight railroad carriers to train their employees on identifying IEDs and signs of tampering. Where a freight railroad carrier finds a foreign object or indication of tampering, the freight railroad carrier would be required to take appropriate actions to ensure that the security of the rail car and its contents have not been compromised before accepting the rail car for further movement. If PHMSA's NPRM proposal to add a security inspection requirement to 49 CFR 174.9 is in effect as a regulation at the time TSA's NPRM becomes a final rule, paragraphs (c) and (d) of this section would require the freight railroad carrier's rail car attendance procedures to provide for a security inspection, in accordance with DOT's HMR.

In paragraph (d), TSA requires the delivering and receiving freight railroad carriers involved in an interchange outside an HTUA of a rail car containing one or more of the quantities and categories of hazard materials set forth in 49 CFR 1580.100(b) to adopt and implement procedures to ensure that the rail car is attended during the physical transfer of custody for rail cars if the rail

car "may subsequently enter an HTUA." The reason TSA is applying the chain of custody requirements to those interchanges outside the HTUA is to address the possibility that a terrorist would choose an unpopulated or isolated location on a railroad line to compromise the security of an unattended rail car, such as by attaching an IED to it. The rail car could then travel into an HTUA and a terrorist could detonate it, thereby using the car as a weapon of mass effect to cause significant casualties and property damage.

TSA intends that freight railroad carriers make the determination as to whether paragraph (d) is applicable based upon the route information reasonably available to them at the time the delivering railroad carrier transfers the rail car to the receiving railroad carrier. In this regard, TSA recognizes that, after a rail car has been interchanged, a change in route may become necessary resulting from a cause unknown and unforeseeable to either freight railroad carrier at the time of the interchange, such as a rockslide that blocks trackage located outside the HTUA. Accordingly, since the randomness and unpredictability of such a unique event occurring makes it unlikely that the rail car could be exploited by a terrorist, TSA would allow the unattended rail car to enter an HTUA without penalty to either freight railroad carrier. Of course, if the freight railroad carriers know in advance before the interchange that, for whatever reason, the rail car must be re-routed through an HTUA, this limited exception to the chain of custody requirements in paragraph (d) of this section would be inapplicable.

TSA is not proposing that carriers or facilities submit the transfer of custody documentation to TSA. TSA would only want the document if it requests it. Each freight railroad carrier, rail hazardous materials shipper, and rail hazardous materials receiver required to create this documentation must maintain a copy of the specified information or an electronic image thereof, and must make the record available, upon request, to TSA. TSA proposes in paragraph (h) of this section that the documentation be maintained for at least 60 calendar days.

TSA also is seeking comment on an alternative to the chain of custody requirements in proposed paragraphs (c) and (d) for transfers between railroad carriers that occur outside of an HTUA. This alternative would not require freight railroad carriers to attend rail cars while the rail cars are being transferred. Under this alternative, TSA would only permit such unattended

transfers to occur if they take place in a low risk location, such as at an appropriate distance away from such locations as schools, hospitals, and nursing homes. The receiving railroad carrier would be required to conduct a security inspection of the rail car as provided in proposed paragraph (d) of this NPRM. In addition, both the transferring and the receiving railroad carrier would be required to document the physical transfer of custody as in proposed (c) and (d). TSA seeks comment on whether the potential security threat from this alternative warrants the inclusion of requirements to attend the car as now is in proposed paragraphs (c) and (d). TSA also invites comments on the appropriate criteria that TSA should use to define the term "low risk location," including comments on appropriate geographical distances and/or boundaries to define these locations.

In paragraph (e), TSA is proposing that freight railroad carriers delivering rail cars containing one or more of the quantities and categories of hazardous materials set forth in 49 CFR 1580.100(b) to a rail hazardous materials receiver located within an HTUA must ensure that an employee or authorized representative of the receiver is physically present to accept receipt of the car, unless the car is delivered to a secure area of the facility. Alternatively, the freight railroad carrier may use its own employees or authorized representatives to attend the rail car until the rail hazardous materials receiver accepts physical custody and control of the car. The freight railroad carrier must not depart the rail hazardous materials receiver until it has released the car to a hazardous materials facility employee or authorized representative or has secured the car in a secure area.

The standards for a rail secure area are the same for rail hazardous materials facilities regardless of whether the rail hazardous materials facility is receiving or offering the hazardous material. A "rail secure area" is defined in proposed 49 CFR 1580.3 as the portion of the "rail hazardous materials facility where security-related pre-transportation or transportation functions are performed on rail cars containing the categories and quantities of hazardous materials set forth in proposed 49 CFR 1580.100(b) are prepared, loaded, stored, and/or unloaded." As stated in proposed paragraph (i) of this section, secure areas must have physical security measures in place to prevent unauthorized access to rail cars that contain the specified categories and quantities of hazardous materials. These

measures could include fencing, lighting, or monitoring by a signaling system (such as a video system, sensing equipment, or mechanical equipment) that is observed by an employee or authorized representative of the rail hazardous materials shipper or receiver who is located either in the immediate area of the rail car or at a remote location within the facility such as a control room.

Paragraph (f) applies only to rail hazardous materials facilities located within an HTUA that receive from a freight railroad carrier or unload rail cars containing one or more of the quantities and categories of hazard materials set forth in proposed 49 CFR 1580.100(b). Consistent with the requirements placed upon freight railroad carriers by paragraph (e), the rail hazardous materials receiver must maintain positive control of the rail car during the physical transfer of custody, which involves not leaving the car unattended and placing the car in a secure area. The requirements for rail hazardous materials facilities that, in addition to receiving or unloading one or more of the hazardous materials referenced in paragraph (f), also offer, prepare, or load these materials for transportation by freight railroad carriers are set forth in paragraph (a) of this section. In accordance with paragraph (f), during unloading and temporary placement of the rail car, a rail hazardous materials receiver located within an HTUA must keep the rail car in a secure area with physical security measures in place, such as fencing, lighting, or video surveillance.

Paragraph (g) provides an exception to the security requirements contained in paragraph (a) for rail hazardous materials receivers located an HTUA, that in the normal course of their business do not offer, prepare, or load rail cars containing the categories and quantities of hazardous material set forth in proposed 49 CFR 1580.100(b) for transportation by rail. Rail hazardous materials facilities located outside an HTUA that routinely receive shipments of the specified categories and quantities of hazardous material, that receive and subsequently reject and return a rail car containing the hazardous material to the originating offeror or shipper are not, by virtue of rejecting and returning a shipment, required to meet the security requirements of paragraph (a). TSA is providing this exception, because the randomness and unpredictability of such an event makes it unlikely that a terrorist could exploit the rail car and use it as a weapon of mass effect. However, the freight railroad carrier

receiving the rejected rail car would still be subject to the requirements of this section.

Paragraph (j) allows any rail hazardous materials receiver located within an HTUA to apply for a waiver from some or all of the chain of custody requirements if the receiver believes, based upon the operational characteristics and geographical location of its facility, that the potential security threat of its facility is insufficient to warrant application of the chain of custody requirements in paragraph (f). In considering whether to grant a waiver, TSA would analyze factors that relate to the potential security threat. The factors include: (1) The quantities and types of all hazardous materials that the rail hazardous materials receiver typically receives or unloads; (2) the receiver's geographical location in relationship to populated areas, which includes both daytime office building populations and populations in residential neighborhoods; (3) the receiver facility's immediate proximity to entities that may be attractive targets, such as other businesses (including other hazardous materials facilities), residential homes and apartment buildings, elementary schools, hospitals, nursing homes, assisted living facilities, and sports stadiums; (4) any information regarding threats to the facility; and (5) any other circumstances unique to that receiver's activities that would demonstrate that these activities present a low security risk. For instance, if a requestor were to present an analysis showing that, due to the topography of the area, a release of the hazardous material would be unlikely to cause a significant danger to persons in the area, TSA would consider that information as a factor in considering whether to grant or deny the waiver. After reviewing a rail hazardous materials receiver's application for a waiver, and consulting as necessary and appropriate with other Federal, State, and local governmental agencies, TSA would send a written decision to the receiver.

Section 1580.109 Preemptive Effect

Section 20106 of title 49 of the U.S.C. provides that all regulations prescribed by the Secretary of Homeland Security related to railroad security matters preempt any State law, regulation, or order covering the same subject matter. A State may, however, adopt or continue an additional or more stringent regulation when that provision is: (1) Necessary to eliminate or reduce an essentially local security hazard; (2) not incompatible with a Federal law, regulation, or order; and (3) does not

unreasonably burden interstate commerce. *Id.*

Proposed § 1580.109 informs the public of the preemptive effect of proposed 49 CFR 1580.107 regarding chain of custody and control requirements for rail cars containing the categories and quantities of hazardous materials set forth in proposed 49 CFR 1580.100(b). In the past, TSA has not included regulatory text about preemptive effect in its regulations. The absence of such a provision in a Federal regulation does not necessarily indicate that TSA does not intend to preempt State or local regulations. However, TSA has included such a provision in this proposed rule, so that its position regarding preemptive effect is clear.

Consistent with 49 U.S.C. 20106, TSA proposes to preempt any State or local laws regarding security measures during the physical transfer of custody and control of a rail car containing hazardous materials. We believe that such security measures must be subject to uniform national standards. This preemption would apply to all "hazardous materials" as defined in 49 CFR 171.8. It would be impractical and burdensome to the secure chain of physical custody and control process to require the regulated parties to develop multiple sets of procedures to comply with varying State and local requirements. TSA is aware that, if this final rule did not preempt State or local regulations regarding the chain of custody requirements in proposed § 1580.107, a freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver may need to comply with different requirements in different jurisdictions. This could require a substantial resource commitment, because it could necessitate instructing the individuals involved in carrying out chain of custody requirements in accordance with a multitude of different operating rules and practices, which could raise significant safety and security concerns. Carriers could also be required to vary the size and training qualifications of the train crew based upon the varying laws in each jurisdiction. Because rail transportation of hazardous materials frequently involves transportation across jurisdictions and because of the resources necessary to comply with potential and varying chain of custody requirements, TSA believes that subjecting carriers to additional state regulations in this area would likely place an unreasonable burden on interstate commerce. TSA seeks to avoid this result.

Although national uniformity, to the extent practicable, of laws, regulations,

and orders related to rail security is vitally important, TSA recognizes a need for emergency preparedness at the State and local level. Accordingly, TSA does not intend to preempt inspection activities conducted in furtherance of State and local laws or preempt requirements to appoint a RSC, or report significant security concerns.

As noted above, TSA does not intend to preempt the States from requiring freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers to designate a point of contact who the State could reach immediately concerning security or other emergency matters. In this regard, TSA does not intend to prevent the States from requiring the regulated parties to designate an individual as a point of contact in addition to the person(s) they select to serve as the corporate level RSC under proposed 49 CFR 1580.101. Since TSA recognizes the important security role of local law enforcement agencies, TSA also does not intend to preempt the States from requiring freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers to report potential threats and significant security concerns to the States in addition to these entities complying with TSA's reporting requirements. If an emergency situation develops, TSA expects that the first priority of the freight railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers would be to call 911 and follow the directions of the police and other first responders to the scene.

TSA seeks comment on the scope of the subject matter that this proposed rule would or would not preempt under 49 U.S.C. 20106.

Subpart C—Passenger Rail Including Passenger Railroad Carriers, Rail Transit Systems, Tourist, Scenic, Historic, and Excursion Operators, and Private Cars

Section 1580.200 Applicability

TSA proposes that this subpart apply to all types of passenger rail operations, including intercity, commuter, and short-haul railroad passenger train service, and rail mass transit systems. The subpart would also cover the operation of private rail cars on or connected to the general railroad system of transportation, and tourist, scenic, historic, and excursion operations, whether on or off the general railroad system of transportation.

Section 1580.201 Rail Security Coordinator

The proposed rule requires that each passenger railroad carrier and each rail transit system covered within the scope of part 1580 must have one or more RSCs. Owners and operators of private rail cars, including business/office cars, circus trains, tourist, scenic, historic, or excursion operations would only be required to designate an RSC if TSA specifically notified them in writing that a security threat exists concerning that operation.

As discussed in section III B above, the proposed rule would allow different people to be on call at different times, but would necessitate that at least one individual be available to TSA on a 24 hours, 7 days a week basis. TSA anticipates that the passenger railroad carriers and rail transit systems will generally designate a lead RSC at the corporate level for the entire rail operation and also select other individuals to assist in carrying out the job duties.

The proposal would also permit an individual serving as an RSC to perform other duties in addition to those that TSA requires, that individual need not serve full-time as the RSC. Particularly in the case of smaller passenger railroad or rail transit system operations, TSA anticipates that serving as the RSC will not be an individual's permanent full-time job. Regardless of who is serving in the role of the RSC on a given day, the passenger railroad carrier or rail transit system would remain responsible if any official to whom the RSC security functions are delegated fails to perform them properly.

The proposal applicable to passenger railroads and rail transit systems described in § 1580.201 would subsume the existing requirement in TSA's rail SDs that passenger rail operators designate and use a primary and alternate Security Coordinator and provide current name and contact information to TSA via email. However, this proposal would not change the requirements in the rail SDs that the Security Coordinator:

- Review with sufficient frequency, as practicable and appropriate, all security-related functions to ensure they are effective and consistent with all applicable rail passenger security measures, including the SDs.
- Upon learning of any instance of non-compliance with TSA-required security measures, immediately initiate corrective action.

Section 1580.203 Reporting Significant Security Concerns

Passenger railroad carriers and rail transit systems would be required to immediately report potential threats or significant security concerns encompassing incidents, suspicious activities, and threat information including, but not limited to:

(1) Interference with the crew of the passenger train or rail transit vehicle, such as by attempting to gain entry to the locomotive cab or crew compartment

(2) Bomb threats, whether specific as to target, location, and timing, or non-specific.

(3) Reports or discovery of suspicious items that result in the disruption of passenger rail operations, such as evacuation of a conveyance or facility or the temporary halting of rail service

(4) Suspicious activity occurring onboard a passenger train or rail transit vehicle or inside the facility of a passenger railroad carrier or rail transit system that results in a disruption of rail operations, such as evacuation of a conveyance or facility or the temporary halting of rail service due to the discovery of a suspected IED

(5) Suspicious activity observed at or around passenger rail cars or rail transit vehicles, facilities, or infrastructure used in the operation of the passenger railroad or rail transit system, whether observed by employees or authorized representatives of the railroad carrier or rail transit system or other individuals

(6) Discharge, discovery, or seizure of a firearm or other deadly weapon on a passenger train or rail transit vehicle or in a station, terminal, storage facility or yard, or other location used in the operation of the passenger railroad or rail transit system, regardless of whether an individual legally possesses the firearm or deadly weapon.

(7) Indications of tampering with passenger rail cars or rail transit vehicles, including signs that the security of the car or vehicle may have been compromised or an IED may be present.

(8) Information relating to the possible surveillance of a passenger train or rail transit vehicle or facility, storage yard, or other location used in the operation of the passenger railroad carrier or rail transit system, regardless of whether the source of the information is an employee or authorized representative of the passenger railroad carrier or rail transit system or other individual

(9) Correspondence received by the passenger railroad carrier or rail transit system indicating a potential threat to passenger or freight rail transportation.

(10) Other incidents involving breaches of the security of the passenger railroad carrier or the rail transit system operations or facilities that could reasonably represent potential threats or significant security concerns.

The proposal would require passenger railroad carriers and rail transit systems to report the above types of concerns and threats to DHS/TSA in a manner that TSA prescribes. The final rule will provide details of the reporting process. With respect to each concern or threat, the passenger railroad carrier or rail transit system would have to report the following information, to the extent it was available and applicable, to DHS/TSA:

(1) Name of the reporting entity and contact information for communication by telephone and e-mail.

(2) Affected station, terminal, or other facility

(3) Identifying information on the affected passenger train or rail transit vehicle, including the train number, train line, and route

(4) The origination and route termination locations for the affected passenger train or rail transit vehicle

(5) Current location of the affected passenger train or rail transit vehicle, with as much specificity as circumstances and available information permits.

(6) Description of the threat, incident, or activity affecting the passenger train or rail transit vehicle or facility.

(7) Names and other available biographical data of individuals purported to be involved in the threat, incident or activity

(8) Source of the threat information
Possible sources of the information might include: a Federal (with the exception of DHS/TSA), State, or local government agency, a foreign government, to the extent there is no legal prohibition on the reporting of such information, an employee or authorized representative of the passenger railroad carrier or rail transit system; another passenger railroad carrier or rail transit system or freight railroad carrier; or a private individual

The requirements of the proposed rule do not supersede FTA's State Safety Oversight rules found at 49 CFR part 659. Some duplication of reporting may occur, as entities may have to report incidents to an OA under 49 CFR 659.33 and DHS under 49 CFR 1580.203 of the proposed rule. A suspected terrorist incident resulting in loss of life, injuries requiring medical attention, extensive property damage, and/or evacuation of rail transit system facilities would be subject to the proposed rule and to FTA's State Safety Oversight

requirements for accident reporting. Significantly though, the purposes of the reports differ dramatically. TSA needs information immediately on potential threat, suspicious activities, and security incidents for the purposes of comprehensive intelligence analysis, threat assessment and allocation of security resources. The report to the OAs meets a more general need for situational awareness, particularly pertaining to safety conditions. In any event, the required reporting under the proposed rule and the reporting under 49 CFR 659.33 do not overlap extensively. Additionally, it is not unusual in the transportation sector generally and the passenger rail and rail transit mode in particular for carriers and systems to report matters to Federal and State regulatory entities. However, TSA invites comments on the matter.

V. Rulemaking Analyses and Notices

Proposed changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 (E.O. 12866), Regulatory Planning and Review (58 FR 51735, October 4, 1993), directs each Federal agency to propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (19 U.S.C. 2531–2533) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. Fourth, the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually (adjusted for inflation). The OMB A–4 Accounting Statement is located in the full regulatory evaluation.

In conducting these analyses, TSA determined:

(1) This rulemaking would not constitute an economically "significant regulatory action" as defined in the Executive Order.

(2) This rulemaking would have a yet to be determined impact on small businesses. We have conducted an Initial Regulatory Flexibility Analysis (IRFA) for comment.

(3) This rulemaking would not constitute a barrier to international trade.

(4) This rulemaking would not impose an unfunded mandate on state, local, or tribal governments, or on the private sector.

These analyses, available in the public docket, are summarized below. The reader is cautioned that we did not attempt to replicate precisely the regulatory language in this discussion of the proposed rule, the regulatory text, not the text of this evaluation, is legally binding. We invite comments on all aspects of the economic analysis. We will attempt to evaluate all regulatory evaluation comments submitted by the public; however, those comments with specific data sources or detailed information will be more useful in improving the impact analysis. If possible, evaluation comments should be clearly identified with the evaluation issue or section. Including page numbers or figure references with your comments will expedite the process and

ensure the issue is addressed by the most appropriate agency experts.

A. Executive Order 12866 Assessment (Regulatory Planning and Review)

Impact Summary

The proposed rule would address threats and vulnerabilities in the rail transportation sector. This summary provides a synopsis of the costs and benefits of the proposed rule.

Benefits of the Proposed Rule

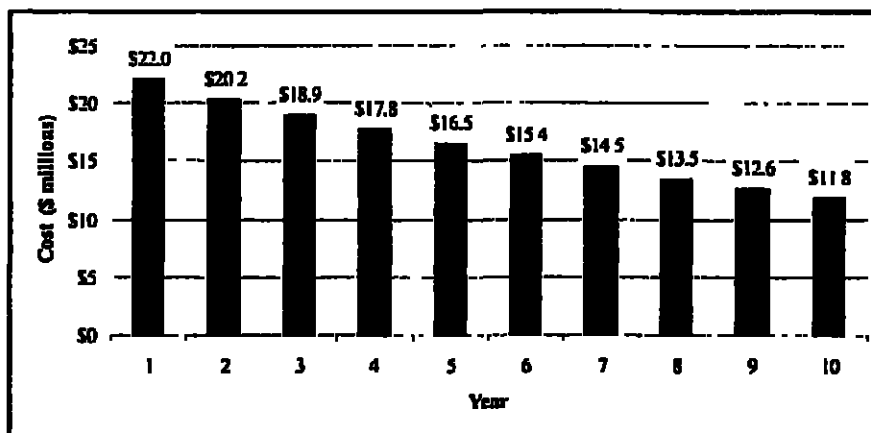
The proposed rule would enhance the security of rail transportation by: (1) Giving TSA and DHS the authority to conduct inspections in order to assess and mitigate threats to security, (2) providing TSA and DHS with a regulatory mechanism to locate rail cars containing certain hazardous materials, (3) mandating that rail hazardous materials facilities that ship or receive these materials conduct routine inspections of shipments, (4) creating a secure chain of custody requirement for the transfer of rail cars containing these materials; and (5) requiring certain rail

hazardous materials shipper and receiver facilities to store rail cars containing these hazardous materials in areas with physical security controls.

Costs of the Proposed Rule

The costs of the proposed rule would result primarily from the requirements for: (1) Rail carriers and rail hazardous materials shippers and receivers to establish secure chains of custody for hazardous materials covered by the NPRM, and (2) railroad carriers, rail hazardous materials shippers, and rail hazardous materials receivers to provide TSA and DHS with various pieces of information. TSA concluded that the total cost of the proposed rule, discounted at 7 percent, would range from \$152.8 million to \$173.9 million. See Figure 1 for the primary 10 year cost estimate, which equals \$163.3 when discounted at 7 percent. A detailed discussion of how TSA calculated this estimate and the range of estimates discussed above is available on the docket. The agency seeks comments on all cost estimates.

Figure 1: Total Cost of the Proposed Rule, Discounted 7 Percent



B. Regulatory Flexibility Act Assessment

The Regulatory Flexibility Act (RFA) of 1980 requires that agencies perform a review to determine whether a proposed or final rule will have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA. For purposes of the RFA, small entities include small businesses, not-for-profit organizations, and small governmental jurisdictions. Individuals and States are not included in the definition of a small entity.

This proposed rule would have a yet to be determined impact on small entities, as defined by the RFA. TSA, therefore, has prepared an Initial Regulatory Flexibility Analysis, which is available on the docket. TSA requests comments on this analysis.

C. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501 *et seq.*) requires that TSA consider the impact of paperwork and other information collection burdens imposed on the public and, under the provisions of PRA section 3507(d), obtain approval from the Office of Management and Budget

(OMB) for each collection of information it conducts, sponsors, or requires through regulations.

This proposed rule contains new information collection activities subject to the PRA. Accordingly, TSA has submitted the following information requirements to OMB for its review.

Title. Rail Transportation Security

Summary: This proposal would require: (1) Freight and passenger railroad carriers, rail transit systems, certain rail hazardous materials shipper and receiver facilities, tourist, scenic, historic, and excursion rail operations (whether operating on or off the general railroad system of transportation), and

private rail car operations (on or connected to the general railroad system of transportation) to allow TSA and DHS officials working with TSA to enter and be present within any area or within any conveyance to conduct inspections, tests, or to perform such other duties as TSA directs, including copying of records, (2) freight railroad carriers, certain rail hazardous materials shipper and receiver facilities, passenger railroad carriers, and rail mass transit systems to designate a rail security coordinator and at least one alternate rail security coordinator to be available to TSA on a 24 hours, 7 days a week basis to serve as primary contact for receipt of intelligence information and other security-related activities, (3) freight and passenger railroad carriers, certain rail hazardous materials shippers and receivers, passenger railroad carriers, rail mass transit systems, tourist, scenic, historic, and excursion rail operations (whether operating on or off the general railroad system of transportation), and private rail car operations (on or connected to the general railroad system of transportation) to immediately report potential threats and significant security concerns to DHS, (4) freight railroad carriers and certain rail hazardous materials shippers and receivers to provide for a secure chain of custody and control of rail cars containing a specified quantity and type of hazardous material, and (5) SSI protection to be extended to certain rail security information, with corresponding responsibilities of rail entities as covered persons under the SSI regulation.

Use of This proposal would support the information needs of TSA to enhance security in the following modes of transportation: freight rail, including freight railroad carriers, rail hazardous materials facilities which offer, load, prepare, receive and/or unload certain types and quantities of hazardous materials, and private cars; passenger rail, including passenger railroad carriers such as intercity and commuter passenger rail operations, rail transit systems, tourist, scenic, historic, and excursion rail operations (whether operating on or off the general railroad system of transportation), and private rail car operations (on or connected to the general railroad system of transportation).

Respondents (including number of) The likely respondents to this proposed information requirement are an estimated 1,791 freight and passenger railroad carriers, rail transit systems, and rail hazardous materials shippers and receivers.

Frequency TSA estimates each of the 949 freight and passenger railroad carrier, rail transit systems, and rail hazardous materials shippers and receivers will respond once to submit RSC information to TSA. Additionally, TSA estimates that each freight railroad carrier will respond anywhere from 1 to 36 times per year depending on the amount of PHH materials the carrier transports. This includes all requirements on freight railroad carriers in this proposal. TSA estimates that each passenger rail and rail transit entity will respond between 0 and 1,480 times per year. TSA estimates that each rail hazardous materials shipper and receiver facility will respond from 0 to 2 times per year. Thus, the annual frequency of information requirements is between 49,762 to 99,862.

Annual Burden Estimate: This proposal would result in an annual recordkeeping and reporting burden in the range of \$3,420,055 to \$6,576,955. Larger reporting burdens are anticipated for passenger rail systems due to higher estimates of suspicious incident reports.

TSA is soliciting comments to—

- (1) Evaluate whether the proposed information requirement is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
- (2) Evaluate the accuracy of the agency's estimate of the burden;
- (3) Enhance the quality, utility, and clarity of the information to be collected; and
- (4) Minimize the burden of the collection of information on those who are to respond, including using appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Individuals and organizations may submit comments on the information collection requirements by February 20, 2007. Direct the comments to the address listed in the ADDRESSES section of this document, and fax a copy of them to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention DHS-TSA Desk Officer, at (202) 395-5806. A comment to OMB is most effective if OMB receives it within 30 days of publication. TSA will publish the OMB control number for this information collection in the Federal Register after OMB approves it.

As protection provided by the PRA, as amended, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

D International Trade Impact Assessment

The Trade Agreement Act of 1979 prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. TSA has assessed the potential effect of this rulemaking and has determined that it will have only a domestic impact and therefore no effect on any trade-sensitive activity.

E. Unfunded Mandates Reform Act Analysis

The Unfunded Mandates Reform Act of 1995 is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments. Title II of the Act requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in a \$100 million or more expenditure (adjusted annually for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action."

This rulemaking does not contain such a mandate. The requirements of Title II of the Act, therefore, do not apply and TSA has not prepared a statement under the Act.

F Executive Order 13132, Federalism

TSA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, entitled "Federalism," issued August 4, 1999. Executive Order 13132 requires TSA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" are defined in the Executive Order to include regulations that have "substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

TSA proposes that this rule would preempt certain State, local, and tribal requirements, including any such requirements prescribing or restricting

security measures during the physical transfer of custody and control of a rail car containing hazardous materials. This is consistent with applicable statutes and with sound policy. Congress has enacted comprehensive Federal railroad laws (49 U.S.C. 20101 *et seq.*), which mandate that "[l]aws, regulations and orders related to railroad safety and laws, regulations, and orders related to railroad security [] be nationally uniform to the extent practicable." See 49 U.S.C. 20106. To achieve national uniformity, the Federal railroad laws "expressly preempt[] state authority to adopt safety rules, save for two exceptions." See *Union Pacific Railroad Co. v. California Public Utilities Comm'n*, 346 F.3d 851, 858 (9th Cir. 2003), *see also* 49 U.S.C. 20106. A state may enact or continue in force a law related to railroad safety or security "until the Secretary of Transportation (with respect to railroad safety matters), or the Secretary of Homeland Security (with respect to railroad security matters), prescribes a regulation or issues an order covering the subject matter of the State requirement." 49 U.S.C. 20106. "Even after such a federal regulation issues, a State may adopt a more stringent law when 'necessary to eliminate or reduce an essentially local safety or security hazard' if it 'is not incompatible' with the federal regulation and 'does not unreasonably burden interstate commerce.'" *CSX Transportation, Inc. v. Williams*, 406 F.3d at 670-71; 49 U.S.C. 20106.

A primary security concern related to the rail transportation of hazardous materials is the prevention of a catastrophic release or explosion in proximity to densely populated areas, including urban areas and events or venues with large numbers of people in attendance. Also of major concern is the release or explosion of a rail car in proximity to iconic buildings, landmarks, or environmentally significant areas. These are national concerns that require a uniform national regulatory approach that does not require regulated parties to implement different measures in different jurisdictions across the nation. TSA is therefore proposing a nationally-uniform regulatory provision requiring chain of custody procedures. This would avoid the burden on interstate commerce that would result if multiple States and localities established their own chain of custody requirements.

Although proposed § 1580.107 would preempt State and local requirements addressing the same matters, TSA does not believe that the proposed custody and control requirements of this rulemaking would have an immediate

substantial direct effect on the States, the relationship between the national government and the States, or the distribution of power and responsibilities among the various levels of government. The rule would not require any actions by States or localities. In addition, only one state has enacted a measure addressing chain of custody and control requirements for the rail transportation of hazardous materials.¹⁰ Thus, it appears that the proposed rule would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment at this time. TSA invites comments from States and localities on whether promulgation of a final rule with the preemptive effects provided in proposed § 1580.109 would have substantial direct effects on States and localities. Additionally, TSA plans to consult with the States and/or their representatives during the public comment period concerning this proposed rule.

G Environmental Analysis

TSA has reviewed this action under Department of Homeland Security (DHS) Management Directive 5100.1, Environmental Planning Program (effective April 19, 2006), which guides TSA compliance with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321-4370). We have determined that this proposal is covered by the following categorical exclusions (CATEX) listed in the DHS regulation, to wit: Number A3(a) (administrative and regulatory activities involving the promulgation of rules and the development of policies); paragraph A4 (information gathering and data analysis); paragraph A7(d) (conducting audits, surveys and data collection of a minimally intrusive nature, to include vulnerability, risk and structural integrity assessments of infrastructure); paragraph B3 (proposed activities and operations to be conducted in existing structures that are compatible with ongoing functions); and paragraph B11 (routine monitoring and surveillance activities that support homeland security, such as patrols, investigations and intelligence gathering).

Additionally, we have determined that this proposal meets the three conditions required for a CATEX to apply, as described in paragraph 3.2 (Conditions and Extraordinary Circumstances). The rule establishes new security requirements for rail transportation, to include: Requiring freight and passenger railroad carriers, rail transit systems, certain rail

hazardous materials shipper and receiver facilities, tourist, scenic, historic, and excursion rail operations (whether operating on or off the general railroad system of transportation), and private rail car operations (on or connected to the general railroad system of transportation) to give TSA officials and DHS officials working with TSA access to carry out security-related duties, requiring freight and passenger railroad carriers, certain rail hazardous materials shipper and receiver facilities, and rail transit systems to appoint and use rail security coordinators as TSA points of contact, requiring freight railroad carriers and certain rail hazardous materials shipper and receiver facilities to track and report the location of specified rail cars upon request, requiring improved security measures to protect certain railroad shipments, and extending the protection of the SSI program to rail transportation information.

H Energy Impact Analysis

The energy impact of the notice has been assessed in accordance with the Energy Policy and Conservation Act (EPCA), Pub. L. 94-163, as amended (42 U.S.C. 6362). We have determined that this rulemaking is not a major regulatory action under the provisions of the EPCA. We also have analyzed this proposed rule under E.O. 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," 66 FR 28355 (May 18, 2001). We have determined that it is not a "significant energy action" under that order. While it is a "significant regulatory action" under E.O. 12868, it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The Administrator of the Office of Information and Regulatory Affairs has not designated it as a significant energy action. Therefore, a Statement of Energy Effects is not required for this rule under E.O. 13211.

List of Subjects

49 CFR Part 1520

Air carriers, Aircraft, Airports, Maritime carriers, Rail hazardous materials receivers, Rail hazardous materials shippers, Rail transit systems, Railroad carriers, Railroad safety, Railroads, Reporting and recordkeeping requirements, Security measures, Vessels

49 CFR Part 1580

Hazardous materials transportation, Mass transportation, Rail hazardous materials receivers, Rail hazardous

¹⁰ California adopted the "Local Community Rail Security Act of 2006" on October 1, 2006.

materials shippers, Rail transit systems, Railroad carriers, Railroad safety, Railroads, Reporting and recordkeeping requirements, Security measures

The Proposed Rule

For the reasons set forth in the preamble, the Transportation Security Administration proposes to amend Chapter XII, of Title 49, Code of Federal Regulations, as follows:

Title 49—Transportation

Chapter XII—Transportation Security Administration, Department of Homeland Security

PART 1520—PROTECTION OF SENSITIVE SECURITY INFORMATION

1. The authority citation for part 1520 continues to read as follows:

Authority: 46 U.S.C. 70102–70106, 70117, 49 U.S.C. 114, 40113, 44901–44907, 44913–44914, 44910–44918, 44935–44936, 44942, 46105.

2. In § 1520 J, add definitions of “Rail hazardous materials receiver,” “Rail hazardous materials shipper,” “Rail facility,” “Rail secure area,” “Rail transit facility,” “Rail transit system,” “Railroad,” and “Railroad carrier,” amend the definition of “Vulnerability assessment” to read as follows, and insert in alphabetical order.

§ 1520.3 Terms used in this part.

Rail facility means “rail facility” as defined in 49 CFR 1580

Rail hazardous materials receiver means “rail hazardous materials receiver” as defined in 49 CFR 1580 3

Rail hazardous materials shipper means “rail hazardous materials shipper” as defined in 49 CFR 1580 3

Rail secure area means “rail secure area” as defined in 49 CFR 1580.3.

Rail transit facility means “rail transit facility” as defined in 49 CFR 1580 3.

Rail transit system or Rail Fixed Guideway System means “rail transit system” or “Rail Fixed Guideway System” as defined in 49 CFR 1580 3.

Railroad means “railroad” as defined in 49 U.S.C. 20102(1).

Railroad carrier means “railroad carrier” as defined in 49 U.S.C. 20102(2)

Vulnerability assessment means any review, audit, or other examination of the security of a transportation infrastructure asset, airport, maritime facility; port area; vessel; aircraft; railroad; railroad carrier, rail facility; train; rail hazardous materials shipper or receiver facility, rail transit system; rail transit facility; commercial motor vehicle; or pipeline; or a transportation-

related automated system or network, whether during the conception, planning, design, construction, operation, or decommissioning phase. A vulnerability assessment may include proposed, recommended, or directed actions or countermeasures to address security concerns.

3. In § 1520 5(b), revise paragraphs (b)(6)(i), (8) introductory text, (10), (11)(i)(A), and (12) introductory text to read as follows

§ 1520.5 Sensitive security information.

(b) * * *

(6) * * *

(i) Details of any security inspection or investigation of an alleged violation of aviation, maritime, or rail transportation security requirements of Federal law that could reveal a security vulnerability, including the identity of the Federal special agent or other Federal employee who conducted the inspection or audit

(8) *Security measures.* Specific details of aviation, maritime, or rail transportation security measures, both operational and technical, whether applied directly by the Federal Government or another person, including—

(10) *Security training materials.* Records created or obtained for the purpose of training persons employed by, contracted with, or acting for the Federal Government or another person to carry out aviation, maritime, or rail transportation security measures required or recommended by DHS or DOT.

(11) * * *

(i) * * *

(A) Having unescorted access to a secure area of an airport, a rail secure area, or a secure or restricted area of a maritime facility, port area, or vessel.

(12) *Critical aviation, maritime, or rail infrastructure asset information.* Any list identifying systems or assets, whether physical or virtual, so vital to the aviation, maritime, or rail transportation system (including rail hazardous materials shippers and rail hazardous materials receivers) that the incapacity or destruction of such assets would have a debilitating impact on transportation security, if the list is—

4. In § 1520.7, add new paragraph (n) to read as follows:

§ 1520.7 Covered persons.

* * * * *

(n) Each railroad carrier, rail hazardous materials shipper, rail hazardous materials receiver, and rail transit system subject to the requirements of part 1580 of this chapter

5. Add part 1580 to read as follows

PART 1580—RAIL TRANSPORTATION SECURITY

Subpart A—General

Sec

1580.1 Scope

1580 J Terms used in this part

1580 5 Inspection authority.

Subpart B—Freight Rail Including Freight Railroad Carriers, Rail Hazardous Materials Shippers, Rail Hazardous Materials Receivers, and Private Cars

1580 100 Applicability

1580.101 Rail security coordinator

1580.103 Location and shipping

Information for certain rail cars

1580.105 Reporting significant security concerns

1580 107 Chain of custody and control requirements.

1580 109 Proscriptive effect

Subpart C—Passenger Rail Including Passenger Railroad Carriers, Rail Transit Systems, Tourist, Scenic, Historic and Excursion Operators, and Private Cars

1580 200 Applicability

1580 201 Rail security coordinator

1580 203 Reporting significant security concerns

Appendix A to Part 1580—High Threat Urban Areas

Appendix B to Part 1580—Summary of the Applicability of Part 1580

Authority: 49 U.S.C. 114

Subpart A—General

§ 1580.1 Scope.

Except as provided in paragraph (i) of this section, this part includes requirements for the following persons. Appendix B of this part summarizes the general requirements for each person, and the specific sections in this part provide detailed requirements.

(a) Each freight railroad carrier that operates rolling equipment on track that is part of the general railroad system of transportation.

(b) Each rail hazardous materials shipper that offers, prepares, or loads for transportation in commerce by rail one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) of this part

(c) Each rail hazardous materials receiver, located within a High Threat Urban Area that receives in commerce by rail or unloads one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) of this part.

(d) Each passenger railroad carrier, including a carrier operating light rail or heavy rail transit service on track that is part of the general railroad system of transportation, each carrier operating or providing intercity passenger train service or commuter or other short-haul railroad passenger service in a metropolitan or suburban area (as described by 49 U.S.C. 20102), and each public authority operating passenger train service.

(e) Each passenger or freight railroad carrier hosting an operation described in paragraph (d) of this section.

(f) Each tourist, scenic, historic, and excursion rail operator, whether operating on or off the general railroad system of transportation.

(g) Operation of private cars, including business/office cars and circus trains, on or connected to the general railroad system of transportation.

(h) Each rail transit systems, including heavy rail transit, light rail transit, automated guideway, cable car, inclined plane, funicular, and monorail systems.

(i) This part does not apply to a freight railroad carrier that operates rolling equipment only on track inside an installation which is not part of the general railroad system of transportation.

§ 1580.3 Terms used in this part.

For purposes of this part *Commuter passenger train service* means "train, commuter" as defined in 49 CFR 238.5, and includes a railroad operation that ordinarily uses diesel or electric powered locomotives and railroad passenger cars to serve an urban area, its suburbs, and more distant outlying communities in the greater metropolitan area.

General railroad system of transportation means 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. (49 CFR part 209, Appendix A).

Hazardous material means "hazardous material" as defined in 49 CFR 171.8.

Heavy rail transit means service provided by self-propelled electric railcars, typically drawing power from a third rail, operating in separate rights-of-way in multiple cars; also referred to as subways, metros, or regional rail.

High Threat Urban Area (HTUA) means an area comprising one or more cities and surrounding areas including a 10 mile buffer zone, as listed in Appendix A of this part.

Improvised explosive device means a device fabricated in an improvised manner that incorporates explosives or destructive, lethal, noxious, pyrotechnic, or incendiary chemicals in its design, and generally includes a power supply, a switch or timer, and a detonator or initiator.

Intercity passenger train service means both "train, long-distance intercity passenger" and "train, short-distance intercity passenger" as defined in 49 CFR 238.5.

Light rail transit means service provided by self-propelled electric railcars, typically drawing power from an overhead wire, operating in either exclusive or non-exclusive rights-of-way in single or multiple cars and with shorter distance trips and frequent stops; also referred to as streetcars, trolleys, and trams.

Offers or offeror means:

(1) Any person who does either or both of the following.

(i) Performs, or is responsible for performing, any pre-transportation function for transportation of the hazardous material in commerce.

(ii) Tenders or makes the hazardous material available to a carrier for transportation in commerce.

(2) A carrier is not an offeror when it performs a function required as a condition of acceptance of a hazardous material for transportation in commerce (such as reviewing shipping papers, examining packages to ensure that they are in conformance with the hazardous materials regulations, or preparing shipping documentation for its own use) or when it transfers a hazardous material to another carrier for continued transportation in commerce without performing a pre-transportation function. (49 CFR 171.8)

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 a Multiple Unit (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. (49 CFR 238.5)

Passenger train means a train that transports or is available to transport members of the general public. (49 CFR 238.5)

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. (49 CFR 238.5)

Rail facility means a location at which rail cargo or infrastructure assets are stored, cargo is transferred between conveyances and/or modes of transportation, where transportation command and control operations are performed, or maintenance operations are performed. The term also includes, but is not limited to, passenger stations and terminals, rail yards, crew management centers, dispatching centers, transportation terminals and stations, fueling centers, and telecommunication centers.

Rail hazardous materials receiver means any fixed-site facility that has a physical connection to the general railroad system of transportation and receives or unloads from transportation in commerce by rail one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) of this part, but does not include a facility owned or operated by a department, agency, or instrumentality of the Federal Government.

Rail hazardous materials shipper means any fixed-site facility that has a physical connection to the general railroad system of transportation and offers, prepares, or loads for transportation by rail one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) of this part, but does not include a facility owned or operated by a department, agency, or instrumentality of the Federal Government.

Rail secure area means a secure location(s) identified by a rail hazardous materials shipper or rail hazardous materials receiver where security-related pre-transportation or transportation functions are performed or rail cars containing the categories and quantities of hazardous materials set forth in § 1580.100(b) are prepared, loaded, stored, and/or unloaded.

Rail transit facility means rail transit stations, terminals, and locations at which rail transit infrastructure assets are stored, command and control operations are performed, or maintenance is performed. The term also includes rail yards, crew management centers, dispatching centers, transportation terminals and stations, fueling centers, and telecommunication centers.

Rail transit system or "Rail Fixed Guideway System" means any light, heavy, or rapid rail system, monorail, inclined plane, funicular, cable car, trolley, or automated guideway.

Railroad means any form of nonhighway ground transportation that runs on rails or electromagnotic guideways, including: Commuter or other 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 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. (49 U.S.C. 20102(1))

Railroad carrier means a person providing railroad transportation. (49 U.S.C. 20102(2))

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. (49 CFR 171.8)

Tourist, scenic, historic, or excursion operation means a railroad operation that carries 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. (49 CFR 238.5)

Transportation or transport means the movement of property including loading, unloading, and storage. Transportation or transport also includes the movement of people, boarding, and disembarking incident to that movement.

§ 1580.5 Inspection authority.

(a) This section applies to the following:

(1) Each freight railroad carrier that operates rolling equipment on track that is part of the general railroad system of transportation.

(2) Each rail hazardous materials shipper as defined in § 1580.3.

(3) Each rail hazardous materials receiver located within an HTUA.

(4) Each passenger railroad carrier, including a carrier operating light rail or heavy rail transit service on track that is part of the general railroad system of transportation, each carrier operating or providing intercity passenger train service or commuter or other short-haul railroad passenger service in a metropolitan or suburban area (as described by 49 U.S.C. 20102), and each public authority operating passenger train service.

(5) Each passenger or freight railroad carrier hosting an operation described in paragraph (a)(4) of this section.

(6) Each tourist, scenic, historic, and excursion rail operator, whether operating on or off the general railroad system of transportation.

(7) Operation of private cars, including business/office cars and circus trains, on or connected to the general railroad system of transportation.

(8) Each rail transit system.

(b) The persons described in paragraph (a) of this section must allow TSA and other authorized DHS officials, at any time and in a reasonable manner, without advance notice, to enter, inspect, and test property, facilities, equipment, operations, and to view, inspect, and copy records, as necessary to carry out TSA's security-related statutory or regulatory authorities, including its authority to—

(1) Assess threats to transportation.

(2) Enforce security-related regulations, directives, and requirements;

(3) Inspect, maintain, and test security facilities, equipment, and systems.

(4) Ensure the adequacy of security measures for the transportation of passengers and freight, including hazardous materials;

(5) Oversee the implementation, and ensure the adequacy, of security measures at rail yards, stations, terminals, transportation-related areas of rail hazardous materials shipper and receiver facilities, crew management centers, dispatch centers, telecommunication centers, and other transportation facilities and infrastructure.

(6) Review security plans; and

(7) Carry out such other duties, and exercise such other powers, relating to transportation security as the Assistant Secretary of Homeland Security for the TSA considers appropriate, to the extent authorized by law.

(c) TSA and DHS officials working with TSA, may enter, without advance notice, and be present within any area or within any conveyance without access media or identification media issued or approved by a railroad carrier, transit system owner or operator, rail hazardous materials shipper, or rail hazardous materials receiver in order to inspect or test compliance, or perform other such duties as TSA may direct.

Subpart B—Freight Rail Including Freight Railroad Carriers, Rail Hazardous Materials Shippers, Rail Hazardous Materials Receivers, and Private Cars

§ 1580.100 Applicability.

(a) **Applicability.** The requirements of this subpart apply to:

(1) Each freight railroad carrier that operates rolling equipment on track that is part of the general railroad system of transportation.

(2) Each rail hazardous materials shipper as defined in section 1580.3.

(3) Each rail hazardous materials receiver located within an HTUA.

(4) Each freight railroad carrier hosting a passenger operation described in § 1580.1(d) of this part.

(5) Operation of private cars, including business/office cars and circus trains, on or connected to the general railroad system of transportation.

(b) **Hazardous materials.** The requirements of this subpart apply to:

(1) A rail car containing more than 2,268 kg (5,000 lbs) of a Division 1.1, 1.2, or 1.3 (explosive) material, as defined in 49 CFR 173.50;

(2) A tank car containing a material poisonous by inhalation as defined in 49 CFR 171.8, including Division 2.3 gases poisonous by inhalation, as set forth in 49 CFR 173.115(c) and Division 6.1 liquids meeting the defining criteria in 49 CFR 173.132(a)(1)(iii) and assigned to hazard zone A or hazard zone B in accordance with 49 CFR 173.133(a), other than residue; and

(3) A rail car containing a highway route-controlled quantity of a Class 7 (radioactive) material, as defined in 49 CFR 173.403.

§ 1580.101 Rail security coordinator.

(a) **Applicability.** This section applies to:

(1) Each freight railroad carrier that operates rolling equipment on track that is part of the general railroad system of transportation.

(2) Each rail hazardous materials shipper as defined in § 1580.3.

(3) Each rail hazardous materials receiver located within an HTUA.

(4) Each freight railroad carrier hosting the passenger operations described in § 1580.1(d) of this part.

(5) Each private rail car operation, including business/office cars and circus trains, on or connected to the general railroad system of transportation, when notified by TSA, in writing, that a threat exists concerning that operation.

(b) Each person described in paragraph (a) of this section must designate and use a primary and at least one alternate Rail Security Coordinator (RSC).

(c) The RSC and alternate(s) must be appointed at the corporate level.

(d) Each freight railroad carrier, rail hazardous materials shipper, and rail hazardous materials receiver required to have an RSC must provide to TSA the

names, title, phone number(s), and e-mail address(es) of the RSCs and alternate RSCs, and must notify TSA within 7 calendar days when any of this information changes.

(e) Each freight railroad carrier, rail hazardous materials shipper, and rail hazardous materials receiver required to have an RSC must ensure that at least one RSC

(1) Serves as the primary contact for intelligence information and security-related activities and communications with TSA. Any individual designated as an RSC may perform other duties in addition to those described in this section.

(2) Is available to TSA on a 24 hour a day 7 days a week basis.

(3) Coordinates security practices and procedures with appropriate law enforcement and emergency response agencies.

§ 1580.103 Location and shipping information for certain rail cars.

(a) *Applicability.* This section applies to:

(1) Each freight railroad carrier transporting one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) of this part

(2) Each rail hazardous materials shipper as defined in § 1580.3

(3) Each rail hazardous materials receiver located with an HTUA

(b) Each person described in paragraph (a) of this section must have procedures in place to determine the location and shipping information for each rail car under its physical custody and control that contains one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) of this part.

(c) The location and shipping information required in paragraph (b) of this section must include the following:

(1) The rail car's current location by city, county, and state, including, for freight railroad carriers, the railroad milepost, track designation, and the time that the rail car's location was determined.

(2) The rail car's routing, if a freight railroad carrier.

(3) A list of the total number of rail cars containing the materials listed in § 1580.100(b) of this part, broken down by:

(i) The shipping name prescribed for the material in column 2 of the table in 49 CFR 172.101;

(ii) The hazard class or division number prescribed for the material in column 3 of the table in 49 CFR 172.101, and

(iii) The identification number prescribed for the material in column 4 of the table in 49 CFR 172.101

(4) Each rail car's initial and number

(5) Whether the rail car is in a train, rail yard, siding, rail spur, or rail hazardous materials shipper or receiver facility, including the name of the rail yard or siding designation.

(d) Upon request by TSA, each railroad carrier, each rail hazardous materials shipper, and each rail hazardous materials receiver must provide the location and shipping information to TSA no later than 1 hour after receiving the request, unless otherwise approved by TSA

(e) The freight railroad carrier, rail hazardous materials shipper, and rail hazardous materials receiver must provide the requested location and shipping information to TSA by one of the following methods:

(1) Electronic data transmission in spreadsheet format

(2) Electronic data transmission in Hyper Text Markup Language (HTML) format

(3) Electronic data transmission in Extensible Markup Language (XML)

(4) Facsimile transmission of a hard copy spreadsheet in tabular format

(5) Posting the information to a secure Web site address approved by TSA

(6) Another format approved in writing by TSA.

§ 1580.105 Reporting significant security concerns.

(a) *Applicability.* This section applies to:

(1) Each freight railroad carrier that operates rolling equipment on track that is part of the general railroad system of transportation

(2) Each rail hazardous materials shipper as defined in § 1580.3.

(3) Each rail hazardous materials receiver located with an HTUA.

(4) Each freight railroad carrier hosting a passenger operation described in § 1580.1(d) of this part.

(5) Operation of private cars, including business/office cars and circus, on or connected to the general railroad system of transportation trains.

(b) Each person described in paragraph (a) of this section must immediately report potential threats and significant security concerns to DHS in a manner prescribed by TSA

(c) Potential threats or significant security concerns encompass incidents, suspicious activities, and threat information including, but not limited to, the following:

(1) Interference with the train crew

(2) Bomb threats, specific and non-specific.

(3) Reports or discovery of suspicious items that result in the disruption of railroad operations.

(4) Suspicious activity occurring onboard a train or inside the facility of a freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver that results in a disruption of operations.

(5) Suspicious activity observed at or around rail cars, facilities, or infrastructure used in the operation of the railroad, rail hazardous materials shipper, or rail hazardous materials receiver

(6) Discharge, discovery, or seizure of a firearm or other deadly weapon on a train, in a station, terminal, facility, or storage yard, or other location used in the operation of the railroad, rail hazardous materials shipper, or rail hazardous materials receiver.

(7) Indications of tampering with rail cars.

(8) Information relating to the possible surveillance of a train or facility, storage yard, or other location used in the operation of the railroad, rail hazardous materials shipper, or rail hazardous materials receiver

(9) Correspondence received by the freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver indicating a potential threat.

(10) Other incidents involving breaches of the security of the freight railroad carrier's, rail hazardous materials shipper's, or rail hazardous materials receiver's operations or facilities.

(d) Information reported should include, as available and applicable:

(1) The name of the reporting freight railroad carrier, rail hazardous materials shipper, or rail hazardous materials receiver and contact information, including a telephone number or e-mail address

(2) The affected train, station, terminal, rail hazardous materials facility, or other rail facility or infrastructure.

(3) Identifying information on the affected train, train line, and route.

(4) Origination and termination locations for the affected train, including departure and destination city and the rail line and route, as applicable

(5) Current location of the affected train.

(6) Description of the threat, incident, or activity

(7) The names and other available biographical data of individuals involved in the threat, incident, or activity.

(8) The source of any threat information

§ 1580.107 Chain of custody and control requirements.

(a) *Within or outside of an HTUA, rail hazardous materials shipper transferring to carrier.* Except as provided in paragraph (e) of this section, at each location within or outside of an HTUA, a rail hazardous materials shipper transferring custody of a rail car containing one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) to a freight railroad carrier must:

(1) Physically inspect the rail car before loading for signs of tampering, including closures and seals, other signs that the security of the car may have been compromised; suspicious items or items that do not belong, including the presence of an improvised explosive device.

(2) Keep the rail car in a rail secure area from the time the security inspection required by paragraph (a)(1) of this section or by 49 CFR 173.31(d), whichever occurs first, until the freight railroad carrier takes physical custody of the rail car.

(3) Document the transfer of custody to the railroad carrier in writing or electronically.

(b) *Within or outside of an HTUA, carrier receiving from a rail hazardous materials shipper.* At each location within or outside of an HTUA where a freight railroad carrier receives from a rail hazardous materials shipper custody of a rail car containing one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b), the freight railroad carrier must document the transfer in writing or electronically and perform the required security inspection in accordance with 49 CFR 174.9.

(c) *Within an HTUA, carrier transferring to carrier.* Within an HTUA, whenever a rail car containing one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) is transferred from one freight railroad carrier to another, each freight railroad carrier must adopt and carry out procedures to ensure that the rail car is not left unattended at any time during the physical transfer of custody. These procedures must include the receiving freight railroad carrier performing the required security inspection in accordance with 49 CFR 174.9. Both the transferring and the receiving railroad carrier must document the transfer in writing or electronically.

(d) *Outside of an HTUA, carrier transferring to carrier.* Outside an HTUA, whenever a rail car containing one or more of the categories and quantities of hazardous materials set

forth in § 1580.100(b) is transferred from one freight railroad carrier to another, and the rail car containing this hazardous material may subsequently enter an HTUA, each freight railroad carrier must adopt and carry out procedures to ensure that the rail car is not left unattended at any time during the physical transfer of custody. These procedures must include the receiving railroad carrier performing the required security inspection in accordance with 49 CFR 174.9. Both the transferring and the receiving railroad carrier must document the transfer of custody in writing or electronically.

(e) *Within an HTUA, carrier transferring to rail hazardous materials receiver.* A freight railroad carrier delivering a rail car containing one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) to a rail hazardous materials receiver located within an HTUA must not leave the rail car unattended in a non-secure area until the rail hazardous materials receiver accepts custody of the rail car. Both the railroad carrier and the rail hazardous materials receiver must document the transfer of custody in writing or electronically.

(f) *Within an HTUA, rail hazardous materials receiver receiving from carrier.* Except as provided in paragraph (i) of this section, a rail hazardous materials receiver located within an HTUA that receives a rail car containing one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) from a freight railroad carrier must:

(1) Ensure that the rail hazardous materials receiver or railroad carrier maintains positive control of the rail car during the physical transfer of custody of the rail car.

(2) Keep the rail car in a rail secure area until the car is unloaded.

(3) Document the transfer of custody from the railroad carrier in writing or electronically.

(g) *Within or outside of an HTUA, rail hazardous materials receiver rejecting car.* This section does not apply to a rail hazardous materials receiver that does not routinely offer, prepare, or load for transportation by rail one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b). If such a receiver rejects and returns a rail car containing one or more of the categories and quantities of hazardous materials set forth in § 1580.100(b) to the originating offeror or shipper, the requirements of this section do not apply to the receiver. The requirements of this section do apply to any railroad

carrier to which the receiver transfers custody of the rail car.

(h) *Document retention.* The documents required under this section must be maintained for at least 60 calendar days and made available to TSA upon request.

(i) *Rail secure area.* The rail hazardous materials shipper and the rail hazardous materials receiver must use physical security measures to ensure that no unauthorized person gains access to the rail secure area.

(j) *Waivers for rail hazardous materials receivers.* A rail hazardous materials receiver located within an HTUA may request from TSA a waiver from some or all of the requirements of this section if the receiver demonstrates that the potential threat from its activities is insufficient to warrant compliance with this section. TSA will consider all relevant circumstances, including—

(1) The amounts and types of all hazardous materials received.

(2) The geography of the area surrounding the receiver's facility.

(3) Proximity to entities that may be attractive targets, including other businesses, housing, schools, and hospitals.

(4) Any information regarding threats to the facility.

(5) Other circumstances that indicate the potential threat of the receiver's facility does not warrant compliance with this section.

§ 1580.109 Preemptive effect.

Under 49 U.S.C. 20106, issuance of § 1580.107 of this subpart preempts any State law, rule, regulation, order or common law requirement covering the same subject matter.

Subpart C—Passenger Rail Including Passenger Railroad Carriers, Rail Transit Systems, Tourist, Scenic, Historic and Excursion Operators, and Private Cars

§ 1580.200 Applicability.

This subpart includes requirements for:

(a) Each passenger railroad carrier, including a carrier operating light rail or heavy rail transit service on track that is part of the general railroad system of transportation, each carrier operating or providing intercity passenger train service or commuter or other short-haul railroad passenger service in a metropolitan or suburban area (as described by 49 U.S.C. 20102), and each public authority operating passenger train service.

(b) Each passenger railroad carrier hosting an operation described in paragraph (a) of this section.

(c) Each tourist, scenic, historic, and excursion rail operator, whether operating on or off the general railroad system of transportation.

(d) Operation of private cars, including business/office cars and circus trains, on or connected to the general railroad system of transportation.

(e) Each rail transit system.

§ 1580.201 Rail security coordinator.

(a) *Applicability.* This section applies to

(1) Each passenger railroad carrier, including a carrier operating light rail or heavy rail transit service on track that is part of the general railroad system of transportation, each carrier operating or providing intercity passenger train service or commuter or other short-haul railroad passenger service in a metropolitan or suburban area (as described by 49 U.S.C. 20102), and each public authority operating passenger train service.

(2) Each passenger railroad carrier hosting an operation described in paragraph (a)(1) of this section.

(3) Each rail transit system.

(4) Each private rail car operation, including business/office cars and circus trains, on or connected to the general railroad system of transportation, when notified by TSA, in writing, that a security threat exists concerning that operation.

(5) Each tourist, scenic, historic, or excursion operations, whether on or off the general railroad system of transportation, when notified by TSA, in writing, that a security threat exists concerning that operation.

(b) Each person described in paragraph (a) of this section must designate and use a primary and at least one alternate Rail Security Coordinator (RSC).

(c) The RSC and alternate(s) must be appointed at the corporate level.

(d) Each passenger railroad carrier and rail transit system required to have an RSC must provide to TSA the names, titles, phone number(s), and e-mail address(es) of the RSCs, and alternate RSCs, and must notify TSA within 7 calendar days when any of this information changes.

(e) Each passenger railroad carrier and rail transit system required to have an RSC must ensure that at least one RSC

(1) Serves as the primary contact for intelligence information and security-related activities and communications with TSA. Any individual designated as an RSC may perform other duties in addition to those described in this section.

(2) Is available to TSA on a 24 hours a day 7 days a week basis.

(3) Coordinate security practices and procedures with appropriate law enforcement and emergency response agencies.

§ 1580.203 Reporting significant security concerns.

(a) *Applicability.* This section applies to

(1) Each passenger railroad carrier, including a carrier operating light rail or heavy rail transit service on track that is part of the general railroad system of transportation, each carrier operating or providing intercity passenger train service or commuter or other short-haul railroad passenger service in a metropolitan or suburban area (as described by 49 U.S.C. 20102), and each public authority operating passenger train service.

(2) Each passenger railroad carrier hosting an operation described in paragraph (a)(1) of this section.

(3) Each tourist, scenic, historic, and excursion rail operator, whether operating on or off the general railroad system of transportation.

(4) Operation of private cars, including business/office cars and circus trains, on or connected to the general railroad system of transportation.

(5) Each rail transit system.

(b) Each person described in paragraph (a) of this section must immediately report potential threats or significant security concerns to DHS in a manner prescribed by TSA.

(c) Potential threats or significant security concerns encompass incidents, suspicious activities, and threat information including, but not limited to, the following:

(1) Interference with the train or transit vehicle crew.

(2) Bomb threats, specific and non-specific.

(3) Reports or discovery of suspicious items that result in the disruption of rail operations.

(4) Suspicious activity occurring onboard a train or transit vehicle or

inside the facility of a passenger railroad carrier or rail transit system that results in a disruption of rail operations.

(5) Suspicious activity observed at or around rail cars or transit vehicles, facilities, or infrastructure used in the operation of the passenger railroad carrier or rail transit system.

(6) Discharge, discovery, or seizure of a firearm or other deadly weapon on a train or transit vehicle or in a station, terminal, facility, or storage yard, or other location used in the operation of the passenger railroad carrier or rail transit system.

(7) Indications of tampering with passenger rail cars or rail transit vehicles.

(8) Information relating to the possible surveillance of a passenger train or rail transit vehicle or facility storage yard, or other location used in the operation of the passenger railroad carrier or rail transit system.

(9) Correspondence received by the passenger railroad carrier or rail transit system indicating a potential threat to rail transportation.

(10) Other incidents involving breaches of the security of the passenger railroad carrier or the rail transit system operations or facilities.

(d) Information reported should include, as available and applicable:

(1) The name of the passenger railroad carrier or rail transit system and contact information, including a telephone number or e-mail address.

(2) The affected station, terminal, or other facility.

(3) Identifying information on the affected passenger train or rail transit vehicle including number, train or transit line, and route, as applicable.

(4) Origination and termination locations for the affected passenger train or rail transit vehicle, including departure and destination city and the rail or transit line and route.

(5) Current location of the affected passenger train or rail transit vehicle.

(6) Description of the threat, incident, or activity.

(7) The names and other available biographical data of individuals involved in the threat, incident, or activity.

(8) The source of any threat information.

APPENDIX A TO PART 1580—HIGH THREAT URBAN AREAS (HTUAs)

State	Candidate urban area	Geographic area captured in the data count	Previously designated urban areas included
AZ	Phoenix Area*	Chandler, Gilbert, Glendale, Mesa, Peoria, Phoenix, Scottsdale, Tempe, and a 10-mile buffer extending from the border of the combined area.	Phoenix, AZ
CA	Anaheim/Santa Ana Area	Anaheim, Costa Mesa, Garden Grove, Fullerton, Huntington Beach, Irvine, Orange, Santa Ana, and a 10-mile buffer extending from the border of the combined area	Anaheim, CA; Santa Ana, CA
	Bay Area	Berkeley, Daly City, Fremont, Hayward, Oakland, Palo Alto, Richmond, San Francisco, San Jose, Santa Clara, Sunnyvale, Vallejo, and a 10-mile buffer extending from the border of the combined area.	San Francisco, CA; San Jose, CA, Oakland, CA
	Los Angeles/Long Beach Area	Burbank, Glendale, Inglewood, Long Beach, Los Angeles, Pasadena, Santa Monica, Santa Clarita, Torrance, Van Nuys, Thousand Oaks, and a 10-mile buffer extending from the border of the combined area	Los Angeles, CA, Long Beach, CA
	Sacramento Area*	Elk Grove, Sacramento, and a 10-mile buffer extending from the border of the combined area	Sacramento, CA
	San Diego Area*	Chula Vista, Escondido, and San Diego, and a 10-mile buffer extending from the border of the combined area.	San Diego, CA
CO	Denver Area	Arvada, Aurora, Denver, Lakewood, Westminster, Thornton, and a 10-mile buffer extending from the border of the combined area	Denver, CO.
DC	National Capital Region	National Capital Region and a 10-mile buffer extending from the border of the combined area	National Capital Region, DC
FL	Fort Lauderdale Area	Fort Lauderdale, Hollywood, Miami Gardens, Miramar, Pembroke Pines, and a 10-mile buffer extending from the border of the combined area	N/A
	Jacksonville Area	Jacksonville and a 10-mile buffer extending from the city border.	Jacksonville, FL
	Miami Area	Hialeah, Miami, and a 10-mile buffer extending from the border of the combined area	Miami, FL
	Orlando Area	Orlando and a 10-mile buffer extending from the city border	Orlando, FL
	Tampa Area*	Clearwater, St. Petersburg, Tampa, and a 10-mile buffer extending from the border of the combined area	Tampa, FL
GA	Atlanta Area	Atlanta and a 10-mile buffer extending from the city border	Atlanta, GA.
HI	Honolulu Area	Honolulu and a 10-mile buffer extending from the city border.	Honolulu, HI.
IL	Chicago Area	Chicago and a 10-mile buffer extending from the city border	Chicago, IL.
IN	Indianapolis Area	Indianapolis and a 10-mile buffer extending from the city border.	Indianapolis, IN
KY	Louisville Area*	Louisville and a 10-mile buffer extending from the city border.	Louisville, KY
LA	Baton Rouge Area*	Baton Rouge and a 10-mile buffer extending from the city border	Baton Rouge, LA.
	New Orleans Area	New Orleans and a 10-mile buffer extending from the city border	New Orleans, LA
MA	Boston Area	Boston, Cambridge, and a 10-mile buffer extending from the border of the combined area	Boston, MA
MD	Baltimore Area	Baltimore and a 10-mile buffer extending from the city border	Baltimore, MD.
MI	Detroit Area	Detroit, Sterling Heights, Warren, and a 10-mile buffer extending from the border of the combined area.	Detroit, MI.
MN	Twin Cities Area	Minneapolis, St. Paul, and a 10-mile buffer extending from the border of the combined entity	Minneapolis, MN, St. Paul, MN
MO	Kansas City Area	Independence, Kansas City (MO), Kansas City (KS), Olathe, Overland Park, and a 10-mile buffer extending from the border of the combined area	Kansas City, MO
	St. Louis Area	St. Louis and a 10-mile buffer extending from the city border.	St. Louis, MO.
NC	Charlotte Area	Charlotte and a 10-mile buffer extending from the city border	Charlotte, NC
NE	Omaha Area*	Omaha and a 10-mile buffer extending from the city border	Omaha, NE
NJ	Jersey City/Newark Area	Elizabeth, Jersey City, Newark, and a 10-mile buffer extending from the border of the combined area.	Jersey City, NJ, Newark, NJ
NV	Las Vegas Area*	Las Vegas, North Las Vegas, and a 10-mile buffer extending from the border of the combined entity	Las Vegas, NV

APPENDIX A TO PART 1580—HIGH THREAT URBAN AREAS (HTUAs)—Continued

State	Candidate urban area	Geographic area captured in the data count	Previously designated urban areas included
NY	Buffalo Area*	Buffalo and a 10-mile buffer extending from the city border.	Buffalo, NY
	New York City Area	New York City, Yonkers, and a 10-mile buffer extending from the border of the combined area	New York, NY
OH	Cincinnati Area	Cincinnati and a 10-mile buffer extending from the city border	Cincinnati, OH
	Cleveland Area	Cleveland and a 10-mile buffer extending from the city border	Cleveland, OH
	Columbus Area	Columbus and a 10-mile buffer extending from the city border.	Columbus, OH
	Toledo Area*	Oregon, Toledo, and a 10-mile buffer extending from the border of the combined area.	Toledo, OH
OK	Oklahoma City Area*	Norman, Oklahoma and a 10-mile buffer extending from the border of the combined area	Oklahoma City, OK
OR	Portland Area	Portland, Vancouver, and a 10-mile buffer extending from the border of the combined area.	Portland, OR
PA	Philadelphia Area	Philadelphia and a 10-mile buffer extending from the city border	Philadelphia, PA
	Pittsburgh Area	Pittsburgh and a 10-mile buffer extending from the city border	Pittsburgh, PA
TN	Memphis Area	Memphis and a 10-mile buffer extending from the city border	Memphis, TN
TX	Dallas/Fort Worth/Arlington Area	Arlington, Carrollton, Dallas, Fort Worth, Garland, Grand Prairie, Irving, Mesquite, Plano, and a 10-mile buffer extending from the border of the combined area.	Dallas, TX, Fort Worth, TX; Arlington, TX
	Houston Area	Houston, Pasadena, and a 10-mile buffer extending from the border of the combined entity	Houston, TX
	San Antonio Area	San Antonio and a 10 mile buffer extending from the city border.	San Antonio, TX
WA	Seattle Area	Seattle, Bellevue, and a 10-mile buffer extending from the border of the combined area	Seattle, WA.
WI	Milwaukee Area	Milwaukee and a 10-mile buffer extending from the city border.	Milwaukee, WI

*FY05 Urban Areas eligible for sustainment funding through the FY06 UASI program; any Urban Area not identified as eligible through the risk analysis process for two consecutive years will not be eligible for continued funding under the UASI program

APPENDIX B TO PART 1580—SUMMARY OF THE APPLICABILITY OF PART 1580

[This is a summary—see body of text for complete requirements]

Proposed security measure and rule section	Freight railroad carriers NOT transporting specified hazardous materials	Freight railroad carriers transporting specified hazardous materials (1580.100(b))	Rail operations at certain facilities that ship (i.e., offer, prepare, or load for transportation) hazardous materials	Rail operations at certain facilities that receive or unload hazardous materials within HTUA	Passenger railroad carriers and rail transit systems	Certain other rail operations (private, business/office, circus, tourist, historic, excursion)
Allow TSA to inspect (1580.5).	X	X	X	X	X	X
Appoint rail security coordinator (1580.101 freight; 1580.201 passenger)	X	X	X	X	X	Only if notified in writing that security threat exists.
Report significant security concerns (1580.105 freight; 1580.203 passenger).	X	X	X	X	X	X
Provide location and shipping information for rail cars containing specified hazardous materials if requested (1580.103)		X	X	X		
Chain of custody and control requirements for transport of specified hazardous materials that are or may be in HTUA (1580.107)		X	X	X		

Issued in Arlington, Virginia, on December
7, 2006.

Kip Hawley,

Assistant Secretary

[FR Doc. EG-21512 Filed 12-20-06, 8 45 am]

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APPENDIX B



Federal Register

Tuesday,
April 1, 2008

Part V

Department of Transportation

**Pipeline and Hazardous Materials Safety
Administration**

**49 CFR Parts 171, 173, 174 and 179
Hazardous Materials: Improving the Safety
of Railroad Tank Car Transportation of
Hazardous Materials; Proposed Rule**

DEPARTMENT OF TRANSPORTATION**Pipeline and Hazardous Materials Safety Administration**

49 CFR Parts 171, 173, 174 and 179

[Docket No. FRA-2008-25169]

RIN 2130-AB69

Hazardous Materials: Improving the Safety of Railroad Tank Car Transportation of Hazardous Materials

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (DOT)

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The Pipeline and Hazardous Materials Safety Administration and the Federal Railroad Administration are proposing revisions to the Federal Hazardous Materials Regulations to improve the crashworthiness protection of railroad tank cars designed to transport poison inhalation hazard materials. Specifically, we are proposing enhanced tank car performance standards for head and shell impacts, operational restrictions for trains hauling tank cars containing PIH materials; interim operational restrictions for trains hauling tank cars not meeting the enhanced performance standards, and an allowance to increase the gross weight of tank cars that meet the enhanced tank-head and shell puncture-resistance systems.

DATES: Submit comments by June 2, 2008. To the extent possible, late-filed comments will be considered as we develop a final rule.

ADDRESSES: You may submit comments identified by the docket number FRA-2008-25169 by any of the following methods.

- **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.

- **Fax:** 1-202-493-2251

- **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

- **Hand Delivery:** U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590

Instructions: All submissions must include the agency name and docket number (FRA-2008-25169) for this rulemaking. Note that all comments received will be posted without change to <http://www.regulations.gov> including

any personal information. Please see the Privacy Act heading in the "Regulatory Analyses and Notices" section of this document for Privacy Act information related to any submitted comments or materials. Internet users may access comments received by DOT at <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: William Schounover, (202) 493-0229, Office of Safety Assurance and Compliance, Federal Railroad Administration, Lucinda Henriksen, (202) 493-1345, Office of Chief Counsel, Federal Railroad Administration; or Michael Stevens, (202) 366-8553, Office of Hazardous Materials Standards, Pipeline and Hazardous Materials Safety Administration.

SUPPLEMENTARY INFORMATION:**Abbreviations and Terms Used in This Document**

AAR—Association of American Railroads
ABS—Automatic Block Signal
Action Plan—National Rail Safety Action Plan

ADAMS—Automated Dynamic Analysis of Mechanical Systems

ARI—American Railway Car Institute

ATP—Automated Train Control Program

BNSF—BNSF Railway Company

BTS—Bureau of Transportation Statistics

CRS—Confidential Close Call Reporting System

CEQ—Council on Environmental Quality

CP—Crash Prevention Circular

CI—Chlorine Institute

CP—Canadian Pacific

CPR—Conditional Probability of Release

CSXT—CSX Transportation

Department—U.S. Department of Transportation

DOW—Dow Chemical Company

DOT—U.S. Department of Transportation

ECP—Electronically Controlled Pneumatic Brake Systems

ETMS—Electronic Train Management System

Federal hazard law—Federal hazardous

materials transportation law (40 U.S.C.

5101 *et seq.*)

FRA—Federal Railroad Administration

HMR—Hazardous Materials Regulations

NGRTCP—Next Generation Rail Tank Car Project

NPRM—Notice of Proposed Rulemaking

NTSB—National Transportation Safety Board

OMB—Office of Management and Budget

PHMSA—Pipeline and Hazardous Materials

Safety Administration

PIH—Poison Inhalation Hazard

PTC—Positive Train Control

PV—Present Value

QA—Quality Assurance

R&D—Research and Development

RSAC—Railroad Safety Advisory Committee

RST—Railway Supply Institute

SAFETEA—L.U.—Safe, Accountable, Flexible,

Efficient, Transportation Equity Act

A Legacy for Users, Pub. L. 109-59

SBA—Small Business Administration

SOMC—Association of American Railroads Safety and Operations Management Committee

SRT—Structural Reliability Technologies Tank Car Manual—Association of American Railroads Tank Car Committee Tank Car Manual

TCC—Association of American Railroads Tank Car Committee

TFI—The Fertilizer Institute

TIH—Toxic Inhalation Hazard

TRANSCAER—Transportation Community

Awareness and Emergency Response

ISA—Department of Homeland Security,

Transportation Security Administration

Trinity—Trinity Industries, Inc.

Union Tank—Union Tank Car Company

UP—Union Pacific Railroad Company

Volpe—Volpe National Transportation

Systems Center

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I Background

Hazardous materials are essential to the economy of the United States and to the well being of its people. These materials are used in water purification, farming, manufacturing, and other industrial applications. Railroads carry over 1.7 million shipments of hazardous materials annually, including millions of tons of explosive, poisonous, corrosive, flammable, and radioactive materials. The need for hazardous materials to support essential services means that the transportation of highly hazardous materials is unavoidable.

Rail transportation of hazardous materials is a safe method for moving large quantities of hazardous materials over long distances. The vast majority of hazardous materials shipped by railroad tank car each year arrive at their destinations safely and without incident. In the year 2004 (most recent data available), for example, out of the approximately 1.7 million shipments of hazardous materials transported by rail, there were 29 accidents in which a hazardous material was released. In those accidents, a total of 47 hazardous material cars released some amount of product, thus, the risk of a release was a tiny fraction of a percent (0.0028 percent or 47/1,700,000). The DOT Hazardous Materials Information System's ten-year incident data for 1997 through 2006 identifies a total of 17 fatalities resulting from rail hazardous materials incidents. While even one death is too many, those statistics show that train accidents involving a release of hazardous materials that causes death are rare. We recognize, however, that rail shipments of hazardous materials frequently move through densely populated or environmentally-sensitive areas where the consequences of an incident could be loss of life, serious injury, or significant environmental damage.

Historically, the Pipeline and Hazardous Materials Safety Administration (PHMSA), working closely with the Federal Railroad Administration (FRA), has issued a number of regulations to improve the survivability of rail tank cars in accidents.¹ Among other things, these

regulations require hazardous material tank cars to be equipped with tank-head puncture resistance systems (head protection), coupler vertical restraint systems (shelf couplers), insulation, and for certain high-hazard materials, thermal protection systems. The historical safety record of railroad tank car hazardous material transportation demonstrates that these systems, working in combination, have been successful in greatly reducing the potential harm to human health and the environment when tank cars are involved in accidents.

In the last several years, however, there have been a number of rail tank car accidents in which the car was breached and product lost on the ground or into the atmosphere. Of particular concern have been accidents involving materials that are poisonous, or toxic, by inhalation (referred to as PIH or TII materials). For example, on January 18, 2002, a Canadian Pacific Railway Company (CP) train derailed in Minot, North Dakota, resulting in one death and 11 serious injuries due to the release of anhydrous ammonia when five tank cars carrying the product catastrophically ruptured, and a vapor plume covered the derailment site and surrounding area. On June 28, 2004, a Union Pacific Railroad Company (UP) train collided with a Burlington Northern and Santa Fe Railway Company (now known as BNSF Railway Company) (BNSF) train in Macedonia, Texas, breaching a loaded tank car containing chlorine and causing the deaths of three people and seriously injuring 30 others. On January 6, 2005, a Norfolk Southern Railway Company train collided with a standing train on a siding in Graniteville, South Carolina. The accident resulted in the breach of a tank car containing chlorine, and nine people died from the inhalation of chlorine vapors. Although none of these accidents was caused by hazardous material tank cars, the failure of the tank cars involved led to fatalities, injuries, evacuations, property and environmental damage.

On August 10, 2005, Congress passed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, Pub. L. 109-59 (SAFETEA-LU). SAFETEA-LU added section 20155 to the Federal hazmat law, 49 U.S.C. § 20155. As discussed below, section 20155, in part, required FRA to (1) validate a predictive model quantifying the relevant dynamic forces acting on railroad tank cars under accident conditions, and (2) initiate a rulemaking to develop and implement appropriate design standards for pressurized tank cars.

In response to these recent accidents and in light of Congress's mandate in SAFETEA-LU to develop and implement appropriate design standards for pressurized tank cars, PHMSA and FRA, the two operating administrations within DOT responsible for overseeing the safe transportation of hazardous materials by rail, initiated a comprehensive review of design and operational factors that affect rail tank car safety. DOT's approach to enhancing the safety of rail tank cars and transportation of hazardous materials by rail tank cars is on-going and multi-faceted. For example, DOT is utilizing a risk management approach to identify ways to enhance the safe transportation of hazardous materials in tank cars, including: (1) Tank car design, manufacture, and requalification, (2) railroad operational issues such as human factors, track conditions and maintenance, wayside hazard detectors, signals and train control systems, and (3) improved planning and training for emergency response.

Recognizing the need for public input into this review of hazardous material tank car safety, on May 31 and June 1, 2006, PHMSA and FRA hosted a public meeting to discuss the initiation of this comprehensive review and to invite interested parties to participate in the agencies' efforts to surface and prioritize issues relating to the safe transportation of hazardous materials by railroad tank car. Subsequent to the meeting, FRA established a public docket (Docket No. FRA-2006-25169) to provide interested parties with a central location to both send and review relevant information concerning the safety of railroad tank car transportation of hazardous materials and a venue to gather and disseminate information and views on the issues. See 71 FR 37974 (July 3, 2006).

Building on the initial public meeting, FRA and PHMSA held a second public meeting on December 14, 2006. At this second meeting, FRA announced DOT's commitment to develop an enhanced tank car standard by 2008. In addition,

¹ 50224 (Sept. 24, 1993), *Performance Oriented Packaging: Changes to Classification, Hazard Communication, Packaging and Handling Requirements Based on UN Standards and Agency Initiative*, 58 FR 52402 (Dec. 21, 1993), *Transportation of Hazardous Materials, Miscellaneous Amendments*, 54 FR 38700 (Sept. 20, 1989), *Specifications for Railroad Tank Cars Used to Transport Hazardous Materials*, 49 FR 3468 (Jan. 27, 1984), *Shippers, Specifications for Tank Cars*, 49 FR 1477 (Jan. 27, 1984), *Interlocking Couplers and Restrictions of Capacity of Tank Cars*, 35 FR 14215 (April 9, 1970), *Shippers, Specifications for Pressure Tank Cars*, 42 FR 40308 (Sept. 18, 1977), *Tank Car Tank Head Protection*, 41 FR 21475 (May 26, 1976).

² *Crashworthiness: Protection Requirements for Tank Cars, Detection and Repair of Cracks, Pits, Corrosion, Lining Flaws, Thermal Protection Flaws, and Other Defects of Tank Car Tanks*, 60 FR 49048 (Sept. 21, 1995), *Performance-Oriented Packaging Standards, Miscellaneous Amendments*, 58 FR

at this meeting, the agencies solicited input and comments in response to nine specific questions pertaining to potential methods and goals of tank car improvements. On March 30, 2007, PHMSA and FRA held a third public meeting at which FRA shared the preliminary results of its research related to tank car survivability and provided an update on DOT's progress towards developing enhanced tank car safety standards.

As discussed in Section XI below, meeting participants from both the railroad and shipping industries expressed agreement on the need for continuous improvement in the safe transportation of hazardous materials by railroad tank car, particularly in light of the Minot, Macdonald, and Graniteville accidents. Accordingly, after careful review and consideration of all of the relevant research and data, oral comments at the public meetings, and comments submitted to the docket, PHMSA and FRA are proposing enhanced tank car performance standards and operating limitations designed to minimize the loss of lading from tank cars transporting PIH materials in the event of an accident.

Issuance of this NPRM does not mean that FRA and PHMSA's efforts to improve tank car safety will end. Improving the safety and security of hazardous materials transportation via railroad tank car is an ongoing process. Going forward, FRA's hazardous materials research and development (R&D) program will continue to focus on reducing the rate and severity of hazardous materials releases by optimizing the manufacture, operation, inspection, and maintenance procedures for the hazardous materials tank car fleet. FRA's overall R&D program will also continue to examine railroad operating practices and the use of technologies designed to increase overall railroad safety.

II. Summary of Proposals in this NPRM

As discussed in detail in Section X below, DOT's tank car research has shown that the rupture of tank cars and loss of lading are principally associated with the car-to-car impacts that occur as a result of derailments and train-to-train collisions. Conditions during an accident can be such that a coupler of one car impacts the head or the shell of a tank car. With sufficient speed, such impacts can lead to rupture and loss of lading. When a tank car is transporting PIH materials, the consequences of that loss of lading can be significant. Based on the information currently available, DOT believes that a significant opportunity exists to enhance the safe

transportation of PIH materials by railroad tank car. Accordingly, in order to enhance the safety of hazardous materials transportation, and in direct response to the Congressional directive of 49 U.S.C. 20155, DOT is proposing revisions to the Hazardous Materials Regulations (HMR; 49 CFR Parts 171–180) that would improve the accident survivability of railroad tank cars used to transport PIH materials. Specifically, in this NPRM, we are proposing to require:

- A maximum speed limit of 50 mph for all railroad tank cars used to transport PIH materials;
- A maximum speed limit of 30 mph in non-signalized (i.e., dark) territory for all railroad tank cars transporting PIH materials, unless the material is transported in a tank car meeting the enhanced tank-head and shell puncture-resistance systems performance standards of this proposal;
- As an alternative to the maximum speed limit of 30 mph in dark territory, submission for FRA approval of a complete risk assessment and risk mitigation strategy establishing that operating conditions over the subject track provide at least an equivalent level of safety as that provided by signaled track;
- Railroad tank cars used to transport PIH materials to be manufactured to meet enhanced performance standards for tank-head and shell puncture-resistance systems;
- The expedited replacement of tank cars used for the transportation of PIH materials manufactured before 1989 with non-normalized steel² head or shell construction; and
- An allowance to increase the gross weight on rail for tank cars designed to meet the proposed enhanced tank-head and shell puncture-resistance systems performance standards.

In drafting this proposed rule, DOT has carefully considered the results of all of its research regarding tank car accident survivability, all comments received through the series of public meetings held in the course of DOT's comprehensive review of tank car safety, as well as all written comments submitted to the docket of this proceeding. DOT believes that its two-pronged approach to enhancing the accident survivability of tank cars—that is, limiting the operating conditions of the tank cars transporting PIH materials and enhancing the tank-head and shell puncture-resistance performance—represents the most efficient and cost-

effective method of improving the accident survivability of these cars. DOT invites comments on all aspects of this proposed rule.

First, with regard to the proposed speed and operating restrictions, we have reviewed the results of research on the current tank car fleet used for the transportation of PIH materials. We have also reviewed recent accidents and subsequent recommendations of the National Transportation Safety Board (NTSB). As discussed in Section X below, FRA's research demonstrates that the speed at which a train is traveling has the greatest effect on the closing velocity between cars involved in a derailment or other accident situation. Specifically, the research indicates that, in general, the secondary car-to-car impact speed is approximately one-half that of the initial train speed—the speed of the train at the time of the collision or derailment. Limiting the operating speed of tank cars transporting PIH materials is one method to impose a control on the forces experienced by these tank cars.

The rail industry, through the Association of American Railroads (AAR), has developed a detailed protocol on recommended operating practices for the transportation of hazardous materials. These recommended practices were originally implemented in 1990 by all of the Class 1 rail carriers operating in the United States. In 2006, AAR issued a revised version of this protocol, known as Circular OT-55-I, with short-line railroads also participating in the implementation. Among other requirements, OT-55-I restricts the operating speeds to a maximum of 50 mph for key trains, which are defined to include trains containing five or more tank car loads of PIH materials. Pursuant to OT-55-I, most trains with tank cars containing PIH materials are transported under this speed restriction. The period in which these tank cars are picked up or delivered is the most likely time when a train might not contain a sufficient quantity of hazardous materials to meet the definition of a key train and thus not operate under the 50 mph speed restriction. However, it is likely that the class of track into the facility may already limit the speed below 50 mph. Under FRA's Track Safety Standards,³ there are minimum safety requirements that a track must meet, and the condition of the track is directly tied to the maximum allowable operating speed for the track. Only the two highest categories of track typically used for freight service, Classes 4 and 5,

² Non-normalized steel is steel that has not been subjected to a specific heat treatment procedure that improves the steel's ability to resist fracture.

³ See 49 CFR part 213.

have a maximum allowable operating speed above 50 mph. In addition, 50% of track in the United States is non-signalized and restricted by the Track Safety Standards to a speed limit of 40 mph. We therefore believe that the proposed restrictions in this NPRM represent an effective way to control the forces experienced by the tank car during most derailment or accident conditions without imposing an undue burden on the industry. We invite commenters to address whether our assumption that most tank cars transporting PIH materials are transported in accordance with the speed restrictions in OT-55-1 is accurate, particularly for smaller and short-line carriers. In addition, we invite commenters to address whether there are alternative approaches to reduce the consequences of a train derailment or accident involving PIH materials, including data and information in support of suggested alternative approaches or strategies.

FRA analyzed data from chlorine incidents between 1965 and 2005, and anhydrous ammonia incidents between 1981 and 2005, to study those incidents resulting in loss of product from head and shell punctures, cracks, and tears.⁴ This analysis suggests that a disproportionate number of those incidents occurred in non-signalized (dark) territory, as compared to the percentage of total train miles in dark territory. Additionally, this analysis showed that at the time of these accidents, the median train speed was 40 mph and the average speed was 38 mph. This analysis also demonstrates that approximately 80% of the losses occurred at speeds greater than 30 mph. Notably, no catastrophic losses of chlorine occurred at speeds below 30 mph. Based on this data, we are proposing an interim measure to limit the speed of the existing fleet of tank cars used to transport PIH materials when traversing non-signalized territory. Specifically, we propose to limit the maximum allowable operating speed to 30 mph for tank cars transporting PIH materials over non-signalized territory unless the tank cars meet the enhanced tank-head and shell puncture-resistance systems performance standards of this proposal. We are also proposing alternate provisions that a railroad may choose to follow in lieu of the speed restriction.

Second, we are proposing enhanced tank-head and shell puncture-resistance performance standards that are designed

to enhance the accident survivability of tank cars. One critical aspect of this enhancement is improved tank-head and shell puncture-resistance standards. The enhanced standards would require tank cars that transport PIH materials in the United States to be designed and manufactured with a shell puncture-resistance system capable of withstanding impact at 25 mph and with a tank-head puncture-resistance system capable of withstanding impact at 30 mph. As noted above, we are proposing these enhanced performance standards in tandem with an operational speed restriction of 50 mph. Because the secondary car-to-car impact speed in a derailment or collision scenario is approximately one-half of the initial train speed, designing and constructing tank cars to withstand shell impacts of at least 25 mph and limiting the speed of those tank cars to 50 mph will ensure that in most instances, the car will not be breached if it is involved in a derailment or other type of accident. Designing and constructing tank cars to withstand tank-head impacts of at least 30 mph would take advantage of the greater available space for impact-attenuating structures in front of the tank-head and would help mitigate possible differences between the generalized tank-head impact scenarios and the actual tank-head impacts that occur in collisions or derailments.

Empirical evidence from recent accidents and the derailment dynamics research prepared by the Volpe National Transportation Systems Center (Volpe) show that impacts happen to both tank car heads and shells. Tank car heads have historically been provided more protection than tank shells because the majority of tank car punctures occurred in rail yards to the heads of tank cars as a result of overspeed impacts. However, given the recent PIH releases in train accidents, we believe that it is time to enhance the accident survivability of the tank car, increasing the level of protection to both the tank-head and the shell.

To support the enhanced tank-head and shell puncture-resistance standards, we are proposing performance criteria, including impact test requirements. The proposed tests reflect generalized impact scenarios as a means to evaluate the performance of alternative designs. In the shell impact scenario, a rigid ram car with a punch impacts the shell of the tank car. Similarly, in the head impact scenario, a rigid ram car with a punch impacts the head of the tank car. The test procedures are based on the modeling developed by Volpe and the baseline tank car testing performed in cooperation with the Next Generation

Rail Tank Car Project (NGRTCP), as discussed in Section IX below.

As proposed in this NPRM, compliance with the proposed standards can be shown by computer simulation, by simulation in conjunction with substructure testing, by full-scale impact testing, or a combination thereof. The highest level of confidence, although at the greatest cost, is provided by full-scale impact testing. The least costly and lowest level of confidence is provided by simulation alone. Substructure testing significantly increases the confidence in simulation modeling, potentially with relatively modest costs, depending on the details of the substructure test. Economic analysis indicates that freight rail industry economics should allow the development of several new tank car designs, through compliance shown with simulations and substructure testing. The performance criteria proposed in this NPRM provide for full-scale testing, scale model or component testing, simulation, or comparative analysis to an approved design. We are proposing to require designs for which no full-scale testing is performed to be submitted to FRA for review. FRA's review is necessary to ensure that modeling parameters and scale or substructure testing are sufficient to ensure that the necessary level of safety has been achieved. In evaluating a design, FRA will consider appropriate data and analysis showing how the proposed design meets the enhanced performance standards for head and shell impacts. FRA will consider proper documentation of competent engineering analysis or practical demonstrations, or both, which may include validated computer modeling, structural crush analysis, component testing, or any combination thereof. This approach is consistent with FRA's practice in determining compliance with equipment performance standards promulgated in other areas of railroad safety. See, e.g., 49 CFR 229.211 (Locomotive Crashworthiness). We request comments on this proposal.

Third, to ensure timely replacement of the PIH tank car fleet, we are proposing an implementation schedule that allows for design development and manufacturing ramp-up in the first two years after the final rule becomes effective. We are also proposing that in the next three years, one-half of the existing fleet will be replaced, with the remaining fleet replacement taking place in the following three years. This schedule will allow for replacement of the current PIH tank car fleet within eight years from the effective date of the final rule.

⁴ See document no. 30 in docket no. FRA-2006-25789, "Loss of T111 Product in Head and Shell Punctures, Cracks & Tears."

One of the factors we have taken into consideration in developing this proposal is the NTSB's recommendations related to pre-1989 tank cars manufactured with non-normalized steel. The NTSB, in its report on the Minot, North Dakota accident,⁶ concluded that low fracture toughness of non-normalized steels used for tank shells contributed to the complete fracture and separation of the derailed cars. While we believe that low fracture toughness of non-normalized steels is only one of many material and design characteristics that can contribute to tank car releases, the pre-1989 tank cars are reaching the upper limits of their useful life. Therefore, we believe that these pre-1989 cars, which were manufactured with non-normalized steel, should be replaced in an expedited fashion. To accomplish this safety goal, we propose to prohibit the use of tank cars manufactured with non-normalized steel heads or shells beginning five years after the effective date of the final rule. We want to emphasize that this requirement is focused on the expedited removal of the pre-1989 tank cars that were manufactured using non-normalized steel. We recognize the efforts of the AAR to incorporate requirements for normalized steel for cars manufactured after 1988. We also recognize that some tank car manufacturers began using normalized steel prior to 1988, those tank cars would not be affected by this proposal.

Finally, we are proposing to allow an increase in the gross weight of tank cars allowed on rail. Improvements in tank car performance have historically relied in large part on thicker and/or stronger steel, which brings with it a corresponding addition to the empty weight of the tank car. Therefore, a potential consequence of the proposed enhanced tank-head and shell puncture-resistance performance standards in this NPRM could be a measurable increase in the total number of PIH rail shipments to convey the same quantity of product to the customer since a heavier tank car means must contain less loading to keep within the gross weight limit. As noted above, however, there is a long history of safe shipment of hazardous materials via railroad tank car, and the enhancements proposed in this NPRM will further increase the accident survivability of the tank cars used to transport PIH materials. Accordingly, we are proposing to allow an increase in the gross weight allowed on rail (up to 286,000 pounds) for tank

cars that transport PIH materials to offset the potentially increased weight of the enhanced tank car.

This measure should enable shippers to continue meeting customer demands without significantly increasing the total number of PIH shipments. In proposing to allow tank cars meeting the enhanced tank-head and shell puncture-resistance system requirements to weigh up to 286,000 pounds gross weight on rail, we recognize that there are mechanical and structural concerns that must be addressed to ensure the safety of these cars during transportation. To ensure that tank cars exceeding the existing 263,000 pound limitation and weighing up to 286,000 pounds gross weight on rail are mechanically and structurally sound, we propose to require that such cars conform to AAR Standard S-286-2002, SPECIFICATION FOR 286,000 LBS GROSS RAIL LOAD CARS FOR FREE/UNRESTRICTED INTERCHANGE SERVICE (adopted November 2002 and revised September 1, 2005), which we propose to incorporate by reference into the HMR. AAR Standard S-286-2002 is the existing industry standard for designing, building, and operating rail cars at gross weights between 263,000 pounds and 286,000 pounds. A copy of AAR Standard S-286-2002 has been placed in the docket.

We recognize that some facilities and railroads do not currently have infrastructure sufficient to support the use of a 286,000 pound tank car. We anticipate tank car designers, working with the end users, will develop tank cars that will meet the enhanced tank-head and shell performance standards while minimizing the addition of weight to the empty car. The existing tank car specifications provide flexibility that will allow some use of new technologies and materials to provide the improved accident survivability required by this proposal. DOT encourages the development of innovative engineering design changes to meet the proposed enhanced accident survivability standard while minimizing added weight to the empty tank car. We also anticipate that the growing use of rail cars with gross weight on rail exceeding 263,000 lbs for non-hazardous commodities, such as coal and grain, will minimize the track infrastructure barriers to the use of the heavier cars over time. For these reasons, we believe that the number of PIH shipments will not be significantly increased by the proposed enhanced accident survivability standards. As in all aspects of this proposed rule, we request comments on this proposal. We are particularly interested in data and information concerning the extent to

which track infrastructure has already been modified to accommodate heavier rail cars, including how those modifications were accomplished and at what cost. We also invite comments concerning additional infrastructure modifications that may be required to accommodate the heavier cars that would be permitted in accordance with the proposals in this NPRM and the extent to which PIH shipments along certain rail lines may increase because existing infrastructure may not accommodate heavier cars.

The specific proposals in this rule are explained in more detail in Section XIII, the Section-by-Section Analysis, which is set forth below.

III. Statutory Authority, Congressional Mandate, and NTSB Recommendations

The Federal hazardous material transportation law (Federal hazmat law, 49 U.S.C. 5101 *et seq.*) authorizes the Secretary of DOT (Secretary) to "prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce." The Secretary has delegated this authority to PHMSA, 49 C.F.R. 1.53(h). The HMR, promulgated by PHMSA, are designed to achieve three goals: (1) to ensure that hazardous materials are packaged and handled safely and securely during transportation; (2) to provide effective communication to transportation workers and emergency responders of the hazards of the materials being transported; and (3) to minimize the consequences of an incident should one occur. The hazardous material regulatory system is a risk management system that is prevention-oriented and focused on identifying a safety or security hazard and reducing the probability and quantity of a hazardous material release.

Under the HMR, hazardous materials are categorized by analysis and experience into hazard classes and packing groups based upon the risks that they present during transportation. The HMR specify appropriate packaging and handling requirements for hazardous materials, and require a shipper to communicate the material's hazards through the use of shipping papers, package marking and labeling, and vehicle placarding. The HMR also require shippers to provide emergency response information applicable to the specific hazard or hazards of the material being transported. Finally, the HMR mandate training requirements for persons who prepare hazardous materials for shipment or who transport hazardous materials in commerce. The HMR also include operational

⁶ See *infra* Section VI for a detailed discussion of the Minot, North Dakota accident.

requirements applicable to each mode of transportation.

The Secretary also has authority over all areas of railroad transportation safety (Federal railroad safety laws, 49 U.S.C. 20101 *et seq.*), and has delegated this authority to FRA. 49 CFR 1.49. Pursuant to its statutory authority, FRA promulgates and enforces a comprehensive regulatory program (49 CFR parts 200–244) to address railroad track, signal systems, railroad communications, rolling stock, rear-end marking devices, safety glazing, railroad accident/incident reporting, locational requirements for the dispatch of U.S. rail operations, safety integration plans governing railroad consolidations, merger and acquisitions of control, operating practices, passenger train emergency preparedness, alcohol and drug testing, locomotive engineer certification, and workplace safety. FRA inspects railroads and shippers for compliance with both FRA and PIIMSA regulations. FRA also conducts research and development to enhance railroad safety. In addition, both PIIMSA and FRA are working with the emergency response community to enhance its ability to respond quickly and effectively to rail transportation accidents involving hazardous materials.

As noted above, on August 10, 2005, Congress passed SAFETEA-LU, which added section 20155 to the Federal hazard law. 49 U.S.C. 20155. In part, section 20155 required FRA to (1) validate a predictive model quantifying the relevant dynamic forces acting on railroad tank cars under accident conditions, and (2) initiate a rulemaking to develop and implement appropriate design standards for pressurized tank cars.

Prior to the Minot accident and the enactment of SAFETEA-LU, FRA had initiated tank car structural integrity research. In response to the Minot accident, the NTSB made four safety recommendations to FRA specific to the structural integrity of hazardous material tank cars. The NTSB recommended that FRA analyze the impact resistance of steels in the shells of pressure tank cars constructed before 1989 and establish a program to rank those cars according to their risk of catastrophic failure and implement measures to eliminate or mitigate this risk. The NTSB also recommended that FRA validate the predictive model being developed to quantify the maximum dynamic forces acting on railroad tank cars under accident conditions and develop and implement tank car design-specific fracture toughness standards for tank cars used for the transportation of

materials designated as Class 2 hazardous materials under the HMR. In response to the Graniteville accident, the NTSB recommended, in part, that FRA “require railroads to implement operating measures such as . . . reducing speeds through populated areas to minimize impact forces from accidents and reduce the vulnerability of tank cars transporting” certain highly-hazardous materials. Each of these NTSB recommendations is discussed in more detail in Section VI below.

The Department considers this NPRM responsive to section 20155’s mandate, as well as to the NTSB recommendations.

IV. Brief Overview of FRA Programs To Continuously Improve Rail Safety Outside of Tank Car-Specific Efforts

FRA implements a broad and extensive safety program directed at reducing accidents, casualties, loss of property and threats to the human environment. Through the Railroad Accident/Incident Reporting System, FRA gathers data that are employed in crafting responsive measures. See 49 CFR part 225. FRA safety standards address track, equipment, signal and train control systems, motive power and equipment, and operating practices. These regulations set out detailed requirements for design or system performance, inspection and testing, and training. With respect to rail equipment accident/incidents (“train accidents”), the regulations seek to reduce the risk of derailments, collisions, and other losses such as fires involving on-track equipment. FRA employs the Railroad Safety Advisory Committee (RSAC), a group comprised of all of FRA’s stakeholders, to help identify safety needs and to fashion responsive regulations.

FRA also conducts R&D, both independently and in concert with the railroad industry, to identify new ways to enhance safety. R&D products are as diverse as the Track Quality Index, which can help guide investments in program maintenance before safety limits are encountered, and a human-machine interface evaluation tool that can help evaluate control systems and display designs.

On May 18, 2005, DOT and FRA launched the National Rail Safety Action Plan (Action Plan) to address further the safety issues that face the nation’s rail industry. The Action Plan targeted the most frequent, highest risk causes of accidents; focused federal oversight and inspection resources; and accelerated research into new technologies that can improve safety.

The Action Plan elements focused heavily on preventing train accidents caused by human factors and track—the two major categories of train accident causes. In the area of human factors, FRA has issued a proposed rule that seeks to ensure better management of railroad operational tests and inspections. The proposed rule is also intended to establish greater accountability for compliance with operating rules, particularly those that are involved in human factors train accidents, such as the handling of switches. FRA is now completing consultations within the RSAC regarding revocation of public comments on the proposed rule, and a final rule will be issued this year.

In November 2006, FRA fulfilled an Action Plan objective by releasing a study report entitled *Validation and Calibration of a Fatigue Assessment Tool for Railroad Work Schedules*. That report, and an accompanying White Paper, confirmed the impact of fatigue on human factor train accidents and announced the availability of an analytical model that can be used to evaluate crew scheduling. On February 13, 2007, DOT delivered proposed railroad safety reauthorization legislation to the Congress (introduced by request as H.R. 1516 and S. 918) that would replace the 100-year-old Hours of Service Law with science-based regulations addressing fatigue.

Because the genesis of human factors accidents is often unclear, FRA joined with a national coalition of employee organizations and railroads to launch the Confidential Close Call Reporting System (C₃RS). The Bureau of Transportation Statistics (BTS) supports this effort by collecting the data and ensuring the anonymity of the persons providing reports. Local labor/management/FRA teams use the data to identify safety needs before a serious accident occurs. An initial C₃RS project is presently underway at a major UP facility, and additional pilots are being planned. Other human factors initiatives include projects on “behavior-based safety” that seek peer involvement in workplace safety, initiatives to promote crew resource management, and extensive research to support further program development. In FY 2008, FRA will be seeking to integrate many of these efforts into a larger Risk Reduction Program intended to advance safety beyond what can be accomplished with traditional command and control approaches.

Recognizing that the best answer to human factor risks is sometimes technology that can “backstop” the person in cases when errors have high

consequences, FRA continues to work actively to promote Positive Train Control (PTC) systems and similar technology. For instance, FRA R&D provided funding and technical support for the BNSF's deployment of a new Switch Position Monitoring System on the railroad's Avard Subdivision. This system can detect a misaligned main track switch in non-signal territory and provide notification to the dispatcher for appropriate action. BNSF is also demonstrating track integrity circuit technology that can help identify broken rails without the full expense of a signal system. These technologies, which are forward compatible with the railroad's PTC system, known as the Electronic Train Management System (ETMS), are already being installed on additional rail lines. FRA approved the Product Safety Plan for ETMS Configuration I in December 2006, under a performance-based regulation issued with RSAC input in March of 2005. The Product Safety Plan was submitted under subpart H of 49 CFR part 236 and described in detail the train control technology, concept of operations, and results of safety analysis for the system (which in this configuration is designed for single track territory either with a traffic control system or without any signal system).

In the field of track safety, FRA is taking concrete steps in both research and enforcement. FRA research has provided a new tool to detect cracks in joint bars. This optical recognition technology can capture and analyze images for very small cracks while mounted on a hi-rail truck or other on-track vehicle. The system is already in initial use by two major railroads.

In order to ensure compliance with track geometry limits under load, FRA acquired two additional Automated Track Geometry Program (ATIP) cars instrumented for measurement of geometry at track speed, supplementing an existing Office of Safety car (and use of FRA's research cars for geometry surveys when available). This expanded ATIP capability will permit FRA to survey the core of the national rail system on an annual basis, returning to problem areas, as appropriate, without sacrificing coverage. These two additional cars were in service as of April 30, 2007.

One of the most vexing areas of track safety work is rail integrity. The concentration of rail traffic on a smaller, post-merger system together with growth in traffic, increasing gross weight of cars, and a slow pace of rail replacement has led to heavy reliance on internal rail inspections to detect rail flaws before they become service

failures and pose the imminent risk of an accident. The President's Budget for the current fiscal year requested nine positions for rail integrity specialists to build a better organized and aggressive approach to oversight of railroad rail integrity programs. The Congress authorized funding sufficient to support this staffing in February, and FRA is recruiting for these positions.

Over time, strengthened oversight of compliance with railroad safety regulations, introduction of new technology such as PTC, better management of fatigue affecting safety critical employees, and other steps should yield a reduction in the risk of train accidents that could affect the transportation of hazardous materials. FRA is encouraged that, after over a decade of gradual increases in train accidents associated with the growth of rail traffic and other factors, both the train accident rate and total train accidents declined in 2006. This decline likely reflects improved compliance with regulatory requirements, reduced stress from fatigue associated with service disruptions, and other factors. However, history suggests that the underlying factors that create safety challenges, such as growing rail service demands that strain capacity, aging infrastructure, and factors beyond the effective control of the railroads (e.g., natural disasters, impacts with heavy vehicles at highway-rail crossings) will continue to introduce substantial risk even as train accident rates decline. Accordingly, it is necessary for PHMSA and FRA to take the additional actions proposed in this NPRM to reduce the probability that future train accidents will involve catastrophic releases of PHM materials. Thus, the Action Plan provided for acceleration of the research underlying this proposed rule, which is intended to make tank cars used for PHM service more resistant to product loss when a train accident occurs.

The Action Plan also noted with approval the action of major railroads to make available to emergency responders information concerning the top 25 commodities transported through their jurisdictions and called on the railroads to make additional efforts to provide emergency responders with hazardous materials information, including the location of cars hauling hazardous materials on specific trains. CSX Transportation and CHEMTREC—the 24-hour emergency assistance hotline provided as a service by chemical manufacturers—have partnered to provide a demonstration of technology that can readily provide consistent information to emergency responders.

PHMSA and FRA encourage other railroads to join in this effort.

V. Relevant Regulatory Framework

Today railroad tank cars in the United States are designed, built, maintained, and operated under four primary sets of regulations and guidelines: (1) Regulations and orders issued under the Federal railroad safety laws; (2) regulations and orders issued under the Federal hazmat law; (3) the AAR's Interchange Rules;⁶ and (4) the AAR Tank Car Committee's Tank Car Manual (Tank Car Manual).⁷

FRA's freight car, safety appliance, and power brake regulations in 49 CFR parts 215, 231, and 232 apply to tank cars as they do every other type of railroad freight car. Parts 215 and 232 establish minimum safety standards; railroads are free to supplement these standards with additional or more stringent safety standards that are not inconsistent with the Federal standards 49 CFR 215.1 and 232.1.

The HMR treat the tank car as a packaging and mandate safety features, permissible materials and methods of construction, as well as inspection and maintenance standards. A material identified as a hazardous material by the HMR may not be shipped by railroad tank car unless the tank car meets the requirements of the HMR, 49 CFR 173.31(a).

A separate set of standards—the AAR Interchange Rules, issued by AAR's standing Tank Car Committee (TCC)—govern the tender and acceptance of rail cars among carriers within the general system of railroad transportation. The AAR Interchange Rules address a range of design and operational requirements intended to promote uniformity and reciprocity in car handling, including the obligation of rail carriers to perform running repairs on equipment received in interchange. Historically, the AAR Interchange Rules also have addressed certain subjects, such as rail tank car standards, now covered comprehensively by the HMR. Most recently, as discussed below, the TCC has issued an Interchange requirement (Casualty Prevention Circular 1175, as

⁶ AAR, *Interchange Rules*, Washington, DC, published annually in a "Field Manual" and an "Office Manual."

⁷ AAR, Operations and Maintenance Dep't, Mechanical Div., *Manual of Standards and Recommended Practices, Section C-Part III, "Specifications for Tank Cars, Specification M-1002"* (revised annually).

⁸ The Mechanical Division of AAR's Operations and Maintenance Department is responsible for industry freight car standards and for administering the Interchange Rules, a body of private law that governs the acceptance and use by railroads of equipment which they do not own. See fn. 8, *supra*.

amended by Casualty Prevention Circular 1178) that would require tank cars transporting anhydrous ammonia and chlorine to meet tank car design standards that are more stringent than those specified in the HMR.

Railroads, as common carriers, are generally required to provide transportation services in a reasonable manner, and they may not impose unreasonable requirements as a condition precedent to providing rail transportation services. Accordingly, interchange requirements, such as Casualty Prevention Circular 1178, that restrict the movement of railroad tank cars that meet DOT standards must be reasonable, and, if challenged, the burden is on the railroad to establish the reasonableness of the restriction. See *Akron, Canton & Youngstown R.R. v. ICC*, 611 F.2d 1162, 1189 (6th Cir. 1979), see also *Consolidated Rail Corp. v. ICC*, 646 F.2d 642, 650 (D.C. Cir. 1981), cert. denied, 454 U.S. 1047 (1981). Two of the factors that the Surface Transportation Board and the courts consider in determining the reasonableness of interchange requirements are whether there are Federal safety standards on point and whether a railroad has the ability to seek changes to these standards to meet the safety concerns of the railroad. See *Consolidated Rail*, 646 F.2d at 651. In fact, DOT has established safety standards for tank cars carrying PHH commodities and, pursuant to this rulemaking, is proposing enhanced standards for tank-head and shell puncture resistance systems for those cars. Through participation in this rulemaking, railroads and other interested parties have the ability to influence the enhanced safety standards ultimately adopted by DOT. As discussed below, DOT has concluded that it is inappropriate at this time to establish new standards for top fittings protection, but DOT will continue to work with interested parties on research and ongoing discussions aimed at establishing enhanced consensus standards. There is, therefore, no reasonable basis for the railroads to implement Casualty Prevention Circular 1178 at this time. Railroads are free at any time to seek stricter tank car safety standards through a DOT rulemaking (49 CFR 108.95); to date, no rail carrier has petitioned PHMSA to adopt the tank car standards embodied in Casualty Prevention Circular 1178. FRA has notified the AAR that before the TCC can implement the proposed requirements in Circular 1178, the proposal must be submitted to DOT for approval.

The AAR TCC is a standing committee of the Mechanical Division of AAR's Operations and Maintenance Department. Voting members of the TCC include representatives of AAR member railroads, as well as tank car shipper and owner organizations, tank car builders, and chemical and industry associations. In addition, the Bureau of Explosives and the Railway Supply Institute have non-voting membership on the TCC. FRA and PHMSA, as the Federal agencies responsible for oversight of the safety of hazardous materials transportation by railroad, also participate in the TCC as nonvoting members.

Under the HMR, certain functions related to hazardous material tank cars are delegated to the TCC, including: (1) Approvals for construction of tank cars meeting DOT specifications; (2) procedures for repairs or alterations, and (3) recommending changes in tank car specifications.¹⁰ First, the HMR requires tank car manufacturers to obtain TCC approval for specific tank car designs and construction methods and materials and procedures for repairs and alterations to tank cars. The HMR authorizes the TCC to make the determination that the proposed design, construction, or repair procedures conform to the applicable DOT specification requirements and to issue the approval. 49 CFR 179.3. This authority is primarily a ministerial function, designed to ensure that plans to construct, alter, or convert tank car tanks conform to DOT regulations. In accordance with 49 CFR 179.3(b), the TCC must approve construction of a tank car that meets all Federal requirements.

When a party seeks to construct a railroad tank car to be used in hazardous materials service that does not meet a current DOT specification (see 49 CFR 179.10–179.500–18), the HMR authorizes the TCC to review the proposed specification and report its recommendations on the proposal to DOT. 49 CFR 179.4. In this capacity, DOT benefits greatly from the technical expertise of the TCC members. However, final policy judgment lies with DOT, and only DOT is authorized to approve a new tank car specification, or, through issuance of a special permit in accordance with 49 CFR 107.101–127, the construction and use of a tank car not meeting an existing DOT specification. DOT does not construe the procedures established in 49 CFR

179.4 as limitations on its rulemaking authority.

In addition to the approval authority noted above, in several subsections of Part 179 of the HMR, the TCC is authorized to approve fittings, attachments, materials, designs, methods, and procedures relevant to tank car design, construction, maintenance, repair, and inspection. For example, 49 CFR 179.103–2(a) provides that manway covers “shall be of approved design.” Similarly, 49 CFR 179.201–9 states that “a gauging device of an approved design must be applied to permit determining the liquid level of the lading.” In addition, 49 CFR 179.10 states that “[t]he manner in which tanks are attached to the car structure shall be approved.” In each instance, the term “approved” refers to approval by the TCC. See 49 CFR 179.2.

The primary document containing the standards governing these approvals of the TCC is the Tank Car Manual. The December 2000 version of the Tank Car Manual is incorporated by reference into the HMR at 49 CFR 171.7; thus, compliance with the Tank Car Manual's standards is required under the HMR. Chapter 2 of the Tank Car Manual contains the AAR requirements for DOT tank cars. As noted above, the TCC, subject to certain limitations, may establish standards for tank cars that go beyond the standards set by DOT. For example, the Tank Car Manual requires that the heads and shells of pressure tank cars constructed of certain types of steel must be normalized, although DOT participated in the discussions leading to these standards and approves of them; the tank car specifications contained in the HMR do not contain comparable requirements.¹¹ However, as indicated above, because the December 2000 version of the Tank Car Manual is incorporated by reference into the HMR, compliance with the tank car standards specified in that version of the Tank Car Manual is required under the HMR. Under the Administrative Procedure Act, compliance with any other version of the Tank Car Manual would be required under the HMR only upon the incorporation of that version into the HMR by reference through rulemaking.

¹⁰ Federal regulations also require tank car facilities to have quality assurance programs that are approved by AAR. These programs relate to construction, life-cycle maintenance, and continuing qualification for service.

¹¹ Chapter 2 of the Tank Car Manual also includes additional commodity specific tank car requirements relevant to certain PHH materials which are not included in the HMR. See §§ 2.1.2 (hydrogen sulfide tank cars) and 2.1.4 (hydrogen fluoride tank cars).

VI. Railroad Accidents Involving Hazardous Materials Releases and Accompanying NTSB Recommendations

The NTSB investigated three recent accidents involving tank cars transporting PIH materials, which occurred between 2002 and 2005 in Minot, North Dakota; Macdonia, Texas, and Graniteville, South Carolina. In all three accidents, the NTSB recommended that FRA study improving the safety and structural integrity of tank cars and develop necessary operational measures to minimize the vulnerability of tank cars involved in accidents.

A. Minot

The accident occurred at approximately 1:30 a.m. on January 18, 2002, near Minot, North Dakota, and resulted in the derailment of 31 cars of a 112-car train. Eleven of the 31 derailed cars were pressurized tank cars transporting anhydrous ammonia, a toxic liquefied compressed gas. Five of those tank cars (DOT 105J300W cars) received sidewall impacts to their shells, causing the cars to catastrophically rupture and instantaneously release their contents. Approximately 146,700 gallons of anhydrous ammonia were released from those five cars. As a result, a toxic vapor plume covered the derailment site and the surrounding area. The plume rose approximately 300 feet and gradually expanded five miles downwind of the accident site. The remaining six pressurized tank cars transporting anhydrous ammonia that derailed also suffered from shell impacts. Those cars, DOT 105J300W, 112J340W, and 105S300W cars, gradually released 74,000 gallons of anhydrous ammonia due to damage to the cars' fittings or small punctures and/or tears to the shells. One resident was fatally injured, and 333 people suffered other injuries (11 serious). According to the NTSB, early in the emergency response effort, the Chief of the Minot Rural Fire Department ordered residents in the affected area to shelter-in-place (i.e., remain inside their homes with the windows shut). NTSB concluded that sheltering-in-place was an effective emergency response and credited this action with the relatively low number of injuries, as compared to the number of persons affected by the vapor plume (333 injuries in 11,600 persons affected).

The NTSB determined that the probable cause of the accident was an undetected defective rail. Damages to rolling stock and track, as well as monetary loss from the damaged or

destroyed loading, exceeded \$2.6 billion. As of March 15, 2004, over \$8 million has been spent on environmental remediation. Other significant costs include: evacuation costs, truck delay, rerouting and associated out of service expenses, expenses for disruption to non-railroad businesses, and expenses incurred in settling claims arising from the accident.¹¹

On March 15, 2004, the NTSB released Safety Recommendations R-04-01 through R-04-07 as a result of the Minot accident. The first three recommendations (R-04-01, R-04-02, and R-04-03) pertain to FRA's oversight of continuous welded rail maintenance programs and are not relevant to this rulemaking. The four remaining recommendations (R-04-04, R-04-05, R-04-06, and R-04-07) concern tank car structural integrity and are relevant to this rulemaking. In fact, those four recommendations served as the basis for the reformulation of FRA's tank car research program.¹² Recommendations R-04-04 through R-04-07 read as follows:

(R-04-04). Conduct a comprehensive analysis to determine the impact resistance of the shells in the shells of pressure tank cars constructed before 1989. At a minimum, the safety analysis should include the results of dynamic fracture toughness tests and/or the results of nondestructive testing techniques that provide information on material ductility and fracture toughness. The data should come from samples of steel from the tank shells from original manufacturing or from a statistically representative sampling of the shells of the pre-1989 pressure tank car fleet.

(R-04-05). Based on the results of the Federal Railroad Administration's comprehensive analysis to determine the impact resistance of the shells in the shells of pressure tank cars constructed before 1989 as addressed in Safety Recommendation R-04-04, establish a program to rank those cars according to their risk of catastrophic fracture and separation and implement measures to eliminate or mitigate this risk. This ranking should take into consideration operating temperatures, pressures, and maximum train speeds.

(R-04-06). Validate the predictive model the Federal Railroad Administration is developing to quantify the maximum dynamic forces acting on railroad tank cars under accident conditions.

(R-04-07). Develop and implement tank car design-specific fracture toughness standards, such as a minimum average Charpy value, for steels and other materials of construction for pressure tank cars used for the transportation of U.S. Department of

Transportation class 2 hazardous materials, including those in "low-temperature" service. The performance criteria must apply to the material orientation with the minimum impact resistance and take into account the entire range of operating temperatures of the tank car.

B. FRA's Responses to the NTSB Tank Car Recommendations for Minot

In August 2004, the FRA responded to NTSB Safety Recommendations R-04-04 through R-04-07, which arose from the Minot accident. As for NTSB Recommendation R-04-04 and R-04-05, which recommended that FRA analyze the impact resistance of steels in the shells of pressure tank cars constructed before 1989 and establish a program to rank the cars according to their risk of fracture, FRA advised the NTSB that the TCC had developed a plan to sample steels from pre-1989 pressure tank cars and that a program to rank those cars would be established. Because of FRA's commitment to ranking the pre-1989 fleet, the NTSB reclassified Safety Recommendation R-04-05 as "Open—Acceptable Response." The NTSB, however, classified Safety Recommendation R-04-04 as "Open—Unacceptable Response" because the Board did not believe that the necessary analysis would be completed in a timely manner. After FRA provided additional information to the NTSB about the sampling, including preliminary fracture toughness data relating to the samples from the pre-1989 tank cars, the NTSB reclassified Safety Recommendation R-04-04 as "Open—Acceptable Response."

As for NTSB Recommendation R-04-06, which recommended that FRA validate its model to quantify the dynamic forces acting on tank cars in accident conditions, the FRA advised the NTSB that it had initiated modeling programs at Volpe and the University of Illinois at Chicago to determine in-train forces on tank cars involved in train derailments. Based on FRA's response to Safety Recommendation R-04-06, the NTSB classified the Recommendation as "Open—Acceptable Response."

Finally, as for NTSB Recommendation R-04-07, which recommended that FRA develop tank car design-specific fracture toughness standards for steels used in pressure tank cars, the FRA responded by stating that more research was needed (approximately three years) to address tank car design-specific fracture toughness standards. Because the NTSB believed there were existing solutions and accident findings from which to gauge fracture toughness values, such as Charpy impact, in June 2005, the NTSB

¹¹ On October 9, 2007, a Federal judge approved a \$7 million settlement in a class-action lawsuit between Canadian Pacific Railroad and individuals affected by the accident.

¹² See Section X, *infra*, for a more detailed discussion of FRA's tank car research program.

classified the FRA response to Safety Recommendation R-04-07 as "Open—Unacceptable Response." Since June 2005, AAR, in cooperation with FRA, has developed standards that ensure a minimum level of impact resistance for normalized steel and that require that Charpy tests be performed in the orientation of the sample material with the lowest impact property. In July 2006, the NTSB determined that FRA had made progress on the development of fracture toughness standards, and it reclassified Safety Recommendation R-04-07 "Open—Acceptable Response."

C. Macdona

The accident occurred at approximately 5 a.m. on June 28, 2004, in Macdona, Texas, and resulted in the derailment of four locomotives and 36 cars belonging to two trains that collided while traveling on the same track in opposing directions. As the eastbound 123-car train was attempting to leave the main line to enter a parallel siding, it was struck midpoint by a westbound train traveling on the same main line track. The 16th car of the westbound train was a pressurized tank car transporting chlorine, a toxic liquefied compressed gas. This tank car, a DOT 105A500W car, was punctured in the lower quadrant of the tank car head and the puncture terminated one inch beyond the seam joining the tank-head to the tank shell. The tank car instantaneously released approximately 9,400 gallons of chlorine, and a toxic vapor plume engulfed the accident area to a radius of at least 700 feet before drifting away from the site. The NTSB noted that the vapor cloud drifted with the wind from the accident site and traveled in a northwesterly direction toward several residential areas within the city of San Antonio. NTSB further noted that Sea-World, a large commercial entertainment venue, was about 10 miles northwest of Macdona in the path of the chlorine vapor cloud.

The NTSB determined that the probable cause of the accident was UP train crew fatigue that resulted in the failure of the engineer and conductor to appropriately respond to wayside signals governing the movement of their train. Thirty-three persons were injured, three fatally (including the UP train conductor and two occupants of a residence located near the accident site).¹² Damages to rolling stock, track

and signal equipment were estimated at \$6.3 million. As of July 20, 2006, \$150,000 was spent to clean-up environmental consequences. Other significant costs include Evacuation costs, truck delay, rerouting and associated out of service expenses, expenses for disruption to non-railroad businesses, and expenses incurred in settling claims arising from the accident.

On July 20, 2006, the NTSB released Safety Recommendations R-06-14 and R-06-15 as a result of the Macdona accident. Although neither recommendation specifically addressed the vulnerability of tank cars involved in an accident, the NTSB stated that the successful and timely implementation of Safety Recommendations R-04-04 through R-04-07 (recommendations from the Minot accident) and R-05-16 through R-05-17 (recommendations from the Graniteville accident discussed below) may have prevented/mitigated the Macdona accident and any future catastrophic releases of hazardous materials from pressurized tank cars involved in an accident.

D. Graniteville

The accident occurred at approximately 2:30 a.m. on January 6, 2005, in Graniteville, South Carolina, when a freight train was improperly switched from a main line track onto an industry track and struck an unoccupied, parked train head-on, on a rail spur leading to a textile manufacturing facility. The collision resulted in the derailment of three locomotives and 17 cars belonging to the two trains. Three of the 17 derailed cars were pressurized tank cars transporting chlorine. One tank car, a DOT 105J500W car, was punctured in the shell by the coupler of another car, and instantaneously released approximately 9,220 gallons of chlorine, creating a toxic vapor plume that engulfed the surrounding area.

The NTSB concluded that the probable cause of the accident was the failure of a train crew to return a main line switch to the normal position after the crew completed work at the Avondale Mills' industry track. As a result of the chlorine release, 5,400 people within a 1-mile radius of the derailment site were evacuated for several days. Nine persons were fatally injured and 554 sustained other injuries (75 requiring hospitalization). The nine persons fatally injured included the train engineer, six employees of the

textile manufacturing facility, Avondale Mills, a truck driver at one of Avondale Mills' facilities, and an individual in a residence south of the accident site.¹³ Noting that emergency responders were enroute to the scene within two minutes of the accident occurring and that emergency responders used a "particularly efficient and expeditious means" of evacuating affected persons, the NTSB concluded that the emergency response efforts were "timely, appropriate, and effective."¹⁴ The Board noted, however, that despite these emergency response efforts, the eight civilian fatalities were determined to have resulted from asphyxia that occurred within minutes of exposure to chlorine gas. In other words, the fatalities occurred within the minutes that passed before emergency responders arrived on the scene or were able, because of the toxic fumes, to begin a safe search and rescue effort.¹⁵

The property damage, including damages to the rolling stock and track, exceeded \$6.9 million. Other significant costs include evacuation costs, truck delay, rerouting and associated out of service expenses, expenses for disruption in non-railroad businesses, costs to affected local governments and residents, as well as expenses incurred in settling claims arising from the accident. According to financial documents produced by NS, the railroad recorded \$41 million of expenses related to the accident in 2005 and it is estimated that the costs of the Graniteville accident were approximately \$138 million, excluding chlorine cleanup costs.¹⁶ This cost estimate likely greatly underestimates the actual costs incurred by those affected by the accident. For example, according to various South Carolina State Emergency Operations Center and U.S. Environmental Protection Agency Situation Reports,¹⁷ schools were closed for several days, mail service for the

¹²As was the case in the Macdona accident, both train crew members survived the collision (the engineer died later from exposure to the gas). Given that both crew members survived the collision, no fatalities or serious injuries would have resulted from the accident had a tank car of chlorine not been punctured.

¹³NTSB, Railroad Accident Report NTSB/RAR-05/04, *Collision of Norfolk Southern Freight Train 192 With Stalling Norfolk Southern Local Train P22 with Subsequent Hazardous Materials Release at Graniteville, South Carolina*, (Jan. 6, 2005), at p. 40. Available at <http://www.regulations.gov> in docket no. FRA-2006-23169 and at <http://www.ntsb.gov> (Graniteville Report).

¹⁴Id.

¹⁵Norfolk Southern Corporation, *Quarterly Financial Review, Fourth Quarter 2005*, at p. 4 (downloaded at http://www.nscorp.com/nscportal/nscorp/pdf/financial_q4_06.pdf).

¹⁶Available at <http://www.epa.osc.org>.

¹⁷The crew of the striking train survived the collision and exited the locomotive unscathed, but could not escape the chlorine gas. The conductor and engineer were able to walk some distance from the collision where they were transported to hospitals. The engineer was treated and released, the conductor died several hours later from

inhalation of the toxic gas. Given that both crew members survived the collision, no fatalities or serious injuries would have resulted from the accident had a tank car of chlorine not been punctured.

evacuated areas had to be forwarded to a neighboring post office, and preliminary estimates of costs to Aiken County were in the millions due to potential damage to electrical systems and equipment within homes and businesses, the cost of the first response and recovery operations, damage to fire and EMS response vehicles, and the treatment of the victims.

The fate of Avondale Mills, the textile manufacturing company with four facilities within the vicinity of the accident, illustrates the significant long-term economic impacts that may result from catastrophic hazardous materials transportation accidents. In July 2006, after spending \$140 million on cleaning, re-cleaning, repairs, and damage mitigation as a result of the derailment, Avondale Mills reported that it was unable to recover financially from the derailment and closed its 10 mills in South Carolina and Georgia. The company cited irrevocable damage to its core facilities, as well as market and production losses caused by the derailment. For example, the Company was unable to identify cleaning and restoration protocols that would successfully or economically halt the chlorine's corrosive effects, repair the damage caused by the chlorine exposure, and return the affected facilities and equipment to their pre-derailment condition. As a result, the Company was faced with the expensive replacement of damaged assets in addition to the lost business, higher manufacturing costs, and lower profits related to the reduction in productive capacities resulting from the derailment.¹⁹ At the time of its closure, Avondale Mills employed approximately 4,000 people.

Although the costs of associated legal claims resulting from the derailment are still accumulating, in May 2006, Avondale Mills reached a \$215 million settlement with its primary property and casualty insurer for all claims related to the derailment. Even with this multi-million dollar settlement, Avondale Mills' management believed that the amount was substantially less than the full value of the losses incurred as a result of the derailment.²⁰ In June 2006, a Federal judge approved a class-action settlement in excess of \$10.5 million between Norfolk Southern and almost 500 individuals who claimed they suffered serious injuries after the derailment. In May 2005, Norfolk

Southern announced that it had reached agreement on settlements for Graniteville residents and businesses that were evacuated as a result of the derailment, but did not seek medical attention. Under the terms of this settlement, Norfolk Southern offered each resident who was evacuated, but did not seek medical attention within 72 hours of the accident a flat amount of \$2,000 for the evacuation plus \$200 per person per day of the evacuation. These amounts are separate from any property damage claims. Norfolk Southern settled separately with the families of the nine people killed as a result of the accident.

On December 12, 2005, the NTSB released Safety Recommendations R-05-14 through R-05-17 as a result of the Graniteville accident. The first recommendation (R-05-14) pertains to railroad switching devices and is not directly relevant to this rulemaking. The three remaining Safety Recommendations (R-05-15, R-05-16, and R-05-17) relate to operating speeds in non-signalized territory, as well as the transportation of PIH materials and other hazardous materials that may pose inhalation hazards in the event of unintentional release. Recommendations R-05-15 through R-05-17 read as follows:

(R-05-15) Require railroads, in non-signalized territory and in the absence of switch position indicator lights or other automated systems that provide train crews with advance notice of switch positions, to operate those trains at speeds that will allow them to be safely stopped in advance of misaligned switches.

(R-05-16) Require railroads to implement operating measures, such as positioning tank cars toward the rear of trains and reducing speeds through populated areas, to minimize impact forces from accidents and reduce the vulnerability of tank cars transporting chlorine, anhydrous ammonia, and other liquefied gases designated as poisons by inhalation.

(R-05-17) Determine the most effective methods of providing emergency escape breathing apparatus for all crewmembers on freight trains carrying hazardous materials that would pose an inhalation hazard in the event of unintentional release, and then require railroads to provide these breathing apparatus to their crewmembers along with appropriate training.

In addition, noting that the punctured car was among the strongest tank cars in service, the NTSB concluded that even the "strongest tank cars in service can be punctured in accidents involving trains operating at moderate speeds."²¹ The NTSB then repeated its concern for crashworthiness integrity of railroad

tank cars by restating what it said, in part, in response to the Minot accident:

Improvements in the crashworthiness of pressure tank cars can be realized through the evaluation of alternative steels and tank car performance standards. The ultimate goal of this effort should be the construction of railroad tank cars that have sufficient impact resistance and that eliminate the risk of catastrophic brittle failures under all operating conditions and in all environments. Achieving such a goal does not necessarily require the construction of a tank car that is puncture-proof, it may only require construction of a car that will remain intact and slowly leak its contents if it is punctured.²²

E. FRA's Responses to the NTSB Tank Car Recommendations for Graniteville

On June 30, 2008, the FRA responded to NTSB Safety Recommendations R-05-15 through R-05-17, which arose from the Graniteville accident. As for NTSB Recommendation R-05-15, which recommended that railroads be required, under certain conditions, to operate trains at lower speeds in non-signalized territory, the FRA informed the NTSB that the Recommendation was not feasible for operational and economic reasons. From an operational standpoint, depending on the terrain at the switches and the train make-up, train braking could prove difficult, generating excessive in-train forces that could cause derailments. From an economic standpoint, Recommendation R-05-15 would impede the movement of trains, especially on tracks where many switches exist, thereby causing train delays and an increase in running time. The FRA also explained that Recommendation R-05-15 was overly broad in that it would apply to all trains, regardless of loading. The NTSB classified Safety Recommendation R-05-15 as "Open—Response Required."

As for NTSB Recommendation R-05-16, which suggested that FRA require railroads to position tank cars towards the rear of trains and reduce their speeds through populated areas, the FRA advised the NTSB that it would be imprudent to require the placement of tank cars carrying PIH materials at the rear of trains for several reasons. First, the placement of tank cars carrying PIH materials at the rear of trains could expose the cars to the consequences of rear-end collisions. Second, FRA's research demonstrates that the preferred location for loaded cars is towards the front of trains because, upon braking, heavy cars decelerate more slowly than empty cars. If loaded cars are placed towards the rear of trains, they would push the more rapidly decelerating cars

¹⁹See Avondale Incorporated, *Notes to Consolidated Financial Statements (Unaudited)*, at note 1 (Aug. 25, 2006). Available at <http://www.sec.gov>.

²⁰*Id.*

²¹Graniteville Report at p. 51.

²²*Id.*

in front of them and generate higher buff forces. Finally, the switching of railroad cars to position tank cars containing PIH materials at the rear of trains involves the risk of increased yard accidents and employee injuries resulting from additional switching. In its response to NTSB Recommendation R-05-16, the FRA also noted several practical difficulties with slowing trains on a location-by-location basis (including the dangers of introducing additional train handling challenges, the impact of such a speed restriction on the efficiency and capacity of the rail network, as well as the potential negative effect that slowing operations could have on communities located along the track). Nonetheless, in its response, FRA stated that it would review the potential costs and benefits of slowing trains carrying certain toxic commodities. The NTSB classified Safety Recommendation R-05-16 as "Open—Response Received."

As for NTSB Recommendation R-05-17 which recommended that FRA examine the most effective methods of providing emergency escape breathing apparatus for crewmembers on trains carrying PIH materials, FRA explained to the NTSB that it would initiate a study of potential breathing apparatus for use by crewmembers of freight trains carrying PIH materials. Based on FRA's response to Safety Recommendation R-05-17, the NTSB classified the Recommendation as "Open—Acceptable Response."

The NTSB Safety Recommendations referenced in this section above and the publicly available responses to them may be found on the <http://www.regulations.gov> Web site under docket number FRA-2006-25160.

VII. Evaluating the Risk Related to Potential Catastrophic Releases From PIH Tank Cars in the Future

Although it is not possible to accurately determine the probability of future occurrences of railroad accidents that would result in the catastrophic release of hazardous materials, it is unrealistic to assume that absent the improvements proposed, consequences from future accidents involving hazardous materials tank cars would be of the same order of frequency and severity as in the past. In fact, absent the improvements proposed, one or more events could be significantly more severe than experienced thus far. All that would be required would be the necessary environmental conditions (concentrating and channeling a gas plume at ground level), an exposed population of scores or hundreds within the path of the plume, and an ineffective or delayed emergency response (either

due to deficiencies in the emergency response process or because of safety risks posed to emergency responders prohibiting emergency responders from entering an accident area).

Each of the three accidents discussed in section VI above share certain similarities that effectively minimized the catastrophic results of the accidents. Each accident occurred in a relatively rural area, thereby limiting the population exposed to the hazardous materials release. Each accident occurred during the early morning hours, while most of the surrounding populations were in their homes and not in the immediate accident vicinity. The meteorological conditions at the time of each accident effectively limited the speed at which the resulting toxic plumes expanded and the distance over which the plumes expanded. Had any of the accidents occurred in a more densely populated area or later in the day, it is likely that many more people would have been exposed to the toxic plumes. Had the meteorological conditions at the time of any of the accidents been different (e.g., wind speed or direction, temperature, barometric pressure, or humidity) it is possible that the plumes could have expanded more than what actually occurred, again, exposing many more people to the toxic chemicals. To demonstrate the potential effects of different accident conditions, such as location, time of day, or the weather, the circumstances surrounding the Graniteville and Minot accidents are discussed below.

A. Graniteville

Graniteville is a mixed rural and suburban area of Aiken County, South Carolina, with a population of approximately 7,000.²⁴ Graniteville lies in a relatively shallow valley, approximately 200 feet above sea level. The terrain surrounding the accident site is approximately 225 feet above sea level, with the elevation of the industry track where the accident occurred moderately decreasing as the track extends north and west towards the Avondale Mills plant. The January 6, 2005, accident occurred at 2:30 in the morning, a time at which most individuals were asleep in their homes and very few individuals were on the premises of the Avondale Mills plant. At the time of the accident, a light wind was blowing in a south-southwest direction, the temperature was

approximately 55° F, and humidity was high.

The NTSB concluded that approximately 120,000 pounds (9,218 gallons) of liquefied chlorine was released before emergency responders arrived on the scene.²⁵ The chlorine settled in low areas around the railroad tracks and the plume expanded to the west of the accident site and into the Avondale Mills plant, generally following the local topography, running downhill to the south and west,²⁶ before being blown to the north by light winds where it hovered. The NTSB concluded that based on emergency responder observations and the locations of those receiving fatal injuries, the cloud extended at least 2,500 feet to the north, 1,000 feet to the east, 900 feet to the south, and 1,000 feet to the west.

The area to the east of the accident site and extending in a southerly direction is primarily a residential area. To the west and extending in a northerly direction are several moderate-to-large-sized industrial plant facilities, some of which operate continuously. A small commercial/retail district is just north of the accident site.

Given the demographics and topography surrounding the accident site, had the accident occurred at a different time of day, or had any of the meteorological variables been different (e.g., wind speed or direction, temperature, barometric pressure, or humidity), it is likely that many more people would have been exposed to the chlorine plume. For instance, if the accident had occurred while the Avondale Mills plant was fully staffed, or during an afternoon shift change, hundreds of individuals could have been exposed. In addition, a middle school is located approximately 1,000 feet north of the accident site (well within the area of the plume that did occur). Had the accident happened while school was in session, approximately 500 students and scores more school personnel could have been exposed to the toxic plume.

Similarly, had any meteorological variables been different (e.g., wind speed or direction, temperature, barometric pressure, or humidity), it is likely that the chlorine plume could have expanded more rapidly and affected a greater area than it did. For instance, at the time of the accident, a

²⁴ As of 2006, the approximate population of Aiken County was 182,000. U.S. Census Bureau State & County QuickFacts (available at <http://quickfacts.census.gov>).

²⁵ Note: The vaporization of liquefied chlorine at 72 °F at atmospheric pressure can generate a gaseous cloud with a volume 450 times greater than the volume of the liquid released. See Graniteville NTSB Report at 49 (citations omitted).

²⁶ Because chlorine gas is heavier than air with a vapor density of 2.5 at 32 °F, it will seek the lowest point in the immediate area.

light wind was blowing in a south-southwest direction. If the wind had been blowing at the same intensity, but in a south-southeast direction, the chlorine plume could have hovered over the southeasterly side of the accident site, rather than the northwesterly side. Southeast of the accident site is primarily a residential area and given the size of the plume that did result, the plume could have endangered approximately 185 homes. Given the average household size of 2.68 in Aiken County,²⁶ almost 500 people to the southeast of the accident site could have been exposed to vapors above the ERPG-3 level causing significantly more casualties and fatalities.²⁷ We note as well that the high humidity at the time of the accident limited the plume's rate of expansion because the chlorine reacted with the moisture in the air (effectively diluting the chlorine) to form a weak hydrochloric acid. This weak hydrochloric acid, a highly corrosive liquid, then accumulated in low lying areas and on the abundant vegetation surrounding the accident site, limiting the expansion of the plume. At the time of the accident the outside temperature was approximately 55 °F. As the NTSB noted, the liquefied chlorine rapidly vaporized and expanded when it spilled from the tank car, but the sudden release of the gas caused the product remaining in the tank car to auto-refrigerate and remain in a liquid state, slowing the release of additional gas.²⁸ Had it been warmer, the higher temperature could have provided additional energy for the chlorine to expand, and it is likely that the chlorine plume would have expanded faster.

B. Minot

The Minot accident occurred at approximately 1:30 in the morning, a time at which most individuals were sleeping inside their homes with their windows closed. Almost

instantaneously, approximately 148,700 gallons of anhydrous ammonia were released as five tank cars catastrophically ruptured. A toxic vapor plume formed almost immediately. The plume rose approximately 300 feet and gradually expanded five miles downwind of the accident site and over a population of about 11,600 people (approximately one-third the population of the City of Minot). The outside temperature at the time of the accident was -6 °F, a light snow had fallen earlier in the day and a large amount of residual snow was on the ground.

Recognizing the smell of the chemical, the responsible fire chief immediately determined that the leaking material was anhydrous ammonia. Because of the large amount of anhydrous ammonia released, emergency responders were unable to enter the accident area for approximately three hours. Within 15 minutes of the accident, however, 911 operators were advising residents in the affected area to shelter-in-place (i.e., remain inside their homes with the windows shut) and the emergency room of a local hospital was notified of the derailment.

Upon notification of the derailment, the hospital activated its disaster plan and staff secured the facility against the hazardous vapors by shutting down air handlers, setting up a portable air-handling unit in the emergency room, and establishing an alternate emergency room entrance away from the vapor cloud. Within three hours of the accident, the ammonia cloud had drifted to and encompassed the hospital. Nevertheless, throughout the incident, the hospital treated approximately 300 people.

Ultimately, one resident of the neighborhood nearest the derailment site was fatally injured, two residents were seriously injured, and 60–65 residents were rescued hours after the derailment. All three residents that were seriously injured left the protective confines of their homes and were directly exposed to the anhydrous ammonia cloud for a prolonged period of time (given the time of day and widespread power outages as a result of the accident, it is unknown whether these individuals had heard or seen any of the emergency directives to shelter-in-place). As a result of the accident, nine other people sustained serious injuries, and 322 people, including the two train crew members, sustained minor injuries.

The NTSB concluded that sheltering-in-place was an effective emergency response and credited this action with the relatively low number of injuries, as

compared to the number of persons affected by the vapor plume (approximately 330 injuries in 11,600 persons affected). However, had this accident happened at another time of day, possibly during the morning commuting hours when people are generally not at home, or if emergency responders did not promptly direct residents to shelter-in-place, or if the local hospital had not taken appropriate measures to protect itself from the plume, the consequences of the release could have been much worse than what occurred on January 18, 2002.

Similar to the meteorological circumstances surrounding the Graniteville accident, had the atmospheric variables been different (particularly, the temperature at the time of the accident), it is likely that many more people could have been at risk of exposure to the toxic plume. The low atmospheric temperature at the time of the accident helped to keep the ammonia plume close to ground level as it traveled downwind and also minimized the chemical's vaporization, accordingly limiting the spreading of the plume. Had this accident happened in the spring or summer, or any other time of warmer temperatures, windows in the homes may have been open and it is likely that the ammonia plume would have expanded more rapidly, thus exposing a greater population to the chemical.

Although the Minot, Macdonia, and Graniteville accidents each occurred during the early morning hours, while most of the surrounding populations were in their homes and not in the immediate accident vicinity, because hazardous material transportation is not limited to early morning transportation, any of the accidents could have occurred later in the day, when neighboring factories were fully staffed, schools were in session, and unsuspecting individuals were otherwise outside of the protective confines of their homes and workplaces going about their daily routines. As an example, at approximately 11 a.m. on October 10, 2007, a CSX train transporting mixed freight of grain, lumber, and tank cars of various hazardous materials, derailed in Painesville, Ohio,²⁹ resulting in an explosion and subsequent fire as hazardous materials were released to the environment. Although the train was reportedly not carrying any toxic inhalation hazard materials, and no injuries were reported, 600 people

²⁶ U.S. Census Bureau, American Factfinder (available at <http://factfinder.census.gov/>).

²⁷ ERPG-3 level refers to the American Industrial Hygiene Association's (AIHA) Emergency Response Planning Guideline level 3 which means "[t]he maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing life-threatening health effects." See AIHA Emergency Response Planning Committee, *Procedures and Responsibilities* at 1 (Nov. 1, 2006) (downloaded from <http://www.aiha.org/>). According to AIHA the ERPG levels are intended as health-based guideline concentrations for single exposures to chemicals and the levels are commonly used in the emergency response planning industry for assessing the adequacy of accident prevention and emergency response plans. *Id.*

²⁸ Graniteville Report at 11, 49.

²⁹ Painesville is located approximately 30 miles from Cleveland and has an estimated population of 20,000.

(including over 300 children from a nearby elementary school) within a half mile radius of the train derailment were evacuated.

Although the Minot, Macdonia, and Graniteville accidents each occurred in a relatively rural area, the accidents could have occurred anywhere, including in the midst of major metropolitan areas. The Minot accident was caused by an undetected defective rail. A crew's failure to appropriately respond to wayside signals governing movement of their train led to the Macdonia accident. The Graniteville accident was caused by a train crew's failure to correctly align a switch. Each of these "causes" could have occurred in close proximity to a metropolitan area, thus potentially impacting a much larger population of people. The Painesville, Ohio, incident, although not an accident with catastrophic results, illustrates this point. As a Cleveland City Councilman noted, had the derailment occurred closer to Cleveland, more than 8,000 people could have been affected.¹⁰

VIII. The Railroad Industry's Liability and the Impact of Accidents Involving the Shipment of PIH Materials on Insurance Costs and Shipping Rates

In 2005, railroads moved just over 100,000 carloads of PIH materials and nearly 37 million total carloads.¹¹ The 100,000 carloads of PIH materials equate to approximately 0.3 percent of all rail carloads. Despite the small fraction of the railroad industry's business constituted by PIH materials (and the limited revenue it generates), railroad industry representatives, citing the Minot, Macdonia, and Graniteville accidents, have noted that transporting PIH materials has led to the imposition of "hundreds of millions of dollars of liability."¹² Further, noting that "railroads can suffer multi-billion dollar judgments" from accidents involving highly-hazardous materials, in 2007 the President and CEO of AAR testified before a Congressional committee that "every time a railroad moves [a highly-hazardous shipment] it faces potentially enormous liability" and that the "insurance industry is unwilling to

insure railroads against the multi-billion dollar risks associated with highly-hazardous shipments."¹³ In support of this assertion, a representative of the railroad industry noted that as a result of the Minot, Macdonia, and Graniteville accidents, insurance costs for the entire railroad industry have gone up by 100 percent.¹⁴

This increase in railroad insurance rates, coupled with the actual costs of the accidents, has resulted in increased shipping rates for the shippers of hazardous materials. Minimally, shipping rates for PIH materials have doubled; however, many shippers report larger increases (including at least one shipper which has had its rates increased over 4.8 times in a two-year period).

IX. Industry Efforts To Improve Railroad Hazardous Materials Transportation Safety

A. General Industry Efforts

The rail industry, through the AAR, has developed a detailed protocol on recommended railroad operating practices for the transportation of hazardous materials. Although in early 1990 this protocol was implemented by only the Class 1 rail carriers operating in the United States, on July 17, 2006, AAR issued a revised version of this protocol, known as Circular OT-55-I with short-line railroads also participating in the implementation. The Circular details recommended railroad operating practices for, among other things: (1) Designating certain trains hauling hazardous materials as "key trains," defined as trains containing live or more tank car loads of PIH materials; (2) designating operating speed and equipment restrictions for key trains, (3) designating "key routes"¹⁵ for key trains and setting standards for track inspection and wayside detectors on

these "key routes"; (4) yard operating practices for handling placarded tank cars, (5) storage, loading, unloading and handling of loaded tank cars; (6) assisting communities with emergency response training and information, (7) shipper notification procedures, and (8) the handling of time-sensitive materials. The Circular also: (1) Restricts key trains to a maximum speed of 50 mph; (2) requires, as practicable, that unless a siding or auxiliary track meets FRA Class 2 standards a key train will hold main track at meeting or passing points; (3) requires all cars in key trains to be equipped with roller bearings; and (4) imposes a further speed restriction of 30 mph in the event a defect in a key train bearing is reported by a wayside detector, but is not able to be confirmed visually. A copy of the most recent version of Circular OT-55-I has been placed in the docket.

In addition, FRA is aware that some carriers have individually taken voluntary steps to reduce the occurrence of accidents that can lead to hazardous material releases. For example, BNSF has implemented a derailment prevention program that includes, among other efforts, implementing advanced train control technology, utilizing various freight car condition monitoring technologies; and installing and maintaining switch point position indicators and broken rail protection in non-signalized territory. Specific to the transportation of hazardous materials through non-signalized territory, BNSF has also revised its operating practices at certain locations in its system through which a significant amount of PIH materials are transported in an effort to decrease the probability of an accident or incident involving a train hauling PIH material. A more detailed discussion of BNSF's efforts in this regard is found in the "Discussion of Public Comments" section below.

B. Trinity Industries, Inc.'s Special Permit Chlorine Car

In accordance with 49 CFR 107.105, in early 2005, Trinity Industries, Inc. (Trinity) applied for a Special Permit to manufacture, mark, and sell DOT 105/600W specification tank cars, for use in chlorine service, with a variation in design and construction of the protective housing (the "Trinity car").¹⁶ Specifically, as noted in Trinity's

¹⁰ David Summers, WKYC-TV (Cleveland, OH), *Hazardous Cargo Legislation Stalled on the Tracks* (Oct. 14, 2007).

¹¹ Written Statement of Edward K. Hamburger, President & CEO, AAR, before the U.S. House of Representatives Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials (Jan. 31, 2007) at 7 (Hamburger Statement).

¹² Statement of Rob Fromczak, Assistant Vice President, Environment and Hazardous Materials, AAR, at the Dec. 14, 2006 public meeting (Fromczak Statement). See document no. 19 in the docket.

¹³ Hamburger Statement at 7-8. An example of such a judgment is *In re New Orleans Train Car Leakage Fire Litigation*, 795 So. 2d 154 (La. Ct. App. 2001). In that case, the Louisiana Court of Appeals upheld a class-action judgment of \$850,000,000 in punitive damages and \$2,100,000 in compensatory damages against CSX Transportation, Inc. Railroads, as common carriers, are generally required to provide transportation services in a reasonable manner and may not refuse to transport a material that the government has deemed safe for transportation.

¹⁴ Fromczak Statement.

¹⁵ Circular OT-55-I defines the term "key routes" as "injury track with a combination of 10,000 car loads or intermodal portable tank loads of hazardous materials, or a combination of 4,000 car loads of PIH or TH (Hazard 2000 A, B, C or D) anhydrous ammonia, flammable gas, Class 1 or 2 explosives, environmentally-sensitive chemicals, Spent Nuclear Fuel (SNF), and High Level Radioactive Waste (HLRW) over a period of one year."

¹⁶ See 70 FR 12762, 12783 (Mar. 15, 2005) (Research and Special Programs Administration 1st of Applications for Exemption). 49 U.S.C. § 5117 authorizes the DOT to issue special permits (previously referred to as "exemptions") authorizing a variance from the HMR if the proposed variance is equivalent to the level of safety required by the HMR.

application, the Trinity car varies from Federal standards because it has a protective housing welded, rather than bolted, to the tank nozzle and its maximum gross weight on rail is 286,000 pounds (due in part to a thicker head and shell than current chlorine cars).¹⁷ In response to Trinity's application, several members of the hazardous materials shipping industry expressed concern with certain aspects of the proposed Trinity car. For example, commenters expressed concern regarding the proposed manway arrangement, noting that the modified pressure plate and protective housing may present difficulties for emergency responders because it was unclear whether the standard Emergency Kit C, which is used to contain leaks in and around the pressure relief device and angle valves, was compatible with the arrangement. Further, commenters expressed concern regarding the increased car pressure and corresponding pressure rating of the valves and fittings. Commenters also questioned the efficacy of increasing the thickness of the car's steel, but utilizing steel with a lower tensile strength than current chlorine cars. Furthermore, commenters expressed concern that given the increased weight of the car, some shipping and receiving facilities may not be able to handle the heavier car.

After careful review of Trinity's application, the comments received, and DOT's own analysis of the Trinity car, PHMSA issued the requested Special Permit on April 20, 2008, authorizing Trinity to manufacture, mark, and sell the car for use in chlorine service, subject to certain operational restrictions and inspection requirements.¹⁸ Specifically, the terms of the Special Permit prohibit the Trinity car from being used in free interchange and require the manway nozzle welds to be requalified annually. The Special Permit was issued based on the finding that the Trinity car used under the specified conditions would provide an equivalent level of safety to current DOT specification cars and additionally would provide a way to gather data about an alternative to a

regulatory standard over a relatively short time-span.

C. AAR Proposals for Enhanced Chlorine and Anhydrous Ammonia Tank Cars

In early 2006, the Safety and Operations Management Committee (SOMC) of the AAR directed the AAR's TCC to consider improved packaging for the shipment of chlorine and anhydrous ammonia. Specifically, SOMC directed the TCC to present a plan for developing performance standards for chlorine and anhydrous ammonia tank cars that would reduce the conditional probability of a release, given an accident, by a target of 65% from the current values, as well as a plan to phase in the new improved cars within a target time frame of five to seven years. The goal of a 65% reduction was based on the findings of researchers at the University of Illinois at Urbana-Champaign's Railroad Engineering Program, which concluded that utilizing existing technology, the probability of a release of anhydrous ammonia and chlorine from a tank car involved in an accident could be reduced by 65% or more by substituting enhanced tank cars for the cars currently used to transport these materials.¹⁹ The enhanced tank car contemplated in the University of Illinois research is the thicker, heavier Trinity car designed for chlorine service and subject to PHMSA Special Permit 14167. As noted in the AAR Risk Analysis, the finding of a potential 65% improvement is premised on replacing the current 263,000 pound cars for anhydrous ammonia and chlorine with 286,000 pound cars equipped with additional head protection, thicker shells, and modified top fittings protection.

In response to this directive, the TCC established a task force to develop the requested plan. The task force consisted of a wide spectrum of interested parties, including hazardous material shippers, railroads, the Railway Supply Institute (RSI), and railroad industry consultants. The task force, however, was unable to reach consensus on a recommendation to the TCC.

In July 2006, the AAR TCC considered proposals for improved tank cars in light of its mandate from SOMC to make the cars transporting chlorine and anhydrous ammonia 65% safer. At the July TCC meeting, all member railroads,

supported by Trinity, proposed that anhydrous ammonia be transported in DOT 112/600W tank cars, equipped with full-height half-inch thick or equivalent head shields and top fittings protection designed to withstand a rollover with a minimum linear velocity of nine miles per hour. Similarly, the same parties proposed that chlorine be transported in tank cars built to the 105/600W specification, equipped with full-height half-inch thick or equivalent head shields and top fittings protection designed to withstand a rollover with a minimum linear velocity of nine mph. Alternatively, cars for each commodity could be designed in accordance with a formula derived from the statistical analysis in the RSI-AAR Tank Car Safety Project Report RA-05-02.²⁰ For anhydrous ammonia, this statistical formula required shell and head protection to reduce the conditional probability of release (CPR) by 32% given that the car is derailed in an accident; for chlorine, the statistical formula required shell and head protection to reduce the CPR by at least 45%.²¹ This railroad/Trinity proposal contemplated that 50% of a car owner's fleet of anhydrous ammonia and chlorine cars would be replaced with these "enhanced cars" within approximately six years, with the entire fleets being replaced within approximately eleven years.

At the same TCC meeting, all shipper members of the TCC, as well as every rail tank car builder other than Trinity, supported a proposal submitted jointly by The Fertilizer Institute (TFI) and the Chlorine Institute (CI). The TFI/CI proposal for cars constructed after a proposed effective date incorporated the Federal standard for head protection (49 CFR 174.16), with the ram car adjusted to reflect the increasing presence of cars with a gross rail load of 286,000 pounds. The TFI/CI proposal contemplated grandfathering existing cars in anhydrous ammonia and chlorine service prior to the effective date as compliant.

The initial result of this deliberation was the TCC's issuance of Casualty Prevention Circular 1175 (CPC-1175) on July 28, 2006. CPC-1175 proposed to implement the railroad/Trinity proposal introduced at the July TCC meeting. In response to CPC-1175, several members of the hazardous materials shipping

¹⁷ The HMR require bolted top fittings and provide for a tank car maximum gross weight on rail of 263,000 pounds. See 49 CFR 170.100-12 and 174.13.

¹⁸ See 71 FR 47268, 47101 (Aug. 16, 2006) (PHMSA Special Permit number DOT-SP 14167). Subsequently, the Special Permit was revised on August 18, 2006 to clarify the outage and filling density requirements and specify requirements for filing agreements between carriers and filing non-destructive testing procedures. More recently, Trinity requested that the Special Permit be revised to amend the manway protective housing design

¹⁹ Christopher P. L. Barlan, Ph.D., M. Kapil Seal, M.S. Railroad Engineering Program, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, *Risk Analysis of Rail Transport of Chlorine and Ammonia on U.S. Railroad Mainlines* (Feb. 27, 2006) (AAR Risk Analysis).

²⁰ RSI-AAR Railroad Tank Car Safety Research and Test Project, *Safety Performance of Tank Cars in Accidents: Probabilities of Lading Loss*, RA-05-02 (Jan. 2006).

²¹ While this statistical analysis sought to advance the safety of tank cars, it does not foster new technology because the CPR was derived from empirical data.

industry submitted comments to the AAR expressing concern with certain aspects of the proposal. For example, commenters expressed concern with the proposed implementation schedule, the proposed top fittings arrangement, and the scientific basis utilized for development of the standard. Commenters also questioned the efficacy of moving forward with the proposal without the benefit of the results of the FRA's Volpe research designed to quantify tank car survival conditions.

FRA also corresponded with the AAR in response to CPC-1175. In its letters, FRA first noted that the Circular contained two proposed, amended tank car specifications and two proposed, new specifications. Accordingly, FRA noted that before the TCC could implement the proposed requirements in CPC-1175, in accordance with 49 CFR 179.4, the proposals would have to be submitted to the Department. The FRA also expressed concern regarding the engineering analysis underlying the proposal, specifically related to the analysis of the top fittings, tank-head and shell, as well as the tank car's capacity.

In response to comments received from FRA and the industry, on October 18, 2006, the TCC issued Casualty Prevention Circular 1176 (CPC-1176), which adopted as a final TCC action the proposals set forth in CPC-1175 with minor modifications to the implementation period initially proposed. Specifically, the intermediate implementation goal of CPC-1175 (50% of the fleet by December 31, 2012) was eliminated and replaced by a requirement that the tank car owners' plans for implementation be submitted to AAR by December 31, 2007. Subsequently, on December 18, 2006, AAR issued Casualty Prevention Circular 1178 (CPC-1178) in response to appeals to CPC-1176. Although various aspects of CPC-1176 were appealed (e.g., the proposed implementation schedule, top fittings arrangement, and the scientific basis of the proposed design), CPC-1178 is substantially the same as CPC-1176, except the target implementation dates were delayed by one year (i.e., tank car owners' plans for implementation were required to be submitted by December 31, 2008 and tank cars were required to be 100% fleet compliant by December 31, 2018).⁴²

⁴² On August 28, 2007, the TCC issued Casualty Prevention Circular 1180 (CPC-1180) for public comment. CPC-1180 addresses certain high-hazard materials (including chlorine and anhydrous ammonia). CPC-1180 proposes an implementation period for a top fittings requirement consistent with that of CPC-1178, but also includes requirements

D. Dow/UP Safety Initiative and the Next Generation Rail Tank Car Project

In October 2005, the Dow Chemical Company (Dow) and UP, Dow's largest rail service provider, formed a partnership to address rail safety and security improvements for the transportation of hazardous materials. Specific goals of the agreement between UP and Dow include: (1) Reducing idle times for hazmat shipments by 50 percent in high-threat urban areas; (2) redesigning Dow's customer supply chains to cut in half the amount of "highly hazardous chemicals" shipped by 2015; (3) eliminating all nonaccidental leaks of certain hazardous materials in three years; and (4) having hazardous material shipments monitored by satellite tracking tags and other sensors.⁴³ As Dow noted at the May 31-June 1, 2006, PHMSA/FRA public meeting, the companies' joint effort focuses on six areas for improvement: (1) Supply chain redesign; (2) next generation rail tank car design; (3) improved shipment visibility; (4) a strengthened commitment to TRANSCAER[®]; (5) improved rail operations safety; and (6) hazardous material shipment routing.

With regard to supply chain redesign, Dow is evaluating potential ways to reduce the number and distance of shipments involving high-hazard materials. In this connection, Dow is evaluating the potential for co-location of production and consuming facilities, the use of pipelines instead of rail in some instances; and the conversion of highly hazardous products to less hazardous derivatives before shipping.⁴⁴ At the same public meeting, Dow noted that since 1999, the company has reduced the amount of chlorine it ships in the United States by 80%. Dow also noted that the company's current commitment is to have further reduced by 50 percent the number of shipments of highly hazardous materials (i.e., PIH materials and flammable gases) and container miles traveled by those

shipments by 2015. Recognizing that the temperature, pressure, and other characteristics of the material being shipped affects the consequences of any hazardous materials release, Dow is also focusing its efforts on improving shipment visibility and tracking. Specifically, by the end of 2007, Dow's stated goal is to have implemented shipment tracking via GPS technology to know, in real time, exactly where its tank cars containing PIH materials are located and what condition they are in. Through TRANSCAER[®], Dow has also publicly committed to "touch every community" through which its highly hazardous materials travel within the next five years. Through this initiative, Dow's stated intent is to provide community awareness and emergency responder training to help ensure that the communities through which their highly hazardous materials travel are better prepared for potential chemical transportation emergencies.

We invite commenters to provide data and information concerning the extent to which other companies are voluntarily implementing measures to reduce the transportation safety risks associated with the transportation of PIH materials in tank cars. We are particularly interested in efforts planned or underway to modify or redesign supply chains, reduce the number of shipments and the time-in-transit of shipments, or enhance shipment visibility and tracking. We ask commenters to consider whether implementation of these and similar risk-reduction measures industry-wide would militate against the need to improve the accident survivability of the current PIH tank car fleet, as proposed in this NPRM.

With regard to improving rail tank car design, Dow, UP, and the Union Tank Car Company (Union Tank), which had joined the Dow/UP Partnership specifically to participate in the NGRTCP, initiated the NGRTCP for the stated purpose of collaborating on the design of a next generation railcar for the transportation of certain hazardous materials. The project is multi-generational with the first generation focusing on designing a breakthrough next generation tank car for the transport of PIH materials that will meet or exceed the AAR TCC performance requirements and provide a five- to ten-fold improvement in the safety and security performance of existing rail tank cars in PIH service. Subsequent generations of the project would build on the first generation to leverage the process, methodology, and criteria used in designing the next generation PIH tank car to design a tank car appropriate

for commodity specific tank improvement factors. The tank improvement factor requirements are now requirements for chlorine and anhydrous ammonia.

⁴³ John D. Boyd, *UP, Dow Sign Safety Pact*, *Traffic World* (Mar. 19, 2007).

⁴⁴ TRANSCAER[®] (Transportation Community Awareness and Emergency Response) is a voluntary national outreach effort that focuses on assisting communities to prepare for and respond to a possible hazardous materials transportation incident. TRANSCAER[®] members consist of volunteer representatives from the chemical manufacturing, transportation, distributor, and emergency response industries, as well as the government. For more information on TRANSCAER[®] see <http://www.transcaer.com/public/about.cfm>.

⁴⁵ See transcript of May 31-June 1, 2006 public meeting in docket no. FRA-2006-25189.

for other hazardous materials, such as flammable gases or chemicals that pose a significant risk to the environment if released. Dow's stated goal is full implementation within the company of a next generation PIH tank car by the end of 2014, and full implementation of further generations of tank cars for flammable gases and environmentally-sensitive chemicals by the end of 2029.

The NGRTCP team includes industry leaders and representatives from Dow, UP, Union Tank, as well as an external advisory panel of academic, industry, and former regulatory leaders to help guide the development of the next generation rail tank car design. Recognizing the significant opportunities to leverage government and industry resources in designing this next generation rail tank car, in January 2007, FRA signed a Memorandum of Cooperation (MOC) with the companies involved in the NGRTCP. This MOC provides for extensive information sharing and cooperation between ongoing FRA and industry research programs to improve the safety of rail shipments of hazardous commodities such as PIH materials. FRA hazardous materials safety and R&D personnel are actively involved in the project.⁴⁶

The NGRTCP is following a six sigma approach (i.e., a data driven approach and methodology for eliminating defects) to tank car design, evaluating such issues as: (1) Coupler penetration to tank sides and heads; (2) hydrostatic failure; (3) ability of tanks to withstand ballistic impacts; (4) fittings protection; (5) operational efficiency (including payload, infrastructure, maintenance and re-qualification); as well as (6) fire and thermal protection. Recognizing that the traditional method of enhancing tank car survivability (i.e., utilizing thicker, stronger steel) is limited, the project is evaluating the use of alternative technologies and design concepts from other industry sectors (e.g., automotive and aerospace). The general framework for the modeling and testing contemplated by the NGRTCP consists of the use of quantitative analysis (computer simulation using finite element analysis), component testing, quarter- to half-scale model testing, and limited full-scale testing. The project also involves a comparison of any potential new design with existing designs (e.g., the DOT 105A500W base car, the DOT 105/600W tank car with full head shields and top fittings protection).⁴⁷

E. The Chlorine Institute (CI) Study

In late 2005, CI established a research program to investigate tank car puncture resistance and the potential development of alternative materials tests (e.g., un-notched Charpy test) to develop and validate alternative fracture criteria. The CI study recognizes that considerable advances have been made in the design of tank car steels to improve and increase the ductile-to-brittle transition temperature and that these improvements have resulted in recent tank car failures occurring in a ductile fashion due to an overload of the tank. The CI research is looking at several alternative strategies to increase the ductile performance of tank car design, including the development of novel material tests to better establish a relationship between overloading and material failure from specimens that do not include a pre-existing crack. This information will be used to refine how modeling of tank car failures occurs and to help with the evaluation of the alternative strategies being reviewed.

X. Discussion of Relevant Tank Car Research

The process of improving the safety of railroad tank cars has been ongoing for decades. It involves railroads, tank car builders, chemical companies, and government regulators. Historically, FRA has conducted, and continues to fund and co-fund, a substantial amount of tank car safety research and development projects with Transport Canada, as well as with RSI and AAR, through their cooperatively funded RSI-AAR Railroad Tank Car Safety Research and Test Project. The RSI-AAR Railroad Tank Car Safety Research and Test Project conducts tank car safety research in two principal ways: (1) By maintaining a comprehensive database on the details of the damage suffered by tank cars in accidents, to enable better understanding of tank car design strengths and weaknesses, and (2) by conducting engineering analyses of specific problems. The FRA further collaborates with industry through the TTC to develop standards for designing, constructing, maintaining, and safely operating railroad tank cars in North America.

Historically, the Department's research has focused on developing information on damage tolerance for tailoring inspection intervals for specific tank car designs, developing non-destructive evaluation and testing techniques and methodologies;

improving fittings protection and gaskets; reviewing tank car operating environments, and developing new linings, coatings, and tank car steels. Since the 1970s, based on the combined research efforts of the Department and industry, DOT has issued a number of regulations to improve the survivability of tank cars in accidents. For example, DOT has promulgated regulations requiring the installation of tank-head puncture-resistance systems (head protection), coupler vertical restraint systems (shelf couplers), insulation, and thermal protection systems on tank cars used to transport certain hazardous materials.

Despite these safety improvements, as noted above, in the last several years there have been a number of rail tank car accidents in which the tank car was breached and product was lost on the ground or into the atmosphere. FRA's research focus changed after the tragic occurrence of these accidents. Specifically, as discussed in Section VI above, the NTSB issued seven safety recommendations to FRA as a result of the Minot derailment. Four of these recommendations concern tank car structural integrity (R-04-04, R-04-05, R-04-06, and R-04-07), and these four recommendations served as the basis for the reformulation of FRA's tank car research and development program. The current FRA tank car research program objective is the development of effective strategies to maintain tank integrity during train derailments or accidents. The key metric identified for this research is the maximum speed for which tank integrity is maintained. This metric has been identified because of the comparable ability for other researchers to perform large deformation analysis. Ascertaining the specifics of material failure through analysis is still extremely challenging. The ability to model tank car integrity with confidence will be critical to the ability of tank car manufacturers to develop new designs that conform to the performance standards proposed in this NPRM.

Specifically, in response to NTSB's Minot recommendation R-04-07, work was conducted on the testing of tank car steels to examine the dynamic fracture toughness of such steels as a function of service temperature. This work included standardized fracture mechanics tests and the comparison of results from these tests with Charpy V-notch impact energies at different temperatures. Due to inherent material variability, the results from the fracture toughness tests are scattered by a factor of four, which would require a safety factor of at least 2 in a quality assurance (QA)

⁴⁶ The MOC was amended in early 2007 when Transport Canada joined the project.

⁴⁷ Additional discussion of the NGRTCP may be found in the "Discussion of Public Comments"

section below and in the transcript to the December 14, 2006, public meeting (document no. 22 in FRA docket no. FRA-2006-25180).

specification. This means, for example, the samples taken from a production heat of steel would have to average at least twice the toughness needed for service.

Tightening the QA on steel products can result in inordinately expensive steel costs and most likely would be cost prohibitive. Alternatively, an unacceptable gain in structural weight may be required to sufficiently decrease the applied stresses to meet the safety factor with achievable material performance. Additionally, a specification will not provide an absolute guarantee of safety because, despite the implementation of any QA specification, some materials released from production may not meet the minimum fracture toughness standard. Accordingly, although FRA is in the process of completing the dynamic fracture toughness testing, it does not appear that a workable steel specification could be developed based on the results. Instead, in this NPRM, the Department has chosen to explore advances in tank car safety through engineering redesign of tank car structures to increase the amount of energy absorption a tank car experiences prior to a breach. The Department will continue to examine the dynamic fracture toughness of steels used in the construction of pressure tank cars in hazardous materials service and will incorporate any workable tank car design-specific fracture toughness standards into the HMR as appropriate in future rulemakings.

Also in response to NTSB's Minot recommendations, a risk model framework was developed to provide the technical basis to rank the factors affecting catastrophic failure of tank cars in derailments or collisions. The risk model framework focuses on determining whether the risk of lading loss in an accident situation could be minimized by specifying a particular material, e.g., normalized versus non-normalized steel. A hierarchical approach (i.e., Level 1, Level 2, and Level 3) was applied and as research results become available they will be incorporated.

In Level 1, a qualitative ranking is conducted by identifying the factors that are perceived to affect risk. These factors are then grossly sorted in terms of their expected impact on risk (e.g., high, medium, or low impacts). A simple Level 1 risk ranking has been completed. In Level 2, a systematic framework will be developed to provide a technical basis for ranking the risk factors. In this semi-quantitative method, a probabilistic approach will be used to account for uncertainties due to physical randomness and/or limited

information. Different probability distributions (e.g., normal, Weibull, triangular, etc.) have been used to assess various uncertainties in the model. In Level 3, a quantitative risk ranking, the information obtained from other research programs will be incorporated with the goal of ranking tank cars that are perceived to be the most vulnerable to catastrophic failure. Although material properties play an important role in the performance of a tank car subjected to fatigue type loading, for overload conditions such as those experienced in collisions or derailments, the ranking developed is not expected to provide a tool for improving tank car performance. Instead, as noted above, in the NPRM, the Department has chosen to examine the potential redesign of the tank car structure to minimize the effect of the overload conditions, e.g., to absorb more energy prior to incipient rupture and spread the load over as large an area as possible.

Currently, FRA's research focusing on the accident survivability of railroad tank cars involves a three-step process to assess the effects of various types of train accidents (e.g., derailments or collisions) on tank cars. Each phase involves the development of computational models with different objectives. The first phase involved the development of a physics-based model to analyze the gross motions of rail cars in a derailment (i.e., a derailment dynamics model). This derailment dynamics model was then used to estimate the closing speeds, peak impact forces, and angles of incidence between an impactor (e.g., the coupler of another car) and the tank car head or shell. The second phase involved the development of structural finite element analysis models to simulate the structural response of the tank car head or shell to an assumed scenario (i.e., penetrator shape, initial closing velocity, and effective collision mass). The third phase is an assessment of the damage created by the impacting loads, which entails the application of fracture mechanics testing and analysis methods. The research is being conducted by Volpe and is summarized below. In addition, a more detailed discussion of the research can be found in the transcript to the March 30, 2007, public meeting (document no. 29 in docket no. FRA-2006-25169) and in FRA's "Research Results" (document no. 24 in docket no. FRA-2006-25169).

The first phase of FRA's current research program developed information about the performance of a train consist after a derailment occurs. Initially, this phase of the research was

aimed at developing a derailment model effectively recreating the Minot derailment. However, due to the chaotic events and inherent complexities (e.g., track layout and condition, the three dimensional topography of the local terrain; car types in a train, and the location of each car in a train) of derailment situations, the initial and boundary conditions that lead up to specific derailment scenarios are very poorly understood. Early in its research effort, FRA realized that the exact circumstances and boundary conditions of the Minot derailment could not be accurately reproduced.

Accordingly, FRA revised its objective in this first phase of research from trying to replicate the conditions of the Minot accident, to identifying all of the salient features of derailment situations based on historical accident consequence review, as well as active accident investigations, thereby creating a generalized accident scenario with well-defined initial and boundary conditions. This information was then used to establish more easily analyzed impact scenarios. Specifically, the derailment dynamics model was used to estimate the post-derailment car-to-car interactions, that is, the gross motions of the cars as they come off the track after a derailment, the closing impact speeds and the orientations at which the derailed cars come together in a generalized derailment scenario.

Sensitivity studies were then performed to assess the relative effect of various factors on derailment severity. The factors analyzed included: (1) The number of cars derailed; (2) the secondary car-to-car closing speed; (3) the peak forces that the couplers experience; and (4) the lateral displacement of the derailed cars from the point of derailment. Although there are several potential alternative analysis techniques that could be employed, FRA used two different types of models to calculate the gross motions of rail cars during a derailment scenario. One model was a purpose-built model using an explicit derivation of the equations of motions for a two-dimensional lumped-parameter representation. The second model involved a commercially-available, general-purpose model for rigid-body dynamics, commonly accepted within the rail industry. The inputs for the models included: (1) Operational factors such as the number of cars in the train and the masses of the cars; (2) descriptions of the initial conditions such as the longitudinal speed of the train just prior to derailment and the initial angular velocity used to perturb the train set and cause the derailment; (3) the coefficients

of friction between the tank car trucks (i.e., the swiveling frames of wheels under each end of the tank car) and the rail or the ground; (4) specific coupler characteristics such as length, dead band, stiffness, and maximum swing angles; and (5) higher-level model assumptions such as how the couplers break, the car-to-car contact forces, and lumped mass simplification.

The input parameters were varied by as much as $\pm$ fifty percent. The models consistently demonstrated that significant sensitivities are associated with initial train speed and ground friction. The higher the initial train speed, the higher the post-derailment car-to-car impact closing speed and the greater the number of derailed cars. However, the results indicate that, in general, the secondary car-to-car impact speed is one-half that of the initial train speed across the variation in input parameters. Additionally, the resulting car-to-car impact speeds are negatively affected by increases in ground friction. That is, for higher ground friction, the resulting car-to-car closing speeds are lower and fewer cars derail. Of interest was the finding that within the parameters of the modeling, the mass of the cars was not a significant factor on post-derailment car-to-car closing speeds or on the number of cars derailed.

Results of the derailment dynamics modeling also demonstrated similar car-to-car interactions as observed in real world accident situations. For example, one type of impact occurs when two cars come together and the second car impacts the lead of the first car (e.g., the Macdonald accident). A second type of impact is associated with side/shell impacts (e.g., the Minot accident). Both the derailment dynamics models, as well as real world incidents documented in the RSI-AAR Tank Car Accident Damage Database, demonstrate that these head/shell impacts occur both at the centerline of the car as well as at the ends of the cars above the trucks/bogies. By combining this information, simple impact scenarios were developed that could be readily analyzed to compare the performance of different types of tank car designs (whether from the existing fleet or newer proposed designs).

The second phase of FRA's current research program utilized the information generated from the derailment dynamics modeling to assess the forces to which cars can be subjected in the event of a collision or derailment. This work required the development of large deformation finite element models capable of analyzing post buckling/plastic deformations.

Both head and shell impacts were analyzed, but emphasis was placed on head impacts because there is a greater body of knowledge available on head performance.

In cooperation with FRA, extensive head puncture testing was conducted by the RSI-AAR Test Project throughout the 1970's and 1980's. This research, conducted on both empty, non-pressurized and loaded, pressurized tank cars, led to the HMR's current specification for head protection. It is important when developing such complicated models to start simply and build up in levels of complexity. Because head impacts are better understood, as is the deformation of a tank car unloaded and unpressurized, FRA initially modeled an empty, unpressurized tank car. There is greater uncertainty associated with pressurized fully-loaded cars, as well as understanding the stress states the cars experience prior to rupture. Results from the RSI-AAR head impact data, empirical puncture models, and three-dimensional laser mapping of the damage from the cars in Graniteville were used to help establish the validity and fidelity of the models. FRA intends to continue its modeling efforts to increase the level of complexity to analyze a loaded, pressurized car.

The third phase of the FRA's current research program is an extension of the model development and assessment of damage to tank cars from prescribed impact loading conditions that may lead to catastrophic failure. The results from full-scale tests will be used to validate the second and third phases of the research.

The FRA and the NGITC group are conducting a series of shell impact tests to provide information about the performance of conventional PIH tank cars under the collision conditions defined from the previous research program. In addition to providing baseline performance data, the test conditions developed are intended to aid in the development of a testing process that can be used to assess the relative performance of different designs, as well as to qualify a design. The full-scale testing approach involves a generalized impact condition based upon the scenarios defined previously and is designed to be simple to set-up, safe to conduct, and readily analyzed. It is also designed to provide consistent and repeatable results. The test conditions developed are not intended to replicate any specific accident conditions but are rather intended to result in similar failure and deformation modes as observed in accidents. This is

a very similar approach that parallels the automotive 30 mph barrier test.

Three full-scale tests have been conducted to date, on April 11, 2007, April 26, 2007, and July 11, 2007. These tests involved a side impact between a rigid ram car with a stylized punch striking a standing pressurized DOT specification 105 tank car broadside at the centerline of the tank, both horizontally and vertically. The ram car was ballasted to a weight of 286,000 pounds. The standing tank car was pressurized to 100 psig and was loaded with clay slurry with a density equal to liquid chlorine with an outage of 10.0%. The ram car was pulled back to a predetermined position on the slightly graded tangent track and released to achieve the desired impact speed. Just prior to impact with the standing tank car, the air brakes on the ram car were activated, such that upon rebound, a second impact would not occur. In the first two tests, the punch face size was approximately 23 inches by 17 inches; in the third test, the punch face size was approximately 6 inches by 6 inches.

The first test was a limited instrumented assurance test designed to develop information about how the colliding equipment interact and to better understand the gross motions of the two cars. Because the test was designed to develop more detailed information about the interacting cars' behavior, and puncturing the standing car would have unnecessarily complicated the analysis and test set-up, the test speed was defined such that no puncture would occur. Specifically, the first test was conducted at 9.6 mph, and as predicted no puncture occurred. The limited instrumentation on both the ram car and the standing tank car were analyzed and the force-time histories measured and predicted. The measured force-time histories from the collected data were within the standard deviation of the predicted test results.

The second test that was conducted had a fully-instrumented standing tank car. The additional instrumentation helped to define load path into the tank car, the evolution of the plastic dent growth, and recovery. It also refined the measurements of the gross motions of the colliding cars' interaction. The test was conducted at 14.0 mph. As with the first test, this test speed was chosen so that puncture would not occur. The ram car was again released from a predefined location and allowed to roll freely under gravity and the grade to impact the standing tank car. The analysis of the test data are on-going, but preliminary review suggests that again the force-time histories of the ram car and the struck tank car are within

the standard deviation of the predicted test results.

After the second test, a careful inspection of the ram car showed that a modest amount of damage was inflicted on the lead truck and its carbody attachment. This damage was attributed to the off-axis vertical motions resulting from the difference in the centerline of the impactor and the height of the center-of-gravity of the ram car.

In order to safely run a test to puncture the baseline car, either a smaller punch would be needed and the test speed maintained at 14 mph, or the center-of-gravity of the ram car would have to be raised to be more in line with the centerline of the punch, to minimize ram car vertical motions for impact speeds greater than 14 mph. The option selected was to reduce the punch size to 6 inches by 6 inches. There was equal confidence in simulating the influence of punch size and impact speed on tank rupture. DOT is seeking to significantly increase the impact speed at which tank cars carrying PH materials can protect their lading. For a wide range of sizes, this goal is independent of punch size. In order to allow for safer test procedures and lower test speeds, it was decided to use the smaller punch size in the regulation.

Because of the results of the second test, in the third test, the punch face size was approximately 6 inches by 6 inches. The standing tank car that was used during the third test was fully-instrumented. The test was conducted at 15.1 mph, and this test speed was chosen so that puncture would occur. The third test was designed to confirm that material failure of the tank car and puncture would occur at 15 mph with a smaller impactor. The test also provides a comparative baseline reference for the enhanced tank car designs. As with the second test, the ram car was again released from a pre-defined location and allowed to roll freely under gravity and the grade to impact the standing tank car. The analysis of the test data are on-going, but preliminary review suggests that again the force-time histories of the ram car and the struck tank car are within the standard deviation of the predicted test results.

Additional tank car testing is planned. The further testing will provide additional insight and validation to the modeling. The additional tests include material, full-scale sub-assembly, and full-scale prototype car tests. Materials tests improve the constitutive models applicable to the specific sub-components used in alternative designs, such as behavior of composites, foams, and multi-layered metal structures. The

full-scale sub-assembly tests build confidence in the fidelity of the models used as they capture both material and geometric nonlinear behavior exhibited by larger scale components. Finally, in conjunction with the NGRTC program, full-scale prototype cars will be subjected to side and head impact and over-the-road testing. Each additional test enhances the modelers' ability to predict and capture increasingly complicated behavior under extreme accident loading conditions. As noted in the discussion of the proposed rule text, the proposed head and shell performance standard is based on the model that has been developed by Volpe. As more testing is completed, any new information or refinements to the test procedure will be considered for incorporation in this proposed rule.

For the reasons outlined above, FRA's research has focused on ways to enhance the accident survivability of tank cars through implementation of an enhanced performance standard for head shields and tank shells. We recognize that there may be a number of different ways for tank car manufacturers to meet this performance standard, including different design-types, variations in materials of construction, and the like. We invite commenters to suggest specific measures that would be utilized to meet the proposed performance standard. In addition, commenters may wish to provide data and information that would support alternative strategies for achieving the goal of improved tank car accident survivability.

XI. Discussion of Public Comments

As noted above, recognizing the need for public input as part of DOT's comprehensive review of design and operational factors affecting rail tank car safety, PHMSA and FRA held three public meetings inviting interested parties to comment on relevant aspects of tank car safety. As part of the public comment process, FRA established a public docket (Docket No. FRA-2006-25164), providing interested parties with a central location to both send and review relevant information concerning the safety of railroad tank car transportation of hazardous materials. The FRA docket contains several submissions from FRA (e.g., transcripts of the three public meetings, relevant Congressional testimony, research reports), as well as comments from numerous members of the regulated community. Specifically, written comments were received from the following organizations: BASF Corporation, the Institute of Makers of Explosives, Dow, TFI, Trinity, Applied

Solutions, Inc., the Brotherhood of Railroad Signalmen, Agrum U.S. Inc., CI, and PPG Industries (PPG). Many of these same organizations attended the public meetings and provided oral comments at those meetings. The following discussion provides an overview of the written and verbal comments that were received. Where appropriate, a more detailed discussion of specific comments and how DOT has chosen to address those comments in this proposed rule can be found in Section XIII below, the Section-by-Section analysis portion of this preamble.

A. May 31–June 1, 2006 Public Meeting

The primary purpose of the first public meeting, held on May 31–June 1, 2006, was to surface and prioritize issues relating to the safe transportation of hazardous materials in railroad tank cars. Attendees included representatives from the railroad industry, shipping industry, railroad tank car manufacturing and repair companies, labor organizations, the NTSB, Transport Canada, and the Transportation Security Administration (TSA). At this meeting, commenters from both the railroad industry and the hazardous materials shipping industry expressed the view that rail is the safest mode of transportation for hazardous materials over land. For example, the AAR explained that since 1980, the rate of rail accidents with a hazardous materials release per thousand rail carload has dropped by 89%. RSI noted that approximately 1.7 million carloads of hazardous materials are transported by rail throughout the United States each year and 99.98% of those shipments reach their destinations without incident. Similarly, RSI commented that statistics demonstrate that it is 16 times safer to move hazardous materials by rail, as compared to highway. Noting that it would take approximately four cargo tank trucks to deliver the amount of hazardous materials that can be carried in one rail tank car, several shippers expressed concern that if shippers were forced to transport hazardous materials via highway, the overall safety risk would increase because of the increased number of shipments on the nation's roads. Several representatives of the hazardous materials shipping industry expressed the view that rail transportation of hazardous materials is essential to the competitiveness of the U.S. chemical and agricultural industries, to the public health, safety and welfare, as well as to the economy of the United States. Dow, the largest chemical company in the world,

indicated that its North American business model is based on the belief that the rail transportation of hazardous materials is the safest, most efficient, most economical, and most socially acceptable way of shipping hazardous materials over land.

Despite these safety statistics, meeting participants from both the railroad and shipping industries expressed agreement on the need for continuous improvement in the safe transportation of hazardous materials by railroad tank car, particularly in light of the Minot, Macdon, and Granville accidents. However, participants expressed differing views on how to accomplish that goal. Many representatives of organizations that depend on railroads for shipping hazardous materials stated that improvements in the safe transportation of hazardous materials by railroad tank car should be made only after a "holistic" consideration of the rail transportation system. For instance, several commenters expressed the view that not only should tank car design improvements be considered, but safety improvements should also address railroad operating and maintenance practices, railroad routing practices and how to reduce ton miles PIH materials travel due to inefficient routes; shipper commodity handling practices, and emergency response procedures. Both the Brotherhood of Locomotive Engineers and Trainmen (BLET) and the United Transportation Union (UTU) echoed several of these same concerns, particularly noting human factors issues, the prevalence of non-signalized territory, the training of crews to handle hazardous materials, and crews' access to personal protective equipment in the event of an incident. One commenter specifically suggested that DOT adopt AAR Circular OT-55-1 as a regulation. Several commenters noted that the tank car is only one component of the rail transportation system, and no single component of the system can provide the entire means to improving tank car safety. Accordingly, many commenters expressed a desire for DOT to take a leadership role in addressing the safe transportation of hazardous materials by railroad tank car on a system-wide basis.

FRA and PHMSA generally agree with these commenters. Although this NPRM focuses on enhancing the tank car packaging, it also proposes certain operational restrictions specific to tank cars transporting PIH materials, and DOT's comprehensive review of design and operational factors affecting rail tank car safety is not so limited. As noted above, DOT's rail safety efforts are multi-faceted, and DOT is addressing operational issues such as human

factors, track conditions, and signal and train control systems designed to prevent accidents in the first place, as well as emergency response issues intended to ensure that in the event of an incident, emergency responders are able to respond appropriately. In addition, PHMSA has issued a proposed rule that would require railroads to gather traffic and commodity data on certain explosive, radioactive, and PIH materials they transport, analyze safety and security vulnerabilities of current and alternative routes used for these materials, and select the routes that pose the least safety and security risks after considering any mitigation measures that could be implemented. See 71 FR 76834 (Dec. 21, 2006).

Other commenters noted the voluntary efforts already underway by many hazardous materials shippers to improve the safe transportation of their materials by rail. One example of an industry effort to address the safe transportation of hazardous materials in tank cars is the partnering of Dow and UP in a series of initiatives to improve rail safety and security, including the NGRTCP. These initiatives are discussed in more detail in Section IX above.

Railroad participants, including the AAR, CP, and BNSF, expressed the view that the railroad industry itself has taken many voluntary steps to reduce the occurrence of accidents that can lead to hazardous materials releases. For instance, a representative from BNSF presented information on the carrier's derailment prevention efforts aimed at track caused derailments, equipment caused derailments, as well as derailments relating to operating practices. BNSF's efforts include implementing advanced train control technology, utilizing various freight car condition monitoring technologies, installing and maintaining switch point position indicators and broken rail protection in non-signalized dark territory; as well as modifying the carrier's operating practices when transporting a significant amount of PIH materials over non-signalized territory. Specifically, noting that nearly 50% of BNSF's PIH movement is over non-signalized territory, BNSF explained changes in its operating practices aimed at ensuring the safe transport of PIH materials over this type of territory. BNSF noted the following changes in operating practices when transporting PIH materials over dark territory: (1) inspecting the route prior to operating trains carrying PIH materials, (2) restricting the speed of trains carrying PIH materials to 35 miles per hour, (3) requiring that trains hauling PIH

materials hold the main line during meets, and (4) requiring trains on sidings to stop before PIH trains pass. Additionally, a representative from CP presented information on the carrier's efforts, dating back to 1995, to address human factors issues in the railroad environment, including efforts directed at crew resource management, and fatigue risk management.

Noting member railroads' efforts to reduce the occurrence of accidents that can lead to hazardous materials releases, the AAR expressed the view that "irresponsible planning must consider that accidents can occur" and "in addition to the efforts to prevent accidents, industry must also do everything it can to reduce the probability of a release of TIH [materials], such as anhydrous ammonia and chlorine, should an incident occur." Based on its research through the University of Illinois, AAR noted that there appears to be a significant opportunity to reduce the probability of a release of anhydrous ammonia and chlorine in the event of an accident.

AAR indicated that the University of Illinois research concluded that, utilizing existing technology, the probability of a release of anhydrous ammonia and chlorine from a tank car involved in an accident could be reduced by 65 percent or more by substituting enhanced tank cars for the cars currently used to transport these materials. AAR explained that this conclusion was premised on replacing the current 263,000 pound tank cars used for transporting anhydrous ammonia and chlorine with 286,000 pound tank cars equipped with additional head protection, thicker shells, and enhanced top fittings protection (i.e., the Trinity car).

Most commenters representing members of the hazardous materials shipping industry generally expressed support for the efforts of the AAR TCC to improve the transportation of hazardous materials by rail. However, those commenters expressed concerns with several aspects of the TCC's recent proposals. First, commenters stated that the implementation period proposed by AAR (i.e., replacing the entire chlorine and anhydrous tank car fleet within five to seven years) was unrealistic, particularly given tank car manufacturing capacity. One commenter, Terra Industries (Terra), a shipper of anhydrous ammonia, objected to AAR's proposal noting that the estimated costs to build cars to the standard would be approximately 100% higher than new ammonia cars being built today. In addition, Terra noted that because the cars would hold

approximately 80% as much product as compared to current ammonia cars due to infrastructure restrictions, shippers would need more cars in order to make shipments at current levels. This, in turn, according to Terra, would increase the costs of shipping by approximately 75% before rail freight and fuel charges. Several other shippers and chemical manufacturers echoed Terra's concern regarding reduced capacity, noting that infrastructure restrictions of many facilities and some shortline railroads would prohibit utilizing a car weighing 206,000 pounds. These commenters also noted that this reduced car capacity could lead to an increased number of railroad tank car shipments, and in the case of anhydrous ammonia, a shift from rail transportation to highway transportation.

Terra also noted that AAR's approach was inconsistent with the NTSB's recommendations in response to the Minot accident. Specifically, Terra stated that the NTSB's report for the Minot accident indicated that the construction of tank cars with sufficient impact resistance to eliminate or reduce leaks would require an evaluation of the dynamic forces acting on the tank cars in an accident situation, as well as an integrated analysis of the response of the tank's structure and the tank material to these forces. Terra noted that AAR's proposed approach considered none of these factors.

Similarly, noting FRA's on-going research with Volpe, several commenters stated that any potential tank car design improvements should take into consideration the results of the Volpe research. Commenters generally noted that improved tank car design is dependent on understanding and defining the environment in which the tank car is expected to perform. FRA and PHMSA agree that in order to design an enhanced tank car with increased accident survivability, an understanding of the forces acting upon a tank car in a typical derailment or collision scenario is necessary. Accordingly, FRA has aggressively accelerated its research efforts related to tank car integrity and, as discussed above, FRA is working cooperatively with industry to leverage R&D resources. We will continue to update this docket to reflect the results of our ongoing research efforts and, as indicated above, may incorporate research results in a final rule developed as a result of this NPRM.

Several commenters further expressed the view that the overriding goal of any effort must be to prevent accidents from occurring in the first place and that AAR's proposal does not address the

root causes of accidents (e.g., operating factors). Again, FRA and PHMSA agree with commenters in this respect. As described above, FRA is aggressively working through a comprehensive action plan to not only improve the integrity of tank cars used to transport hazardous materials, but to address the root causes of such accidents as well.

B. December 14, 2006 Public Meeting

Although commenters at the second public meeting, which was held on December 14, 2006, raised many of the same issues discussed at the prior public meeting, discussion at the meeting focused on a series of nine questions posed by PHMSA and FRA in the meeting notice publication. See 71 FR 67015 (Nov. 17, 2006). Attendees again included representatives from the railroad industry, shipping industry, railroad tank car manufacturing and repair companies, Transport Canada, and TSA.

First, PHMSA and FRA asked what new designs, materials, or structures DOT should be investigating for improved accident/derailment survivability of hazardous materials tank cars. In response to this question, CI expressed the view that advances in material science present an opportunity to investigate new materials for the construction and protection of tank cars. For example, CI noted advances in steelmaking practices, composites used for insulation, materials used for thermal protection, as well as crash energy management materials. Similarly, Trinity explained that the AAR TCC has an ongoing program evaluating non-traditional steels for tank car construction (i.e., steels not typically used in the construction of railroad tank cars) and suggested that DOT should actively participate in, and fund, this activity. FRA notes that it is an active participant in the AAR task force evaluating these steels, and FRA looks forward to continuing to work with industry on this research. CI commented further, however, that prior to the use of any of these new materials, DOT and industry would need to conduct appropriate research, utilizing real world accident data. To that end, CI noted its ongoing research through Structural Reliability Technologies, which preliminarily identified certain materials as having the potential to improve accident survivability of hazardous material rail cars.

ARI stated that in order to accommodate material advances, certain existing DOT regulatory requirements may need to be revised. For example, ARI noted that the J-type tank car requires a metal external jacket for fire

protection purposes, but because fire protection is now provided through layers of insulation, the metal jacket is not necessarily needed any longer. Instead, ARI explained that certain carbon fibers may better serve the purpose of the metal jacket. As discussed in more detail in the Section-by-Section analysis below, this NPRM proposes to retain the requirement that tank cars used to transport PIH materials be equipped with metal jackets. DOT, however, invites further comments on the efficacy of maintaining this requirement or suggestions for effective, feasible alternatives.

On behalf of the NGRTCP, a representative of Dow generally explained the new designs, materials, and structures being explored by the project. The commenter noted that the current rail car design for the typical jacketed pressure car relies on the inner tank to serve three functions: (1) contain the commodity; (2) carry all train stresses and loads; and (3) protect the commodity from external forces. The NGRTCP is evaluating the potential to separate these tank functions, so that the inner tank's primary purpose is to contain the commodity and then effectively add layers of functionality in addition to train stresses and loads and protect the inner tank from external forces. This commenter also noted that the current jacketed pressure car is made up of three components: (1) An outer shell or jacket; (2) an interstitial space (typically 10–12 inches for a chlorine tank car); and (3) the inner tank and that the NGRTCP is analyzing what can be done to improve tank car survivability by utilizing the interstitial space.

Dow further explained that the NGRTCP was evaluating two high-level tank car designs. The first design under evaluation is how a typical jacketed pressure car could be improved by adding layers of functionality and incorporating alternative technologies, particularly in the interstitial space. The second design under evaluation by the NGRTCP is similar to a DOT 113/115 tank-within-a-tank design. The primary purpose of the inner tank in this design is to contain the commodity. The interstitial space and outer structure of the tank is then used to bear trainload stresses and protect the inner tank from external forces. A tank-within-a-tank approach allows the inner tank to be designed around the physical and chemical properties of the material being transported and allows for several different alternatives for designing the interstitial space and the outer tank structure to bear trainloads and protect the inner tank. For example, Dow

explained that the inner tank could potentially be made of a thinner steel than that used in current cars and wrapped in a composite material. Additionally, deformable materials could be used to create "crumple zones" in the interstitial space, the outer structure of the tank could be constructed of a different type of steel, not necessarily suitable for use in a typical pressure car, and potentially an impact resistant coating could be applied to the outer structure. Dow noted that this could possibly result in a stronger tank, which weighs less than the current design.

The Department encourages industry to continue evaluating the potential use of the new materials, new types of steel, and alternative designs discussed at the meeting. FRA believes that, by utilizing existing technology, a significant improvement can be made to enhance railroad tank car accident survivability. Accordingly, the performance standards for enhanced head and shell protection set forth in this NPRM are technology-neutral and are intended to allow for the most design, material, and manufacturing flexibility, while significantly improving the accident survivability of railroad tank cars. We ask commenters to submit data and information concerning alternative strategies for enhancing accident survivability that may be as effective as, or more effective than, the enhanced head and shell protection measures proposed in this NPRM.

Second, PHMSA and FRA solicited information regarding tank car top fittings. Specifically, the agencies asked whether there were any design changes that would enhance the survivability of tank car top fittings (e.g., modifications to height or placement of valves or modifications to the protective structure that surrounds the valves). In response to this question, commenters generally agreed that two of the most important factors for top fitting survivability in an accident are lowering the profile of the fittings to reduce vulnerability and strengthening the protection surrounding the fittings. Along those lines, a few commenters representing the railroad industry suggested that the ultimate goal of enhancing top fittings protection should be a tank car with only a flange on the pressure plate that could be skid- or roll bar-protected, or a tank car that could be shipped with no fittings, requiring that the fittings be installed at the point of unloading. In response to the idea of a tank car being shipped with no fittings, however, shippers generally expressed concern with the safety and compatibility of such a system given existing plant

infrastructure and the regulatory scheme surrounding tank car unloading. Trinity suggested that DOT could facilitate improvements in top fittings protection by modifying the regulations to require lower profiles and by replacing the current hardware-specific requirements with a performance standard. As noted in Section IX above, CPC-1178 would require anhydrous ammonia and chlorine tank cars constructed after January 1, 2008 and used in interchange to have top fittings designed to withstand a rollover with a minimum linear velocity of nine mph. See discussion in Section V above on interchange requirements.

Although DOT is aware that incidents involving tank car top fittings do occur, historical accident data demonstrates that top fittings are not a significant factor in attempting to reduce the risk associated with large product losses. For example, considering the more than 2 million chlorine shipments between 1965 and 2005, only 1 of the 14 losses in accidents from top fittings was reasonably deemed substantial, with 1,000 gallons lost. During the same time frame, the next largest chlorine release from top fittings in an accident involved 100 gallons, while the remaining 12 top fitting losses in accidents were small amounts, many of them 10 gallons or less, with an average loss of approximately 13 gallons. None of these incidents resulted in injuries. At the same time, catastrophic losses from tank-head or shell punctures averaged approximately 10,000 gallons per accident. These data demonstrate that failures or breaches of tank car heads or shells tend to lead to large quantities of chemicals released, and accordingly, pose the greatest safety risk.

Despite the minimal risk of substantial releases from tank car top fittings in accidents, FRA and industry are actively researching methods for enhancing tank car safety through modifications to top fittings. FRA has an ongoing research program focused on improving the performance of tank car top fittings in the event of roll-over incidents. Additionally, both the TCC and the NGRTCP are investigating potential improvements to top fittings. The TCC is examining the effectiveness of various fitting protection devices and the feasibility of using recessed fittings. The TCC has indicated that initial simulations of these concepts demonstrate potential for providing significant protection, particularly at higher speeds. The NGRTCP is examining potential improvements including (1) lowering the profile of the fittings; (2) reducing the number of valves; (3) the use of internal closures,

and (4) redesign of the pressure relief valve. We expect that modified top fittings will be ready for service trials in early 2008.

Although the research appears promising, at this time it is inappropriate to propose new standards (by rulemaking or otherwise) for top fittings protection because it is not yet clear what modifications would provide a substantial improvement in the ability of top fittings to:

(1) Withstand accident conditions, while providing at least the same level of protection from non-accident releases;

(2) Continue to work with industry's existing loading and unloading infrastructure; and

(3) Maintain compatibility with current emergency response requirements (e.g., compatibility with Emergency Kit C, which is used to contain leaks in and around the pressure relief device and valves in the case of chlorine tank cars).

We expect that FRA's research, together with the findings of the TCC and NGRTCP, will lead to a consensus-based industry standard for enhanced tank car top fittings protection. Provided that the design does not deviate from Federal regulations, the Department will evaluate implementation. If the consensus design does deviate from Federal standards or if the Department deems that the industry actions are not sufficient, we will propose revised Federal standards for top fittings in a separate rulemaking proceeding as early as next year. To support these efforts, the Department intends to hold a public meeting early next year to discuss the need for revised top fittings standards. Parties wishing the Department to consider proposed revised top fittings standards may, of course, petition the Department at any time for a rulemaking to change the existing Federal standards. 49 CFR 106.55.

As discussed in Section I above, improving the safety and security of hazardous materials transportation via railroad tank car is an ongoing process. As we continue our comprehensive review of tank car safety, we anticipate holding additional public meetings to address relevant issues other than those contained in this NPRM. At this time, however, because the loss of lading from side or head impacts in accident scenarios presents the greatest risk, FRA is concentrating its efforts on those areas for purposes of this rulemaking. We do, however, invite commenters to provide any data or other information relative to potential modifications to tank car top fittings or potential enhanced safety standards for fittings, including the

design of fittings utilized on the Trinity tank car. Commenters may also wish to provide data and information concerning the costs that would be incurred to modify tank cars built to the performance standard proposed in this NPRM to incorporate enhanced fitting designs. We also remind interested parties that any person may petition the Department to initiate a rulemaking proceeding regarding issues relevant to the transportation of hazardous materials by rail 49 CFR 106.55.

The third question posed by PHMSA and FRA pertained to tank car puncture-resistance (including the puncture-resistance of the head and shell), and specifically whether there are any design, material, or manufacturing changes that could lead to improved tank car puncture-resistance. In response to this question, a representative of the NTSB suggested that the relevant issue should not be limited to what PHMSA and FRA termed "puncture-resistance." Instead, the NTSB noted that low-speed impacts by large objects lead to structural deformation and possible puncture, and accordingly, any structural deformation and puncture must be looked at together as an issue of structural impact and response.

DOT recognizes NTSB's point with regard to the specific term "puncture resistance." However, DOT's research efforts are aimed at improving the accident survivability of railroad tank cars, and in examining this issue, DOT is considering not just the ability of a tank car to resist puncture, but as noted in Section X above, the agency has analyzed the equipment's overall structural response to head or shell impacts. DOT believes that an understanding of a tank car's overall structural response to impacts is necessary in any effort to improve the ability of a tank car to maintain its integrity under accident conditions. However, DOT believes that for purposes of regulatory language setting forth a performance standard regarding a tank car's ability to maintain its integrity under accident conditions, the term "puncture resistance" is an accurate representation of the performance that needs to be achieved (i.e., the tank car maintains its integrity such that no lading is released as a result of the impact). Accordingly, in this NPRM, DOT has maintained the term "puncture resistance."

The NTSB also stated that any new tank car design should take advantage of the large increase in structural stiffness and strength that results from coupling two rigid shells together, as opposed to a floating tank-within-a-tank design.

The NTSB further suggested that the materials utilized between the inner and outer shells should be designed so that they can serve as a local impact energy dissipation momentum transfer mechanism, effectively spreading out the imparting force. Following the NTSB's line of reasoning and noting that pressure within a tank is a "pushback" against external forces, ARI expressed the view that consideration needs to be given to lowering the internal pressure of tank cars (depending on the vapor pressure of the commodity contained in the car), so that impact forces result in deformation to the tank shell, rather than a puncture of the shell.

Commenters generally noted that several concepts aimed at improving tank car puncture-resistance are currently being explored in the industry, or could be explored. For example, Trinity suggested that tank-head protection could be provided by ultra-high strength, non-formable, flat plates such as armor plating, thereby permitting tank-head thickness to be reduced to that required to contain the internal pressure. CI commented that improving puncture resistance is the single most important design factor in enhancing accident survivability. To this end, CI noted that through its ongoing research with Structural Reliability Technologies (SRT), it is looking at potential improvements through a combination of new material for tank and/or jacket construction (e.g., high strength/low alloy steels) and the incorporation of energy-absorbing materials into the configuration of tank cars and tank car jackets. Commenters also suggested that DOT consider technologies utilized in other industries. For example, one commenter noted antiterrorism industry projects regarding self-sealing technologies. DOT, together with TSA and industry, are currently investigating the potential of utilizing self-sealing technologies on hazardous material tank cars to aid in the quick repair of the tank in the event of a breach. DOT believes that this research is promising, particularly in the context of ballistic impacts. However, the technologies appear to be of limited utility in the repair of tank breaches resulting from derailments and other collision scenarios where the area breached tends to be larger than what results from ballistic impacts.

Dow, on behalf of the NGRTCP, explained that in connection with improved puncture-resistance, the project is examining different types of steels (e.g., the current TC-128 with varying sulfur contents, as well as other types of steels not currently used in railroad tank car construction). In

addition, the NGRTCP is considering structural foams as energy absorbing and diffusing materials, as well as crash energy management systems, impact limiters, the use of deformable materials (particularly based on experience in the automobile racing industry), and impact resistant coatings.

In the fourth question, PHMSA and FRA solicited information pertaining to whether there were measures, other than accident survivability, such as improved security of operating fittings, or an ability to locate cars beyond current car movement reporting systems, that could improve the overall safety and security of hazardous material shipments via railroad tank car. In response to this question, commenters generally noted the many voluntary efforts, which are already underway in both the shipping and railroad industries, designed to detect hazardous materials leaks, monitor the temperature and other conditions of materials being transported in railroad tank cars, and track the locations of railroad tank car hazardous material shipments. Although commenters generally expressed the view that the existing car movement reporting system, including the automatic equipment identification system, is sufficient for purposes of locating shipments in a timely fashion, most commenters expressed support for utilizing additional location monitoring and other shipment monitoring technologies (e.g., car security sensors, temperature sensors) depending on the commercial viability of the technologies and the risk presented by the product being shipped.

The fifth question PHMSA and FRA posed at the public meeting pertained to whether, in addition to accident survivability, tank cars should be designed to withstand other types of extraordinary events (e.g., ballistic attack or unauthorized access to tank car valving). In response to this question, one shipper commented that tank cars should not be designed to withstand extraordinary events. Instead, the environment in which tank cars operate needs to be modified to prevent such extraordinary events as derailments. Other commenters suggested that tank car design changes should be made to prevent unauthorized access to the cars' contents and to potentially withstand ballistic attack. Generally, however, commenters recognized the need to examine any such potential changes on a risk basis, taking into consideration whether such requirements would be cost effective in particular situations given the risk presented by a particular commodity.

Noting that the HMR currently include performance standards for coupler vertical restraint systems, pressure relief devices, tank-head puncture-resistance systems, thermal protection systems, and service equipment protection, the sixth question PHMSA and FRA posed at the public meeting pertained to whether these standards are adequate for future tank cars, and if not, what areas and aspects of railroad tank cars need to be improved. In response to this question, Trinity suggested that the current requirement in the HMR for top fittings protection on pressure cars (49 CFR 179.100-12) is not a performance standard and should be made one. In addition, Trinity suggested that the HMR should be updated in other areas, such as bottom outlet protection and requiring normalized steel for pressure cars, to make the regulations consistent with industry standards. Echoing comments raised at the initial public meeting, CI suggested that all railroad freight cars be equipped with double shell couplers to avoid couplers on non-hazardous materials cars from becoming disengaged and breaching a tank car containing hazardous materials. FRA is actively researching the potential benefits of modifying freight car couplers (e.g., the use of push-back couplers or other coupler technology advancements) to potentially reduce the likelihood of a tank car being punctured by the coupler of another car during an accident. If the results of FRA's research demonstrates that such coupler modifications would increase safety cost-effectively, FRA will consider such a requirement in a future rulemaking proceeding.

Commenters generally expressed a preference for the development of performance standards, as opposed to hardware-specific requirements. Commenters noted, however, that there is not uniform agreement on what constitutes a performance standard. For example, CI stated that a performance standard is something that is physically verifiable, that can be tested to, considers risks and benefits, and that can be applied to new technologies and new designs. However, CI noted that the probability of release is not something that can be tested to. Trinity also expressed support for utilizing performance standards in the tank car regulations. Trinity suggested that any performance standard should also include at least one default hardware-specific standard that can be applied by those who do not have the time or resources to develop their own performance-based design. As an

example, Trinity cited AAR's CPC-1176, which contains both a performance standard and a default design standard conforming to the performance standard. Expressing the view that CPC-1176 is a true performance standard, AAR encouraged the Department to use the work already done by the TCC.

We agree with an approach that specifies a performance standard. In fact, in the final rule relating to Crashworthiness Protection Requirements for Tank Cars,⁴⁸ we agreed with commenters that a performance-based standard for shell-puncture resistance could have merit over a specification-based standard. At that time, however, we did not have the data to support a performance-based standard. Since then, we have assembled enough research and data to allow for the promulgation of a performance-based standard, which will foster new technology and provide design, material, and manufacturing flexibility.

The seventh question on which PHMSA and FRA solicited information pertained to how the agencies should consider risk factors in determining whether to require tank car safety and security enhancements. For example, the agencies asked whether the risk of the car/commodity pair should be considered so that improvements would first apply to the car/commodity pairs considered to have the greatest risk or for which the car/commodity pair would benefit most from the improvement. In addition, the agencies solicited information on what other risk factors should be considered.

In response to this question, commenters generally maintained that tank car safety and security enhancements should be based on the hazard of the commodity involved, as well as the existing tank car safety features, materials, and methods of construction. For example, CI stated that the appropriate way to prioritize tank car safety enhancements is to start with those commodities that have the greatest consequence and greatest likelihood of causing consequences if released. Accordingly, CI concluded that starting with PH materials was logical. Similarly, citing its efforts at developing an enhanced tank car standard, AAR commented that tank car safety improvements should first focus on the cars carrying commodities that are hazardous to human health (i.e., PH

materials). Even more specifically, AAR suggested that those PH materials with the highest hazards and those shipped most often, should be addressed first. With regard to the tank car itself, ARI noted that the better protected a tank car is at the present time, it should be one of the last cars retrofitted or taken out of service. In addition, ARI expressed the view that the order in which cars are retrofitted or taken out of service should be left to car owners.

We agree that car owners need a certain amount of flexibility in managing improvements to their tank car fleets. Accordingly, this NPRM proposes an implementation period spread over eight years during which car owners are free to manage the implementation of the proposed enhancements within their fleets, provided certain milestones are met. The NPRM does provide, however, that five years after the effective date of the final rule, tank cars manufactured using non-normalized steel for head or shell construction would no longer be authorized for the transportation of PH materials.

The eighth question posed by PHMSA and FRA pertained to whether the installation of bearing sensors or other on-board tracking/monitoring systems capable of monitoring, for example, tank car pressure, temperature, and safety conditions, would improve the safety and security of hazardous materials shipments by railroad tank car and, if so, whether implementing such a system is feasible.

In response to this question, commenters generally noted that many hazardous materials shippers have already implemented onboard tracking and monitoring systems for a variety of reasons. A representative of the NGRTCP noted that it was expected that certain on-board tracking/monitoring systems would be included in the Next Generation Rail Car design, but that many detailed practicalities of such a system would need to be addressed (e.g., monitors attached to individual cars or through a system of wayside detectors, the utilization of data collected and communication of that data to affected parties).

The final question posed by PHMSA and FRA pertained to whether the installation of electronically controlled pneumatic (ECP) brake systems on tank cars would improve the safety of hazardous materials shipments by railroad tank car. Only Trinity and a representative of the NGRTCP responded to this question. Expressing the view that for ECP brakes to be effective, all equipment in a train would have to be equipped with such brakes.

⁴⁸ Crashworthiness Protection Requirements for Tank Cars: Detection and Repair of Cracks, Pits, Corrosion, Lining Flaws, Thermal Protection Flaws and Other Defects of Tank Car Tanks, 80 FR 49048 (Sept. 21, 2015).

Trinity commented that ECP brakes would be of little or no benefit to improving hazardous material safety. A representative of the NGRTCP, however, noted that the Next Generation Rail Car will probably incorporate a duality of systems—a traditional brake system with the anticipation of ECP brakes. This commenter further noted that the implementation of ECP brakes is a long-term issue. Although FRA encourages industry to pursue implementation of ECP brake technology as expeditiously as possible, and is encouraged by NGRTCP's representation that a new tank car design may incorporate the duality of brake systems, FRA recognizes that this is a long-term issue affecting the entire railroad industry, and accordingly, such a requirement is outside the scope of this rulemaking.

C. March 30, 2007 Public Meeting

The third public meeting was held on March 30, 2007. At this meeting, FRA explained that DOT is aggressively working to develop a performance standard for an enhanced tank car design, which will allow innovation and foster new technology in the tank car design process. FRA, through representatives of Volpe, presented its preliminary research results regarding tank car survivability, and solicited comments from meeting participants on several specific ideas regarding how DOT was considering moving forward with the development and implementation of a performance standard based on that research. In addition, on behalf of the AAR, Christopher P. L. Barkun, Ph.D., of the University of Illinois at Urbana-Champaign, Railroad Engineering Program, presented the results of a risk analysis performed by the University on behalf of AAR pertaining to PIII materials transported by railroad tank car.

First, FRA noted that, in light of the NTSB recommendations in response to the Minot accident and the mandates of SAFETEA-LU, the agency's current research efforts regarding tank car survivability are primarily focused on tank-head and shell performance. In response, commenters stated that DOT should also consider enhancements to top fittings protection in any rulemaking designed to improve tank car accident survivability. As discussed previously in this section, although we believe that improvements to tank car top fittings may be one method of enhancing tank car safety, we are not proposing new standards for top fittings protection at this time because the research demonstrating the efficacy and feasibility of such enhanced standards is

not yet complete. Additionally, based on historical accident data, the greatest likelihood of a catastrophic release of material from a tank car is through the tank-head or shell, not the fittings. Accordingly, this NPRM focuses on enhancing tank-head and shell impact resistance. FRA will, however, continue to investigate potential improvements to tank car top fittings and if appropriate, will pursue such improvements in a separate rulemaking proceeding.

Second, Volpe made presentations relating to FRA's tank car research program. Volpe's presentations focused on three aspects of FRA's ongoing tank car research program: (1) Derailment dynamics analysis (designed to calculate ranges of closing speeds and incidence angles between cars involved in pile-ups), (2) dynamic structural analysis (designed to estimate the forces corresponding to closing speeds for head and shell impacts) and (3) damage assessment (designed to estimate deformations to tank-heads and shells and the force at which puncture is expected to occur). Volpe explained that the key results of the derailment dynamics study are that (1) train speed has the most significant effect on the number of cars that derail, and (2) closing speed (that is, the car-to-car impact speed) is approximately one-half the train speed at which the derailment occurs.

In response to Volpe's presentations, meeting participants posed several questions. A few participants questioned why FRA did not explicitly model the Minot or Graniteville derailments and what efforts have been made to relate the modeling results to real world scenarios. Similarly, noting that Volpe's derailment dynamics models were "straightforward" models that consider just one force acting against a car, one commenter noted that real life derailment situations are generally more complicated. As noted in Section X, above, FRA's research was initially aimed at developing a derailment model specific to the Minot accident. However, due to the inherent complexities and variables surrounding any derailment situation (e.g. track layout and condition, three dimensional topography of the local terrain, car type and location within train consist), the initial and boundary conditions of particular accident scenarios cannot be reasonably ascertained. Additionally, the initial perturbation (i.e., the train speed and track location) resulting in derailments is not precisely known. Accordingly, FRA revised its research objective to define a generalized derailment situation identifying the salient features of derailment situations

based on historical accident consequences. This information was then used to establish more easily analyzed impact scenarios (i.e., post derailment car-to-car interactions; and the speeds, orientations and trajectories of the cars as a function of location in the train).

Commenters also noted that although Volpe apparently used two different models in its derailment dynamics study, only the results of one model were presented in detail. As noted at the public meeting, although Volpe utilized two models to investigate the derailment kinematics, each of the models predicted the same trends. Accordingly, for ease of presentation, only the results of the ADAMS (Automatic Dynamic Analysis of Mechanical Systems) model were presented in any detail at the meeting because of the ability of the ADAMS software to provide animations of the results.

Noting that Volpe's presentation showed that the highest closing speed occurs for the last car that allows the coupler to break, one commenter questioned what would happen if more couplers were allowed to break and whether it was expected that the highest closing speed would always occur at the point. FRA explained that the highest closing speed may occur at the point of the last coupler break, but again noted that the average closing speed between cars is approximately one-half the initial train speed. In addition, because software limitations only allowed the modeling of up to ten coupler breaks in a particular scenario, FRA stated that before any more concrete conclusions can be drawn, further research would be necessary.

Another commenter inquired as to how much variation in force the derailment model could predict and whether Monte Carlo techniques (i.e., a type of computational algorithm utilizing random numbers and probability statistics to simulate the behavior of physical or mathematical systems) should be applied to try to develop a more statistical understanding of the potential variability. FRA noted that although Monte Carlo techniques could be applied, FRA's first and foremost focus is on predicting the salient car-to-car interactions that take place during derailments. FRA intends to analyze the forces achieved in other modeling programs using non-linear large deformation crush calculations and validate the models by full scale testing.

Commenters also questioned why the baseline car mass utilized in the derailment dynamics study was 150,000

pounds (which does not represent a typical light car or a typical loaded car) and whether the initial angular velocity used to cause a derailment has a large effect on the number of cars derailed and/or the secondary car-to-car impact speeds. In response, FRA explained that the baseline values utilized in the study were varied $\pm 20\%$ to $\pm 50\%$. Further, FRA noted that a sensitivity analysis of the results from generalized derailment scenarios demonstrated that both car mass and initial angular speed causing a derailment are very weakly correlated to the number of cars that derail. Instead, the highest sensitivities are associated with initial train speed and the ground friction experienced.

Stating that, in most real-world accident scenarios, tank cars are impacted by "coupler like" objects, one commenter questioned the use of a square flat-surface ram in Volpe's modeling to impact the tank-heads and shells while another commenter questioned why the collision dynamic model of a car is shaped like a cube. Specifically, Trinity noted that in its own crashworthiness analysis performed on the newly designed Trinity car, a rigid coupler head was used as the impacting object. Further, Trinity noted that after the crashworthiness analysis was completed, the results were compared with real-world accidents, as well as the type of punctures and tank deformations that occurred. Trinity further reported finding a good correlation between their crashworthiness analysis and the shape of punctures and deformations found in real-world accident vehicles.

FRA responded that the collision dynamics model is a lumped mass model connected by non-linear springs and that the masses are treated as rigid objects. Further, the collision dynamics model uses as an input the force-crush characteristics predicted or measured from analysis and testing. This input is derived through the application of the simplified collision scenarios defined for the performance standards. The shape of the force crush characteristic is weakly affected by the impactor size for a range within ± 30 percent of that prescribed in the testing program. If the impactor size was sufficiently small, then the mode of material failure initiation would change. The impactor size chosen for the baseline testing captures the salient deformation and failure modes observed in accidents and testing. Accordingly, neither the shape of the impactor or the car is determinative. FRA further explained that in accident scenarios, a tank car may be impacted by a variety of different objects (e.g., couplers, pieces of

rail, rail car trucks, other car draft sills, side sills) and accordingly, the goal of FRA's current research is to develop a standardized method for comparing the relative performance between different tank car designs, regardless of what the impactor is in a particular scenario. Additionally, as Volpe noted at the meeting, the simulations have resulted in modes of deformation that are similar to the deformations found in accident vehicles.

Another commenter also noted that the modeling presented by Volpe at the meeting addressed main line derailments only and questioned whether FRA intended to expand the analysis to collision scenarios. In response to this comment, FRA explained that generally, collisions degenerate into derailment-like situations. Accordingly, the secondary car-to-car interactions obtained through Volpe's modeling and review of historical accident consequences provided a methodology to simplify the impact conditions such that a generalized performance standard for two cars interacting could be identified. Utilization of this performance standard compares the relative performance between different tank car designs, and FRA further plans to investigate the use of pushback couplers and deformable anti-climbing systems to decrease the aggressivity between new and older tank car designs in the future.

With regard to the dynamic structural analysis, noting the apparent ductile properties of the model materials (i.e., that the elliptical head almost turns itself inside out), one commenter questioned what type of material model was being used. At the meeting, Volpe explained that the tensile strength of the material being modeled is the minimum required for TC-128 steel. Further, DOT noted that the results presented were of an empty tank, where material failure was not allowed. The results represented the first step in a series of models that gradually build in complexity—starting with an empty tank and applying first elastic, then elastic with plastic loadings, and finally building up to material failure. After the model results are checked against analytical solutions available in literature, pressurized fluid tanks will be evaluated in the same manner.

At the meeting, Volpe also addressed the full-scale impact tests being performed on existing DOT 105A500W cars in an effort to develop a methodology for assuring a minimum level of tank integrity, defining the conditions for which a tank car is capable of maintaining its contents, and identifying the maximum speed at

which a tank car can survive the generalized impact scenarios developed in the derailment dynamics study. In response to this portion of Volpe's presentation, commenters raised two main concerns. First, commenters questioned how the pressure and outage requirements used in the tests to establish the baseline performance of current tank cars were chosen. DOT explained that although a pressure and outage that could be expected in everyday transport were utilized (i.e., 10.6 percent outage, 100 psi pressure), because the goal is to establish the relative performance of different tank car designs, such parameters are ultimately irrelevant, provided the same pressure and outage is used for all cars analyzed. In other words, in order to establish the relative performance of different tank car designs, all designs must be tested under the same initial and boundary conditions (including weights, pressure, and outage).

Second, commenters again questioned why DOT was performing "simplified tests" and not examining the effect of applying multiple forces simultaneously in different locations on tank cars. DOT responded that its goal is to establish the relative performance of different tank car designs by developing a safe and simple test that is relatively easy to set up and conduct, easy to analyze, and provides repeatable results. FRA reiterated that it did not intend to conduct a test that represents any particular accident situation. Instead, FRA's goal is to establish a test that provides the salient and predominant failure modes observed from historical accident consequences in a consistent manner.

At the March 30, 2007 meeting, FRA also presented several specific ideas regarding how DOT was considering moving forward, given the results of Volpe's research. FRA noted that it was considering imposing a 50 mph speed restriction on all tank cars carrying PIH materials. Assuming a 50 mph speed restriction, based on Volpe's research anticipating a closing speed of 25 mph in the event of a derailment or collision, FRA stated that it was also considering setting a performance standard requiring tank cars to be constructed such that tank-heads and shells would resist puncture or other catastrophic loss from impacts at speeds around 25 mph. Because any necessary tank car fleet change out would require a reasonable implementation period, as an interim measure, FRA noted its consideration of imposing an interim 30 mph speed restriction in dark territory for trains transporting PIH tank cars of current designs, based on the higher train mile

collision risk and the increased derailment risk present in dark territory.

In response to FRA's ideas, one commenter noted that FRA's proposal presented a "one-size-fits-all" approach to enhancing PIH transportation via railroad tank car. This commenter noted that there are many PIH materials that do not pose the same dangers as materials such as chlorine and anhydrous ammonia. This commenter expressed the view that FRA's proposal would be "extremely penalizing" to those other materials.

For uniformity purposes, in its regulations, DOT has historically addressed hazardous materials as a class. Employing this rationale, DOT decided that, for the purposes of the present rulemaking, it would similarly address PIH materials as a class. Moreover, while some PIH materials may not pose as great a threat to the public and the environment as other PIH materials, it is in the public's best interest that all PIH materials are transported in the safest manner possible. Additionally, in this proposed rule, DOT has identified a performance standard rather than a specific standard which provides the regulated community with the flexibility to design an enhanced tank car with features that are appropriate for the type of PIH materials that the car will transport.

Other commenters questioned whether risk would be considered and how benefits of implementing such new requirements would be quantified. Lastly, one commenter expressed the view that given current tank car manufacturing capacity, a five- to ten-year implementation period would be reasonable. This commenter further noted that existing tank cars designed to carry anhydrous ammonia could be retrofitted and utilized to transport materials other than PIH materials, but existing chlorine cars, however, would probably need to be replaced.

XII. Proposed Rule and Alternatives

The proposed rule would seek to control destructive forces brought to bear on tank cars in the course of derailments and collisions by establishing a maximum speed limit and by enhancing the ability of the package to withstand those forces by making it more crashworthy. Although the proposed rule would establish a performance standard for head and shell puncture-resistance, this is most likely to be achieved by a strategy to absorb energy short of breaching the tank. The proposed rule would also impose a more stringent limit on train speed during the period tank cars of current design remain in use. There may be

other means of achieving the same end results (e.g., protecting persons from the effects of PIH materials released into the atmosphere), and DOT invites comments that might identify such means and describe how their effectiveness might be verified.

Mitigation of harm from accidental releases is a major component of any effort to improve the safety of hazardous materials transportation. DOT engages in significant actions to help prepare emergency responders for hazardous materials releases. For instance, PHMSA periodically publishes an Emergency Response Guidebook, which provides information on initial steps to take to respond to hazardous materials accidents, with the objective of ensuring that it is present at every command center and on every emergency vehicle. As noted above, the railroad and chemical industries conduct outreach to local authorities through the TRANSCAER® program. In March 2005, the AAR, with FRA encouragement, adopted an amendment to its Circular No. OT-55, which established procedures for providing information to local emergency response agencies concerning the top 25 hazardous materials transported through their communities.

Ensuring the availability of detailed hazardous materials information, when an event does occur, is also a critical means of mitigating the consequences of a release. The HMR require that railroads maintain hazardous materials information on-board trains reflecting the position of cars in the train, and hazard information regarding the commodities transported in specific rail cars.¹⁰ FRA actively enforces those requirements through periodic audits of railroad information systems and through review of documentation on-board trains.

In response to the accidents detailed in this notice, FRA approached the AAR and requested consideration of additional action to ensure that detailed and specific hazardous materials information, including the position of cars in the train, is readily available to emergency responders even when crew members are disabled or otherwise unable to contact responders at the scene. FRA conducted two meetings with the AAR, various railroads, and emergency response organizations to discuss enhancements to the emergency response system that would ensure emergency responders have access to necessary information during incidents and accidents. As a result of the discussions, and in response to the

positive comments from the emergency response community, CSX Transportation (CSXT) and Chemtrec, the chemical industry's 24-hour hotline, entered into a pilot project in August of 2005, to test improvements. The pilot project consists of providing access to the Chemtrec watchstanders, who have direct communications with emergency responders, to CSXT's information network where they can obtain virtually real-time information, either verbally or via electronic means, almost immediately after receiving notification of an incident or accident. This system relies in part on train position information from CSXT locomotives equipped with Global Positioning System receivers and means for communicating the position to the CSXT operations center, together with a geographic information system on which the information is displayed. This is a capability not yet fully available elsewhere in the industry, but it could be acquired. PHMSA and FRA request that commenters address the following questions: (1) Are other rail carriers considering the implementation of emergency response communication systems similar to that currently being tested by CSXT? (2) Are there impediments to more widespread implementation of such communication systems? If so, how should these impediments be addressed? (3) Should the Federal government promote more widespread adoption of such communication systems? If so, how could this be accomplished?

More generally, we ask commenters to consider the relationship between effective emergency response actions and risk reduction. As indicated above, the HMR address risk in two ways—that is, the regulations are intended to reduce the risk of an accident occurring and to minimize the consequences of an accident should one occur. Commenters may wish to provide comments concerning the extent to which effective emergency response, including proactive measures such as alert warnings, evacuations, and shelter-in-place directives, affects the basic risk equation (risk = the probability of an accident multiplied by the consequences of an accident) and whether there are ways to combine more effective emergency response with accident prevention measures to enhance overall safety.

Similarly, Dow's safety program for these products is exploring more effective tracking and remote monitoring of tank cars so that, in the case of an incident or accident, critical parameters such as geographic location, internal pressure, or product

¹⁰ 49 CFR part 174, subpart G; 49 CFR § 174.26

temperature might be determined and provided to emergency responders. PHMSA and FRA invite commenters to address the extent to which this strategy promises advances in safety that might substitute, in whole or in part, for the proposals contained in this NPRM. We also ask commenters to discuss whether there are additional regulatory options that should be considered.

XIII. Section-by-Section Analysis

Part 171

Section 171.7—Reference Material

Existing § 171.7 addresses reference materials that are not specifically set forth in the HMR, but that are incorporated by reference into the HMR. We propose to amend § 171.7(a)(3), the table of material incorporated by reference, to add the entry for AAR Standard S-286-2002, Specification for 286,000 lbs Gross Rail Load Cars for Free/Unrestricted Interchange Service, revised as of September 1, 2005. AAR Standard S-286-2002 is the existing industry standard for designing, building, and operating rail cars at gross weights between 263,000 pounds and 286,000 pounds. By incorporating AAR Standard S-286-2002 into the HMR, we will ensure that tank cars exceeding the existing 263,000 pound limitation and weighing up to 286,000 pounds gross weight on rail are mechanically and structurally sound.

Part 173

Section 173.31—Use of Tank Cars

Existing § 173.31 addresses the use of tank cars to transport hazardous materials and contains various safety system and marking requirements. This NPRM proposes to revise existing paragraphs (a)(6), (b)(3), (b)(6) and (e)(2)(ii), as well as add new paragraphs (b)(7) and (b)(8). Existing paragraph (a)(6) explains that any tank car of the same class with a higher tank test pressure than the tank car authorized in the HMR may be used. It also specifies the hierarchy of the letters in the specification marking that indicate special protective systems (e.g., "I" for thermally protected, jacketed cars, "T" for thermally protected, non-jacketed cars, "S" for cars with head shields but without thermal protection, and "A" for cars without protective systems) for which cars are equipped. We are proposing to add the letter "M" to represent tank cars with the enhanced tank-head and shell puncture-resistance systems of this proposed rule, but that do not meet the HMR's thermal protection requirement. For tank cars that meet the thermal protection

requirement and are equipped with the enhanced tank-head and shell puncture-resistance systems proposed, we are proposing the use of the letter "N" in the specification marking. Additionally, we are proposing to modify the hierarchy of use to incorporate these two new delimiters in a manner consistent with the current hierarchy. In other words, tank cars with the delimiter "M" may be used when "A" or "S" is authorized. Tank cars with the delimiter "N" may be used when tank cars with an "A," "S," "T," "I," or "M" are authorized.

We are proposing the use of two different delimiters for tank cars meeting the enhanced head and shell protection requirements of this proposal because there are some PIH materials for which the HMR do not require use of a tank car with a thermal protection system (e.g., hydrogen fluoride, anhydrous ammonia). Therefore, we have proposed to allow a tank car to be constructed that would meet the enhanced tank-head and shell puncture-resistance system requirements, but not be equipped with a thermal protection system.

Existing paragraph (b)(3) requires head protection for all tank cars transporting Class 2 materials and tank cars constructed from aluminum or nickel plate. We are proposing to revise this paragraph to remove outdated compliance dates, and require tank cars used to transport PIH materials to be equipped with an enhanced tank-head puncture-resistance system. Specifically, proposed paragraph (b)(3)(i) reiterates the existing head protection requirements for tank cars used to transport Class 2 materials, other than PIH materials, and tank cars constructed from aluminum or nickel plate used to transport hazardous materials.

New paragraph (b)(3)(ii) would require all tank cars used to transport PIH materials to be equipped with the enhanced tank-head puncture-resistance system of proposed 179.16(b). Specifically, beginning two years after the effective date of the final rule, new paragraph (b)(3)(ii)(A) would require all new tank cars used for the transportation of PIH materials to conform to the enhanced head protection requirements of 179.16(b). Within eight years of the effective date of the final rule, new paragraph (b)(3)(ii)(B) would require all tank cars used to transport PIH materials to conform to the enhanced head protection standard. This proposed implementation period would allow one year for the design of tank cars meeting the proposed performance standard, a

second year for tank car manufacturers to modify their manufacturing process as necessary to construct the improved tank cars, and a further six-year period to bring the entire North American fleet of PIH tank cars into compliance with the enhanced standards. The Department has developed this proposed implementation schedule after careful consideration of the number of tank cars in PIH service and tank car manufacturing capacity. After the implementation period, any tank car that transports PIH materials in the United States, including PIH-carrying tank cars that originate in countries outside of the United States, must conform to the enhanced tank-head puncture-resistance standard. As in all aspects of this proposal, however, the Department requests comments as to the feasibility and costs of this proposed implementation schedule, as well as suggestions for any alternatives. We are particularly interested in data and information concerning current tank car manufacturing capacity and whether capacity limitations will affect the implementation period proposed in this NPRM.

Existing paragraph (b)(6) requires tank car owners to implement measures to ensure the phased-in completion of modifications previously required by the Department and to annually report progress on such phased-in implementation. This NPRM proposes to modify paragraph (b)(6) by deleting the references to paragraphs (b)(3) (head protection) and (a)(2) (special requirements for tank cars used to transport PIH materials) because the existing compliance dates in each section have now passed and this NPRM proposes new modifications, with new compliance dates set forth in proposed §§ 173.31(b)(3) (head protection), (b)(7) (shell protection), and (b)(8) (implementation schedule).

New paragraph (b)(7) would require tank cars used to transport PIH material to be equipped with an enhanced tank shell puncture-resistance system. Specifically, proposed paragraph (b)(7)(i) would require that beginning two years after the effective date of the final rule, all new tank cars to be used for the transportation of PIH materials must comply with the shell protection requirements of 179.24. Furthermore, new paragraph (b)(7)(ii) would require that within eight years of the effective date of the final rule, all tank cars used to transport PIH materials must comply with the enhanced shell protection standard. This proposed implementation schedule is consistent with that proposed for the enhanced tank-head protection system. It would

allow one year for the design of tank cars meeting the proposed performance standard, a second year for tank car manufacturers to modify their manufacturing process as necessary to construct the improved tank cars, and a further six year period to bring the entire North American fleet of PIH tank cars into compliance with the enhanced standard. Again, after the implementation period, any tank car that transports PIH materials in the United States, including PIH-carrying tank cars that originate in countries outside of the United States, must conform to the enhanced tank shell puncture-resistance standard. The Department requests comments as to the feasibility and costs of this proposed implementation schedule, as well as suggestions for any alternatives.

New paragraph (b)(8) is added to set forth the phased-in implementation schedule for the enhanced head- and shell-protection requirements of proposed §§ 179.16(b) and 179.24. Specifically, new paragraph (b)(8)(i) would require owners of tank cars subject to these enhanced requirements to have brought at least 50 percent of their affected fleet into compliance with the new requirements within five years of the final rule's effective date. The Department believes that allowing a full five years to replace half of the PIH tank car fleet is reasonable and will ensure the phased-in construction and use of tank cars meeting the enhanced standards. Further, this implementation period again contemplates an initial one-year design period, a second year for manufacturers to modify their manufacturing process as necessary to construct the improved tank cars, three years to replace half of the fleet, and a final three-year period to complete fleet replacement.

New paragraph (b)(8)(ii) prohibits the use of tank cars manufactured using non-normalized steel for head or shell construction for the transportation of PIH material five years after the final rule's effective date. In other words, the Department expects that tank cars constructed of non-normalized steel in the head or shell will be phased out within the first half of the fleet replacement period (i.e., no later than five years after the effective date of the final rule). This section is intended to ensure that tank cars constructed prior to 1989 that utilize non-normalized steel in the head or shell are the first cars phased out in the course of implementing the proposed enhanced standards. The Department understands that pre-1989 tank cars constructed of non-normalized steel comprise almost 50 percent of the current chlorine tank

car fleet and approximately 20 percent of the current anhydrous ammonia tank car fleet. Significantly, a large portion of chlorine cars with non-normalized steel are approaching retirement age. Because chlorine and anhydrous ammonia account for over 80 percent of the annual PIH shipments in the United States, the Department believes that requiring the phase out of these cars within the first half of the fleet replacement period is reasonable.

Finally, proposed paragraph (b)(8)(iii) requires the submission of a progress report to FRA two months after the initial five years of the implementation period has passed. Specifically, this section would require tank car owners to report to FRA the total number of in-service tank cars in PIH service and the number of those cars in compliance with the enhanced head and shell protection requirements of proposed §§ 179.16(b) and 179.24. In addition, this paragraph would require that tank car owners certify that their fleets do not contain any pre-1989 tank cars in PIH service utilizing non-normalized steel in the head or shell construction.

Existing paragraph (e)(2) requires that tank cars used to transport PIH materials must have a minimum tank test pressure of 20.7 Bar (300 psig), head protection, and a metal jacket. We are proposing to revise this paragraph to remove the outdated compliance date in (e)(2)(ii), and cross reference the proposed requirements for enhanced head- and shell protection contained in proposed §§ 179.16(b) and 179.24 to make it clear that tank cars used to transport PIH materials must meet the enhanced head- and shell-protection requirements of this proposal. We are also proposing to cross reference the proposed implementation schedule for the tank-head and shell puncture-resistance systems in paragraph (b)(8). This will make it clear that five years after the final rule's effective date, at least 50 percent of each tank car owner's fleet of tank cars that transport PIH materials must comply with the enhanced tank-head and shell requirements and that five years after the final rule's effective date, tank cars manufactured with non-normalized steel for tank-heads or shells are no longer authorized for the transport of PIH materials. Finally, we are proposing to maintain the requirement that tank cars used to transport PIH materials be equipped with metal jackets because as noted in an earlier rulemaking proceeding, the purpose of the metal jacket is to provide "both accident damage and fire

protection" for certain PIH materials.⁴⁰ As in all aspects of this proposal, DOT invites comments on the proposed revisions to this section.

Section 173.249—Bromine

Existing § 173.249 sets forth specific packaging requirements, including specific tank car requirements, for bromine, a PIH material. This NPRM proposes to add new paragraph (g) to the section, clarifying that railroad tank cars transporting bromine must comply with the enhanced tank-head and shell puncture-resistance requirements of proposed §§ 179.16(b) and 179.24.

Section 173.314—Compressed Gases in Tank Cars and Multi-Unit Tank Cars

Existing § 173.314 sets forth specific filling limits and tank car packaging requirements for various compressed gases, including chlorine, a PIH material. As relevant to this NPRM, existing paragraph (c) prohibits the transportation of more than 90 tons of chlorine in a single unit-tank car and paragraph (k) contains specific tank car packaging requirements relevant to chlorine. We propose to revise paragraph (k) to make clear that railroad tank cars transporting chlorine must comply with the enhanced tank-head and shell puncture-resistance requirements of proposed §§ 179.16(b) and 179.24.

We are also proposing to replace the current insulation system of 2-inches glass fiber over 2-inches ceramic fiber with a requirement to meet the existing thermal protection requirements of § 179.18, or with a system that has an overall thermal conductivity of no more than 0.613 kilojoules per hour, per square meter, per degree Celsius temperature differential. This proposal does not impose a new requirement for the chlorine cars. Based on research conducted by FRA,⁴¹ the 2+2 glass and ceramic fiber insulation used for chlorine cars provides an equivalent level of thermal protection as the requirements of § 179.18. We are replacing the specific requirement for

⁴⁰ Chlorine Carriers Protection Requirements for Tank Cars, Delineation and Repair of Cracks, Pits, Corrosion, Lining Flaws, Thermal Protection Flaws and Other Defects of Tank Car Tanks. Final Rule, 60 FR 49048, 49054 (Sept. 21, 1995) (citing final rule on Performance-Oriented Packaging Standards, Miscellaneous Amendments, 58 FR 50214 (Sept. 24, 1993) and the NPRM, 56 FR 37812 (July 12, 1991)).

⁴¹ W. Wright, W. Slack, and W. Jackson, Thermal Insulation Systems Study for the Chlorine Tank Car, FRA-ORD-85-10, April 1985, Federal Railroad Administration, Washington, DC 20590, and W. Wright, W. Slack, and W. Jackson, Evaluation of the Thermal Effectiveness of Urethane Foam and Fiberglass as Insulation Systems for Tank Cars, FRA-ORD-87-11, July 1987, Federal Railroad Administration, Washington, DC 20590.

the insulation system with the more generic requirements to allow flexibility in the use of the interstitial space between the tank shell and jacket. Use of this space for crush energy management is integral to improving the accident survivability of the PIH tank cars.

We are not proposing any change to the 90-ton single-unit tank car commodity limit. However, we believe tank car manufacturers could employ innovative engineering design changes to meet the proposed enhanced accident survivability standard, and it may be possible, using new technology and materials, to actually increase the volume capacity of the tank car and meet the new performance standards. It is not clear, however, that increasing the quantity of chlorine transported in the tank car is advantageous—to the shipper, the receiver, or the emergency response community. If the 90-ton limit were changed, we could rely solely on the normal lading and filling density limits, we could increase the limit from 90 tons to a slightly higher amount (e.g., 94 tons), or we could incorporate a process for application to FRA for approval to increase the limit above the 90 tons, either by the manufacturer for a specific design or by the shipper for specified tank cars. We are asking commenters to consider these alternatives and provide input on potentially changing the 90-ton limit. In particular, we are interested in the potential positive or negative ramifications of allowing an increase in the quantity of chlorine in a tank car.

We recognize that chlorine is regularly transported between the United States and Canada. The Canadian requirements for transporting chlorine do not include the 90-ton capacity limit; however, there is a requirement for use of tank cars with a minimum 500 psi tank test pressure.

Section 173.323—Ethylene Oxide

Existing § 173.323 sets forth specific packaging requirements, including specific tank car requirements, for ethylene oxide, a PIH material. Relevant to this proposal, paragraph (c)(1) contains specific requirements for transporting ethylene oxide in railroad tank cars. Accordingly, we propose to revise paragraph (c)(1) to make clear that railroad tank cars transporting ethylene oxide must comply with the enhanced tank-head and shell puncture-resistance requirements of proposed §§ 179.10(b) and 179.24.

Part 174

Section 174.86—Maximum Allowable Operating Speed

Existing § 174.86 addresses the maximum allowable operating speed for molten metals and molten glass. We propose to amend this section to (1) limit the operating speed of all railroad tank cars transporting PIH materials to 50 mph, and (2) in non-signalized territory limit the operating speed of railroad tank cars transporting PIH materials to 30 mph, unless alternative measures providing an equivalent level of safety are provided, or the material is being transported in a tank car conforming to the enhanced requirements of proposed §§ 179.10(b) and 179.24. Specifically, new paragraph (b) would restrict all tank cars containing PIH materials to a maximum operating speed of 50 mph. As discussed above, the current industry standard, DOT-55-1, currently restricts the operating speed of trains containing five or more tank car loads of PIH materials to a maximum of 50 mph and we believe that extending this restriction to all tank cars transporting PIH materials is a reasonable way to control the forces experienced by the tank car during most derailment or accident conditions, without unduly burdening industry. Moreover, this 50 mph speed restriction in conjunction with the 25 mph enhanced shell and the 30 mph enhanced tank-head puncture-resistance performance standards, should ensure that tank integrity will be maintained in most derailments or other accidents.

New paragraph (c)(1) provides that if a tank car not meeting the enhanced performance standards of proposed §§ 179.10(b) and 179.24 is used to transport PIH material over non-signalized territory, its maximum operating speed is limited to 30 mph. For purposes of this section, non-signalized territory is defined to mean "a rail line not equipped with a traffic control system or automatic block signal system" compliant with 49 CFR part 236. As discussed above, this 30 mph speed restriction is based on FRA's finding that a disproportionate number of incidents occurring between 1965 and 2005, which resulted in loss of product from head and shell punctures, cracks, and tears, occurred in non-signalized territory.

New paragraph (c)(2) proposes an alternative to complying with the speed restriction of paragraph (c)(1) in non-signalized territory. Specifically, paragraph (c)(2) proposes to allow railroads to implement alternative safety measures in lieu of complying with the

30 mph speed restriction, so long as those alternative safety measures provide an equivalent level of safety as a traffic control system complying with 49 CFR part 236 (Part 236). A traffic control system is a block signal system⁵² under which train movements are authorized by block signals whose indications supersede the superiority of trains for both opposing and following movements on the same track. Part 236 sets forth standards governing the use of traffic control systems. Typically, railroads utilize a centralized traffic control system, governed by a series of signal arrangements and capable of detecting the presence of trains and the positions of switches. Although the vital circuitry for a typical centralized traffic control system is in the field, the dispatcher can request movement authority.

Potential mitigation measures which could provide an equivalent (or better) level of safety as a traffic control system, depending on the particular circumstances of a location, include an automatic block signal (ABS) system, an interlocking arrangement, or a positive train control system. Part 236 again sets forth standards governing the implementation and use of ABS systems, interlockings, and certain types of PTC systems. See 49 CFR part 236, subparts B, C and H. Track circuits, which are integral to any Part 236 traffic control system or ABS system, are electrical devices designed to detect the presence or absence of a train on a certain segment of track, but also serve to detect broken rails due to electrical discontinuity. Any potential alternative risk mitigation measures designed to comply with paragraph (c)(2), must take into consideration the alternative's ability to detect broken rails.

A railroad might also be able to establish equivalent safety by implementing a combination of measures that together address the relevant risks, but without installing a full signal or train control system on the line. For instance, by installing a switch position monitoring system, track integrity circuits, and additional safety procedures (e.g., patrolling ahead of PIH trains or reducing PIH train speeds to something less than 49 mph), a railroad might be able to demonstrate that reducing PIH train speeds to 30 mph is not warranted. The proposed rule would

⁵² A block signal system is a method of governing the movement of trains into or within one or more blocks by block signals (i.e., roadway signals operated either automatically or manually at the entrance to a block) or cab signals (i.e., a signal located in the engineer's compartment or cab, indicating a condition affecting the movement of a train).

permit any combination of technologies or procedures that could be shown to be effective.

Paragraph (c)(2) further provides that once a railroad completes a risk assessment demonstrating that certain identified alternative measures provide an equivalent level of safety to a Part 236 traffic control system, and FRA approves this risk assessment, the railroad may operate tank cars containing PIH materials at up to 50 mph. Because, in this proposal, we are providing for specific markings to delineate tank cars complying with the enhanced head and shell protection standards proposed, railroad personnel should be able to easily identify tank cars that are not subject to the non-signalized territory speed restriction.

DOT believes that the proposed operating restrictions in this section are responsive to NTSB Safety Recommendations R-05-15 and R-05-16 stemming from the Graniteville accident. We recognize that this proposal does not directly adopt the NTSB's recommendations to reduce speeds of tank cars transporting certain highly-hazardous materials through populated areas or reduce speeds of all trains in non-signalized territory in the absence of advance notice of switch positions. However, we believe that this proposal will achieve the goal of the recommendation, i.e. to minimize impact forces from accidents and reduce the vulnerability of tank cars transporting certain hazardous materials. At the same time, the proposal will adequately take into consideration the practical issues related to any reduction in train speed, such as higher crew costs and longer trip time.

Comment is requested on means to further limit any burdens associated with the 30 mph speed restriction in dark territory, and the proposed rule may be changed based on the comments received. For instance, because it is desirable from a safety standpoint and from the point of view of fuel conservation to maintain constant train speed, because most affected rail lines intersect scores of small towns and suburban areas, and because even very small populations present the potential for serious consequences, this proposal would apply regardless of the population size along the line. Major hazardous material accidents have historically occurred in small-to mid-sized communities away from major terminals, in part because of the elevated actual speeds that can be attained in these areas. However, there may be lines that traverse wilderness areas or extensive farm lands over

distances that would permit increases in train speed without the threat of serious consequences should a release occur. We ask commenters to address the following questions: (1) Should an exception be made for those line segments? (2) How should any such exception be defined? (3) Do railroads have sufficient information regarding abutting land use, and changes in land use over time, so that such an exception could be implemented practicably? (4) If an exception is provided, should it extend to all PIH materials, or are there materials whose potential impacts on the environment are so great that the exception should not apply?

Part 179

Section 179.13—Tank Car Capacity and Gross Weight Limitation

Existing § 179.13 sets forth tank car capacity and gross weight limitations. Specifically, this section provides that tank cars may not exceed a capacity of 34,500 gallons or 263,000 pounds gross weight on rail. These limitations date back to 1970 and were based on DOT's findings that weight related stress failures in track and car parts accounted for approximately 50 percent of all rail accidents at the time. 35 FR 14216, 14217 (Sept. 9, 1970). Accordingly, DOT reasoned that imposing capacity and gross weight limitations on tank cars would limit the impact forces in a derailment and therefore lessen the likelihood that a tank car would be breached in the event of a derailment or other accident. *Id.* at 14217. Since the promulgation of this section in 1970, however, rail infrastructure has changed, and through industry and regulatory efforts, tank car accident survivability has improved.¹¹

To ensure that tank cars that transport PIH materials and that exceed the existing 263,000 pound limitation and weigh up to 286,000 pounds gross weight on rail are mechanically and structurally sound, we propose to require that such cars comply with AAR Standard S-286-2002, SPECIFICATION FOR 286,000 LBS GROSS RAIL LOAD CARS FOR FREE/UNRESTRICTED INTERCHANGE SERVICE (adopted November 2002 and revised September 1, 2005). AAR Standard S-286-2002 is the existing industry standard for designing, building, and operating rail cars at gross weights between 263,000

pounds and 286,000 pounds. This standard sets forth industry-tested practices for designing, building and operating rail cars at gross weights between 263,000 pounds and 286,000 pounds.

Section 179.16—Tank-Head Puncture-Resistance Systems

Existing § 179.16 contains the tank-head puncture resistance requirements applicable to tank cars currently required under the HMK to have tank-head puncture-resistance systems. We propose to amend this section to specify an enhanced tank-head puncture-resistance performance standard for tank cars used to transport PIH materials.

As discussed above, research prepared by Volpe was relied upon to develop this performance standard. Specifically, the speed chosen for this performance standard, a 30 mph impact, is related to the maximum allowable operating speed of 50 mph, which is also proposed in this NPRM. FRA is cognizant that while the proposed 25 mph closing speed, which is based on the maximum allowable operating speed of 50 mph, protects well against derailment-like events in which the secondary car-to-car impact speeds are approximately half the original train speed, impacts can occur in rail yards, at switches or turnouts, and in mainline tracks where a tank car can be involved in the primary collision. In this situation, it is desirable to have better protection strategies available to help alleviate the risk of loss of lading. The proposed tank-head puncture resistance system can accommodate the proposed 30 mph impact speed because there is more space available in the front of the tank-head to place energy absorbing material between the head shield or jacket and the inner commodity tank when compared with tank shell protection systems, which have more limited expansion space due to design constraints.

Section 179.22—Marking

Existing § 179.22 contains marking requirements applicable to railroad tank cars. Specifically, this section provides that tank cars must be marked in accordance with the Tank Car Manual and assigns meaning to each of the delimiters used in tank car specification markings (e.g., a tank car with a tank-head puncture-resistance system must include the letter "S" in its specification marking, a car with a tank-head puncture-resistance system, a thermal protection system, and a metal jacket, must be marked with the letter "J" in its specification marking). Proposed now

¹¹ DOT has also issued several Special Permits allowing the use of tank cars weighing up to 386,000 pounds. For example, on April 20, 2006, Trinity was issued Special Permit number DOT-SP 14187 authorizing it to manufacture, mark, and sell the Trinity Car, which has a maximum gross weight on rail of 286,000 pounds. See 71 FR 47288, 47301 (Aug. 16, 2006).

paragraphs (e) and (f) of this section would define the delimiters to be used to mark tank cars conforming to the enhanced head- and shell-protection requirements of this proposal. Specifically, new paragraph (e) provides that each tank car that requires a tank-head puncture-resistance system prescribed in proposed § 179.16(b), a shell puncture-resistance system prescribed in § 179.24, and without a thermal protection, must be marked with the delimiter "M" in its specification marking. Similarly, new paragraph (f) provides that each tank car that requires a tank-head puncture-resistance system prescribed in proposed § 179.16(b), a shell puncture-resistance system prescribed in § 179.24, and a thermal protection system, must be marked with the delimiter "N" in its specification marking.

Section 179.24—Tank Shell Puncture-Resistance Systems

Proposed new § 179.24 specifies an enhanced tank shell puncture-resistance performance standard for tank cars used to transport PIH materials. Previous rulemakings have not focused on shell protection, but the statutory mandate, recent accidents, and Volpe's derailment dynamics research together indicate the need to extend a higher level of protection to the tank car body, including both the tank-head and the shell. As discussed above, research prepared by Volpe was relied upon to develop the performance standard proposed, a 25 mph impact test, which is directly tied to the proposed speed restriction of 50 mph. It is important to note, the impact test proposed in Appendix C is to resist puncture at a particular point on the shell. The performance standard requirement for tank car shell protection is intended to apply to the entire tank shell.

Section 179.102–17—Hydrogen Chloride, Refrigerated Liquid

Existing § 179.102–17 sets forth specific tank car packaging requirements for hydrogen chloride, refrigerated liquid, a PIH material. We propose to revise this section by adding a new paragraph (iv) to make clear that railroad tank cars transporting hydrogen chloride must comply with the enhanced tank-head and shell puncture-resistance requirements of proposed §§ 179.16(b) and 179.24.

XIV. Regulatory Analyses and Notices

A. Statutory/Legal Authority for This Rulemaking

This NPRM is published under authority of the Federal hazmat law.

Section 5103(b) of Federal hazmat law authorizes the Secretary of Transportation to prescribe regulations for the safe transportation, including security, of hazardous materials in intrastate, interstate, and foreign commerce. SAFETEA-LU, which added section 20155 to the Federal hazmat law, requires, in part, that FRA (1) validate a predictive model quantifying the relevant dynamic forces acting on railroad tank cars under accident conditions and (2) initiate a rulemaking to develop and implement appropriate design standards for pressurized tank cars. Additionally, the Federal Railroad Safety Act, 49 U.S.C. 20101 *et seq.*, authorizes the Secretary to issue regulations over all areas of railroad transportation safety.

B. Executive Order 12866 and DOT Regulatory Policies and Procedures

This proposed rule has been evaluated in accordance with existing policies and procedures, and determined to be significant under both Executive Order 12866 and DOT policies and procedures (44 FR 11034, Feb. 26, 1979). We have prepared and placed in the docket a regulatory impact analysis (RIA) addressing the economic impact of this proposed rule. PHMSA and FRA invite comments on this RIA.

The costs anticipated to accrue from adopting this proposed rule would include (1) the labor and material costs for incorporating enhanced crashworthiness features into tank cars that transport PIH materials, (2) the design and re-engineering costs required to implement the proposed enhanced tank-head and shell puncture-resistance systems, (3) the costs for transferring existing PIH tank cars to other commodity services, and (4) the maintenance and inspection costs for the new more crashworthy tank cars. Additionally, there would be costs incurred as a result of the operational restrictions for tank cars that transport PIH materials, including (1) the cost of restricting railroad tank cars used to transport PIH materials to 50 mph, and (2) the cost of temporarily restricting existing railroad tank cars used to transport PIH materials in non-signalized territory to 30 mph. Finally, there would be a cost for the increased traffic or volume of tank cars that transport PIH materials due to the increased weight, and thus lower commodity capacity, of those cars.

The primary potential benefits or savings expected to accrue from the implementation of this proposed rule would be the reduction in the number and severity of casualties arising from train accidents and derailments

involving tank cars that transport PIH materials. In addition, benefits would accrue from a decrease in property damages, including damages to locomotives, railroad cars, and track, environmental damage, track closures, road closures, and evacuations. Moreover, there would also be a benefit in fuel savings (which may offset some of the operational costs) due to limiting train operating speeds.

This document presents a 30-year analysis of the costs and benefits associated with DOT's proposed rule, using both 7 percent and 3 percent discount rates. It also presents an analysis of a regulatory alternative considered, and sensitivity analyses associated with varying assumptions used for estimating PIH release-related benefits.

A baseline cost estimate is particularly important for the conduct of these analyses. The railroad industry has expressed its intention to proceed with a standard of its own absent issuance of a DOT rule requiring enhanced crashworthiness of PIH tank cars. In general, industry participants appear to recognize the need to improve the design of tank cars transporting PIH materials. In fact, the AAR has mandated (but temporarily suspended to permit issuance of this notice of proposed rulemaking) use of heavier cars with top fittings that meet specified requirements such as the new tank cars built by Trinity for the transportation of PIH materials. Accordingly, the baseline for the analyses conducted reflects compliance with the AAR standard by replacing the existing fleet of PIH tank cars with AAR-compliant Trinity-like tank cars. This baseline includes incremental costs associated with the design, construction, and operation of new Trinity-like tank cars to replace existing cars and the transfer of existing PIH tank cars to other commodity services. The 30-year cost estimates associated with this baseline are \$476.6 million (PV, 7%) and \$718.7 million (PV, 3%). Annualized costs are \$38.4 million (PV, 7%) and \$36.7 million (PV, 3%).

The analysis of the proposed rule takes into account the incremental impacts that would be incurred with meeting the proposed requirements (i.e., the design, construction, and operation costs for the new DOT-compliant cars in excess of the baseline impacts that would be incurred absent this rulemaking with the introduction of the AAR-mandated cars). In addition, the proposed rule analyzes full impacts related to the proposed operating speed restrictions. Thus, this analysis takes into account the fact that the AAR and

shippers have active plans to make major changes in the tank car fleet that moves PIH commodities. The 30-year cost estimates associated with implementation of the proposed rule are \$350.6 million (PV, 7%) and \$431.6 million (PV, 3%). Annualized costs are \$28.3 million (PV, 7%) and \$22.0 million (PV, 3%).

The benefits of the proposed rule fall into two sub-groups. The first group consists of benefits that would accrue from avoidance of collision- and derailment-related PIH releases resulting from a combination of the enhanced tank car crashworthiness standards and operating speed restrictions. This group of benefits includes reductions in casualties; property damage, including damage to locomotives, rail cars and track, environmental damage; evacuation and shelter-in-place costs; track closures, road closures, and electric power disruptions. Casualty mitigation estimates are based on a value of statistical life of \$5.8 million. This group of benefits also includes more difficult to monetize benefits such as the avoidance of hazmat accident related costs incurred by Federal, state and local governments and impacts to local businesses. As with costs, the benefits associated with introducing DOT-compliant tank cars are reduced by the level of benefits that DOT estimates would accrue from replacing existing cars with AAR-mandated cars absent this rulemaking. This analysis includes a scenario which DOT believes is the most realistic projection of benefits that would be realized, including the possibility of an event with moderately more severe consequences than has occurred in the past 10 years. This approach recognizes the significant probability that, given the quantity of product released and the proximity of potentially affected populations to accident sites, in one or more events the consequences known to be possible will be realized, with loss of life on a scale not previously encountered.

The second group of benefits consists of business benefits that would accrue in response to the operating speed restrictions (which may partially offset the operating costs imposed by these restrictions) and the enhanced tank car design. This group includes fuel savings from economic efficiencies resulting from operating speed restrictions and repair savings from more salvageable tank cars. DOT believes that the useful life of compliant tank cars introduced during the 30-year analysis period will extend well beyond that period. Moreover, the residual value at year 30 of tank cars constructed to meet the

enhanced standards proposed will be greater than the residual value of conventional tank cars and Trinity-like tank cars contemplated by AAR's new standard. Thus, the analysis includes a benefit reflecting the higher residual value for the new tank cars at year 30.

FRA then added up both of these groups of benefits over the next 30 years. Taking both of these groups of benefits, relative to the state of the world where the AAR would enforce its interchange standard, the 30-year benefit estimates associated with implementation of the proposed rule are \$666 million (PV, 7%) and \$1.089 billion (PV, 3%). Annualized benefits are \$53.7 million (PV, 7%) and \$55.6 million (PV, 3%).

An evaluation of a "status quo" alternative is also included. In general, industry parties appear to recognize the need to improve the design of tank cars transporting PIH materials. In fact, as previously noted, the AAR has mandated the use of Trinity-like cars for the transportation of PIH materials in interchange. Accordingly, the "status quo" alternative would be to allow the AAR to enforce its interchange standard. The costs associated with such an alternative would still be represented by the baseline cost scenario, however they would be equivalent to the costs the railroad industry is willing to incur voluntarily, and thus, would not be considered true regulatory costs. In addition, this alternative would not include costs from any operating speed restrictions. The benefits from this alternative would be those resulting from the use of a heavier car of the same basic design currently in place and can be estimated as approximately 15% of the benefits that would be expected to result from implementation of the crashworthiness requirements of the proposed rule. As with the costs, this alternative would not offer any of the business benefits associated with the DOT proposal due to the operating speed restrictions. The 30-year cost estimates associated with this alternative are \$476.6 million (PV, 7%) and \$718.7 million (PV, 3%).

Finally, three sensitivity analyses varying assumptions used to estimate the benefits of the proposed rule are included. The first addresses the uncertainty regarding the consequences from release of PIH materials resulting from train accidents. This analysis is based on the assumption that the consequences of projected incidents will be of the same average severity as those in the past ten years. It does not recognize how fortunate the circumstances surrounding recent past incidents have been. Given the rarity of

the occurrence of rail accidents resulting in the release of PIH materials from tank cars, and the high variability in the circumstances and consequences of such events, this sensitivity analysis is useful. The 30-year benefit estimates associated with this scenario are \$786,073,251 (PV, 7%) and \$868,616,695 (PV, 3%). The second and third sensitivity analyses address the imprecision of assumptions regarding the value of a life, which affect the level of safety benefits (i.e., casualty mitigation) that would result from promulgation of the proposed rule. This analysis presents benefit levels associated with values of a statistical life of \$3.2 million and \$8.4 million. The 30-year benefit estimates associated with these scenarios are \$582,100,371 (PV, 7%, VSL \$3.2M), \$857,952,000 (PV, 7%, VSL \$8.4M).

This rulemaking would fulfill the mandate of SAFETEA-LU and respond to NTSB's recommendations pertaining to tank car structural integrity and operational measures, by specifying performance standards and operational restrictions sufficient to reduce the likely frequency of catastrophic releases to a level as low as reasonably possible, given the need to transport the products in question, and based on analysis of the forces that result from serious train accidents. PHMSA and FRA note that, while the proposed actions are based exclusively on railroad safety considerations, strengthening the protective systems on PIH tank cars may also reduce the likelihood of a catastrophic release caused by criminal acts, such as deliberately throwing a switch in the face of an oncoming train or taking other action that could result in a derailment or collision.

The proposed actions would not reduce to zero the probability of a catastrophic release. However, achieving that goal is likely inconsistent with the purpose of the transportation service provided and beyond design practice that presently can be conceived. The proposed actions would substantially reduce the risk presently attending transportation of the subject products, and these reductions can be achieved within a time certain. Providing reassurance to the communities through which these trains travel, that every feasible action has been taken to safeguard those potentially affected, itself provides societal benefits. Included among these benefits are peace of mind of residents and others within the potential zones of danger, and likely avoidance of more costly and less effective public responses (such as prohibiting transportation of the products outright

or establishing burdensome conditions of transportation that are perceived to benefit individual communities while driving up total public exposure]

C. Executive Order 13132

This NPRM has been analyzed in accordance with the principles and criteria contained in Executive Order 13132 ("Federalism"). If adopted in a final rule, the proposals in this NPRM would amend PHMSA's existing regulations on the design and manufacturing of rail tank cars authorized for the transportation of PH materials and the handling of rail shipments of PH materials in these rail tank cars. As discussed below, State and local requirements on the same subject matters covered by PHMSA's existing regulations and the amendments proposed in this NPRM, including certain State common law tort actions, are preempted by 49 U.S.C. 5125 and 20106. At the same time, this NPRM does not propose any regulation that would have direct effects on the States, the relationship between the national government and the States, or the distribution of power and responsibilities among the various levels of government. Additionally, it would not impose any direct compliance costs on State and local governments. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply.

The Federal Railroad Safety Act (49 U.S.C. 20101 *et seq.*) provides that all regulations prescribed by the Secretary related to railroad safety (such as the rule proposed in this NPRM) preempt any State law, regulation, or order covering the same subject matter, except a provision necessary to eliminate or reduce an essentially local safety or security hazard that is not incompatible with a Federal law, regulation, or order and that does not unreasonably burden interstate commerce. An amendment to Section 20106 enacted in 2007 alters the preemption of certain tort actions by this section that arise from events or activities occurring on or after January 18, 2002, to the extent that a tort action seeks damages for personal injury, death, or property damage and alleges (1) A violation of the Federal standard of care established by regulation or order issued by the Secretary of Transportation (with respect to railroad safety) or the Secretary of Homeland Security (with respect to railroad security); (2) a party's violation of, or failure to comply with, its own plan, rule, or standard that it created pursuant to a regulation or order issued by either of the two Secretaries, or (3) a party's violation of a State standard that is

necessary to eliminate or reduce an essentially local safety or security hazard, is not incompatible with a law, regulation, or order of the United States Government, and does not unreasonably burden interstate commerce.

While this recent amendment has altered the preemptive reach of Section 20106, it is important to note that there are limits to this exception. For example, Congress provided an exception only for an action in State court seeking damages for personal injury, death, or property damage. The statute does not provide for the recovery of punitive damages in the permitted common law tort actions. In addition, the statute permits actions for violation of an internal plan, rule, or standard only when such are created pursuant to a Federal regulation or order issued by DOT or DHS to the minimum required by the Federal regulation or order. While parties are encouraged to go beyond the minimum regulatory standard in establishing safety and security standards, these requirements are not created pursuant to Federal regulation or order. Accordingly, there is no clear authorization of a common law tort action alleging a violation of those aspects of such an internal plan, rule, or standard related to the subject matter of this regulation that exceeds the minimum required by the Federal regulation or order.

Separately, the Federal hazardous materials transportation law, 49 U.S.C. 5101 *et seq.*, contains an express provision (49 U.S.C. 5125(b)) preempting State, local, and Indian tribe requirements on certain covered subjects. Covered subjects are:

- (1) The designation, description, and classification of hazardous material;
- (2) The packing, repacking, handling, labeling, marking, and placarding of hazardous material;
- (3) The preparation, execution, and use of shipping documents related to hazardous material and requirements related to the number, contents, and placement of those documents;
- (4) The written notification, recording, and reporting of the unintentional release in transportation of hazardous material; and
- (5) The design, manufacturing, fabricating, marking, maintenance, reconditioning, repairing, or testing of a packaging or container represented, marked, certified, or sold as qualified for use in transporting hazardous material.

This proposed rule addresses both items 2 and 5 of the HMR and would therefore preempt any State, local, or Indian tribe requirement that is not substantively the same as PHMSA's

regulations on these subject matters, as those regulations would be amended as proposed in this NPRM. The agency welcomes comments about the extent to which the preemptive effect under this statutory authority differs from that discussed above.

Pursuant to 49 U.S.C. 5125(b)(2) of the Federal hazmat law, if the Secretary of Transportation issues a regulation concerning any of the covered subjects, the Secretary must determine and publish in the Federal Register the effective date of Federal preemption. The effective date may not be earlier than the 90th day following the date of issuance of the final rule and not later than two years after the date of issuance. PHMSA has determined that the effective date of Federal preemption for these requirements under the Federal hazmat law would be one year from the date of publication of a final rule in the Federal Register.

D. Executive Order 13175

We analyzed this proposed rule in accordance with the principles and criteria contained in Executive Order 13175 ("Consultation and Coordination with Indian Tribal Governments"). Because this proposed rule does not significantly or uniquely affect tribes and does not impose substantial and direct compliance costs on Indian tribal governments, the funding and consultation requirements of Executive Order 13175 do not apply, and a tribal summary impact statement is not required.

E. Regulatory Flexibility Act and Executive Order 13272 Initial Regulatory Flexibility Assessment

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) and Executive Order 13272 require a review of proposed and final rules to assess their impacts on small entities. An agency must prepare an initial regulatory flexibility analysis (IRFA) unless it determines and certifies that a rule, if promulgated, would not have a significant impact on a substantial number of small entities. DOT has not determined whether this proposed rule would have a significant economic impact on a substantial number of small entities. Therefore, we are publishing this IRFA to aid the public in commenting on the potential small business impacts of the proposals in this NPRM. We invite all interested parties to submit data and information regarding the potential economic impact that would result from adoption of the proposals in this NPRM. We will consider all comments received in the public comment process when making a

determination in the final Regulatory Flexibility Assessment (RFA).

In accordance with the Regulatory Flexibility Act, an RFA must contain:

(1) A description of the reasons why action by the agency is being considered;

(2) A succinct statement of the objectives of, and the legal basis for, the proposed rule;

(3) A description of, and where feasible, an estimate of the number of small entities to which the proposed rule will apply;

(4) A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

(5) An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule; and

(6) A description of any significant alternatives to the proposed rule that accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities. 5 U.S.C. 603(b), (c).

I. Reasons for Considering Agency Action

As discussed in earlier sections of this preamble, in the last several years there have been a number of serious rail tank car accidents involving catastrophic releases of PIH materials causing the attention of the rail industry, PIH shippers and other members of the public, press, NTSB and the Congress to focus on the serious consequences of these events. In 2005 SAFETEA-LU directed the Secretary of Transportation to "initiate a rulemaking to develop and implement appropriate design standards for pressurized tank cars." This proposed rulemaking is responsive to SAFETEA-LU's mandate, as well as recommendations of the NTSB.

II. Objectives and Legal Basis for Proposed Rule

A. Legal Basis for Proposed Rule

As discussed in more detail in section III of this preamble, Federal hazard law authorizes the Secretary of Transportation to "prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce." The Secretary has delegated this authority to PHMSA. The Secretary also has authority over all areas of railroad transportation safety (Federal

Railroad Safety laws, 49 U.S.C. 20101 *et seq.*) and has delegated this authority to FRA. 49 CFR 1.40.

A primary safety and security concern in the rail transportation of hazardous materials is the prevention of a catastrophic release in proximity to places such as populated areas, events or venues with large numbers of people in attendance, iconic buildings, landmarks, or environmentally sensitive areas. Over the past several years, several very serious accidents involving catastrophic releases of PIH materials from railroad tank cars have focused the attention of the public, press, NTSB, and the Congress on the serious consequences of these events. Since 2002, NTSB investigated three accidents involving tank cars transporting PIH materials (See section VI of the preamble for a more detailed discussion of the relevant accidents). In response to all three accidents, the NTSB recommended that FRA study improving the safety and structural integrity of tank cars and develop necessary operational measures to minimize the vulnerability of tank cars involved in accidents. In particular, in response to a January 16, 2002, freight train derailment in Minot, North Dakota, which resulted in one death and 11 serious injuries due to the release of anhydrous ammonia when five tank cars carrying the product catastrophically ruptured and a vapor plume covered the derailment site and surrounding area, the NTSB made four safety recommendations to FRA specific to the structural integrity of hazardous material tank cars. Subsequently, in 2005, section 20155 of SAFETEA-LU reiterated NTSB's recommendations in part and further directed the Secretary of Transportation to "initiate a rulemaking to develop and implement appropriate design standards for pressurized tank cars."

B. Objective of Proposed Rule

The objective of this proposed rule is to improve the crashworthiness protection of railroad tank cars designed to transport PIH materials by (1) requiring enhanced tank-head and shell protection, and (2) limiting the operating speed of the tank cars. See sections II and XII of the preamble for a more detailed discussion regarding the objective of this proposed rule.

III. Description and Estimate of Small Entities Affected

The "universe" of the entities to be considered in an RFA generally includes only those small entities that can reasonably be expected to be directly regulated by the proposed

action. Five types of small entities are potentially affected by this proposed rule: (1) PIH material shippers and tank car owners; (2) governmental jurisdictions of small communities; (3) small railroads; (4) small farms; and (5) small explosives manufacturers.

"Small entity" is defined in 5 U.S.C. 601. Section 601(3) defines a "small entity" as having the same meaning as "small business concern" under section 3 of the Small Business Act. This includes any small business concern that is independently owned and operated, and is not dominant in its field of operation. Section 601(4) includes not-for-profit enterprises that are independently owned and operated, and are not dominant in their field of operations within the definition of "small entities." Additionally, section 601(5) defines as "small entities" governments of cities, counties, towns, townships, villages, school districts, or special districts with populations less than 50,000.

The U.S. Small Business Administration (SBA) stipulates "size standards" for small entities. It provides that the largest a for-profit railroad business firm may be (and still classify as a "small entity") is 1,500 employees for "Line-Haul Operating" railroads, and 500 employees for "Short-Line Operating" railroads.⁴⁴ For PIH material shippers potentially impacted by this rule, SBA's size standard is 750 or 1,000 employees, depending on the industry the shipper is in as determined by its North American Industry Classification System (NAICS) Code. SBA size standards also stipulate in NAICS Code Subsector 111 that the average annual receipt for "crop production" agriculture is \$750,000 per year. Thus, any farm that produces crops is not considered to be a small entity unless its annual revenue is less than \$750,000. For explosives manufacturers, NAICS Code 325020, the size standard is 750 employees.

SBA size standards may be altered by Federal agencies in consultation with SBA, and in conjunction with public comment. Pursuant to the authority provided to it by SBA, FRA has published a final policy, which formally establishes small entities as railroads that meet the line-haulage revenue requirements of a Class III railroad.⁴⁵ Currently, the revenue requirements are \$20 million or less in annual operating revenue, adjusted annually for inflation. The \$20 million limit (adjusted

⁴⁴ "Table of Size Standards," U.S. Small Business Administration, January 31, 1996, 17 FR Part 121. See also NAICS Codes 482111 and 482112.

⁴⁵ See 68 FR 21801 (May 9, 2003).

annually for inflation) is based on the Surface Transportation Board's threshold of a Class III railroad carrier, which is adjusted by applying the railroad revenue deflator adjustment.³⁶ The same dollar limit on revenues is established to determine whether a railroad shipper or contractor is a small entity. DOT proposes to use this definition for this rulemaking.

A. Shippers

Almost all hazardous materials tank cars, including those cars that transport PIH materials, are owned or leased by shippers. DOT believes that a majority, if not all, of these shippers are large entities. DOT used data from the DOT/PHMSA Hazardous Materials Information System (HMIS) database to screen for PIH material shippers that may be small entities. The HMIS uses the SBA size standards as the basis for determining if a company qualifies as a small business. DOT also gathered data from industry trade groups such as the American Chemistry Council and The Fertilizer Institute (TFI) to help identify the number of small shippers that might be affected. After identifying the set of small businesses that could potentially be impacted, DOT cross-referenced this group with *The Official Railway Equipment Register* (October, 2007) to determine if any of these actually own tank cars subject to this rule.

From the DOT/PHMSA HMIS database, and industry sources, DOT found eight small shippers that might be impacted. By further checking information available on the companies' Web sites, all eight shippers are noted as being subsidiaries of larger businesses. Out of these eight, however, only one owns tank cars that would be affected. The remaining seven shippers either do not own tank cars or own tank cars that would not be affected by this rule. The one remaining small shipper potentially impacted has annual revenues that exceed by 20 times the FRA size standard for a small entity. Further, although this shipper is for-profit, the parent company is a non-profit. Thus, DOT believes that there are none or very few PIH material shippers that are small businesses affected by this rule. Additionally, no small shippers commented during the public meeting process. DOT invites commenters to submit information that might assist it in assessing the quantity of small shippers that may be affected by the requirements set forth in the proposed

rule, as well as the potential impact on any such entities.

B. Governmental Jurisdictions of Small Communities

Small entities that are classified as governmental jurisdictions of small communities may also be affected by the proposals in this NPRM. As stated above, and defined by SBA, this term refers to governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of less than 50,000. The potential impact of this rulemaking to these entities is related to chlorine and the use of it in the water purification process for community water districts. DOT does not know how many community water systems are owned by governmental jurisdictions that meet SBA's definition of a small entity, how many community water systems use chlorine at their facilities, or how many could easily substitute a non-dangerous or less lethal material, i.e., bleach, for chlorine.

DOT understands that most water plants for small communities receive their chlorine via 1-ton tanks, which are transported in highway vehicles. These facilities might be impacted indirectly by increasing prices for chlorine due to higher shipping rates. Also, in recent years, the shipping rates for chlorine have been increased due to the PIII accidents that have occurred over the past 10 years. With the introduction of this proposed regulation, DOT expects that the rates will flatten or will increase at a slower pace because the safety features of the rule will reduce the chance of an accident that releases PIH materials, and therefore result in lower accident and associated costs.

DOT notes that many existing chlorine tank cars are nearing the end of their useful lives. Even in the absence of the proposed rulemaking, the affected entities would have to replace these older chlorine tank cars in the next few years. The industry, through AAR, has also been working to improve tank car safety. As discussed in section IX of this preamble, absent this regulation, new AAR chlorine tank car standards will also result in existing tank cars being replaced and entities impacted through higher shipping rates.

Accordingly, DOT cannot accurately assess the number of governmental jurisdictions of small communities that would be directly impacted by this proposed regulation and what the impact would be. DOT requests comment from affected governmental jurisdictions as to the impact the proposed rule will have on them.

C. Railroads

DOT estimates that approximately 46 railroads meeting the definition of "small entity" as described above transport PIH materials via railroad tank car.³⁷ Because the proposed rule would apply to all 46 of these small railroads, we have concluded that a substantial number of such entities would be impacted.

It is important to note, however, that absent this rulemaking, all railroads that transport PIH materials via railroad tank car, including the 46 railroads identified as small entities, would still have to incur the additional expense to accommodate 286,000-pound tank cars to comply with the new AAR PIH tank car standard (i.e., a 286,000-pound tank car equipped with additional head protection, thicker shell, and modified top fittings) (See section IX of this preamble for a more detailed discussion of the new AAR PIH tank car standard).

As noted in section I of this preamble, however, DOT anticipates that tank car designers, working with end users, will develop tank cars that will meet the proposed enhanced tank-head and shell performance standards of this NPRM while minimizing the addition of weight to the empty cars. Recognizing the growing use of rail cars with gross weight on rail exceeding 203,000 pounds for non-hazardous commodities, such as grain, this NPRM provides the flexibility to design a tank car for the transportation of PIH materials weighing up to 286,000 pounds, in line with AAR's existing standard S-286-2002. Accordingly, the actual impact of the general increase in gross weight on rail of products in this commodity group in relation to the overall transition now being completed within the industry (which has been eased by tax incentives and, in some cases, government-guaranteed loan arrangements) should not be substantial. While we recognize that some small railroads will not be able to accommodate the additional weight on some of their bridges and track, we believe that railroads that handle PIH cars have, in general, already made or are making the transition to track structures and bridges capable of handling 286,000-pound cars in line with the general movement in the industry toward these heavier freight cars. These railroads include many switching and terminal railroads.

³⁶ For further information on the calculation of the specific dollar limit, please see 49 CFR Part 1207.

³⁷ Data provided by Railinc, Corp. (a subsidiary of AAR) indicates that approximately 80 short-line and regional railroads transport PIH materials via railroad tank car. Of these 80 railroads, 34 are regional railroads that meet the Surface Transportation Board's definition of a Class II railroad and thus, are not considered "small entities" for the purposes of this IRFA.

that are partially or totally owned by Class 1 railroads as interline connections. These connections have previously mandated upgrading to 286,000-pound capability.

For example, in 2005, the Texas Transportation Institute reported that 42 percent of the short-line railroad miles that were operated in Texas that year had already been upgraded, nine percent would not need an upgrade, and 47 percent needed upgrading if they wanted to transport any type of 286,000-pound shipments.⁵⁰ In addition, the results of a 1998–1999 survey conducted by the ASLRRA indicated that 41 percent of respondent short-line railroads could handle 286,000-pound rail cars and 87 percent of the respondent short-line railroads indicated that they would need to accommodate 286,000-pound railcars in the future.⁵¹ More current data from the ASLRRA suggests that many of the railroads needing future capability to handle 286,000-pound rail loads for this rule have been upgraded within the past two years.⁵²

Nevertheless, we believe that some new 263,000-pound cars will be built for anhydrous ammonia service to address rail line and facility compatibility concerns thus minimizing the burden of the rule on small railroads.

In general, most of the impacts will not burden the 46 small railroads potentially affected by this proposed rule. Any costs incurred by railroads most likely will be passed to shippers and end users through higher transportation costs. Thus, DOT does not expect this regulation to impose a significant burden on the affected small railroads. We invite commenters to submit information that might assist us in assessing the cost impacts on small railroads of the proposals in this NPRM.

D. Farms

Anhydrous ammonia is an important source of nitrogen fertilizer for crops. It is used in farming because it is one of the most efficient and widely used sources of nitrogen for plant growth. Its use has increased because it is relatively easy to apply and readily available. Nonetheless, it does carry disadvantages

to the farming environment because it must be stored and handled under high pressure. Urea, urea ammonium nitrate, or ammonium nitrate could be used for anhydrous ammonia as substitutes for agricultural purposes. Anhydrous ammonia has a free ammonia percentage of 86 percent, while the substitutes have a free ammonia percentage of 46, 28–32, and 34 percent, respectively.

Shippers of anhydrous ammonia do not own tank cars, rather they are leased from larger entities. According to TFI, a switch to a redesigned heavier tank car would increase monthly car lease rates from the current level of \$800–\$850 per car to \$1,300–\$1,400 per car. TFI's members lease about 6,000 tank cars and ship about 52,000 cars per year. If these increased lease costs are passed through to customers, then any agricultural or farming operation that utilizes anhydrous ammonia as part of its fertilizing program could be negatively impacted.

It is important to note, however, that not all crops utilize anhydrous ammonia, nor in the same quantities. Agriculture crops that require greater leaf development, such as corn and wheat, utilize anhydrous ammonia as a fertilizer more than crops that require a greater root development, e.g., carrots, potatoes, and beans, which utilize phosphorus more as a fertilizer. Therefore, not all small farms will be impacted in the same way by an increase in the shipping rates for anhydrous ammonia. DOT invites commenters to submit information that might assist it in assessing the quantity of small agricultural operations that may be affected by the requirements set forth in the proposed rule.

During DOT's public meetings, one commenter noted that the survival of family farms in the Northwest is tied to retaining a cheap source of nitrogen via anhydrous ammonia which is transported via rail.⁵³ Other commenters noted that NH₃ costs 40 to 50 percent less per pound of nitrogen than less concentrated forms of nitrogen.⁵⁴ For example, one commenter noted that anhydrous ammonia costs 24 cents per pound of nitrogen, compared to 34 cents per pound for ammonium nitrate.⁵⁵

Anhydrous ammonia is dependent on natural gas for its production. In North America, anhydrous ammonia production plants are typically built

near a dedicated supply of natural gas, and the price and demand for the product are also dependent and responsive to the price of natural gas. Thus, the production at some plants is currently down due to the increase in price of natural gas. On the demand side of the economic equation there is an increase in the demand and use of anhydrous ammonia due to the recent increase in ethanol demand. Ethanol is typically produced in the United States from corn, and the production of corn requires substantial amounts of nitrogen, much of which comes from anhydrous ammonia.

Because there are a number of factors contributing to increased costs for anhydrous ammonia, it is difficult to determine how much of any increase in the price of the PIH material would be a product of this proposed regulation and shipping via rail. We note as well that increased costs may well make substitute products more attractive.

Currently PIH shippers are experiencing rapidly increasing rate increases as a result of the railroads' concern over possible train accidents involving the release of PIH materials. The use of the more crashworthy tank cars coupled with the operating restrictions DOT is proposing should significantly reduce the risk of catastrophic PIH releases and ultimately translate into relief from those escalating rail transportation costs. (Those rate escalations would likely continue were DOT not to issue its proposed rule since the car mandated by AAR's new standard (i.e., a Trinity-type car) would probably not prevent PIH tank car releases in even moderate speed train accidents.) Shippers would be able to make the case that higher rates would no longer be "reasonable" given the significantly reduced probability of a catastrophic release. This "cost-savings" would allow shippers to offset new-car costs to a large extent. Given that new car expenses are typically financed over several years, we believe that the increased costs passed on by shippers to small farmers would not be significant. The farmers, in turn, would be expected to pass shipping cost increases to end consumers in the form of higher agricultural product prices.

We request comment from affected agricultural operations as to the impact that the proposed rule would have on them.

E. Explosives Manufacturers

Anhydrous ammonia is also used in producing explosives. The Institute of Makers of Explosives (IME), an industry trade group, reports that there are 22 explosives manufacturers in the United

⁵⁰ Jeffrey C. Warner & Manuel Solari Turm, "Assessment of Texas Short Line Railroads," Texas Transportation Institute (Nov. 15, 2005).

⁵¹ The Ten-Year Needs of Short Line and Regional Railroads: Standing Committee on Rail Transportation, American Association of State Highway and Transportation Officials, Washington DC (Dec. 1998). This report was based on a survey conducted by the ASLRRA in 1998 and 1999 with data from 1997.

⁵² John Gallagher, "Tank Car Tensions," *Traffic World* (June 19, 2006).

⁵³ U.S. DOT Public Meeting Transcript, Testimony of Fred Morschuck from the McGray Company, May 11, 2006, p. 166.

⁵⁴ *Id.* p. 169.

⁵⁵ U.S. DOT Public Meeting Transcript, Testimony of William Wolf from The Andersons Inc. (a shipper), May 11, 2006, p. 190.

States. Of those 22 manufacturers, eight actually produce explosives material while the remaining 14 are associated manufacturers making components or assemblies. Finally, three manufacturers consume anhydrous ammonia to produce explosives. None of these three potentially impacted manufacturers, however, is considered a small business.

IV. Description of Reporting, Recordkeeping, and Other Compliance Requirements and Impacts on Small Entities Resulting From Specific Proposed Requirements

A. Reporting Requirement of Proposed § 173.31(b)(8)(iii)

Proposed § 173.31(b)(8)(iii) requires that after the initial 5-year implementation period has passed, owners of PIH tank cars submit a progress report to FRA identifying the total number of in-service tank cars in PIH service owned and the number of those cars in compliance with the enhanced head and shell protection requirements of the proposed rule. This paragraph would also require that tank car owners certify in their progress reports that their fleet does not contain any pre-1989 tank cars in PIH service subject to paragraph (b)(8)(ii).¹⁴

DOT estimates that the burden for this reporting would be 5 minutes per pertinent tank car.¹⁵ In the Regulatory Impact Analysis (RIA), DOT estimated that this requirement will cost \$11,200 in the beginning of the 6th year of the analysis, and this cost is for each tank car. In addition, DOT has provided postage, envelopes, and handling charges of \$1 per tank car report. This cost would total \$7,650, which would also be incurred in the beginning of the 6th year of the analysis. The total cost for this requirement is \$26,800 for all PIH tank car owners. DOT does not expect many of those tank cars to be owned by small entities. Therefore, this reporting requirement would have very little, if any, impact on small entities.

B. Filing Requirement for Alternative Compliance With Proposed § 174.86(c)(1)

Proposed § 174.86(c)(1) provides that if a tank car not meeting the enhanced tank-head and shell puncture resistance standards of the proposed rule is used to transport PIH material over non-

signaled territory, its maximum operating speed is limited to 30 mph. Alternatively, paragraph (c)(2) provides that railroads may implement alternative safety measures in lieu of complying with the 30 mph speed restriction, so long as those alternative safety measures provides an equivalent level of safety as a traffic control system complying with 49 CFR Part 236 and the railroad completes a risk assessment demonstrating this equivalent level of safety. The rule proposes that this risk assessment be submitted to FRA for review and approval.

DOT does not expect a great number of these applications. A typical submission might consist of a commitment to install a switch position monitoring system, track integrity circuits (except in areas where new rail is prevalent), and a temporary speed reduction to 40 mph during the period a positive train control system is installed on the wayside. DOT expects that the average submission would consist of between 20 and 30 pages. DOT does not expect any of these applications to be by small railroads.

C. Demonstration of Compliance With Proposed Enhanced Tank-Head and Shell Puncture Resistance System Tests

Proposed Appendix C to 49 CFR Part 179 provides that compliance with the proposed enhanced tank head and shell puncture-resistance standards can be shown by computer simulation, by annulation in conjunction with substructure testing, by full-scale impact testing, or a combination thereof. The lowest cost and lowest level of confidence is provided by simulation alone. Substructure testing increases the confidence in simulation modeling, potentially with relatively modest costs, depending on the details of the substructure test. The highest level of confidence is provided by full-scale impact testing, along with the greatest cost. The cost of such compliance is not important to this assessment. DOT firmly believes that no small entities will be impacted by this requirement.

D. Impacts on Small Entities Resulting From Specific Proposed Requirements

The impacts from this proposed rulemaking would primarily result from complying with the requirements for building enhanced PIH tank cars. The proposed rule provides affected entities an 8-year period of time in which to accomplish this goal.

1. Additional Cost for Enhanced PIH Tank Cars

One of the impacts from this proposed regulation would be an increase in the

cost of new PIH tank cars. The enhanced crashworthiness features, while increasing safety, would cause the average PIH tank car to increase in cost and also increase in weight. DOT believes that the impact from this increased cost in the tank cars would be substantially passed from the manufacturer to the tank car owners. Since most tank cars are owned by the shippers, much of this cost would be passed on to them. These shippers would most likely pass this cost on to the end users in the form of higher shipping costs. The capacity constraints in the railroad system give shippers some market power to pass on a substantial portion of the costs (i.e., shippers do not need to cut costs to attract customers). However, the flexibility provided by the long phase-in period of the rulemaking, and the ability of some customers to use substitute products or purchase from shippers that rely on other modes of transportation if costs rise beyond their willingness to pay, may temper passing through of costs. If any of the additional or marginal increases in a PIH tank car's cost are absorbed by shippers, then few, if any, PIH material shippers that are considered to be small entities would be negatively affected. Based on information from the DOT/PIHMSA HMLS registry of shippers, and industry trade groups, DOT believes no small PIH material shippers would be impacted. If the higher cost of cars meeting the proposed performance standard are not absorbed by shippers and are not offset by reductions in shipping rates attributable to reduce potential liability for catastrophic releases, small farmers using anhydrous ammonia for fertilizer might be impacted. The degree to which they might be impacted depends, among other things, on their ability to pass costs on to consumers of agricultural products. This may, in turn, be affected by Federal government agricultural policy. FRA specifically requests comments on this issue.

2. Transferring Current PIH Tank Cars to Other Services

A second impact from this proposed rulemaking is the cost for transferring the current PIH tank car fleet into service for other products. This cost would only be incurred for those PIH tank cars that still have a useful life left. DOT has estimated a cost of \$2,500 per PIH tank car for this impact. This cost would only be incurred to the extent that such an investment is believed to yield a positive return to the investor. As noted above, very few, if any, PIH material shippers are considered to be small entities. Thus, DOT does not

¹⁴ This proposed requirement restricts the use of PIH tank cars that were manufactured using non-normalized steel for tank-head or shell construction. Under it, tank cars manufactured using non-normalized steel for the tank-head or shell are not authorized to transport PIH materials five years after the effective date of the final rule.

¹⁵ CALCULATION: (\$10.05 wage rate) * (5 minutes/60 minutes) * (15,200 * 5) = \$19,157

believe that a substantial number of PIH material shippers would be impacted, nor by a significant economic amount.

3. Maintenance, Inspections, and Training Related to the New PIH Tank Cars

Another proposed requirement that could impact small entities is the maintenance, inspection, and training costs related to the new PIH tank cars. This impact will be borne by the shippers. This impact would be temporary and would occur as the first new PIH tank cars are placed into service because DOT expects that initially it may be necessary to inspect the new tank cars more often than conventional tank cars to ensure conformance with the enhanced performance standards.

4. Fuel Cost Impact of the Additional Weight in New PIH Tank Cars

One of the impacts from this proposed regulation would be an increased fuel usage by trains resulting from the additional 23,000 lbs that the new PIH tank cars will carry due to the enhanced crashworthiness features. (This increased fuel cost would also be incurred under the new AAR PIH tank car standard.) Initially, this is a cost that would be borne by the railroads. However, the railroads would likely pass much of that cost on to the PIH material shippers through higher shipping rates. This cost would in turn be passed on to the end users, depending on the product's price elasticity of demand, and the factors noted in the "Additional Cost for Enhanced PIH Tank Cars" section above. Thus, this impact should not affect any of the small railroads. Any shippers that qualify as a small entity will most likely pass the cost on to an end user. Small farms and governmental jurisdictions of small communities are end users of PIH materials. They could potentially be impacted by this cost. However, the cost would be reflected in the shipping rates of these materials. The shipping rates of these products should also decrease or stop increasing due to the insurance costs related to the PIH materials. This is because the proposed enhanced features for the future PIH tank cars would serve to reduce the likelihood of a PIH material release. Therefore, the risk of an accident or derailment occurring where a PIH tank car is ruptured and releases its contents would have decreased, and therefore serve to lower the insurance costs associated with the shipment of these materials.

5. Cost of Restricting Traffic Speed to 50 mph

One of the proposed requirements of this rulemaking is that PIH tank cars be limited to speeds of 50 mph on signaled territory or track. This requirement is not expected to impact any small railroads, because none of them travel at speeds greater than 50 mph.

6. Increased Traffic/Volume of PIH Tank Cars

Due to several of the proposed requirements in this rulemaking, it is anticipated that the actual volume of PIH tank car traffic would increase. In general, this could affect railroads. However, most small railroads transport PIH tank cars from the manufacturing facility to the connection point with the Class I railroad. The traffic of these types of shipments, for the short time they are handled by small railroads, is not expected to impact these railroads. The number of cars will be low at that point, and small railroads usually only run one or two trains a day.

7. Cost of Restricting Speed to 30 mph in Dark Territory

In proposed § 174.86(c), PIH tank cars that do not meet the new performance requirements would not be allowed to travel at speeds in excess of 30 mph when that tank car travels in non-signalized territory. Railroads could exceed the 30 mph limit, provided equivalent safety criteria are met. This proposed requirement should not impact small railroads since most do not operate at speeds greater than 30 mph. This proposed requirement could serve to delay deliveries for PIH material shippers and contribute to higher shipping rates. However, DOT does not believe that there are any small PIH material shippers. DOT would encourage any entities that do meet these criteria and would be negatively impacted to provide comment to this rulemaking. Governmental jurisdictions of small communities that own a water system that uses chlorine could be impacted. Most chlorine that is transported to these facilities is transported to the end destination via a truck in 1-ton tanks. This requirement will serve to slow down some rail traffic and increase the cost to ship via rail. Therefore, small farms that use anhydrous ammonia as a fertilizer could also be impacted.

V. Identification of Relevant Duplicative, Overlapping, or Conflicting Federal Rules

There are no Federal rules that would duplicate, overlap, or conflict with this proposed rule.

VI. Alternatives Considered

DOT has identified no significant alternative to the proposed rule which satisfies the mandate of SAFETEA-LU, related provisions of the Federal hazmat law, or meets the agency's objective in promulgating this rule, and that would minimize the economic impact of the proposed rule on small entities. As in all aspects of this IRFA, DOT requests comments on this finding of no significant alternative related to small entities.

The process by which this proposed rule was developed provided outreach to small entities. DOT held three public meetings (May 31-June 1, 2006, December 14, 2006, and March 30, 2007).¹⁴ At each of the public meetings, DOT sought comment and input from small entities on issues related to the safe transportation of hazardous materials by railroad tank car and how the proposed concepts would impact small entities, as well as potential alternatives that might mitigate such impacts. Subsequent to publication of this notice of proposed rulemaking, DOT expects to hold additional public meetings to discuss all aspects of the proposed rule, including its potential impact on small entities, and DOT encourages the active participation of any small entity potentially affected.

F. Paperwork Reduction Act

This proposed rule may result in an increase in the information collection and recordkeeping burden due to the enhanced performance standards and operational restrictions for railroad tank cars that transport PIH materials. PHMSA currently has an approved information collection under OMB Control Number 2137-0550, "(Rail Carriers and Tank Car Tanks Requirements) Requirements for Rail Tank Car Tanks—Transportation of Hazardous Materials by Rail," with 2,689 annual burden hours and an expiration date of May 31, 2008.

Pursuant to 5 CFR 1320.8(d), PHMSA is required to provide interested members of the public and affected agencies with an opportunity to comment on information collection and recordkeeping requests. This notice identifies a revised information collection request that PHMSA will submit to the Office of Management and Budget (OMB) for approval based on the requirements in this proposed rule.

PHMSA has developed burden estimates to reflect proposals in this NPRM. PHMSA estimates that the proposals in this rulemaking will result

¹⁴ See 71 FR 10019, 71 FR 07015, 72 FR 12259.

in approximately 2,255 additional burden hours and \$87,650.00 additional burden costs. PHMSA estimates that the total information collection and recordkeeping burdens for OMB Control Number 2137-0559, "(Rail Carriers and Tank Car Tank Requirements) Requirements for Rail Tank Car Tanks-Transportation of Hazardous Materials by Rail," would be as follows:

Total Annual Number of Respondents 400.

Total Annual Responses 16,781

Total Annual Burden Hours 4,944

Total Annual Burden Cost

\$170,230.25

Requests for a copy of the information collection should be directed to Deborah Boothe or T. Glenn Foster, U.S. Department of Transportation, Office of Hazardous Materials Standards (PHH-11), Pipeline and Hazardous Materials Safety Administration, 1200 New Jersey Avenue, SE, East Building, 2nd Floor, Washington, DC 20590-0001, Telephone (202) 368-8351.

All comments should be addressed to the Dockets Unit as identified in the ADDRESSES section of this rulemaking, and received prior to the close of the comment period identified in the DATES section of this rulemaking. In addition, you may submit comments specifically related to the information collection burden to the PHMSA Desk Officer, OMB, at fax number 202-395-6974. Under the Paperwork Reduction Act of 1995, no person is required to respond to an information collection unless it displays a valid OMB control number. If these proposed requirements are adopted in a final rule with any revisions, we will resubmit any revised information collection and recordkeeping requirements to OMB for re-approval.

We specifically request comments on the information collection and recordkeeping burden associated with developing, implementing, and maintaining these requirements for approval under this proposed rule.

G. Regulation Identifier Number (RIN)

A RIN is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

II. Unfunded Mandates Reform Act

Pursuant to Section 201 of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4, 2 U.S.C. 1531), each Federal agency "shall, unless otherwise

prohibited by law, assess the effects of Federal regulatory actions on State, local, and tribal governments, and the private sector (other than to the extent that such regulations incorporate requirements specifically set forth in law)." Section 202 of the Act (2 U.S.C. 1532) further requires that "before promulgating any general notice of proposed rulemaking that is likely to result in the promulgation of any rule that includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$120,700,000 or more (adjusted annually for inflation) in any 1 year, and before promulgating any final rule for which a general notice of proposed rulemaking was published, the agency shall prepare a written statement" detailing the effect on State, local, and tribal governments and the private sector.

The proposed rule may result in the expenditure of more than \$120,700,000 (adjusted annually for inflation) by the public sector in any one year. The analytical requirements under Executive Order 12866 are similar to the analytical requirements under the Unfunded Mandates Reform Act of 1995, and, thus, the same analysis complies with both analytical requirements.

1. Environmental Assessment

1. Background

The National Environmental Policy Act, 42 U.S.C. 4321-4375, requires that Federal agencies analyze proposed actions to determine whether the action will have a significant impact on the human environment. The Council on Environmental Quality (CEQ) regulations order Federal agencies to conduct an environmental review considering: (1) The need for the proposed action, (2) alternatives to the proposed action, (3) probable environmental impacts of the proposed action and the alternatives, and (4) the agencies and persons consulted during the consideration process. 40 CFR 1508.9(b). We are proposing regulations to enhance the safety of the transportation by rail of certain hazardous materials. We developed this assessment to determine the effects of this proposed rule on the environment and whether a more comprehensive environmental impact statement may be required.

2. Purpose and Need

Hazardous materials are transported by aircraft, vessel, rail, pipeline, and highway. The need for hazardous materials to support essential services

means that the transportation of hazardous materials is unavoidable. However, these shipments frequently move through heavily-populated or environmentally-sensitive areas where the consequences of an incident could be loss of life, serious injury, or significant environmental damage. To address the safety and environmental risks associated with the transportation of hazardous materials by rail, rail tank cars must conform to rigorous design, manufacturing, and requalification requirements. The result is that tank cars are robust packagings, equipped with features such as shelf couplers, head shields, thermal insulation, and bottom discontinuity protection that are designed to ensure that a tank car involved in an accident will survive the accident intact.

In the last several years, however, there have been a number of rail tank car accidents in which the tank car was breached and product was lost on the ground or into the atmosphere. Of particular concern have been accidents involving PIH materials. The purpose of this NPRM is to adopt regulations to enhance the safety of transporting PIH materials by tank car. A primary safety concern is the prevention of a catastrophic release in proximity to populated areas, including urban areas and events or venues with large numbers of people in attendance. Also of major concern is the release of PIH materials in proximity to iconic buildings, landmarks, or environmentally-sensitive areas. Such a catastrophic event could be the result of an accident—such as the January 18, 2002 derailment near Minot, North Dakota, that resulted in the derailment of 31 cars of a 112-car train. Approximately 146,700 gallons of anhydrous ammonia were immediately released from five cars in the train set. As a result, a toxic vapor plume covered the derailment site and the surrounding area. As of March 15, 2004, over \$8 million had been spent on environmental remediation from this one incident.

3. Alternatives Considered

The goal of this proposed rule is to enhance the safety of transporting PIH materials by rail. In developing this proposed rule, we considered three alternatives:

Alternative 1: Do nothing

This alternative continues the status quo. In this alternative, we would not issue a proposed rule to enhance the accident survivability of tank cars (i.e., limiting the operating conditions of the tank cars transporting PIH materials and enhancing the tank-head and shell

puncture-resistance systems), which represents the most efficient and cost-effective method of improving the accident survivability of these cars.

This is not an acceptable alternative. The transportation of PIH materials poses unique and significant safety threats that warrant careful consideration of measures to address safety vulnerabilities in existing authorized packagings. The January 6, 2005 derailment and release of chlorine in Graniteville, South Carolina, is an example of the serious consequences that can result from the unintentional release of a PIH material. Selection of this alternative could have a negative impact on the environment because it does not reduce safety vulnerabilities related to the transportation of PIH materials.

Alternative 2: Impose enhanced safety requirements for a limited list of PIH materials transported by rail

Under this alternative, we would propose enhanced tank-head and shell-puncture resistance standards for tank cars used to transport a subset of PIH materials that pose the most significant safety risks, such as chlorine, but not for tank cars used to transport less hazardous materials, such as bromine or acrolein.

The HMR define hazardous materials by class. Any material, including a mixture or solution, that meets the definition of one of the nine defined hazard classes is considered a hazardous material and subject to the applicable regulatory requirements. This ensures that the regulations comprehensively address the hazards posed by many different types and formulations of materials. Employing this rationale, we determined that, for the purposes of this rulemaking, we would similarly address PIH materials as a class. Moreover, while some PIH materials may not pose as great a threat to the public or the environment as other PIH materials, it is in the public's best interest for all PIH materials to be transported in the safest manner possible. Nonetheless, selection of this alternative could have a positive impact on the environment because it would reduce safety vulnerabilities related to the transportation of certain PIH materials.

Alternative 3: Impose enhanced safety requirements for all PIH materials transported by rail

Under this alternative, we would propose enhanced tank-head and shell-puncture resistance standards for tank cars used to transport all materials meeting the definition of a PIH material. This approach is consistent with the overall regulatory philosophy

underlying the HMR in that it addresses the safety risks posed by all materials classed as PIH materials. This alternative represents the most efficient and cost-effective method of improving the accident survivability of tank cars transporting PIH materials. This alternative should have a positive impact on the environment because it would enhance the accident survivability of all rail tank cars used to transport PIH materials, thereby minimizing the possibility that PIH materials would be released.

4. Analysis of Environmental Impacts

The potential for environmental damage or contamination exists when packages of hazardous materials are involved in transportation accidents. The ecosystems that could be affected by a hazardous materials release during transportation include air, water, soil, and ecological resources (i.e., wildlife habitats). The adverse environmental impacts associated with releases of most hazardous materials are short-term impacts that can be greatly reduced or eliminated through prompt clean-up of the accident scene.

Releases of PIH materials, such as chlorine and anhydrous ammonia, may result in serious health effects. High concentrations of ammonia (greater than 1,700 parts per million (ppm)) in the atmosphere cause compulsive coughing and death, while lower concentrations (lower than 700 ppm) cause eye and throat irritation. Ammonia is lighter than air so that it dissipates into the atmosphere, the rate of dissipation depending on the weather. Chlorine gas is more than twice as heavy as air. Therefore, it can settle in low lying areas in the absence of wind. Humans detect the presence of chlorine at concentrations as low as 1 to 3 ppm. At 30 ppm, coughing and pain result, at 430 ppm death results in as little as 30 minutes. Higher concentrations of chlorine can cause rapid fatality. Chlorine gas reacts with water in the air to form vapors of hydrochloric acid and liberate nascent oxygen, both of which cause massive tissue damage.

Releases of PIH materials may also result in adverse environmental impacts to soil and ground water. For example, when anhydrous ammonia is released into water, it floats on the surface, rapidly dissolving into the water as ammonium hydroxide while simultaneously boiling into the atmosphere as gaseous ammonia. In an aquatic or wetland environment, ammonium hydroxide can cause fish, planktonic, and benthic organism mortality in the vicinity of the release—the size depending on the volume of

anhydrous ammonia that is released. The chemical can also strip protective oils from the feathers of shore birds, causing drowning or infection. Such die offs could spur high nutrient levels that could stimulate noxious blooms of algae. Terrestrial vegetation can also be either damaged or killed, depending on atmospheric concentrations.

Similarly, in an aquatic environment, chlorine gas reacts with water to form hypochlorous acid and hydrochloric acid. The breakdown of hydrochloric acid causes a decrease in the pH of the water, making it more acidic. These changes in water chemistry can cause widespread damage to aquatic environments, including fish kills. If chlorine gas is released into soil, chlorine will react with moisture, forming hypochlorous acid and hydrochloric acid, which can contaminate ground water.

If adopted, we expect that the tank car performance standards and operating limitations will minimize the loss of lading in the event of a derailment or train-to-train collision. Therefore, we have preliminarily determined that there are no significant adverse environmental impacts associated with the proposals in this NPRM and that to the extent there might be any environmental impacts, they would be beneficial given the reduced likelihood of a hazardous materials release.

5. Locomotive Emissions

The U.S. Environmental Protection Agency (EPA) finalized locomotive emissions standards in 1997, which became effective in 2000.¹⁷ Three separate sets of emission standards were established, with applicability of the standards dependent on the date a locomotive is first manufactured. The first set of standards (Tier 0) apply to locomotives and locomotive engines originally manufactured from 1973 through 2001, at any time they are remanufactured. The second set of standards (Tier 1) apply to locomotives and locomotive engines originally manufactured from 2002 through 2004. The final, and most stringent, set of standards (Tier 2) apply to locomotives and locomotive engines manufactured in or after 2005. Tier 2 locomotives and locomotive engines will be required to meet the applicable standards at the time of original manufacture and at each subsequent manufacture.

As noted in the RIA to this NPRM, we expect the speed restrictions proposed in this rule to produce a net cost savings in the area of fuel. Accordingly, the use of less fuel, combined with the

¹⁷ 40 CFR 92.8.

increasingly stringent locomotive emissions standards of the EPA will further reduce the emissions from railroad freight transportation for movements subject to the requirements of this proposal.

B Consultations and Public Comment

As of March 2007, FRA and PHMSA have conducted three public meetings intended to solicit public, private, and government comments on alternatives (regulatory or otherwise) to address this serious issue. We invite commenters to address the possible beneficial and/or adverse environmental impacts of the proposals in this NPRM. We will consider comments received in response to this NPRM in our assessment of the environmental impacts of a final rule on this issue.

J Privacy Act

Anyone is able to search the electronic form of any written communications and comments received into any of our dockets by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.) You may

review DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477) or at <http://www.dot.gov/privacy.html>

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 174

Hazardous materials transportation, Radioactive materials, Rail carriers, Railroad safety, Reporting and recordkeeping requirements.

49 CFR Part 179

Hazardous materials transportation, Railroad safety, Reporting and recordkeeping requirements.

The Proposed Rule

On the basis of the foregoing, PHMSA proposes to amend title 49, Chapter I, Subchapter C, as follows.

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. The authority citation for part 171 continues to read as follows:

Authority: 49 U.S.C. 5101–5128, 44701, 49 CFR 1.45 and 1.53.

2. In § 171.7, in paragraph (a)(3), in the Table of Material Incorporated by Reference, under the entry "Association of American Railroads," add the entry "AAR Standard S-286-2002, Specification for 286,000 lbs. Gross Rail Load Cars for Free/Unrestricted Interchange Service, revised as of September 1, 2005," to read as follows:

§ 171.7 Reference material.

(a) * * *

(3) Table of material incorporated by reference * * *

Source and name of material	49 CFR reference
Association of American Railroads	
AAR Standard S-286-2002, Specification for 286,000 lbs. Gross Rail Load Cars for Free/Unrestricted Interchange Service, revised as of September 1, 2005	179.13

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

3. The authority citation for part 173 continues to read as follows:

Authority: 49 U.S.C. 5101–5128, 44701, 49 CFR 1.45, 1.53.

4. Amend § 173.31 as follows:

- a. Revise paragraphs (a)(6) and (b)(3).
 - b. Revise paragraph (b)(6) introductory text;
 - c. Add paragraphs (b)(7) and (b)(8), and
 - d. Revise paragraph (c)(2)(ii).
- The revisions and additions read as follows:

§ 173.31 Use of Tank Cars.

(a) * * *

(6) Unless otherwise specifically provided in this part:

(i) When the tank car delimiter is an "A," offerors may also use tank cars with a delimiter "S," "J," "M," "N" or "T."

(ii) When the tank car delimiter is an "S," offerors may also use tank cars with a delimiter "J," "M," "N" or "T."

(iii) When the tank car delimiter is a "T," offerors may also use tank cars with a delimiter of "J" or "N."

(iv) When the tank car delimiter is a "J," offerors may also use tank cars with a delimiter of "N."

(v) When a tank car delimiter is an "M," offerors may also use tank cars with delimiter of "N."

(vi) When a tank car delimiter is an "N," offerors may not use a tank car with any other delimiter.

(b) * * *

(3) Tank-head puncture-resistance requirements. (i) Tank cars used to transport a Class 2 material, other than

a material poisonous by inhalation, and tank cars constructed from aluminum or nickel plate used to transport any hazardous material must have a tank-head puncture-resistance system that conforms to the requirements of § 179.16(a) of this subchapter.

(ii) Tank cars used to transport material poisonous by inhalation must have a tank-head puncture-resistance system that conforms to the requirements of § 179.16(b) of this subchapter, as follows:

(A) Tank cars built after [INSERT DATE 2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE] must have a tank-head puncture-resistance system conforming to the requirements of § 179.16(b) of this subchapter.

(B) Tank cars built on or before [INSERT DATE 2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE] must have a tank-head puncture-resistance system conforming to the

requirements of § 179.16(b) by [INSERT DATE 8 YEARS AFTER EFFECTIVE DATE OF FINAL RULE]

(6) *Scheduling of modifications and progress reporting.* The date of conformance for the continued use of tank cars subject to paragraphs (b)(4), (b)(5), and (f) of this section and § 173.314(j) is subject to the following conditions and limitations.

(7) *Tank shell puncture-resistance system.* Tank cars used to transport material poisonous by inhalation must have a tank shell puncture-resistance system that conforms to the requirements of § 179.24 of this subchapter, as follows:

(i) Tank cars built after [INSERT DATE 2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE] must have a tank shell puncture-resistance system conforming to the requirements of § 179.24 of this subchapter.

(ii) Tank cars built on or before [INSERT DATE 2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE] must have a tank shell puncture-resistance system conforming to the requirements of § 179.24 by [INSERT DATE 8 YEARS AFTER EFFECTIVE DATE OF FINAL RULE].

(8) *Tank-head and shell puncture-resistance systems implementation schedule and reporting requirement.* Each owner of a tank car subject to paragraphs (b)(3)(ii) and (b)(7) of this section must comply with the following implementation schedule and reporting requirements:

(i) No later than [INSERT DATE 5 YEARS FROM THE EFFECTIVE DATE OF THE FINAL RULE], each owner must have brought at least 50 percent of its tank car fleet used to transport material poisonous by inhalation into compliance with the requirements of §§ 179.10(b) and 179.24 of this subchapter.

(ii) After [INSERT DATE 5 YEARS AFTER EFFECTIVE DATE OF FINAL RULE], tank cars manufactured using non-normalized steel for head or shell construction may not be used for the transportation of material poisonous by inhalation.

(iii) No later than [INSERT DATE 5 YEARS AND TWO MONTHS FROM THE EFFECTIVE DATE OF FINAL RULE], each tank car owner must submit to the Federal Railroad Administration, Hazardous Materials Division, Office of Safety Assurance and Compliance, 1200 New Jersey Avenue, SE, Washington, DC, 20590, a progress report that shows the total number of in-service tank cars subject to paragraphs

(b)(3)(ii) and (b)(7) of this section and of those tank cars, the number of cars in compliance with §§ 179.16(b) and 179.24 of this subchapter. In this report, the tank car owner must also certify that its fleet does not include any tank car subject to paragraph (b)(8)(ii).

(e) * * *

(2) * * *

(ii) *Tank-head and shell puncture-resistance systems.* As provided in paragraphs (b)(3)(ii) and (b)(7) of this section, each tank car transporting a material poisonous by inhalation must meet the tank-head and shell puncture-resistance system requirements of §§ 179.16(b) and 179.24 of this subchapter. Except as provided in paragraph (h)(8) of this section, a tank car that does not conform to these requirements may not be used to transport any material poisonous by inhalation after [INSERT DATE 8 YEARS AFTER EFFECTIVE DATE OF FINAL RULE].

5. Amend § 173.249 as follows:

a. Revise the last sentence of paragraph (a), and

b. Add new paragraph (g).

The revisions and additions read as follows:

§ 173.249 Bromine.

(a) * * * Tank cars must conform to the requirements in paragraphs (a) through (g) of this section.

(g) *Except as provided in § 173.31(h)(8), for shipments offered for transportation or transported after [INSERT DATE 8 YEARS AFTER EFFECTIVE DATE OF FINAL RULE], each tank car must meet the tank-head and shell puncture-resistance system requirements of §§ 179.16(b) and 179.24 of this subchapter.*

6. In § 173.314, revise paragraph (k) to read as follows:

§ 173.314 Compressed gases in tank cars and multi-unit tank cars.

(k) *Special requirements for chlorine.*

(1) Tank cars built after September 30, 1991, and before [INSERT 2 YEARS AFTER EFFECTIVE DATE OF THE FINAL RULE] must have an insulation system consisting of 5.08 cm (2 inches) glass fiber placed over 5.08 (2 inches) of ceramic fiber. Tank cars built after [INSERT 2 YEARS AFTER EFFECTIVE DATE OF THE FINAL RULE] must have a thermal protection system conforming to § 179.18 of this subchapter, or have an insulation system with an overall thermal conductance of no more than 0.613 kilojoules per hour, per square

meter, per degree Celsius temperature differential (0.03 B t.u. per square foot, per hour per degree Fahrenheit temperature differential).

(2) Tank cars must have excess flow valves on the interior pipes of liquid discharge valves.

(3) Tank cars constructed to a DOT 105A500W specification may be marked as a DOT 105A300W specification with the size and type of reclosing pressure relief valves required by the marked specification.

(4) Except as provided in § 173.31(h)(8), for shipments offered for transportation or transported after [INSERT DATE 8 YEARS AFTER EFFECTIVE DATE OF FINAL RULE], each tank car must meet the tank-head and shell puncture-resistance system requirements of §§ 179.16(b) and 179.24 of this subchapter.

7. In § 173.323, revise paragraph (c)(1) to read as follows:

§ 173.323 Ethylene Oxide.

(c) * * *

(1) *Tank cars.* Class DOT 105 tank cars.

(i) Each tank car must have a tank test pressure of at least 20.7 Bar (300 psig) and

(ii) Except as provided in § 173.31(h)(8), for shipments offered for transportation or transported after [INSERT DATE 8 YEARS AFTER EFFECTIVE DATE OF FINAL RULE], each tank car must meet the tank-head and shell puncture-resistance system requirements of §§ 179.16(b) and 179.24 of this subchapter.

PART 174—CARRIAGE BY RAIL

8. The authority citation for part 174 continues to read as follows.

Authority: 49 U.S.C. 5101–5128, 49 CFR 1.53.

9. Add new § 174.2 to read as follows:

§ 174.2 Limitation on actions by states, local governments, and Indian tribes.

Sections 5125 and 20106 of Title 49, United States Code, limit the authority of states, political subdivisions of states, and Indian tribes to impose requirements on the transportation of hazardous materials in commerce. A state, local, or Indian tribe requirement on the transportation of hazardous materials by rail may be preempted under either 49 U.S.C. 5125 or 20106, or both.

(a) Section 171.1(f) of this subchapter describes the circumstances under which 49 U.S.C. 5125 preempts a

requirement of a state, political subdivision of a state, or Indian tribe

(h) Under the Federal Railroad Safety Act (49 U.S.C. 20106), administered by the Federal Railroad Administration (see 49 CFR parts 200–268), laws, regulations and orders related to railroad safety, including security, shall be nationally uniform to the extent practicable. A state may adopt, or continue in force, a law, regulation, or order covering the same subject matter as a DOT regulation or order applicable to railroad safety and security (including the requirements in this subpart) only when an additional or more stringent state law, regulation, or order is necessary to eliminate or reduce an essentially local safety or security hazard; is not incompatible with a law, regulation, or order of the United States Government, and does not unreasonably burden interstate commerce.

10. Revise § 174.86 to read as follows:

§ 174.86 Maximum allowable operating speed.

(a) For molten metals and molten glass shipped in packagings other than those prescribed in § 173.247 of this subchapter, the maximum allowable operating speed may not exceed 24 km/hour (15 mph) for shipments by rail.

(b) For trains transporting tank cars containing a material poisonous by inhalation, the maximum allowable operating speed may not exceed 80.5 km/hour (50 mph) for shipments by rail.

(c) (1) Prior to (INSERT DATE 8 YEARS AFTER EFFECTIVE DATE OF FINAL RULE), if a tank car that does not meet the tank-head and shell puncture-resistance system requirements of § 179.16(b) and § 179.24 of this subchapter is used to transport by rail a material poisonous by inhalation, the maximum allowable operating speed of the train may not exceed 48.3 km/hour (30 mph) for that tank car when transported over non-signalized territory. For purposes of this section, non-signalized territory means a rail line not equipped with a traffic control system or automatic block signal system that conforms to the requirements in part 236 of this chapter.

(2) As an alternative to complying with paragraph (c)(1) of this section, a railroad may provide for alternative risk mitigations and complete a risk assessment that includes appropriate data and analysis establishing that the operating conditions over the subject trackage provide at least an equivalent level of safety as a traffic control system that conforms to the requirements in part 236 of this chapter, including consideration of the contribution of the

traffic control system to broken rail detection, provided:

(i) The risk assessment is submitted to FRA's Associate Administrator for Safety, for review; and

(ii) The Associate Administrator determines in writing that the risk assessment establishes that the requirement of paragraph (c)(2) is met.

PART 179—SPECIFICATIONS FOR TANK CARS.

11. The authority citation for part 179 continues to read as follows.

Authority: 49 U.S.C. 5101–5128, 49 CFR part 1.53.

12. Add a new § 179.8 to read as follows.

§ 179.8 Limitation on actions by states, local governments, and Indian tribes

Sections 5125 and 20106 of Title 49, United States Code, limit the authority of states, political subdivisions of states, and Indian tribes to impose requirements on the transportation of hazardous materials in commerce. A state, local, or Indian tribe requirement on the transportation of hazardous materials by rail may be preempted under either 49 U.S.C. 5125 or 20106, in both.

(a) Section 171.1(f) of this subchapter describes the circumstances under which 49 U.S.C. 5125 preempts a requirement of a state, political subdivision of a state, or Indian tribe.

(b) Under the Federal Railroad Safety Act (49 U.S.C. 20106), administered by the Federal Railroad Administration (see 49 CFR parts 200–268), laws, regulations and orders related to railroad safety, including security, shall be nationally uniform to the extent practicable. A state may adopt, or continue in force, a law, regulation, or order covering the same subject matter as a DOT regulation or order applicable to railroad safety and security (including the requirements in this subpart) only when an additional or more stringent state law, regulation, or order is necessary to eliminate or reduce an essentially local safety or security hazard; is not incompatible with a law, regulation, or order of the United States Government, and does not unreasonably burden interstate commerce.

13. Revise § 179.13 to read as follows:

§ 179.13 Tank car capacity and gross weight limitation.

(a) Except as provided in paragraph (b) of this section, tank cars built after November 30, 1970, may not exceed 34,500 gallons (130,597 L) capacity or 263,000 pounds gross weight on rail. Existing tank cars may not be converted

to exceed 34,500 gallons capacity or 263,000 pounds gross weight on rail.

(b) Tank cars meeting the tank-head and shell puncture-resistance requirements of § 179.16(b) and § 179.24 of this subchapter, may not exceed 34,500 gallons (130,597 L) capacity or 263,000 pounds (129,727 kg) gross weight on rail. Tank cars exceeding 263,000 pounds and up to 286,000 pounds gross weight on rail must meet the requirements of AAR Standard S-286–2002, SPECIFICATION FOR 286,000 LBS GROSS RAIL LOAD CARS FOR FREE/UNRESTRICTED INTERCHANGE SERVICE (adopted November, 2002 and revised September 1, 2005) (IDR, see § 171.7 of this subchapter).

14. Revise § 179.16 to read as follows:

§ 179.16 Tank-head puncture-resistance systems.

When the regulations in this subchapter require a tank-head puncture-resistance system, the system must meet the following requirements:

(a) *Performance standard for tank cars transporting a hazardous material other than a material poisonous by inhalation.* (1) For rail tank cars

required to have tank-head puncture-resistance systems pursuant to § 173.31(b)(3)(i) of this subchapter, the tank-head puncture-resistance system must be capable of sustaining, without any loss of lading, a cylinder-to-tank-head impacts at relative car speeds of 29 km/hour (18 mph) when:

(i) The weight of the impact car is at least 119,295 kg (263,000 pounds).

(ii) The impacted tank car is coupled to one or more backup cars that have a total weight of at least 217,724 kg (480,000 pounds) and the hand brake is applied on the last "backup" car, and

(iii) The impacted tank car is pressurized to at least 6.9 Bar (100 psig).

(2) Compliance with the requirements of paragraph (a)(1) of this section must be verified by full-scale testing according to appendix A of this part.

(3) As an alternative to requirements prescribed in paragraph (a)(2) of this section, compliance with the requirements of paragraph (a)(1) of this section may be met by installing full-head protection (shields) or full tank-head jackets on each end of the tank car conforming to the following:

(i) The full-head protection (shields) or full tank-head jackets must be at least 1.27 cm (0.5 inch) thick, shaped to the contour of the tank head and made from steel having a tensile strength greater than 379.21 N/mm² (55,000 psi).

(ii) The design and test requirements of the full-head protection (shields) or full tank-head jackets must meet the

impact test requirements in Section 5.3 of the AAR Specifications for Tank Cars (IBR, see § 171.7 of this subchapter), and

(iii) The workmanship must meet the requirements in Section C, Part II, Chapter 5, of the AAR Specifications for Design, Fabrication, and Construction of Freight Cars (IBR, see § 171.7 of this subchapter).

(b) *Performance standard for tank cars transporting material poisonous by inhalation.* For rail tank cars required to have a tank-head puncture-resistance system pursuant to § 173.31(b)(3)(ii) of this subchapter, the tank-head puncture-resistance system must be capable of sustaining an impact at 48.3 km/hour (30 mph) without loss of lading, as demonstrated by any of the methods of compliance specified in Appendix C of this part.

15. In § 179.22, add paragraphs (n) and (o) to read as follows:

§ 179.22 Marking

(n) Each tank car conforming to the tank-head puncture-resistance system requirements prescribed in § 179.16(h) and the shell puncture-resistance system requirements prescribed in § 179.24, but with no thermal protection system, must have the letter "M" substituted for the letter "A" or "S" in the specification marking.

(o) Each tank car conforming to the tank-head puncture-resistance system requirements prescribed in § 179.16(b), the shell puncture-resistance system requirements prescribed in § 179.24,

and with a thermal protection system, must have the letter "N" substituted for the letter "A," "J," "M," "S," or "T" in the specification marking.

16. Add a new § 179.24 to read as follows:

§ 179.24 Tank shell puncture-resistance systems; performance standard.

When the regulations in this subchapter require a tank shell puncture-resistance system, the tank shell puncture-resistance system must be capable of sustaining an impact at 40.3 km/hour (25 mph) without loss of lading, as demonstrated by any of the methods of compliance specified in Appendix C of this part.

17. In § 179.102–17, add a new paragraph (m) to read as follows:

§ 179.102–17 Hydrogen chloride, refrigerated liquid.

(m) Except as provided in § 173.31(b)(8) of this subchapter, each tank car must meet the tank-head and shell puncture-resistance system requirements of §§ 179.16(h) and 179.24 of this subchapter by [INSERT DATE 8 YEARS AFTER EFFECTIVE DATE OF FINAL RULE]

18. Add Appendix C to Part 179 to read as follows:

**APPENDIX C TO PART 179—
PROCEDURES FOR ENHANCED
TANK-HEAD AND SHELL PUNCTURE-
RESISTANCE SYSTEMS TESTS**

This Appendix provides performance criteria for the impact evaluation of tank cars

designed to carry material poisonous by inhalation. Each of the following criteria describes a collision scenario in which the integrity of the tank must be maintained. These performance criteria are intended to prevent loss of lading during train collisions and derailments.

(a) Tank Heads

(1) *Objective.* The end structure of the tank car must withstand a frontal impact with a proxy object which is intended to approximate a loaded freight car, including the coupler with the knuckle removed. (see figure 1)

(2) *Fixed rigid punch characteristics and orientation.* The fixed rigid punch must have the following characteristics. It shall protrude at least 1.5 meters (49 inches) from its base and it shall be 0.5 meters (21 inches) above the lowest edge of the commodity tank. The fixed rigid punch must have cross-section of 15.2 centimeters (6 inches) high by 15.2 centimeters (6 inches) wide, with 1.3 centimeter (1/2 inch) radii on the edges of the impact face.

(3) *Tank car characteristics.* The tank car must be filled with no more than 10% outage with lading of the same density as the commodity the car type is intended to carry, and pressurized to at least 100 psi.

(4) *Impact.* The end structure of the tank car must withstand a 48.3 km/hour (30 mph) impact with the fixed rigid punch, resulting in the tank maintaining its integrity. At the instant of contact, the longitudinal centerline of the punch must be aligned with the longitudinal centerline of the tank.

(5) *Result.* There must be no loss of lading due to this impact. A test is successful if there is no visible leak from the standing tank car for at least one hour after the impact.

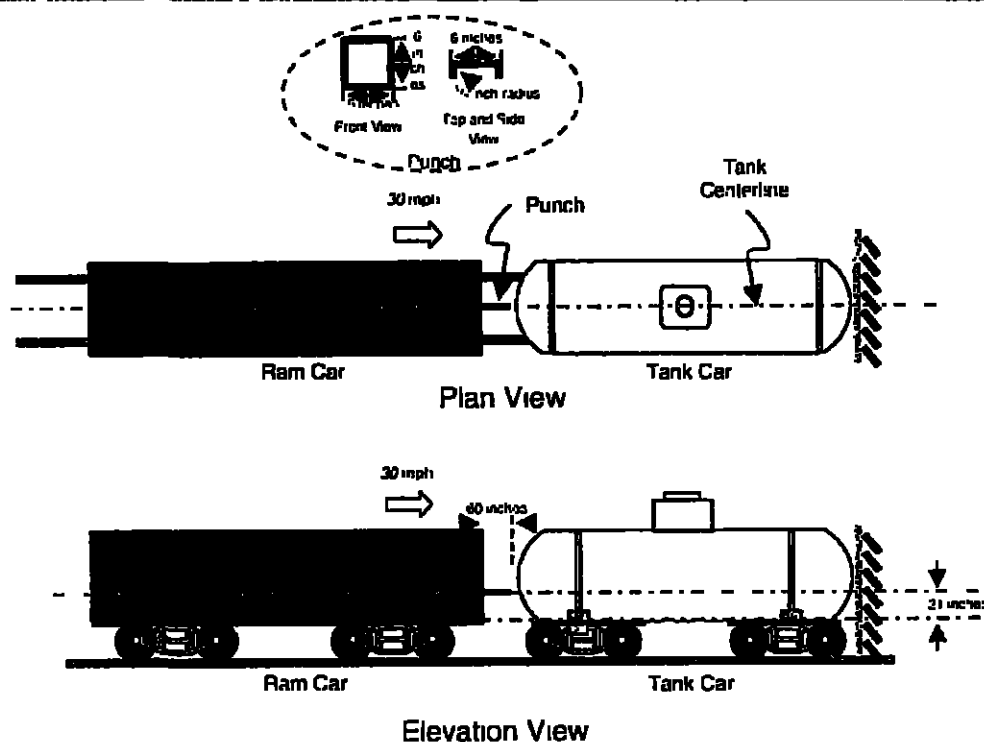


Figure 1 Head Impact

(b) Tank Shell

(1) *Objective* The shell structure of the tank car must withstand a side impact with a proxy object which is intended to approximate a loaded freight car, including the coupler with the knuckle removed (see figure 2).

(2) *Proxy object characteristics and orientation* The proxy object must have the following characteristics: 288,000 pound minimum weight and rigid punch protruding at least 1.5 meters (60 inches). The rigid

punch must have cross-section of 15.2 centimeters (6 inches) high by 15.2 centimeters (6 inches) wide, with 1.3 centimeter (1/2 inch) radius on the edges of the impact face.

(3) *Tank car characteristics* The tank car must be filled with no more than 10% overage with loading of the same density as the commodity the car type is intended to carry, and pressurized to at least 100 psi. The tank car must be restrained in the direction of impact.

(4) *Impact* The end structure of the tank car must withstand a 40.1 km/hour (25 mph) impact with the proxy object resulting in the tank maintaining its integrity. At the instant of contact, the longitudinal centerline of the punch must be aligned with the lateral centerline of the tank.

(5) *Result* There must be no loss of loading due to this impact. A test is successful if there is no visible leak from the standing tank car for at least one hour after the impact.

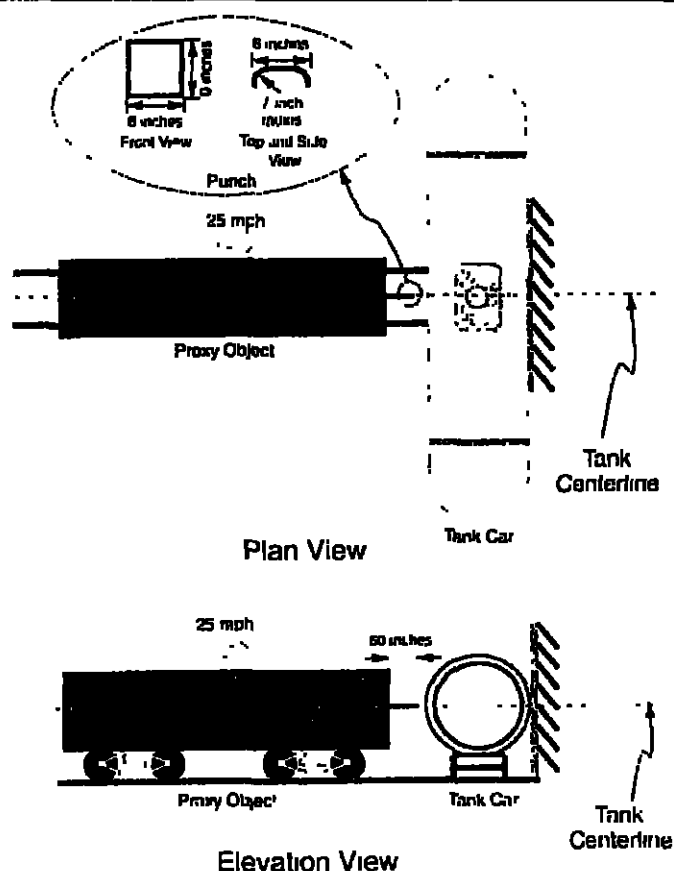


Figure 2 Shell Impact

(c) **Demonstration of Compliance —**
Compliance with the tank-head and shell puncture-resistance system requirement tests above must be demonstrated by any of the methods prescribed in this paragraph, or by a combination of these methods. Before a design is implemented based on the methods in (2) through (5) below, the party seeking to comply must submit all relevant documentation and analysis to FRA and FRA will acknowledge in writing that compliance with the requirements has been met.

(1) Full-scale testing

(2) Performance of the test with substructures or models of appropriate scale incorporating those features that are significant with respect to the item under investigation, when engineering experience has shown results of those tests to be suitable for design purposes. When a scale model is used, the need for adjusting certain test parameters must be taken into account.

(3) Calculations, computer simulation, or substructure testing using reliable and conservative procedures and parameters;

(4) Reference to a previous satisfactory design of a sufficiently similar nature, or

(5) A combination of any of the methods set forth in paragraphs (2) through (4) above.

Issued in Washington, DC on March 20, 2008, under the authority delegated in 49 CFR Part 108.

Theodore L. Willke,
Associate Administrator for Hazardous Materials Safety

[FR Doc. E8-6563 Filed 3-31-08, 8:45 am]
BILLING CODE 4910-60-P

APPENDIX C



Federal Register

Wednesday,
April 16, 2008

Part II

Department of Transportation

Pipeline and Hazardous Materials Safety
Administration

Federal Railroad Administration

49 CFR Parts 172, 174, and 209

Hazardous Materials: Enhancing Rail
Transportation Safety and Security for
Hazardous Materials Shipments; Railroad
Safety Enforcement Procedures; Interim
Final Rule and Proposed Rule

DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials
Safety Administration

49 CFR Parts 172 and 174

[Docket No. PHMSA-RSPA-2004-18730]¹

RIN 2137-AE02

Hazardous Materials: Enhancing Rail
Transportation Safety and Security for
Hazardous Materials ShipmentsAGENCY: Pipeline and Hazardous
Materials Safety Administration
(PHMSA), Department of Transportation
(DOT)

ACTION: Interim final rule.

SUMMARY: The Pipeline and Hazardous Materials Safety Administration, in coordination with the Federal Railroad Administration and the Transportation Security Administration, is revising the current requirements in the Hazardous Materials Regulations applicable to the safe and secure transportation of hazardous materials transported in commerce by rail. This interim final rule fulfills requirements in Section 1551 of the Implementing Recommendations of the 9/11 Commission Act of 2007.

In this interim final rule, we are requiring rail carriers to compile annual data on certain shipments of explosive, toxic by inhalation, and radioactive materials, use the data to analyze safety and security risks along rail routes where those materials are transported, assess alternative routing options, and make routing decisions based on those assessments. We are also clarifying rail carriers' responsibility to address in their security plans issues related to en route storage and delays in transit. In addition, we are adopting a new requirement for rail carriers to inspect placarded hazardous materials rail cars for signs of tampering or suspicious items, including improvised explosive devices.

DATES: This interim final rule is effective June 1, 2008.

Voluntary Compliance Date. Voluntary compliance is authorized as of May 16, 2008.

Comments. Comments must be received by May 16, 2008.

ADDRESSES: You may submit comments identified by the docket number

PHMSA-RSPA-2004-18730 by any of the following methods:

- **Federal eRulemaking Portal:** Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.

- **Fax:** 1-202-493-2251

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

- **Hand Delivery To Docket Operations,** Room W12-140 on the ground floor of the West Building, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Instructions: All submissions must include the agency name and docket number for this rule. Note that all comments received will be posted without change, including any personal information provided. Please see the Privacy Act section of the preamble.

FOR FURTHER INFORMATION CONTACT: William Schoonover, (202) 493-6229, Office of Safety Assurance and Compliance, Federal Railroad Administration, or Susan Gorsky or Ben Supkin, (202) 366-8553, Office of Hazardous Materials Standards, Pipeline and Hazardous Materials Safety Administration.

SUPPLEMENTARY INFORMATION:**I. Background**

Hazardous materials are essential to the economy of the United States and the well being of its people. Hazardous materials fuel motor vehicles, purify drinking water, and heat and cool homes and offices. They are used for farming and medical applications, and in manufacturing, mining, and other industrial processes. Railroads annually carry over 1.7 million shipments of hazardous materials including explosive, poisonous, corrosive, flammable and radioactive materials. As common carriers, railroads are obligated to accept hazardous cargo that is tendered in compliance with legal requirements, whether or not they would choose to do so for business reasons. This common carrier obligation ensures that offerors are given the opportunity to ship hazardous materials, including the most dangerous hazardous materials, in the safest, most secure manner possible.

The need for hazardous materials in support essential services means transportation of hazardous materials is unavoidable. However, those shipments frequently move through densely-

populated or environmentally-sensitive areas where the consequences of an incident could be loss of life, serious injury, property damage, and/or significant environmental damage.

The same characteristics of hazardous materials that cause concern in the event of an accidental release also make them attractive targets for terrorism or sabotage. Hazardous materials in transportation are frequently transported in substantial quantities and are potentially vulnerable to sabotage or misuse. Such materials are already mobile and are frequently transported in proximity to large population centers. Further, security of hazardous materials in the transportation environment poses unique challenges as compared to security at fixed facilities. Finally, hazardous materials in transportation often bear clear identifiers to ensure their safe and appropriate handling during transportation and to facilitate identification and effective emergency response in the event of an accident or release, these identifiers may also identify hazardous materials shipments as targets of opportunity for terrorists or other criminals.

A primary safety and security concern related to the rail transportation of hazardous materials is the prevention of catastrophic release or explosion in proximity to densely populated areas, including urban areas and events or venues with large numbers of people in attendance. Also of major concern is the release or explosion of rail cars in close proximity to iconic buildings, landmarks, or environmentally significant areas. Such a catastrophic event could be the result of an accident—such as the January 6, 2005 derailment and release of chlorine in Graniteville, South Carolina, which resulted in 9 fatalities and 554 injuries—or a deliberate act of terrorism. The causes of intentional and unintentional releases of hazardous material are very different; however, in either case, the potential consequences of both releases are significant. Indeed, the consequences of an intentional release of hazardous material by a criminal or terrorist action are likely to be more severe than the consequences of an unintentional release because an intentional action is designed to inflict the most damage possible.

DHS is the lead agency for transportation security and has shared responsibility with DOT for hazardous materials transportation security. DOT consults and coordinates on security-related hazardous materials transportation requirements to ensure they are consistent with DHS's overall security policy goals. Both departments

¹ This rulemaking was formerly designated as HM-2126, however, with the transition to a new government-wide regulations portal, docket number nomenclature has since changed. Some references to the old docket number are still present in this document.

work to ensure that the regulated industry is not confronted with inconsistent security guidance or requirements promulgated by the government.

The Federal Hazardous Materials Transportation Law (Federal Hazmat Law, 49 U.S.C. 5101 *et seq.*), authorizes the Secretary of the Department of Transportation to "prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce." The Secretary has delegated this authority to the Pipeline and Hazardous Materials Safety Administration (PHMSA). The Hazardous Materials Regulations (HMR, 49 CFR parts 171–180), promulgated by PHMSA under the mandate in section 5103(b), govern safety aspects, including security, of the transportation of hazardous material. In accordance with its security authority, in March 2003, PHMSA adopted new transportation security requirements for offerors and transporters of certain classes and quantities of hazardous materials and new security training requirements for hazardous materials employees 68 FR 14509 (March 25, 2003). These security regulations, which are explained in more detail below, require offerors and carriers to develop and implement security plans and to train their employees to recognize and respond to possible security threats.

When PHMSA adopted its security regulations, we stated that these regulations were "the first step in what may be a series of rulemakings to address the security of hazardous materials shipments." 68 FR 14511 PHMSA also noted that the Transportation Security Administration (TSA) "is developing regulations that are likely to impose additional requirements beyond those established in this final rule," and stated it would "consult and coordinate with TSA concerning security-related hazardous materials transportation regulations * * *."

Under Section 101(a) of the Aviation and Transportation Security Act (ATSA) (codified at 49 U.S.C. 114) and 49 CFR 1502.1, TSA has broad responsibility and authority for "security in all modes of transportation * * *." ATSA authorizes TSA to take immediate action to protect transportation security (49 U.S.C. 114(d)(2)), and to:

- Develop policies, strategies and plans for dealing with threats to transportation (§ 114(f)(3));
- Assess intelligence and other information in order to identify individuals who pose a threat to transportation security (§ 114(f)(1)).

- Coordinate countermeasures with other Federal agencies to address such threats (§ 114(f)(4));
- Enforce security-related regulations and requirements (§ 114(f)(7));
- Ensure the adequacy of security measures for the transportation of cargo (§ 114(f)(10));
- Oversee the implementation and ensure the adequacy of security measures at transportation facilities (§ 114(f)(11));
- Carry out other appropriate duties relating to transportation security (§ 114(f)(15)); and
- Serve as the primary liaison for transportation security to the intelligence and law enforcement communities (§ 114(f)(5)).

In sum, TSA's authority with respect to transportation security is comprehensive and supported with specific powers related to the development and enforcement of regulations, security directives, security plans, and other requirements. Accordingly, under this authority, TSA may identify a security threat to any mode of transportation, develop a measure for dealing with that threat, and enforce compliance with that measure.

On August 7, 2006, PHMSA and TSA signed an annex to the September 28, 2004 DOT–DHS Memorandum of Understanding (MOU) on Roles and Responsibilities. The purpose of the annex is to delineate clear lines of authority and responsibility and promote communications, efficiency, and non-duplication of effort through cooperation and collaboration in the area of hazardous materials transportation security based on existing legal authorities and core competencies. Similarly, on September 28, 2006, the Federal Railroad Administration (FRA) and TSA signed an annex to address each agency's roles and responsibilities for rail transportation security. The FRA–TSA annex provides that "DHS holds lead authority, primary responsibility and dedicated resources for security activities in all modes of transportation including rail." Concerning safety, the FRA–TSA annex recognizes that FRA has authority over every area of railroad safety (including security) and that FRA enforces PHMSA's hazardous materials regulations. The FRA–TSA annex includes procedures for coordinating, (1) Planning, inspection, training, and enforcement activities, (2) criticality and vulnerability assessments and security reviews, (3) communicating with affected stakeholders, and (4) use of personnel and resources. Copies of the

two annexes are available for review in the public docket for this rulemaking. In accordance with the principles outlined in the PHMSA–TSA and FRA–TSA annexes, PHMSA and FRA collaborated with TSA to develop this interim final rule.

II. Current Hazardous Materials Transportation Safety and Security Requirements

A. The Hazardous Materials Regulations

In accordance with § 172.704(a) of the HMR, all hazardous materials employees (hazmat employees) are required to fulfill the security awareness training, and employees responsible for developing and implementing security plans must also complete in-depth security training. Subpart I of Part 172 of the HMR requires persons who offer certain hazardous materials for transportation or transport certain hazardous materials in commerce to develop and implement security plans. A person is required to develop and implement a security plan if he or she transports any of the following materials in commerce:

- (1) A highway route-controlled quantity of a Class 7 (radioactive) material, as defined at 49 CFR 173.403, in a motor vehicle, rail car, or freight container;
- (2) More than 25 kg (55 pounds) of a Division 1.1, 1.2, or 1.3 (explosive) material in a motor vehicle, rail car, or freight container;
- (3) More than one L (1.06 qt) per package of a material poisonous by inhalation, as defined at 49 CFR 171.8, that meets the criteria for Hazard Zone A, as specified in 49 CFR 173.116(a) or 173.133(a);
- (4) A shipment of a quantity of hazardous materials in a bulk packaging having a capacity equal to, or greater than, 13,248 L (3,500 gallons) for liquids or gases or more than 13.24 cubic meters (468 cubic feet) for solids;
- (5) A shipment in other than a bulk packaging of 2,268 kg (5,000 pounds) gross weight, or more, of one class of hazardous materials for which placarding of a vehicle, rail car, or freight container is required for that class under the provisions of subpart F of 49 CFR part 172;
- (6) A select agent or toxin regulated by the Centers for Disease Control and Prevention under 42 CFR part 73, or
- (7) A quantity of hazardous material that requires placarding under the provisions of subpart F of 49 CFR part 172.

Subpart I of part 172 sets forth general requirements for a security plan's components rather than a prescriptive

list of specific items that must be included. The security plan must include an assessment of possible transportation security risks and appropriate measures to address the assessed risks. Specific measures implemented as part of the plan may vary according to the nature and level of threat at a particular time. At a minimum, the security plan must address personnel security, unauthorized access, and en route security. To address personnel security, the plan must include measures to confirm background information provided by job applicants for positions involving access to and handling of the hazardous materials covered by the plan. To address unauthorized access, the plan must include measures designed to limit or mitigate the risk of unauthorized persons gaining access to materials or transport conveyances being prepared for transportation. To address en route security, the plan must include measures to mitigate security risks during transportation, including the security of shipments stored temporarily en route to their destinations.

Under these standards, security plans can and should differ from one offeror or carrier to another. In each case, the plan should be based on the offeror's or carrier's individualized assessment of the security risks associated with the specific hazardous materials it ships or transports and its unique circumstances and operational environment.

The HMR also contain limited provisions intended to minimize delays in transportation. Pursuant to § 174.14 of the HMR, rail carriers are required to expedite the movement of hazardous materials shipments. Each shipment of hazardous materials must be forwarded "promptly and within 48 hours (Saturdays, Sundays, and holidays excluded)" after acceptance of the shipment by the rail carrier. If only biweekly or weekly service is performed, the carrier must forward a shipment of hazardous materials in the first available train. Additionally, carriers are prohibited from holding, subject to forwarding orders, tank cars loaded with Division 2.1 (flammable gas), Division 2.3 (poisonous gas) or Class 3 (flammable liquid) materials. The purpose of § 174.14 is to help ensure the prompt delivery of hazardous materials shipments and to minimize the time such materials spend in transportation, thus minimizing the exposure of hazmat shipments to accidents, derailments, unintended releases, or tampering.

B. AAR Circular OT-55-I

The rail industry, through the Association of American Railroads (AAR), has developed a detailed protocol on recommended railroad operating practices for the transportation of hazardous materials. These recommended practices were originally implemented by all of the Class 1 rail carriers operating in the United States; short-line railroads are also signatories to the most recent version of this document, known as Circular OT-55-I, issued by AAR on July 17, 2006. The Circular details railroad operating practices for: (1) Designating trains containing (i) five tank car loads or more of poison inhalation hazard (PIH) materials, (ii) 20 or more car loads or intermodal portable tank loads of a combination of PIH, flammable gas, Class 1.1 or 1.2 explosives, and environmentally-sensitive chemicals, or (iii) one or more car loads of spent nuclear fuel or high level radioactive waste as "key trains," (2) designating operating speed and equipment restrictions for key trains; (3) designating "key routes" for key trains, and setting standards for track inspection and wayside defect detectors; (4) yard operating practices for handling placarded tank cars; (5) storage, loading, unloading and handling of tank cars; (6) assisting communities with emergency response training and information; (7) shipper notification procedures; and (8) the handling of time-sensitive materials.

Circular OT-55-I defines a "key route" as:

Any track with a combination of 10,000 car loads or intermodal portable tank loads of hazardous materials, or a combination of 4,000 car loadings of PIH (Hazard zone A, B, C, or D), anhydrous ammonia, flammable gas, Class 1.1 or 1.2 explosives, environmentally-sensitive chemicals, Spent Nuclear Fuel (SNF), and High Level Radioactive Waste (HLRW) over a period of one year.

Any route defined by a railroad as a key route should meet certain standards described in OT-55-I. Wayside defective wheel bearing detectors should be placed at a maximum of 40 miles apart, or an equivalent level of protection may be installed based on improvements in technology. Main track on key routes should be inspected by rail defect detection and track geometry inspection cars or by any equivalent level of inspection at least twice each year. Sidings on key routes should be inspected at least once a year, and main track and sidings should have periodic track inspections to identify cracks or breaks in joint bars. Further, any track used for meeting and passing key trains should be FRA Class 2 track or higher.

If a meet or pass must occur on less than Class 2 track due to an emergency, one of the trains should be stopped before the other train passes. This interim final rule in part reflects the recommended practices mentioned above, which are already in wide use across the rail industry.

III. Notices of Proposed Rulemaking

On December 21, 2006, PHMSA, in coordination with FRA and TSA, published a notice of proposed rulemaking (NPRM) under Docket HM-232E (71 FR 76834) proposing to revise the current requirements in the HMR applicable to the safe and secure transportation of hazardous materials by rail. Specifically, we proposed to require rail carriers to compile annual data on specified shipments of hazardous materials, use the data to analyze safety and security risks along rail routes where those materials are transported, assess alternative routing options, and make routing decisions based on those assessments. We also proposed clarifications of the current security plan requirements to address en route storage, delays in transit, delivery notification, and additional security inspection requirements for hazardous materials shipments.

Also on December 21, 2006, TSA published an NPRM proposing security regulations that would cover a broader spectrum of rail transportation, including passenger service (71 FR 76852, see also TSA's Initial Regulatory Flexibility Analysis, 72 FR 7376 [Feb. 15, 2007]). The TSA proposal is intended to reduce security risks associated with certain hazardous materials shipments in designated High Threat Urban Areas (HTUAs) and to raise the overall security baseline for freight railroad shipments. (TSA has identified 46 geographic areas as HTUAs warranting special consideration based on population and risk assessment data. See 71 FR at 76861.) The TSA proposal applies to freight railroad carriers; intercity, commuter, and short-haul passenger trains; rail mass transit systems, and rail operations at certain fixed facilities that ship or receive PIH, explosive, or radioactive materials.

The hazardous materials provisions of the TSA proposal complement and build on the proposals in the PHMSA NPRM. Specifically, TSA proposed to require railroads to designate rail security coordinators to serve as primary contacts for receipt of intelligence information and to require reporting of significant security concerns, potential threats, and incidents. In addition, upon request

from TSA, rail carriers and certain facility operators would be required to report car locations and shipping information for shipments of PIH, explosive, and radioactive materials within one hour of the request. TSA also proposed enhanced chain-of-custody requirements for rail shipments of PIH, explosive, and radioactive materials in HTUAs to ensure that no car is left unattended as it is transferred from shipper to carrier, between carriers, or from carrier to consignee.

To obtain additional public input on our NPRM, PHMSA hosted meetings on February 1, 2007, in Washington, DC, and February 9, 2007, in Dallas, Texas. TSA also held a public meeting on its NPRM on February 2, 2007, in Arlington, Virginia. Thirty-five persons attended the Washington, DC public meeting, and 15 persons attended the Dallas meeting. Records of the public meetings, including attendance lists, transcripts, and a list of questions commenters were asked to address, are available for review in the public docket for this rulemaking.

IV Implementing Recommendations of the 9/11 Commission Act of 2007

Several weeks after the close of the comment period in this proceeding, Congress enacted the Implementing Recommendations of the 9/11 Commission Act of 2007 (Pub. L. 110-53, 121 Stat. 266), which the President signed into law on August 3, 2007. Among other requirements, the Act directs the Secretary of Transportation, in consultation with the Secretary of Homeland Security, to publish a final rule based on PHMSA's December 21, 2006 NPRM by May 3, 2008. In accordance with Section 1551(a) of the Act, PHMSA's final rule must require rail carriers of "security-sensitive materials" to "select the safest and most secure route to be used in transporting" those materials, based on the rail carrier's analysis of the safety and security risks on primary and alternate transportation routes over which the carrier has authority to operate. Specifically, the HM-232E final rule must require such rail carriers to perform the following tasks each calendar year:

(1) Collect and compile security-sensitive commodity data, by route, line segment, or series of line segments, as aggregated by the rail carrier and identify the geographic location of the route and the total number of shipments by UN identification number;

(2) Identify practicable alternative routes over which the carrier has authority to operate as compared to the current route for such shipments,

(3) Seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to a route used by a rail carrier to transport security-sensitive materials;

(4) Consider the use of interchange agreements with other rail carriers when determining practicable alternative routes and the potential economic effects of using an alternative route;

(5) Analyze for both the primary route and each practicable alternative route the safety and security risks for the route, railroad facilities, railroad storage facilities, and high-consequence targets along or in proximity to the route, these analyses must be in writing and performed for each calendar year;

(6) Compare the safety and security risks on the primary and alternative routes, including the risk of a catastrophic release from a shipment traveling along these routes, and identify any remediation or mitigation measures implemented on the primary and alternative transportation routes; and

(7) Using the analysis described above, select the practicable route posing the least overall safety and security risk.

The rule must also require that a covered rail carrier, at least once every three years, analyze its route selection determinations, including a comprehensive, system-wide review of all operational changes, infrastructure modifications, traffic adjustments, changes in the nature of high-consequence targets located along or in proximity to the route, or other changes affecting the safety and security of the movements of security-sensitive materials that were implemented since the previous analysis was completed. Finally, the rule is to require that covered rail carriers retain in writing all route review and selection decision documentation and restrict the distribution, disclosure, and availability of this information to appropriate persons.

The 9/11 Commission Act defines "security-sensitive material" to mean the material or classes of materials that the Secretary of Homeland Security, in consultation with the Secretary of Transportation, determines through a rulemaking proceeding with opportunity for public comment pose a significant risk to national security while being transported in commerce.

As we explain further in later sections of this rule, PHMSA believes the interim final rule we are publishing today fulfills the requirements in § 1551 of the 9/11 Commission Act. In addition to

addressing the comments received in response to the NPRM, we believe that the changes and additions to the NPRM made in this IFR are well within the scope of the NPRM. We are publishing an interim final rule rather than a final rule to provide interested persons with an opportunity to provide specific comments on whether the IFR fully implements the requirements of the Act.

V. Comments on the NPRM

We received more than 50 sets of comments from individuals; members of Congress; Federal, state, and local governmental entities; companies; industry associations; public interest groups; labor organizations, and a homeowners' association. Generally, large rail carriers and their associations express support for the proposals in the NPRM and, in particular, the flexibility for rail carriers to designate routes based on an analysis of safety and security vulnerabilities and measures implemented to address those vulnerabilities. Small carriers and single line haulers express some concern about the applicability of the routing provisions to their operations—in many cases, smaller rail carriers operate on a single line and routing options are limited.

Commenters representing state and local governments and environmental groups generally oppose the proposals in the NPRM. Some of these commenters suggest that the Federal government should mandate specific routing for high-hazard materials rather than provide rail carriers the discretion to make routing decisions. Others, particularly state and local government commenters, want to be able to implement routing restrictions within their jurisdictions and, thus, urge us to modify or eliminate the preemptive effect of a final rule on non-Federal jurisdictions.

Nearly all the commenters suggest that we maintain consistency with TSA's proposed rail requirements in regard to package size, covered hazardous materials, and enforcement of the proposed requirements.

The comments and public meeting transcripts in the docket for this rulemaking may be reviewed at <http://www.regulations.gov> under docket number PHMSA-RSPA-2004-18730. For your convenience, a listing of the docket entries is provided below.

Name/company

Melanie Weintraub and Family
Kevin D. Kline
Instituto of Makers of Explosives (IME)
Tom Nitza.

Name/company

Anonymous.
U.S. Department of Energy, Naval Nuclear Propulsion Program (NNPP).
Congressman Dennis J. Kucinich
Transcript—Washington, DC Public Meeting
BASF Corporation
District of Columbia.
Institute of Makers of Explosives (IME).
American Chemistry Council (ACC)
The Chlorine Institute, Inc.
The Fertilizer Institute, Inc. (TFI)
Metropolitan Transportation Authority.
The Dow Chemical Company (Dow)
Chairman and 3 members of the Committee on Homeland Security, U.S. House of Representatives
The National Industrial Transportation League (NITL)
American Short Line and Regional Railroad Association.
Greenpeace.
Back Creek-II Homeowners Association, Inc
Argonne National Laboratory Report
Surface Transportation Board (STB)
Friends of the Earth
Friends of the Earth
Friends of the Earth
Mayo Clinic
Association of American Railroads (AAR)
City of Cleveland, Ohio
BNSF Railway Company
Transportation Trades Department, AFL-CIO.
Independent Lubricant Manufacturers Association
City of Baltimore, Maryland
Norfolk Southern Corporation
Eureka County, Nevada, Office of Public Works
National Association of Chemical Distributors
Brotherhood of Locomotive Engineers and Trainmen
DuPont.
Friends of the Earth
State of New Jersey, Office of Homeland Security & Preparedness
Transcript—Dallas Public Meeting
Union Pacific Railroad Company.
The Dow Chemical Company, Olin Corporation, Norfolk Southern Corporation, Union Pacific Railroad Company, and Occidental Chemical Corporation
Akzo Nobel Chemicals, Inc
City of St. Louis, MO.
Nuclear Energy Institute
National Association of SARA Title III Program Officials.
Colorado Emergency Planning Commission
Jefferson County Local Emergency Planning Committee.
City of Las Vegas, Nevada.
Springfield Terminal Railway Company
American Petroleum Institute.
CSX Transportation, Inc.
State of Connecticut, Attorney General

VI. Summary of the Interim Final Rule

Based on comments received in response to the NPRM and the provisions of the 9/11 Commission Act, in this interim final rule, we are adopting the following revisions to the HMR:

- Rail carriers transporting certain explosives, PIH material, and radioactive materials must compile information and data on the commodities transported, including the routes over which these commodities are transported.

- Rail carriers transporting the specified hazardous materials must use the data they compile and relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to a route to analyze the safety and security risks for each route used and practicable alternative routes to the route used

- Using these analyses, rail carriers must select the safest and most secure practicable route for the specified hazardous materials.

- In developing their security plans, rail carriers must specifically address the security risks associated with shipments delayed in transit or temporarily stored in transit

- Rail carriers transporting the covered hazardous materials must notify consignees of any significant unplanned delays affecting the delivery of the hazardous material

- Rail carriers must work with shippers and consignees to minimize the time a rail car containing one of the specified hazardous materials is placed on track awaiting pick-up, delivery, or transfer.

- Rail carriers must conduct security visual inspections at ground level of rail cars containing hazardous materials to check for signs of tampering or the introduction of an improvised explosive device (IED)

This interim final rule is effective June 1, 2008. Beginning January 1, 2009, rail carriers must compile information on the commodities they transport and the routes they use for the 6-month period from July 1, 2008 to December 31, 2008. Rail carriers must complete their data collection by March 1, 2009. By September 1, 2009, rail carriers must complete the safety and security analyses of routes currently utilized and available alternatives and select the safest, most secure routes for transporting the specified explosive, PIH, and radioactive materials. Beginning January 1, 2010, and for subsequent years, rail carriers must compile information on the commodities they transport and the routes used for the previous calendar year and complete route assessments and selections by the end of the calendar year.

In adopting these requirements, we reject the more prescriptive approaches urged by some commenters. We

continue to believe that rail carriers are in the best position to identify and assess risks across their systems and that en route safety and security measures will be most effective in reducing system risks when tailored to the carrier's specific circumstances and operations. This approach for determining the safest and most secure rail routes is consistent with the requirements in § 155.1 of the 9/11 Commission Act. Rail carriers use alternative routing in the normal course of business to accommodate a variety of circumstances, such as derailments, accidents, damaged track, natural events, traffic bottlenecks, and heightened security necessitated by major events. In performing the route analysis required by the Interim Final rule, we expect a rail carrier to make an informed decision, balancing all relevant factors and the best information available.

Although individualized risk assessment necessarily is more challenging to perform and oversee, we believe this approach offers the greatest overall benefit. We expect the end result of the analyses to be a clear picture of the practicable alternative route(s) available to rail carriers for the transportation of the specified hazardous materials. As we transition to the new requirements, PHMSA and FRA are committed to working with the railroads to provide the tools and training necessary to conduct the required analyses and make appropriate route selections.

By the same token, we intend to aggressively oversee railroads' route analyses and route selection determinations and will use all available tools to enforce compliance with the rule. As the agency with primary responsibility for railroad safety enforcement, FRA will incorporate review and inspection of route analyses and selections into its inspection programs. FRA inspectors may offer suggestions for modifying or improving the analysis or make changes to a route if the route selection documentation or underlying analysis is found to be deficient. If an inspector's recommendations are not implemented, FRA may compel a rail carrier to make changes and/or assess a civil penalty. Further, if the carrier's chosen route is found not to be the safest and most secure practicable route available, FRA may require the use of an alternative route.

As we implement the interim final rule, PHMSA and FRA are committed to working with railroads, and with communities and first responders, to strengthen their capabilities and reduce

the risks associated with hazardous materials transportation. As discussed below, we are developing a route assessment tool that rail carriers may use in weighing and considering the route analysis criteria.

PHMSA also is stepping up its efforts to build emergency response capabilities through national programs and community-based planning and training. We are sponsoring several initiatives intended to enhance community preparedness, including a project with the International Association of Fire Chiefs to provide real-time access to emergency response information and to share lessons learned from past incidents and exercises. With Congress' approval, we are expanding the Hazardous Materials Emergency Preparedness (HMEP) program, which provides funds for developing, improving, and implementing emergency response plans and for training public sector employees to respond to accidents and incidents involving hazardous materials. We believe these planning and training efforts are most effective when they are tailored to the particular risks facing a community.

We agree that local and regional governments require information on the types, quantities, and locations of hazardous materials transported through their jurisdictions to plan for effective and appropriate emergency response to incidents. We developed a detailed handbook (*Guidance for Conducting Hazardous Materials Flow Surveys*, January 1995) for local governments to use in conducting commodity flow studies of hazardous materials transported by highway, and we are encouraging states to use HMEP grant funds to study flow patterns of hazardous materials within and between states and to determine the need within a state for regional hazardous materials emergency response teams. We are updating our 1995 handbook through a cooperative research project aimed at producing a comprehensive, user-friendly resource that will help local planners develop commodity-flow data for all modes of transportation and to use the data to inform decision-making concerning risk assessment, emergency response preparedness, and resource allocation and to support analyses across jurisdictional boundaries. In addition, we are developing a guide for assessing emergency response needs and capabilities for hazardous materials releases to provide a tool for state and local governments to use to identify and address unmet emergency response planning and resource needs.

The specific provisions of the interim final rule, including a discussion of comments received on the NPRM and the provisions of the 9/11 Commission Act, are detailed in the following sections of this rule.

VII. Discussion of Comments and Section-by-Section Review

A. General (§ 172.820(a))

In the NPRM, we proposed to require rail carriers to implement enhanced safety and security measures for shipments of the following classes and quantities of hazardous materials:

(1) More than 2,268 kg (5,000 lbs) in a single carload of a Division 1.1, 1.2 or 1.3 explosive;

(2) A bulk quantity of a material poisonous by inhalation, as defined in § 171.8 of the HMR, or

(3) A highway route-controlled quantity of a Class 7 (radioactive) material, as defined in § 173.403 of the HMR.

The 9/11 Commission Act directs the Secretary of Transportation to ensure that this final rule requires railroad carriers to compile commodity data on the security-sensitive materials they transport. Section 1501 of the Act defines "security-sensitive material" to mean a material or group or class of materials, in a particular quantity and form that the Secretary of Homeland Security, in consultation with the Secretary of Transportation, determines through rulemaking with opportunity for public comment, poses a significant risk to national security while being transported in commerce. In making such a determination, the Secretary of Homeland Security is directed to consider: (1) Class 7 radioactive materials; (2) Division 1.1, 1.2, and 1.3 explosives; (3) materials poisonous or toxic by inhalation, including Division 2.3 gases and Division 6.1 materials; and (4) a select agent or toxin regulated by the Centers for Disease Control and Prevention (CDC) under 42 CFR part 73.

PHMSA, FRA, and TSA assessed the safety and security vulnerabilities associated with the transportation of different types and classes of hazardous materials. The list of materials to which the proposed enhanced safety and security requirements would apply is based on specific railroad transportation scenarios. These scenarios depict how hazardous materials could be deliberately used to cause significant casualties and property damage or accident scenarios resulting in similar catastrophic consequences. DOT and DHS determined that the materials specified in the NPRM present the greatest rail transportation safety and

security risks—because of the potential consequences of an unintentional release of these materials—and the most attractive targets for terrorists—because of the potential for these materials to be used as weapons of opportunity or weapons of mass destruction.

Following is a basic summary of the materials and critical vulnerabilities warranting enhanced safety and security measures:

- *Division 1.1, 1.2, and 1.3 explosive materials.* A Division 1.1 explosive is one presenting a mass explosive hazard. A mass explosion is one affecting almost the entire load simultaneously. A Division 1.2 explosive has a projection hazard, which means if the material were to explode, it would project fragments outward at some distance. A Division 1.3 explosive presents a fire hazard and either a minor blast hazard or a minor projection hazard or both. If compromised in transit by detonation or as a secondary explosion to an IED, these explosives could result in substantial damage to people, public and private property, and rail infrastructure. Roughly 2,500 carloads of these explosives are transported by rail each year.

- *PIH materials.* PIH materials are gases or liquids that are known, or presumed on the basis of tests, to be toxic to humans and to pose a hazard to health in the event of a release during transportation. PIH materials pose special risks during transportation because their uncontrolled release can endanger significant numbers of people. The January 6, 2005 train derailment in Graniteville, South Carolina with subsequent release of chlorine sadly underscored this risk. About 100,000 carloads of TIH chemicals are shipped by rail each year. Note that for purposes of the HMR, the terms "poison" and "toxic" are synonymous, as are the terms "poison inhalation hazard" or "PIH materials" and "toxic inhalation hazard" or "TIH materials."

- *Highway Route Controlled Quantity Radioactive Materials (HRCQ).* Shipments of HRCQ of radioactive materials are large quantities of radioactive materials requiring special controls during transportation. Because of the quantity included in a single packaging, HRCQ shipments pose significant safety and security risks. Very few HRCQ shipments are transported by rail. Spent nuclear fuel and high-level waste are shipped in containers certified under the Atomic Energy Act to meet stringent safety requirements designed to prevent release of radioactive materials even in the event of a severe accident.

The NPRM did not propose to include select agents or toxins regulated by the CDC under 42 CFR part 73 because railroads transport few, if any, shipments of these types of materials. Generally, shipments of infectious substances, including select agents and toxins, must be transported quickly from origin to destination to prevent degradation of samples that can occur over time and to ensure swift diagnosis and treatment of infectious diseases. For these reasons, highway (for short distances) and air (for longer distances) are the preferred modes of transport for these materials.

Most commenters agree that the above listed materials pose the most significant rail transportation safety and security risks. The Institute of Makers of Explosives (IME), Dow Chemical Company (Dow), Chlorine Institute, Inc., and Mr. Tom Nitzs express some concern that the PHMSA and TSA rail security NPRMs are not consistent in terms of their application to shipments of PIH materials. The PHMSA NPRM applies to bulk quantities of PIH materials. A "bulk quantity" as used in the HMR means a quantity that exceeds 450 L (119 gallons) for liquids, a net mass greater than 400 kg (882 pounds) for solids, or a water capacity greater than 454 kg (1,000 pounds) as a receptacle for gas (49 CFR 171.8). Thus, the provisions of the PHMSA NPRM would apply to PIH shipments transported in tank cars, including residue amounts exceeding 119 gallons, and portable tanks and other bulk containers. The TSA NPRM applies to tank cars containing PIH materials, excluding residues. Commenters suggest that the two rules should be applied consistently and recommend that we adopt the TSA tank-car threshold and exclude residue shipments.

While we recognize that TSA used a risk-based approach in determining the PIH quantities to which its rail security NPRM would apply, we disagree from a safety perspective that bulk packages other than tank cars and residue shipments should be excepted from the route analysis and route selection requirements adopted in this interim final rule. Although target attractiveness from a security standpoint is diminished, significant safety risks persist. A typical tank car of chlorine, for example, will contain about 18,000 gallons when full and may contain a residue amount of 100–320 gallons (1–2 percent of the original amount in the tank). Upon release from its container or packaging, each cubic foot of liquid chlorine will rapidly expand to approximately 450 cubic feet of chlorine gas. Using this rough estimate for the

expansion of chlorine, a residue amount of 160–320 gallons would result in approximately 9,600 to 19,200 cubic feet of chlorine gas. Based on guidance in the DOT Emergency Response Guidebook, the residue amount remaining in a chlorine tank car, if spilled, would suggest an initial isolation distance ranging from 800 ft in all directions and a protective distance of at least 1.5 mi for persons downwind at night. From a safety standpoint, it makes sense to require bulk quantities of PIH residue remaining in tank cars to travel on the "best" route available—the route that considers factors such as population density, emergency response capabilities, environmentally-sensitive and significant areas, and event venues.

Adoption of the proposed TSA threshold for PIH shipments would also exclude rail shipments of most bulk packages containing PIH materials from the route analysis and selection requirements in this interim final rule. Portable tanks, for example, typically contain up to 3,000 gallons, and some are designed to contain up to 6,000 gallons. While the isolation and evacuation distances for portable tanks would be the same as those for residue quantities in a tank car, the amount of gas produced would greatly increase. The amount of a PIH material contained in a fully loaded portable tank could, if released entirely, expand to produce roughly 180,000 to 361,000 cubic feet of gas, creating a safety risk to individuals within the area of the release. When considering risks posed by bulk containers such as portable tanks, different safety and security related aspects must be considered. Portable tanks are designed to be filled and emptied after removal from a transport conveyance; therefore, they have thinner walls and heads and are generally less robust, which makes them more prone to puncture or rupture than a tank car.

We believe the safety risks posed by the rail transportation of bulk quantities of PIH materials should be addressed through enhanced safety requirements, including route assessments. Therefore, in this interim final rule, we are requiring enhanced safety measures for bulk quantities of a material poisonous by inhalation, as proposed in the NPRM.

Written comments submitted by IME and AAR and statements by participants in the public meetings highlight the confusion as to whether we intended anhydrous ammonia to be included as a PIH material for which enhanced safety and security measures are required. The answer is yes. To ensure that this confusion does not persist, in this interim final rule, we are specifically

adding anhydrous ammonia as an example, in § 172.802(a), of a material that falls under the requirements to develop and implement additional safety and security planning requirements, as established by this interim final rule. Commenters are correct that, under the HMR, anhydrous ammonia is classed as a Division 2.2 compressed gas for domestic transportation. However, anhydrous ammonia meets the definition of a material that is poisonous by inhalation under § 171.8 of the HMR. That definition includes any material identified as an inhalation hazard by a special provision in column 7 of the § 172.101 Hazardous Materials Table (HMT). The entry for anhydrous ammonia in the HMT includes Special Provision 13, which requires the words "Inhalation Hazard" to be entered on shipping papers and marked on packages.

Once again, we note that for purposes of the HMR, the terms "poison" and "toxic" are synonymous, as are the terms "poison inhalation hazard" or "PIH materials" and "toxic inhalation hazard" or "TIH materials."

In the NPRM, we sought comments as to whether the proposed requirements should also apply to flammable gases, flammable liquids, or other materials that could be weaponized, as well as hazardous materials that could cause serious environmental damage if released into rivers or lakes. Commenters who addressed this issue state that rail shipments of Division 1.1, 1.2, and 1.3 explosives, PIH materials, and highway-route controlled quantities of radioactive materials pose significant rail safety and security risks warranting the enhanced security measures proposed in the NPRM and adopted in this interim final rule. Commenters generally do not support enhanced security measures for a broader list of materials than was proposed in the NPRM.

The City of Las Vegas, Nevada, supports expanding the list of materials for which enhanced security measures are required to include flammable liquids; flammable gases, certain oxidizers; certain organic peroxides, and 5,000 pounds or greater of pyrophoric materials. While DOT and DHS agree that these materials pose certain safety and security risks in rail transportation, the risks are not as great as those posed by the explosive, PIH, and radioactive materials specified in the NPRM, and we are not persuaded that they warrant the additional precautions required by the interim final rule. We note that the hazardous materials listed by the City of Las Vegas are currently subject to the

security plan requirements in Subpart I of Part 172 of the HMR. Thus, shippers and carriers of these materials must develop and implement security plans based on an assessment of the transportation security risks posed by the materials. Security plans must include measures to address personnel security, unauthorized access, and en route security. DOT, in consultation with DHS, will continue to evaluate the transportation safety and security risks posed by all types of hazardous materials and the effectiveness of our regulations in addressing those risks and will consider revising specific requirements as necessary.

For purposes of Section 1551 of the 9/11 Commission Act, DHS, in consultation with DOT, is developing a list of "security-sensitive materials" for rail transportation. DHS plans to publish its determination concerning "rail security-sensitive materials" in a forthcoming rulemaking. Upon publication of this determination, DOT will consider whether to revise the list of materials to which the safety and security requirements adopted in this IFR apply. We note in this regard that in future rulemaking actions DHS may also make determinations as to the materials that should be considered security-sensitive for other modes of transportation or for non-transportation operations and facilities.

B. Commodity Data (§ 172.820(b))

The NPRM proposed to require rail carriers to compile commodity data on an annual basis for the covered hazardous materials, including an identification of the routes utilized and the total number of shipments transported. The data are to be used by the rail carriers to identify the routes over which the specified hazardous materials are transported and the number of shipments utilizing each route. As proposed, rail carriers would be required to analyze the safety and security risks of the routes identified.

The City of Cleveland, Ohio, suggests that we revise the proposal in the NPRM to require rail carriers to share the commodity data with local governments responsible for the geographic areas through which hazardous materials are transported. We agree that state and local governments should have access to such information, provided access to the information is limited to those with a "need-to-know" for transportation safety and security purposes, and further provided that such information may not be publicly disclosed pursuant to any state, local, or tribal law. Because of the security sensitivity of the commodity data, it is not appropriate for

it to be broadly disclosed to government or private entities. We note that AAR Circular OT-85-1 provides for disclosure of certain commodity flow data, upon request, to local emergency response agencies and planning groups. At a minimum, such information is to include rank-order identification of the top 25 hazardous commodities transported through the community.

Section 1551(h) of the 9/11 Commission Act requires rail carriers to seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to a route used to transport security sensitive materials. A "high consequence target" is defined in the Act to mean a property, natural resource, location, area, or other target designated by the Secretary of Homeland Security that is a viable target of national significance for which an attack by railroad could result in catastrophic loss of life, significant damage to national security or defense capabilities, or national economic harm. We are adopting this requirement in this interim final rule. More broadly, however, rail carriers should work with state and local governments when conducting the route safety and security analysis required by this interim final rule and in making routing decisions based on that analysis. To this end, rail carriers must share information as necessary and appropriate to enable state and local governments to provide meaningful input into the process. We note in this regard that among the factors to be considered by rail carriers in conducting the safety and security analysis are population density along the route; environmentally-sensitive or significant areas, venues along the route (stations, events, places of congregation); emergency response capability along the route, measures and countermeasures already in place to address apparent safety and security risks; proximity to iconic targets, and areas of high consequence along the route. State and local governments may well be able to assist rail carriers in identifying and assessing this type of information. Moreover, state and local government entities may also be able to assist rail carriers in addressing any safety or security vulnerabilities identified along selected routes, in the scheduling of public events, for example, or enhancing emergency response capabilities. If a rail carrier is unable to acquire relevant information from state, local, or tribal officials, then it must document that in its analysis.

We note as well that states and local governments may contact FRA to voice

concerns and request an inspection of a route plan, security vulnerability, or, more generally, a rail carrier.

To provide carriers with flexibility in compiling and assessing the data, we are not adopting a specified format; however, the data must be available in a format that can be read and understood by DOT personnel and that clearly identifies the physical locations of the carrier's route(s) and commodities transported over each route. Physical location may be identified by beginning and ending point, locality name, station name, track milepost, or other method devised by the rail carrier which specifies the geographic location. Carriers must retain the data for two years, in either hard copy or electronic form.

C. Rail Transportation Route Analysis (§ 172.820(c))

In the NPRM, PHMSA proposed to require rail carriers to use the data compilation described above to analyze the rail routes over which the specified materials are transported. As proposed, carriers would be required to analyze the specific safety and security risks for routes identified in the commodity data collection and the railroad facilities along those routes. The route analyses would be required to be in writing and to consider, at a minimum, a number of factors specific to each individual route. A non-inclusive list of those factors was included in proposed Appendix D to Subpart I of Part 172.

Several comments were submitted in response to the proposed requirement. In its comments, Dow suggests that "railroad facilities," as used in this section, should be defined as facilities at which storage incidental to movement occurs along the route, including, but not limited to, classification and switching yards, and non-private sidings. Dow suggests that we clarify that railroad facilities do not include an offeror's facility, private track, private siding, or the hazardous materials' final destination. We agree with Dow that the term "railroad facility" should be clearly defined in the HMR. Therefore, in this interim final rule, we are adopting Dow's suggested definition in § 172.820(c). For purposes of this section, "railroad facility" means railroad property including, but not limited to, storage facilities, classification and switching yards, and non-private sidings. The term does not include an offeror's facility, private track, private siding, or consignee's facility.

AAR suggests an exception from the analysis requirements if there have been no significant changes since the

previous analysis and less than five calendar years have passed since the previous analysis was performed. We will address this issue in more detail later in this rule. We would note that any significant changes to the route over which the covered hazardous materials are transported that occurs before the calendar year actually lapses trigger a revised route analysis.

AAK also suggests an exception from the route analysis requirements for rail carriers that transport fewer than 500 carloads of the covered hazardous materials. We do not agree. The safety and security risks posed by shipments of Division 1.1, 1.2, and 1.3 explosives, highway route controlled quantities of radioactive materials, and bulk quantities of PHH materials are significant even if a rail carrier only transports a single carload. The 2005 accident in Graniteville, South Carolina, resulted in the puncture of a single tank car of chlorine, but the consequences of that accident were devastating. While it is true that the calculation of safety and security risks for the rail transportation system as a whole increases as the total number of shipments increases, it is also true there is a risk associated with each carload transported. An exception from the route analysis requirements adopted in this interim final rule for rail carriers that transport the specified hazardous materials in amounts below a given threshold is not warranted given the safety and security risks posed by these materials.

The National Industrial Transportation League asserts that requiring a small railroad to analyze the safety and security risks of its only available route serves no purpose since such railroads have no alternative routes to assess. The commenter notes that small Class II and III railroads generally operate on a single track, usually a feeder track to main rail lines, and have no available alternate routes. We do not agree. Even in the absence of alternative routes, we believe an assessment of the safety and security risks along the route utilized is critical to enhancing rail transportation safety and security. A comparison of the route utilized with an alternate route is not required in this circumstance, however, rail carriers must address safety and security vulnerabilities identified by the route analysis.

Section 1551(c) of the 9/11 Commission Act requires rail carriers' safety and security analyses of the routes used to transport security sensitive materials to include the route, railroad facilities, railroad storage facilities, and high-consequence targets along or in proximity to the route. This

is consistent with the analysis requirements proposed in the NPRM and adopted in this interim final rule. We have modified the applicable sections of the interim final rule to clarify that rail carriers' safety and security analyses must cover the listed items.

As discussed in the NPRM, we gave careful consideration to the question of how to define a "rail transportation route" for the purpose of the analysis proposed in the NPRM. We proposed this very basic definition: a route is a series of one or more rail line segments, as selected by the rail carrier. Between the beginning and ending points of a rail carrier's possession and responsibility for a hazardous materials shipment, it would be up to the rail carrier to define the routes to be assessed. For example, a route could begin at the geographic point where a rail carrier takes physical possession of the hazardous material from the offeror or another carrier for transportation. A route could end at the geographic point where: (1) The rail carrier relinquishes possession of the hazardous material, either by delivering the commodity to its final destination or interchanging the shipment to another carrier, or (2) the carrier's operating authority ends. Hazardous materials shipments will likely have intermediary stops and transitions; for example, a shipment may be held in a railroad yard, placed in a different train, or stored temporarily during transportation. Our aim is to have rail carriers analyze the territory and track over which these certain hazardous materials are regularly transported in the carrier's normal course of business, while providing flexibility concerning how specific routes will be defined and assessed. The final analysis, however, should provide a clear picture of the routes a rail carrier uses for the specified hazardous materials. Patterns and regular shipments should become obvious, as should non-routine hazardous materials movements, such as the one-time move of a specific shipment of military explosives or high-level nuclear waste.

D. Alternative Route Analysis and Route Selection (§ 172.820(d) & (e))

In addition to the routes normally and regularly used for hazardous materials movements, we proposed to require carriers to analyze and assess the feasibility of available alternative routes over which they have authority to operate. As proposed in the NPRM, for each primary route, one commercially practicable alternative route must be identified and analyzed using, at a minimum, the Rail Risk Analysis

Factors of proposed Appendix D to Part 172. It is the rail carrier's responsibility to retain a copy (or an electronic image thereof) of all route review and selection decision documentation used when selecting the practical route posing the least overall safety and security risk. This documentation should include, but is not limited to, comparative analyses, charts, graphics, or rail system maps. The NPRM noted that a primary safety and security concern for the rulemaking was the prevention of a catastrophic release or explosion in proximity to densely populated areas, including urban areas and events or venues with large numbers of people in attendance. The goal of the routing analysis requirement is to ensure that each route used for the transportation of the specified hazardous materials is the one presenting the fewest overall safety and security risks.

Consistent with § 1551(d) of the 9/11 Commission Act, this interim final rule requires rail carriers to identify practicable alternative routes over which the carrier has authority to operate and perform a safety and security analysis of the alternative routes for comparison to the currently used route, including the risk of a catastrophic release from a shipment traveling each route. In this interim final rule, we are adopting a requirement for rail carriers to identify and analyze all practicable alternative routes, rather than a "commercially practicable" route as proposed in the NPRM. We note in this regard, however, that the identification of an alternative practicable route must necessarily include a determination of its commercial practicability. Congress recognized this by including in § 1551(d) a requirement for the alternative route analyses to include the potential economic effects of using an alternative route. Accordingly, we expect rail carriers to address whether a route is economically viable in light of, but not limited to, market conditions, legal and regulatory requirements, and the economics of the commodity, route, offeror, and consignee. A practicable alternative route is one that may be utilized by the railroad within the limits of the railroad's particular operating constraints and, further, is economically viable given the economics of the commodity, route, and customer relationship. The question of commercial practicability must be reasonably evaluated by each rail carrier as a part of its analysis based on the specific circumstances of the route and proposed traffic. If using a possible alternative route would significantly

increase a carrier's operating costs, as well as the costs to its customers, the carrier should consider and document these facts in its route analysis. We expect that carriers will make those decisions in good faith, using the financial management principles generally applied to other business decisions affecting safety and security.

As we acknowledged in the NPRM, in many cases, the only alternative route in a particular area may be on another carrier's system. A rail carrier would not be obligated to analyze an alternative route over which it has no authority to operate. Likewise, in some cases, no alternative route will be available, in those instances, no alternative route analysis would be required. This is particularly true in the case of regional or short-line railroads that are often the only rail carriers in a given geographic area. However, as discussed below, carriers must consider the use of interchange agreements when identifying practicable alternative routes.

When an alternative route is available, the carrier must analyze that route and document its analysis, including the safety and security risks presented by the alternative route, any remediation or mitigation measures in place or available, and the economic effects of using the alternative route.

Under arrangements known as "trackage rights," it is not uncommon for a carrier to conduct train operations over a rail line that is owned, dispatched, and maintained by another carrier. Such arrangements typically grant the trackage rights tenant little or no control over the track and associated infrastructure, including many of the factors set forth in Appendix D. In completing the route analysis required by this interim final rule, a carrier may identify specific risk mitigation measures that are outside its ability to accomplish. Because it is essential that safety and security measures be coordinated among all responsible entities, it is incumbent upon the tenant carrier to work with the owner of the track to evaluate the vulnerabilities and identify measures to mitigate the risks. If measures required by this interim final rule cannot be implemented because another entity refuses or fails to cooperate, the carrier must notify FRA. As stated in the Compliance and Enforcement section of this interim final rule, FRA retains the authority to require use of an alternative route until such time as identified deficiencies are mitigated or corrected. In today's edition of the Federal Register, FRA is issuing an NPRM setting forth the

enforcement procedures it will use in requiring the use of an alternative route.

On behalf of Friends of the Earth, Fred Millar submitted four sets of comments and spoke at the DC public meeting. In his verbal and written comments, Mr. Millar states that many citizens, local governments, and rail workers are seeking a protective re-routing of the most dangerous hazardous materials cargoes (e.g., TII or poison gas cargoes) around HTUA. Mr. Millar suggests that re-routing of through shipments around HTUA would yield a significant, immediately achievable, and permanent risk reduction.

Greenpeace suggests that we promulgate new regulations that prohibit the storage and routing of TII rail cargo through densely populated and other sensitive areas wherever technically feasible. Greenpeace states "If the federal government is concerned about differing local statutes, they should support national routing legislation." Friends of the Earth similarly acknowledges that "nobody thinks it's a good idea to have 46 high-threat target areas with their own local regulations. What we need is a sensible national protective rerouting regulation."

In their comments, both Mr. Millar and Greenpeace express support for the use of interchange agreements by rail carriers to swap cargo between different rail carriers and avoid HTUAs. In addition, § 1551(d) of the 9/11 Commission Act requires rail carriers, when determining practicable alternative routes, to consider the use of interchange agreements with other carriers. We encourage rail carriers to take all feasible actions to mitigate the safety and security risks for hazardous materials shipments, therefore, in this interim final rule, we are adopting the requirement in § 1551(d) for rail carriers to consider interchange agreements when identifying practicable alternative routes.

In a separate effort to address these concerns, in late 2005, FRA granted a request by the AAR and the American Chemistry Council (ACC) to convene a conference under the authority of 49 U.S.C. 333, which affords limited antitrust protection to rail carriers. Section 333 authorizes the FRA Administrator, as delegate of the Secretary of Transportation, to convene conferences at the request of one or more railroads to address coordination of operations and facilities of rail carriers in order to achieve a more efficient, economical, and viable rail system. Persons attending a section 333 conference are immune from antitrust

liability for any discussions at the conference, and can also receive immunity for any resulting agreements that receive FRA approval. The purpose of the "Section 333 Conference" is to discuss ways to minimize security and safety risks flowing from the transportation by rail of TII materials. FRA, PHMSA, and representatives from the Department of Justice (DOJ), the Federal Trade Commission (FTC), TSA, and the Surface Transportation Board (STB) are participating in these discussions. The initial efforts of the conference are focused on the rail transportation of chlorine and anhydrous ammonia, because those chemicals represent over 80 percent of all TII rail shipments. FRA has met with the rail carriers to discuss modeling and routing options, and has held separate meetings with rail shippers of chlorine and anhydrous ammonia. Further meetings with the rail carriers are anticipated. Projects agreed to through the conference may need the approval of the STB in order to be implemented.

In light of these efforts, and in the interests of system safety, we will not ban movement of the specified hazardous materials through densely populated or other sensitive areas. Rerouting of hazardous materials shipments over longer, more circuitous alternative routes, most of which traverse urban areas at some point, could actually increase safety and security risks. Rerouting to avoid certain areas could add hundreds of miles and several days to a hazardous materials shipment. Those additional miles and days could be on rail infrastructure less suitable to handling hazardous materials. Such rerouting could also result in additional switching and handling of rail cars and more time in rail yards. Longer distances and transit times, increased car handling, and more time in rail yards contribute to an increase in the safety risks to railroad workers and the public inherent in rail transportation in general and the transportation of hazardous materials. As well, military installations, power plants, and other potentially attractive terrorist targets are purposely located on or near rail lines rather than in major metropolitan areas. Such facilities could be placed at greater risk if the Federal government were to require rerouting of highly hazardous materials to avoid densely populated areas. Finally, we would suggest that transportation security is enhanced if terrorists cannot determine whether or when hazardous materials may be rerouted. Such flexibility, provided its use is not made

public, decreases the likelihood that a target will be where a terrorist may expect it to be.

Moreover, the 9/11 Commission Act does not direct the Federal government to mandate specific rail routes for security-sensitive materials; rather, § 1551 of the Act specifically directs the Secretary of Transportation to ensure that the final rule requires rail carriers to select the safest and most secure route to be used to transport security-sensitive materials based on a safety and security assessment of the current routes utilized and practicable alternative routes.

We continue to believe that on route safety and security measures will be most effective when tailored to a railroad's specific circumstances and operations. Rail carriers are in the best position to assess security risks along the full length of the routes available to them and to target enhanced safety and security measures to identified vulnerabilities. Appendix D to the rule lists the wide variety of factors that a carrier must consider in choosing the safest and most secure route. The interim final rule requires carriers to analyze the primary route and a practicable alternative route using the Rail Risk Analysis Factors in Appendix D and select the route posing the least overall safety and security risk. As discussed below, carriers are also required to address delays in transit and on route storage security measures in their security plans.

As with the primary route analysis, we expect the end result of the alternative route analysis to be a clear picture of the practicable alternative route(s) available to rail carriers for the transportation of the specified hazardous materials. Alternative routing is used in the normal course of business throughout the railroad industry in order to accommodate circumstances such as derailments, accidents, damaged track, natural events (mudslides, floods), traffic bottlenecks, and heightened security due to major national events. The rail carriers' analysis of the alternative routes should, in the end, clearly indicate the reasonableness, appropriateness, and feasibility, including economic feasibility, of using the alternative routes. We expect a complete alternative route analysis will reflect such considerations as any actual use of the alternative route, safety and security benefits and risks of the alternative route; and commercial or economic costs and benefits of the route. Clearly, if an alternative route, after analysis, is determined to be the safest and most secure practicable route, the carrier

would either designate it as the primary route or identify and implement mitigating measures to improve the safety and security of the analyzed primary route. Each carrier will be required to use the practicable route posing the least overall safety and security risk, based on its analysis.

We recognize there may not be one single route that affords both the fewest safety and security risks. The most important part of this process is the route analysis itself and the identification of the safety and security risks on each route. The carrier may then make an informed decision, balancing all relevant factors and the best information available, regarding which route to use. For example, if a rail carrier determines one particular route is the safest and most practicable, but has a particular security risk, the carrier should then implement specific security measures so that the route will pose the least overall safety and security risk. We also recognize some security risks or threats may be long-term, while others are short-term, such as those arising from holding a major national event (e.g., national political party conventions) in close proximity to the rail route. Mitigation measures could be put in place for the duration of the event; after the event is over, normal operations could resume. Again, we expect many of the railroads already have experience in addressing safety and security issues such as these and have already catalogued possible actions to mitigate such risks.

In the evaluation of alternative routes, rail carriers may also indicate certain conditions under which alternative routes will be used. In the case of a short-term safety or security risk, such as a temporary event at a venue along the route, or a derailment, carriers may specify an alternative route and the measures to be put in place for use of that alternative route.

Now suggests that, consistent with the proposed rule's performance standard, a rail carrier should not be required to implement remediation and mitigation measures to address vulnerabilities identified during the performance of the safety and security risk analysis if (1) An alternative route analysis reveals a practicable route posing the least overall safety and security risk, and (2) the carrier selects that route in accordance with § 172.820(e). We agree with the commenter, but note that the requirement to implement remediation and mitigation measures proposed in the NPRM and adopted in this interim final rule applies in situations where a rail carrier selects a route that does not pose the least overall safety and security

risks, based on the alternative routing analysis. In such a situation, the carrier must address the safety and security risks along the selected route through implementation of remediation and mitigation measures. Current security plan requirements apply in assessing risks and implementing measures to mitigate risks on existing routes. Nothing in this interim final rule requires remediation and mitigation measures to address vulnerabilities on a route that the carrier has not selected.

To assist rail carriers in performing these analyses of rail transportation routes and alternative routes, PHMSA is adopting a new Appendix D to Subpart 172. This appendix lays out the minimum criteria a rail carrier must consider in analyzing each route and alternative route. The criteria listed are those we believe are most relevant in analyzing the rail routes for the hazardous materials covered by this interim final rule. Of course, not all the criteria will be present on each route, and each route will have its own combination of factors to be considered. Again, our aim is to enable rail carriers to tailor these analyses to the particular risks and factors of their operations, and to get a clear picture of the characteristics of each route.

For the initial route analysis, we anticipate rail carriers will review the prior two-year period when considering the criteria contained in Appendix D. In subsequent years, the scope of the analyses should focus on changes from the initial analyses. For example, using the criteria in Appendix D, carriers should analyze the impact of changes in areas of high consequence along the route, traffic density, new customers offering or receiving the specified hazardous materials, and significant operational changes, to name a few of the considerations listed in Appendix D.

We recognize the need for flexibility in performing risk assessments; yet we must balance it against the need for some degree of uniformity in the assessments. We have tried to balance these interests by prescribing uniform assessment criteria, while allowing each rail carrier to choose the assessment methodology it will follow. Regardless of the risk assessment methodology selected, a rail carrier should apply certain common principles. These include the following:

- The analysis should employ the best reasonable, obtainable information from the natural, physical, and social sciences to assess risks to health, safety, and the environment;
- Characterizations of risks and of changes in the nature or magnitude of risks should be both qualitative and, to

the extent possible given available data, quantitative,

- Characterizations of risk should be broad enough to deduce a range of activities to reduce risks;
- Statements of assumptions, their rationale, and their impact on the risk analysis should be explicit;
- The analysis should consider the full population at risk, as well as subpopulations particularly susceptible to such risks and/or more highly exposed, and
- The analysis should adopt

consistent approaches to evaluating the risks posed by hazardous agents or events

We believe institutionalizing a practical assessment program is important to supporting business activities and provides several benefits. First, and perhaps most importantly, assessment programs help ensure identification, on a continuing basis, of the movement of materials presenting the greatest risk to the public and the business community. Second, risk assessments help personnel throughout the organization better understand where to best apply limited resources to minimize risks. Further, risk assessments provide a mechanism for reaching a consensus on which risks are the greatest and what steps are appropriate for mitigating them. Finally, a formal risk assessment program provides an efficient means for communicating assessment findings and recommended actions to business unit managers as well as to senior corporate officials. The periodic nature of the assessments provides organizations a means of readily understanding reported information and comparing results over time.

The route analysis described above must identify safety and security vulnerabilities along the route to be utilized. Each rail carrier's security plan must include measures to minimize the safety and security vulnerabilities identified through the route analyses. With respect to mitigation measures and cost, there are many measures rail carriers can take without necessarily adding to the cost of compliance. For example, carriers can work to notify local law enforcement and emergency responders of the types and approximate amounts of particular commodities typically transported through communities. Further, location changes can be made as to where rail cars containing highly hazardous materials are stored in transit. As with the current security plan requirements, our goal is to permit rail carriers the flexibility to identify potential safety and security vulnerabilities and

measures to address them, including the determination of which of a carrier's routes present the overall fewest safety and security risks.

We anticipate several possible route selection outcomes:

- The existing route presents the lowest overall safety and security risk and continues to be the selected route.
- The alternative route presents the lowest overall safety and security risks. The alternative will be selected, and transportation of the identified materials on the alternative route will begin as expeditiously as possible.
- The existing or the alternative route presents the lowest overall safety and security risk except under specific identified conditions. The lowest overall safety and security risk route will be used dependent upon the conditions. The conditions warranting route change must be clearly identified in the analyses and routing decision documentation.

Based on the analyses, either the existing or alternative practicable route is identified as presenting the lowest overall safety and security risks, however, the rail carrier identifies measures to mitigate some of the risk and lower the overall risk of the other route. The route with the lowest overall safety and security risk should be selected and used. In documenting the route selection, the carrier should identify remediation measures to be implemented with a schedule of their implementation and the route change upon completion.

Clearly, other outcomes are possible. The analyses must be completed and any routing changes resulting from the analyses must be implemented no later than January 1 of the following year.

E. Completion of Route Analyses (§ 172.820(f))

In the NPRM, we proposed to require rail carriers to conduct the rail transportation route analysis, alternative route analysis, and route selection by the end of the year to which it applies. In addition, we proposed to require the carrier to complete a comprehensive review of all operational changes, infrastructure modifications, traffic adjustments, or other changes implemented over a period not to exceed five calendar years.

Most comments addressing this aspect of the NPRM request that we eliminate confusion and shorten the five-year time period for the system wide review. One commenter, AAR, suggests that we make the one year review encompass the entire system or better clarify what is meant by the separate reviews. AAR further suggests that carriers should be

required to revise and update route analyses only when necessary to account for changes in the way a carrier operates, changes to the routes utilized, or in response to specific threats. In addition, AAR suggests an exception from the analysis requirements if there have been no significant changes since the previous analysis and fewer than five calendar years have passed since the previous analysis was performed.

The Brotherhood of Locomotive Engineers and Trainmen suggests that the frequencies set forth in the proposed rule are appropriate, except that the comprehensive review should be performed every three (3) years.

The 9/11 Commission Act prescribes both the nature and frequency of the analysis. Under § 1551(g) of the Act, we must require rail carriers to perform a comprehensive review at least once every three years. The analysis is to include a system-wide review of all operational changes, infrastructure modifications, traffic adjustments, changes in the nature of high-consequence targets located along or in proximity to the route, and any other changes affecting the safety and security of the movement of security-sensitive materials that were implemented since the previous analysis was completed.

We accept the comments that our proposed schedule for one- and five-year reviews is unnecessarily confusing and complicated and that the proposed five-year time frame for system-wide reviews is too long. Therefore, in this interim final rule, we are requiring rail carriers to conduct all the required analyses every year—that is, each year, a rail carrier must assess the safety and security vulnerabilities along the routes it uses to transport the specified hazardous materials and must also assess the safety and security vulnerabilities of practicable alternative routes for each route currently utilized. This analysis must include a comprehensive review of all operational changes, infrastructure modifications, traffic adjustments, changes in the nature of high-consequence targets located along or in proximity to the route, or other changes affecting the safety and security of the movement of the materials covered by this interim final rule. This process will ensure that modifications and changes to the entire system are taken into account in the route analyses during the same calendar year that they occur. In addition, a rail carrier should consider changes that may reasonably be anticipated to occur in the upcoming year, such as changes to the volumes or types of hazardous materials transported or changes affecting rail infrastructure (e.g.,

planned maintenance that could result in temporary closures of bridges or track segments).

We do not agree with AAR that a carrier should be required to review and revise its route analysis only when necessary to account for changes in the way a carrier operates, changes to the routes utilized, or in response to specific threats. We believe there is value in conducting an annual review of the route analysis even in the absence of changes to the way a carrier operates. Conditions along the selected routes may have changed, for example, or there may be changes affecting other factors utilized in the analyses, such as incidents on the selected route, the capabilities of local emergency response agencies, or venues located in proximity to the selected route.

F. Storage, Delays in Transit, and Notification (§ 172.820(g))

In the NPRM, we proposed to require rail carriers to specifically address delays in transit and en route storage in security plans. Thus, we proposed to require rail carrier security plans to include: (1) A procedure for consulting with offerors and consignees to minimize the time a material is stored incidental to movement; (2) a procedure for informing the operator of the facility at which the material will be stored incidental to movement that the material has been delivered; (3) measures to limit access to the materials during storage and delays in transit; (4) measures to mitigate risk to population centers during storage incidental to transportation; (5) measures to be taken in the event of an escalating threat level during storage incidental to transportation; (6) a procedure for notifying the consignee in the event of transportation delays; and (7) a procedure to inform the consignee that the material has been delivered.

Concerning consultations to minimize delays in transit, ACC requests that we require rail carriers to formally consult with offerors and consignees, to minimize to the extent practicable, the period of time during which the material is stored incidental to movement. ACC suggests that the consultations should provide offerors, consignees, and rail carriers equal weight in developing practicable solutions, which consider, but are not limited to, railroad and shipper/consignee production capacity, land availability, restrictive local ordinances, and other relevant factors. ACC further suggests that these consultations should be conducted on an individual basis, where regional distinctions in security requirements and the aforementioned

constraints may be given full consideration and that proposed solutions should be implemented with mutual consent of all parties. Finally, ACC recommends that, in those instances when mutual consent is not achieved, proposed solutions should be implemented through binding mediation conducted by the Surface Transportation Board's (STB's) Office of Compliance and Consumer Assistance.

We agree with the suggestion made by ACC that any decision made to minimize the time that a material is stored incidental to movement should include mutual consent from all parties and that those parties should be given equal weight. Therefore, in this interim final rule, we are modifying the proposal by incorporating ACC's suggestion that decisions be implemented with the mutual consent of all parties. We are not including the provision to require consultation with STB in the absence of an agreement among the parties. Such a provision would be overly burdensome, moreover, rail carriers, offerors, and consignees should be capable of coming to an agreement without the necessity for mediation. In the absence of such an agreement, a rail carrier may implement whatever measures it finds necessary to minimize the time that a material is stored incidental to movement.

In the NPRM, we proposed to require a rail carrier to notify the consignee if there is a significant unplanned delay during transportation of one of the specified hazardous materials, within 48 hours of identifying the significant delay, and provide a revised delivery schedule. Our goal is to strengthen the requirements of the current "48-hour rule" contained in § 174.14, and to delegate more positive control and responsibility to the railroads for tracking and controlling the movement of railcars carrying hazardous materials. Such notification will also facilitate communication between the carrier in possession of the material and the consignee to ensure the hazardous materials do not inadvertently wait in transit.

In the NPRM, we specified such notification must be made by a method acceptable to both carrier and consignee. One commenter, AAR, states that consignees should not have veto power over the method selected for notification of delays and is concerned because different customers will likely request different notification systems, potentially increasing transportation costs. On the other hand, The Chlorine Institute indicates that it strongly supports the notification provisions that require carriers to work with receivers

and shippers on an appropriate notification method.

We do not believe that the notification issue is as complicated as AAR suggests. We are aware that many rail carriers have in place electronic systems through which consignees may look up and track their expected rail shipments. This is an acceptable method of notification, as are e-mail, facsimile, or telephone. None of these methods would result in significant cost impacts for rail carriers. Because most railroads already have in place systems to monitor the transportation of certain types of shipments, and procedures for notification of consignees, we do not anticipate this requirement will involve major operational changes for any of the affected carriers. The reason the carrier and consignee must agree on a notification method is to ensure that the information about a shipment delay reaches the consignee in a timely fashion. Absent such an agreement, the carrier cannot be certain that the notification will reach the appropriate official for the consignee.

A significant delay is one that: (1) Compromises the safety or security of the hazardous material shipped; or (2) delays the shipment beyond its normal expected or planned shipping time. A "significant delay" must be determined on a case-by-case and hazard-by-hazard basis. As a general rule, any delay beyond the normal or expected shipping time for the material qualifies as a "significant delay."

The AAR Circular OT-55-1 outlines operating practices the rail industry has already implemented for certain time-sensitive shipments. The notification requirement adopted in this interim final rule simply builds on those practices. In particular, the Circular addresses time-sensitive shipments and specifies railroads are to be responsible for monitoring of shipments of such products and communicating with affected parties when the shipment may not reach its destination within the specified timeframe. Circular OT-55-1 recommends delivery of time-sensitive materials should take place within 20 or 30 days, depending on the commodity.² Because of the variety of materials covered by this interim final rule, PHMSA has not designated specific delivery timeframe guidelines for these materials.

In the NPRM, we proposed to require carriers to notify storage facilities and consignees upon delivery of a rail car

²The additional commodities listed in Circular OT-55-1 and requiring a delivery time of 30 days are styrene monomer, stabilized and flammable liquid, and (recycled) styrene.

containing one of the specified hazardous materials. IME, Akzo Nobel Chemicals, and ACC suggest we delete the delivery notification requirements and, instead, align the HMR with the positive chain-of-custody requirements proposed by TSA in its rail security NPRM. We agree. The TSA requirements establish positive control of rail cars containing the specified hazardous materials by requiring direct hand-off of each car to a responsible individual, at points of: (1) Carrier interchange in an HTUA or outside an HTUA for cars that may enter an HTUA; (2) origin; and (3) delivery to a facility in a HTUA. There is, therefore, no need for the notification requirements we proposed in the NPRM. Accordingly, we are not adopting them in this interim final rule.

G. Recordkeeping (§ 172.820(h))

In the NPRM, we proposed to require each rail carrier to maintain an accessible copy of the information and analyses associated with the collection of commodity data and route assessment and selection processes. We further proposed to require the distribution of such information to be limited to covered persons with a need-to-know. In accordance with Sensitive Security Information (SSI) regulations in 49 CFR Parts 15 and 1520. The recordkeeping requirements are consistent with the U/11 Commission Act.

No comments were submitted in response to this paragraph; therefore, we are adopting it as proposed.

H. Compliance and Enforcement (§ 172.820(i))

FRA is the agency within DOT responsible for railroad safety and is the primary enforcer of safety and security requirements in the HMR pertaining to rail shippers and carriers. FRA inspectors routinely review security plans during site visits and may offer suggestions for improving security plans, as appropriate. If an inspector's recommendations are not implemented, FRA may compel a rail shipper or carrier to make changes to its security plan through its normal enforcement process. FRA consults with TSA concerning railroad security issues in accordance with the FRA-TSA annex to the DOT-DHS MOU on transportation security.

In the NPRM, we proposed to require carriers to revise their analyses or make changes to a route if the route selection documentation or underlying analyses are found to be deficient. In addition, we proposed that, are the carrier's chosen route is found not to be the safest and most secure practicable route

available, the FRA Associate Administrator for Safety, in consultation with TSA, could require the use of an alternative route until such time as identified deficiencies are satisfactorily addressed.

AAR questions whether PHMSA has the statutory authority to grant FRA the power to require the use of an alternative route. FRA's authority to require the use of an alternative route stems from § 5121(a) of the Federal Hazardous Materials Transportation Law. The Secretary of Transportation is authorized to issue an order, after notice and an opportunity for a hearing, requiring compliance with the Federal Hazmat Law or a regulation, order, special permit, or approval issued under Federal Hazmat Law. The authority provided in 49 U.S.C. 5123(a) has been delegated to FRA, "with particular emphasis on the transportation or shipment of hazardous materials by railroad" (49 CFR 1.49(a)) as well as to FAA, FMCSA, PHMSA, and USCC (with "particular emphasis" on the respective authority of those agencies).

Dow and IME suggest that, consistent with fundamental concepts of due process, PHMSA should provide an immediate procedure to appeal an FRA determination to require the use of an alternative route. STB suggests that the regulation indicate that prior to making a determination to require the use of an alternative route, FRA and TSA will obtain the comments of STB regarding whether the contemplated alternative route(s) would be economically practicable. In addition, Dow requests that PHMSA clarify the role that TSA or other agencies will play in performing inspections under this rule, including addressing whether TSA will use third-party contractors to perform inspections.

In the preamble to the NPRM, we indicated that FRA would develop procedures for rail carriers to appeal a decision by the FRA Associate Administrator for Safety to require the use of an alternative route, including information a rail carrier should include in its appeal, the time frame for filing an appeal, and the process to be utilized by FRA in considering the appeal, including any consultations with TSA or PHMSA. FRA is developing such procedures and is publishing a notice of proposed rulemaking concurrently with this interim final rule. We note in this regard that FRA will only require an alternate route if it concludes the carrier's analysis did not satisfy the minimum criteria for performing a safety and security risk analysis, as established by the proposed § 172.820 and Appendix D to Part 172. Moreover,

FRA expects to mandate route changes only in exigent circumstances or when a carrier has acted in clear defiance of the requirements.

We agree with STB's suggestion that FRA and TSA should consult with STB prior to making a determination to compel the use of an alternative route in this interim final rule, we are adding language to this effect in the appropriate paragraph. STB's participation in this process will ensure that the FRA-TSA determinations concerning alternative routes fully consider the economic impacts and commercial practicability of the routes under consideration.

As we explained in the preamble to the NPRM, with respect to enforcement of the security requirements in this interim final rule, FRA plans to work closely with TSA to develop a coordinated enforcement strategy to include both FRA and TSA inspection personnel. We note in this regard that TSA does not have the authority to enforce safety or security requirements established in the HMR. If in the course of an inspection of a railroad carrier or a rail hazardous material shipper, TSA identifies evidence of non-compliance with a DOT security regulation, TSA will provide the information to FRA and PHMSA for appropriate action. TSA will not directly enforce DOT security rules and will not initiate safety inspections. In accordance with the PHMSA-TSA and FRA-TSA annexes to the DOT-DHS MOU, all the involved agencies will cooperate to ensure coordinated, consistent, and effective activities related to rail security issues. To address Dow's concern, in this interim final rule we have included a clear statement that FRA, in cooperation with PHMSA, will enforce the requirements contained in this interim final rule.

We are not implementing a submission and approval process for security plans and route analyses. The review and approval of hundreds of security plans and analyses would be extremely resource-intensive and time-consuming. Moreover, the 9/11 Commission Act does not provide for an approval process for route selections made by rail carriers. During FRA's normal inspection process, inspectors will review security plans, route analyses, and route choices for compliance with applicable regulations to ensure that the chosen route is the safest and most secure practicable route as supported by the analysis done by the carrier. If the inspection identifies deficiencies in the route analyses, security plan, or manner in which the plan is implemented, the deficiencies will be addressed using FRA's existing

enforcement procedures. Inspectors will have the discretion to issue notices of non-compliance or to recommend assessment of civil penalties for probable violations of the regulations. As indicated above, FRA may require a rail carrier to use an alternative route if the carrier's chosen route is found not to be the safest and most secure practicable route available.

1. Appendix D to Part 172—Rail Risk Analysis Factors

In the NPRM, we proposed minimum criteria in Appendix D to Part 172 to be used by rail carriers when performing the safety and security risk analyses required by § 172.820. We listed 27 factors in this appendix for carriers to consider in the analyses.

Generally, commenters support the rail risk analysis factors provided in Appendix D. For example, the Brotherhood of Locomotive Engineers and Trainmen, states that it wholeheartedly supports the risk analyses and that the appropriate metrics essential to a detailed risk analysis are provided in this appendix. Dow, AAR, and IME also provided comments. Most notably, IME indicated that it supports the factors, but suggest we enhance their usefulness by providing a ranking of the criteria listed in Appendix D or an indication of the order of precedence in which the factors should be considered. IME notes, for example, that a route with the best emergency response capability is likely to be a route that is more densely populated and asks how those factors should be weighted in such situations.

We agree that how those factors are weighted and used is an extremely important aspect of an overall safety and security risk assessment methodology. However, we do not believe that a one-size-fits-all approach to weighting the factors provides sufficient flexibility for rail carriers to address unique local conditions or concerns. We expect carriers to make conscientious efforts to develop logical and defensible systems using these factors. Tools to assist rail carriers to use the factors to assess the safety and security vulnerabilities of specific routes, including how to weight the factors in performing the analysis, are being developed with funding by a grant from the Department of Homeland Security. Initial products from this program were developed in 2007 and are currently being evaluated and refined. We expect the analysis tools to be available in 2008.

In this interim final rule, we are adopting the list of factors as proposed in the NPRM, with modifications for consistency with requirements of the R/

11 Commission Act. Specifically, we are adding high consequence targets, as defined in § 1551(h)(2) to the list of factors that must be considered.

J. Pre-Trip Security Inspections (§ 174.9)

PHMSA proposed in the NPRM to increase the scope of the current safety inspection to include a security inspection of all rail cars carrying placarded loads of hazardous materials. The primary focus of the enhanced inspection is to recognize an IED, which is a device fabricated in an improvised manner incorporating explosives or destructive, lethal, noxious, pyrotechnic, or incendiary chemicals in its design, and generally including a power supply, a switch or timer, and a detonator or initiator.

To guard against the possibility that an unauthorized individual could tamper with rail cars containing hazardous materials to precipitate an incident during transportation, such as detonation or release using an IED, we proposed to require the rail carriers' pre-trip inspections of placarded rail cars to include an inspection for signs of tampering with the rail car, including its seals and closures, and an inspection for any item that does not belong, is suspicious, or may be an IED. When an indication of tampering or a foreign object is found, the rail carrier must take appropriate actions, before accepting the rail car for further movement, to ensure the security of the rail car and its contents have not been compromised.

The commenters overwhelmingly support the proposed inspection requirement. One commenter, BNSF Railway Company, asks PHMSA to provide specific details on how the inspection should be performed. It asks if walking the train or inspecting it from a slow moving vehicle would suffice for the inspection requirements. Another commenter, Dow, asks if PHMSA or TSA will provide the additional training necessary for rail carriers to comply with the proposed changes. The Chlorine Institute states that the additional training required in conjunction with regular training should not be overly burdensome.

Based on commenters' support for enhanced security inspections, we are adopting the provision as proposed in the NPRM. We offer the following clarifications in response to the commenters' questions.

The security inspection of each placarded rail car should be performed in conjunction with the safety inspection currently required under § 174.9. The inspection is to be conducted at ground level and at a close enough distance so that any problems

can be readily identified. A complete inspection will encompass the entire rail car at ground level, including the area beneath the rail car, thus, a proper inspection will cover more of a rail car than can be seen from a slow moving vehicle. An inspector must be able to identify signs of tampering, including closures and seals, suspicious items or items that do not belong, and other signs that the security of the car may have been compromised, including the presence of an IED. Where an indication of tampering or a foreign object is found, the rail carrier must take appropriate actions to ensure the security of the rail car and its contents have not been compromised before accepting the rail car for further movement.

We understand from the comments submitted by AAR that training to enable rail carrier personnel to comply with the security inspection requirements is already provided in most carriers' current inspection programs. In addition, as we stated in the preamble to the NPRM, TSA is developing instructional materials to assist rail carriers in training employees on identifying IEDs and signs of tampering. This training material should be completed and available by the middle of 2008.

K. Preemptive Effect of This Interim Final Rule (§ 172.822)

Because of the high level of interest in this issue, we proposed to address the preemptive effect of the final rule in the regulatory text. We explained our judgment that state and local regulation of rail routes for shipments of hazardous materials is preempted, by operation of the Federal hazardous materials transportation law (49 U.S.C. 5125) and the Federal Rail Safety Act (49 U.S.C. 20106), based on the agency's decision in Docket No. HM-232 to leave the routing of hazardous materials shipments to the judgment of rail carriers. We also stated our view that the route analysis and selection proposals in the NPRM, if adopted, "would have the same preemptive effect upon states, political subdivisions, or Indian tribes," because those proposals would "not change PHMSA's basic approach in HM-232 of leaving ultimate hazardous materials routing decisions to the rail carriers." 71 FR at 76845 & 76846.

We specifically invited comments from interested states, political subdivisions, and Indian tribes. Immediately after publication of the NPRM, we sent individual letters to the mayors of twelve cities whose local officials had expressed concerns about routes of rail shipments of hazardous

materials and to the following organizations: The National Governors Association, Council of State Governments, National Conference of State Legislatures, United States Conference of Mayors, National Association of Counties, National League of Cities, and National Congress of American Indians. In these letters, we summarized the proposals in the NPRM and provided a copy of the NPRM, encouraged participation in the rulemaking and the public meeting on February 1, 2007, and offered to meet separately to discuss the rulemaking in detail. None of the organizations or cities accepted our offer to meet separately to discuss the NPRM, nor did they participate in the public meeting.

In response to the NPRM and these additional letters, we received numerous comments on whether or not states and political subdivisions are preempted from imposing additional designations or restrictions on routes for rail shipments of hazardous materials, beyond the route analysis and selection process proposed in the NPRM. In general, comments from industry included statements that there is a need for "national uniformity on the rail routing of TII, explosive, and radioactive materials" (ACC), that "[b]y preempting state laws that restrict the movement of hazardous materials, PHMSA will ensure hazardous materials continue to travel on the safest and most secure mode of transportation for these items" (TFI, NTTL), and that "Federal rulemaking and enforcement of hazardous materials regulations allows for a unified plan to effectively implement best practices throughout the nation" and "minimizes confusion for regulated entities by utilizing uniform criteria for all facilities" (Chlorine Institute).

However, some of the comments from shippers and carriers criticized the specific language proposed in the NPRM. IME questioned "why the statement was limited to these proposals and does not encompass all of the agency's security rules, or even all of the agency's security plan rules." In a set of jointly-filed comments, Dow, Olin, Norfolk Southern, Union Pacific, and Occidental ask PHMSA to "expand the preemption considerations described in proposed § 172.820(g)," because "routing is only one aspect of state and local regulation that has the potential to conflict with federal regulations." These companies also stated that "49 U.S.C. 20106 only authorizes state regulation in limited circumstances and excludes all references to 'political subdivisions of a State' (i.e. local government safety or security regulation)." (Emphasis in

original) In its separate comments, Dow stated that "PHMSA should make it abundantly clear that the federal hazardous material transportation law, 49 U.S.C. 5101 *et seq.*, substantially subsumes all state, local, and Indian tribe laws on the subject matter of the use of rail lines for the transportation of hazardous materials."

AAR asserted that the NPRM "fail[s] to provide the public with proper notice as to the scope of preemption. The fundamental preemption provision for railroad safety and security requirements is 49 U.S.C. section 20106," which "applies to regulatory action taken by any agency within DHS or DOT, including FRA, PHMSA, and TSA." AAR also stated that the NPRM falls short in addressing preemption because the preemption provision it proposes only addresses one aspect of the NPRM, routing requirements; exceeds its statutory authority by providing that PHMSA can waive preemption of state or local routing requirements, and ignores the complete preemption of local regulation of railroad safety and security.

Similarly, the City of Cleveland, Ohio stated that the regulatory text proposed in the NPRM should also refer to 49 U.S.C. section 20106, and also contended that § 20106 allows "state governments (interpreted by case law to also include local governments)" to adopt an additional requirement on rail transportation which: "(1) is necessary to eliminate or reduce an essentially local safety or security hazard, is not incompatible with a law, regulation, or order of the United States Government, and (3) does not unreasonably burden interstate commerce." The City of Cleveland, Ohio also asserted that, as one of the high threat urban areas (HTUA) designated by TSA, "it should be provided with special consideration with respect to its needs to adopt enhanced regulations and the possible need to enact specific routing restrictions for rail."

PHMSA agrees with those comments that suggest that the regulatory language on preemption should refer to both 49 U.S.C. section 5125 and 20106, because both of those provisions must be considered in any determination whether a non-Federal requirement on rail transportation of hazardous materials is preempted. See *CSX Transportation, Inc. v. Easterwood*, 507 U.S. 658, 663 n. 4 (1993); *CSX Transportation, Inc. v. Public Utilities Comm'n*, 901 F.2d 497, 501 (6th Cir. 1990), cert. denied, 498 U.S. 1066 (1991) ("any regulation" adopted by the Secretary of Transportation respecting railroad safety matters, regardless of the

law under which the regulation is adopted, may have preemptive effect under § 20106). Moreover, as stated in the NPRM, PHMSA has concluded (and the United States has taken the position in the pending lawsuit over the District of Columbia (District) ordinance) that both §§ 5125 and 20106 preempt any non-Federal designation or restriction of routes for rail shipments of hazardous materials.

PHMSA also agrees with those commenters who suggested that we clarify that the preemption provisions of 49 U.S.C. sections 5125 and 20106 apply to all of the HMR, not just to § 172.820. Therefore, in place of proposed § 172.820(g), we are adding a new § 172.822 dealing with the preemptive effect of the HMR, including subpart I. Section 172.822 refers to the statutory standards for preemption in 49 U.S.C. sections 5125 and 20106, which we believe would apply to any state, local, or Indian tribe requirement affecting the transportation of hazardous materials, including the designation or restriction of routes for rail shipments of hazardous materials.

The District referred to the pending lawsuit by CSX Transportation, Inc. which challenges the District's ordinance against rail shipments of certain types and quantities of hazardous materials within 2.2 miles of the U.S. Capitol building. The District stated that "the fundamental rule of government is to protect its citizens. That role should be left to the District here, and not given to private industry, unless and until the federal government develops the capacity to make such determinations." The City of Baltimore, Maryland, emphasized that the decision of the Court of Appeals in the CSX litigation "did not represent a final ruling on the merits of the issue," but simply overturned the District Court's denial of a preliminary injunction.

The Chairman and three other members of the Homeland Security Committee of the U.S. House of Representatives stated there is a need for "clear and mandatory direction from the federal government," and a "finding of preemption is a gift to the industry and strips away local and state governments' ability to protect its citizens."

As we have indicated elsewhere in this rule, rerouting of hazardous materials to avoid densely populated or sensitive areas may well increase safety and security risks. Moreover, routing restrictions or prohibitions enacted by states or local governments transfer safety and security risks to other areas but do little to achieve enhanced safety and security for the rail transportation

system as a whole. We note that virtually every urban and suburban jurisdiction in the United States has a population density that is a matter of concern in planning for and regulating hazardous materials transportation; if all of the jurisdictions located on or near rail routes were to enact routing restrictions applicable to the rail transportation of hazardous materials, such transportation would come to a virtual standstill. The provisions adopted in this interim final rule will reduce the overall risks posed by the movement of explosive, PIH, and radioactive materials by rail, without imposing an undue burden on transportation.

In § 1528 of the 9/11 Commission Act, Congress restructured the preemption provision in 49 U.S.C. 20106 by placing the then-existing language in a new paragraph (a), and in a new paragraph (b) clarifying what state law causes of action for personal injury, death, or property damage are not preempted. The Joint Conference Report on § 1528 makes clear that the restructuring of 49 U.S.C. 20106 was not intended to make any substantive change to the meaning of new paragraph (a). Rather, as specified in § 1551(h), the specific authority of states, localities, and Indian tribes is limited to providing information on the security risks to high-consequence targets along or in proximity to a route used by a rail carrier to transport security-sensitive materials. Nonetheless, as discussed above, this does not prevent rail carriers from working with state, local, and tribal governments, including sharing information as necessary and appropriate, to enable these non-Federal government bodies to provide meaningful input into the rail carrier's process of conducting the route safety and security analysis, and making routing decisions based on that analysis, as required by this interim final rule. We encourage such cooperation between rail carriers and state, local, and tribal officials.

In this regard, Eureka County, Nevada, expressed concern that the proposed requirements for rail carriers to select the routes based on an analysis of safety and security risks would preempt the announced program of the Department of Energy (DOE) to work with stakeholders, including state regional groups, in selecting routes for shipments of spent nuclear fuel to Yucca Mountain. We do not believe that this interim final rule will adversely affect the DOE program for selecting spent nuclear fuel routes. Indeed, the DOE effort to include stakeholders in its route selection deliberations is precisely

the model we mandate that rail carriers follow as they implement the provisions adopted in this interim final rule—that is, to work with state and local governments in conducting route safety and security analyses and in making routing decisions based on the analyses. Nothing in this interim final rule should be construed or applied in a manner inconsistent with DOE fulfilling its obligations under § 180(c) of the Nuclear Waste Policy Act to provide technical assistance and funds to states and tribes for training public safety officials on procedures for safe routine transportation and emergency response with regard to spent nuclear fuel or high level waste shipments to a repository.

The National Association of SARA Title III Program Officials, the Colorado Emergency Planning Commission, and the Jefferson County, Colorado, Local Emergency Planning Committee stated that “preemption must come with a benefit” and that “PHMSA should require carriers to consider increased risk to a community as part of their routing decisions.” We note in this regard that the routing safety and security analyses adopted in this interim final rule require rail carriers to consider the safety and security risks of the routes they use, considering factors such as population density along the route, venues along the route (stations, events, places of congregation), emergency response capability along the route, and areas of high consequence along the route.

VIII. Regulatory Analyses and Notices

A. Statutory/Legal Authority for This Rulemaking

This interim final rule is published under authority of Federal Hazardous Materials Transportation Law (Federal Hazmat Law; 49 U.S.C. 5101 et seq.) Section 5103(b) of Federal Hazmat Law authorizes the Secretary of Transportation to prescribe regulations for the safe transportation, including security, of hazardous materials in intrastate, interstate, and foreign commerce. In addition, this interim final rule is published under authority of the Implementing the Recommendations of the 9/11 Commission Act of 2007. Section 1551 of the 9/11 Commission Act directs the Secretary of Transportation, in consultation with the Secretary of Homeland Security, to publish a final rule by May 3, 2008, based on the NPRM published under this docket on December 21, 2008. In accordance with Section 1551(e) of the Act, PHMSA's final rule must require rail carriers of

“security-sensitive materials” to “select the safest and most secure route to be used in transporting” those materials, based on the rail carrier's analysis of the safety and security risks on primary and alternate transportation routes over which the carrier has authority to operate.

B. Executive Order 12866 and DOT Regulatory Policies and Procedures

This interim final rule is a significant regulatory action under section 3(f) Executive Order 12866 and, therefore, was reviewed by the Office of Management and Budget (OMB). The interim final rule is a significant rule under the Regulatory Policies and Procedures order issued by the U.S. Department of Transportation (44 FR 11034). We completed a regulatory evaluation and placed it in the docket for this rulemaking.

Generally, costs associated with the provisions of this interim final rule include costs for collecting and retaining data and performing the mandated route safety and security analysis. We estimate total 20-year costs to gather the data and conduct the analyses proposed in this interim final rule to be about \$20 million (discounted at 7%).

In addition, rail carriers and shippers may incur costs associated with rerouting shipments or mitigating safety and security vulnerabilities identified as a result of their route analyses. Because the interim final rule builds on the current route evaluation and routing practices already in place for most, if not all, railroads that haul the types of hazardous materials covered, we do not expect rail carriers to incur significant costs associated with rerouting. The railroads already conduct route analyses and re-routing—in line with what this rule would require—in accordance with the AAR comments and Circular OT-55-1. Moreover, the smaller carriers (regionals and short lines) are unlikely to have access to many alternative routes, and where an alternative does exist, it is not likely to be safer and more secure than the route they are currently using. If there is an alternative route the carrier determines to be safer and more secure than the one it is currently using, the carrier could well switch routes, even in the absence of a regulatory requirement, because it reduces the overall risk to its operations. Such reduction in risk offers a significant economic advantage in the long run. Identifying and mitigating security vulnerabilities along rail routes is currently being done by the railroads. We believe that readily available “high-tech” and “low-tech” measures are

being quickly implemented. The development, procurement, and widespread installation of the more technology-driven alternatives could take several years, however, PHMSA's previous security rule requires the railroads to have a security plan that includes an route security. This existing regulatory requirement, coupled with industry efforts to address security vulnerabilities, has caused railroads to enhance their security posture. As with routing decisions, such reduction in risk offers a significant economic advantage in the long run. Therefore, we expect that the cost of mitigation attributed solely to this interim final rule will not be significant. We note in this regard that safety and security measures are intertwined and often complementary; therefore, separating security costs from safety costs is not feasible.

We do not expect this interim final rule to result in a diversion from railroads to trucks. For the movements subject to this rule, transportation and distribution patterns, with associated infrastructure, tend to be well-established. For example, the vast majority of PIH offshore ship by rail, indeed, many do not have the infrastructure (loading racks, product transfer facilities) necessary to utilize trucks for such transportation. Moreover, the current fleet of cargo tank motor vehicles is insufficient to handle a significant shift of PIH cargoes from rail to highway—for example, there are only 85 cargo tank motor vehicles used for the transportation of chlorine. Because it takes about four tank trucks to haul the amount of product that can be moved in a rail tank car, the industry would have to build many more trucks to accommodate a shift in transportation from rail to highway, necessitating a significant expansion in current tank truck manufacturing capacity. In addition, because it takes four trucks to transport the same amount of product as a single rail tank car, it generally is only cost-effective to utilize trucks for relatively limited distances. A farm cooperative or agricultural products distributor, for example, typically receives large quantities of anhydrous ammonia by rail car and offloads the material into storage tanks for subsequent truck movement to local customers.

Changing these established transportation patterns would require substantial investment in new capacity and infrastructure, vastly exceeding the costs of complying with the interim final rule. Under these circumstances, we do not expect any shift in transportation mode as a result of implementation of this interim final

rule. We note in this regard that no commenters raised this issue in their discussions of the potential impacts of the proposals in the NPRM. Overall transportation costs should not substantially increase because of this interim final rule.

Estimating the security benefits of the new requirements is challenging. Accident causation probabilities can be estimated based on accident histories in a way that the probability of a criminal or terrorist act cannot. The threat of an attack is virtually impossible to assess from a quantitative standpoint. It is undeniable that hazardous materials in transportation are a possible target of terrorism or sabotage. The probability that hazardous materials will be targeted is, at best, a guess. Similarly, the projected outcome of a terrorist attack cannot be precisely estimated. It is assumed choices will be made to maximize consequences and damages. Scenarios can be envisioned in which hazardous materials could be used to inflict hundreds or even thousands of fatalities. To date, there have been no known or specific threats against freight railroads, rail cars, or tank cars, which makes all of these elements even more difficult to quantify. Security plans lower risk through the identification and mitigation of vulnerabilities. Therefore, rail carriers and the public benefit from the development and implementation of security plans. However, forecasting the benefits likely to result from plan implementation requires the exercise of judgment and necessarily includes subjective elements.

The major benefits expected to result from this interim final rule relate to enhanced safety and security of rail shipments of hazardous materials. We estimated the costs of a major accident or terrorist incident by calculating the costs of the January 2005 Graniteville, South Carolina, accident. This accident killed nine people and injured 554 more. In addition, the accident necessitated the evacuation of more than 5,400 people. Total costs associated with the Graniteville accident are almost \$128 million. The consequences of an intentional release by a criminal or terrorist action, particularly in an urban area, likely would be more severe than the Graniteville accident because an intentional act would be designed to inflict the most damage possible. The requirements of the interim final rule are intended to reduce the safety and security risks associated with the transportation of the specified hazardous materials. If the measures proposed in this interim final rule

prevent just one major accident or intentional release over a twenty-year period, the resulting benefits would more than justify the potential compliance costs, we believe that they could.

G. Executive Order 13132

This interim final rule has been analyzed in accordance with the principles and criteria contained in Executive Orders 13132 ("Federalism") and 13175 ("Consultation and Coordination with Indian Tribal Governments"). This interim final rule would not have any direct effect on the states, their political subdivisions, or Indian tribes; it would not impose any compliance costs; and it would not affect the relationships between the national government and the states, political subdivisions, or Indian tribes, or the distribution of power and responsibilities among the various levels of government.

Section VI K above contains a discussion of PHMSA's conclusion that the decision in the March 25, 2003 final rule in HM-232 to leave to rail carriers the specifics of routing rail shipments of hazardous materials preempts all states, their political subdivisions, and Indian tribes from prescribing or restricting routes for rail shipments of hazardous materials, under Federal hazardous material transportation law (49 U.S.C. 5125) and the Federal Rail Safety Act (49 U.S.C. 20106). In that section, we also discuss the comments on the proposed language in the NPRM concerning the preemptive effect of HM-232 and this interim final rule and explain the reasons for adopting revised language in 49 CFR 172.822.

D. Executive Order 13175

We analyzed this interim final rule in accordance with the principles and criteria prescribed in Executive Order 13175 ("Consultation and Coordination with Indian Tribal Governments"). Because this interim final rule does not significantly or uniquely affect tribes, and does not impose substantial and direct compliance costs on Indian tribal governments, the funding and consultation requirements of Executive Order 13175 do not apply, thus, a tribal summary impact statement is not required.

E. Regulatory Flexibility Act, Executive Order 13272, and DOT Procedures and Policies

To ensure potential impacts of rules on small entities are properly considered, we developed this interim final rule in accordance with Executive Order 13272 ("Proper Consideration of

Small Entities in Agency Rulemaking") and DOT's procedures and policies to promote compliance with the Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

The Regulatory Flexibility Act requires an agency to review regulations to assess their impact on small entities. An agency must conduct a regulatory flexibility analysis unless it determines and certifies that a rule is not expected to have a significant impact on a substantial number of small entities.

The Small Business Administration (SBA) permits agencies to alter the SBA definitions for small businesses upon consultation with SBA and in conjunction with public comment. Pursuant to this authority, FRA published a final rule (68 FR 24891, May 9, 2003) defining a "small entity" as a railroad meeting the line haulage revenue requirements of a Class III railroad. Currently, the revenue requirements are \$20 million or less in annual operating revenue. This is the definition used by PHMSA to determine the potential impact of this interim final rule on small entities.

Not all small railroads will be required to comply with the provisions of this interim final rule. Most of the 510 small railroads transport no hazardous materials. PHMSA and FRA estimate there are about 100 small railroads—or 20% of all small railroads—that could potentially be affected by this interim final rule. Cost impacts for small railroads will result primarily from the costs for data collection and analysis. PHMSA estimates the cost to each small railroad to be \$2,776.70 per year over 20 years, discounted at 7%. Based on small railroads' annual operating revenues, those costs are not significant. Small railroads' annual operating revenues range from \$3 million to \$20 million. Thus, the costs imposed by the interim final rule amount to between 0.01% and 0.09% of a small railroad's annual operating revenue.

This interim final rule will not have a noticeable impact on the competitive position of the affected small railroads or on the small entity segment of the railroad industry as a whole. The small entity segment of the railroad industry faces little in the way of intramodal competition. Small railroads generally serve as "feeders" to the larger railroads, collecting carloads in smaller numbers and at lower densities than would be economical for the larger railroads. They transport those cars over relatively short distances and then turn them over to the larger systems, which transport them relatively long distances to their ultimate destination, or for handoff back

to a smaller railroad for final delivery. Although their relative interests do not always coincide, the relationship between the large and small entity segments of the railroad industry is more supportive and co-dependent than competitive.

It is also rare for small railroads to compete with each other. As mentioned above, small railroads generally serve smaller, lower density markets and customers. They tend to operate in markets where there is not enough traffic to attract or sustain rail competition, large or small. Given the significant capital investment required (to acquire right-of-way, build track, purchase fleet, etc.), new entry in the railroad industry is especially rare. Thus, even to the extent the interim final rule may have an economic impact, it should have no impact on the intramodal competitive position of small railroads.

We did not receive any comments in opposition to our conclusion that this rulemaking will not have a significant impact on a substantial number of small entities. Based on the lack of opposing comments, the foregoing discussion, and more detailed analysis in the regulatory evaluation for this interim final rule, I certify that the provisions of this interim final rule, if adopted, will not have a significant impact on a substantial number of small entities.

F. Paperwork Reduction Act

This interim final rule may result in an increase in annual burden and costs under Office of Management and Budget (OMB) Control Number 2137-0612. PHMSA currently has an approved information collection under OMB Control No. 2137-0612, "Hazardous Materials Security Plans" expiring May 31, 2009.

Under the Paperwork Reduction Act of 1995, no person is required to respond to an information collection unless it has been approved by OMB and displays a valid OMB control number. 5 CFR 1320.8(d) requires that PHMSA provide interested members of the public and affected agencies an opportunity to comment on information and recordkeeping requests.

This notice identifies a revised information collection request that PHMSA submitted to OMB for approval based on the requirements in this rule. PHMSA has developed burden estimates to reflect changes in this proposed rule. We estimate that the total information collection and recordkeeping burden for the current requirements and as specified in this rule would be as follows:

OMB No. 2137-0612, "Hazardous Materials Security Plans"

First Year Annual Burden:

Total Annual Number of Respondents: 139.

Total Annual Responses: 139

Total Annual Burden Hours: 51,489.

Total Annual Burden Cost:

\$3,130,859.27

Subsequent Year Burden:

Total Annual Number of Respondents: 139

Total Annual Responses: 139.

Total Annual Burden Hours: 13,677

Total Annual Burden Cost:

\$831,971.91

Direct your requests for a copy of the information collection to Deborah Boothe or T. Glenn Foster, U.S. Department of Transportation, Pipeline & Hazardous Materials Safety Administration (PHMSA), East Building, Office of Hazardous Materials Standards (PHH-11), 1200 New Jersey Avenue Southeast Washington DC, 20590, Telephone (202) 368-8553.

G. Regulation Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

H. Unfunded Mandates Reform Act

This interim final rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of \$120.7 million or more to either state, local, or tribal governments, in the aggregate, or to the private sector, and is the least burdensome alternative to achieve the objective of the rule.

I. Environmental Assessment

The National Environmental Policy Act, 42 U.S.C. 4321-4375, requires that federal agencies analyze proposed actions to determine whether the action will have a significant impact on the human environment. The Council on Environmental Quality (CEQ) regulations order federal agencies to conduct an environmental review considering: (1) The need for the proposed action; (2) alternatives to the proposed action; (3) probable environmental impacts of the proposed action and alternatives; and (4) the agencies and persons consulted during the consideration process. 40 CFR 1508.9(b).

In accordance with the CEQ regulations, we completed an environmental assessment for this interim final rule that considers the potential environmental impacts of three alternatives. The environmental assessment is available for review in the public docket for this rulemaking.

The provisions of this interim final rule build on current regulatory requirements to enhance the transportation safety and security of shipments of hazardous materials transported by rail, thereby reducing the risks of an accidental or intentional release of hazardous materials and consequent environmental damage. The net environmental impact, therefore, will be moderately positive. There are no significant environmental impacts associated with this interim final rule.

J Privacy Act

Anyone is able to search the electronic form of any written communications and comments received into any of our dockets by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477) or you may visit <http://www.regulations.gov>.

List of Subjects

49 CFR Part 172

Hazardous materials transportation, Hazardous waste, Labeling, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 174

Hazardous materials transportation, Rail carriers, Reporting and recordkeeping requirements

■ In consideration of the foregoing, we are amending title 49 Chapter I, Subchapter C, as follows:

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, AND TRAINING REQUIREMENTS

■ 1. The authority citation for part 172 continues to read as follows:

Authority: 49 U.S.C. 5101–5128, 44701; 49 CFR 1.53.

■ 2. Revise the title of subpart I of part 172 to read as follows:

Subpart I—Safety and Security Plans

■ 3. Add new § 172.820, to read as follows:

§ 172.820 Additional planning requirements for transportation by rail.

(a) *General.* Each rail carrier transporting in commerce one or more of the following materials is subject to the additional safety and security planning requirements of this section:

(1) More than 2,268 kg (5,000 lbs) in a single carload of a Division 1.1, 1.2 or 1.3 explosive;

(2) A bulk quantity of a material poisonous by inhalation, as defined in § 171.8 of this subchapter (including anhydrous ammonia); or

(3) A highway route-controlled quantity of a Class 7 (radioactive) material, as defined in § 173.403 of this subchapter.

(b) *Commodity data.* Not later than 90 days after the end of each calendar year, a rail carrier must compile commodity data for the previous calendar year for the materials listed in paragraph (a) of this section, except that for calendar year 2008, data may be compiled for the 6-month period beginning July 1, 2008. The following stipulations apply to data collected:

(1) Commodity data must be collected by route, a line segment or series of line segments as aggregated by the rail carrier. Within the rail carrier selected route, the commodity data must identify the geographic location of the route and the total number of shipments by UN identification number for the materials specified in paragraph (a) of this section.

(2) A carrier may compile commodity data, by UN number, for all Class 7 materials transported (instead of only highway route controlled quantities of Class 7 materials) and for all Division 6.1 materials transported (instead of only Division 6.1 poison inhalation hazard materials).

(c) *Rail transportation route analysis.* For each calendar year, a rail carrier must analyze the safety and security risks for the transportation route(s), identified in the commodity data collected as required by paragraph (b) of this section. The route analysis must be in writing and include the factors contained in Appendix D to this part, as applicable:

(1) The safety and security risks present must be analyzed for the route and railroad facilities along the route. For purposes of this section, railroad facilities are railroad property including, but not limited to, classification and switching yards, storage facilities, and non-private

sidings. This term does not include an offeror's facility, private track, private siding, or consignee's facility.

(2) In performing the analysis required by this paragraph, the rail carrier must seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to the route(s) utilized. If a rail carrier is unable to acquire relevant information from state, local, or tribal officials, then it must document that in its analysis. For purposes of this section, a high-consequence target means a property, natural resource, location, area, or other target designated by the Secretary of Homeland Security that is a viable terrorist target of national significance, the attack of which by railroad could result in catastrophic loss of life, significant damage to national security or defense capabilities, or national economic harm.

(d) *Alternative route analysis.* (1) For each calendar year, a rail carrier must identify practicable alternative routes over which it has authority to operate. If an alternative exists, as an alternative route for each of the transportation routes analyzed in accordance with paragraph (c) of this section. The carrier must perform a safety and security risk assessment of the alternative routes for comparison to the route analysis prescribed in paragraph (c) of this section. The alternative route analysis must be in writing and include the criteria in Appendix D of this part. When determining practicable alternative routes, the rail carrier must consider the use of interchange agreements with other rail carriers. The written alternative route analysis must also consider:

(i) Safety and security risks presented by use of the alternative route(s).

(ii) Comparison of the safety and security risks of the alternative(s) to the primary rail transportation route, including the risk of a catastrophic release from a shipment traveling along each route;

(iii) Any remediation or mitigation measures implemented on the primary or alternative route(s), and

(iv) Potential economic effects of using the alternative route(s), including but not limited to the economics of the commodity, route, and customer relationship.

(2) In performing the analysis required by this paragraph, the rail carrier should seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to the alternative routes. If a rail carrier determines that it is not

appropriate to seek such relevant information, then it must explain its reasoning for that determination in its analysis.

(e) *Route Selection.* A carrier must use the analysis performed as required by paragraphs (c) and (d) of this section to select the route to be used in moving the materials covered by paragraph (a) of this section. The carrier must consider any remediation measures implemented on a route. Using this process, the carrier must at least annually review and select the practicable route posing the least overall safety and security risk. The rail carrier must retain in writing all route review and selection decision documentation and restrict the distribution, disclosure, and availability of information contained in the route analysis to covered persons with a need-to-know, as described in parts 15 and 1520 of this title. This documentation should include, but is not limited to, comparative analyses, charts, graphics or rail system maps.

(f) *Completion of route analyses.* (1) The initial rail transportation route analysis, alternative route analysis, and route selection process required under paragraphs (c), (d), and (e) of this section must be completed by September 1, 2009. In subsequent years, the rail transportation route analysis, alternative route analysis, and route selection process required under paragraphs (c), (d), and (e) of this section must be completed no later than the end of the calendar year following the year to which the analyses apply. The initial analysis and route selection determinations required under paragraphs (c), (d), and (e) of this section must include a comprehensive review of the entire system. Subsequent analyses and route selection determinations required under paragraphs (c), (d), and (e) of this section must include a comprehensive, system-wide review of all operational changes, infrastructure modifications, traffic adjustments, changes in the nature of high-consequence targets located along, or in proximity to, the route, and any other changes affecting the safety or security of the movements of the materials specified in paragraph (a) of this section that were implemented during the calendar year.

(2) A rail carrier need not perform a rail transportation route analysis, alternative route analysis, or route selection process for any hazardous material other than the materials specified in paragraph (a) of this section.

(g) *Storage, delays in transit, and notification.* With respect to the materials specified in paragraph (a) of

this section, each rail carrier must ensure the safety and security plan it develops and implements under this subpart includes all of the following:

(1) A procedure under which the rail carrier must formally consult with offerors and consignees in order to develop measures for minimizing, to the extent practicable, the duration of any storage of the material incidental to movement (see § 171.8 of this subchapter). Such measures should be implemented with mutual consent of all parties.

(2) Measures to prevent unauthorized access to the materials during storage or delays in transit.

(3) Measures to mitigate risk to population centers associated with in-transit storage.

(4) Measures to be taken in the event of an escalating threat level for materials stored in transit.

(5) Procedures for notifying the consignee in the event of a significant delay during transportation; such notification must be completed within 48 hours after the carrier has identified the delay and must include a revised delivery schedule. A significant delay is one that compromises the safety or security of the hazardous material or delays the shipment beyond its normal expected or planned shipping time. Notification should be made by a method acceptable to both the rail carrier and consignee.

(h) *Recordkeeping.* (1) Each rail carrier must maintain a copy of the information specified in paragraphs (b), (c), (d), (e), and (f) of this section (or an electronic image thereof) that is accessible at, or through, its principal place of business and must make the record available upon request, at a reasonable time and location, to an authorized official of the Department of Transportation or the Department of Homeland Security. Records must be retained for a minimum of two years.

(2) Each rail carrier must restrict the distribution, disclosure, and availability of information collected or developed in accordance with paragraphs (c), (d), (e), and (f) of this section to covered persons with a need-to-know, as described in parts 15 and 1520 of this title.

(i) *Compliance and enforcement.* If the carrier's route selection documentation and underlying analyses are found to be deficient, the carrier may be required to revise the analyses or make changes in route selection. If DOT finds that a chosen route is not the safest and most secure practicable route available, the FRA Associate Administrator for Safety, in consultation with TSA, may require the use of an alternative route. Prior to making such

a determination, FRA and TSA will consult with the Surface Transportation Board (STB) regarding whether the contemplated alternative route(s) would be economically practicable.

■ 4. Add new § 172.822 to read as follows:

§ 172.822 Limitation on actions by states, local governments, and Indian tribes.

A law, order, or other directive of a state, political subdivision of a state, or an Indian tribe that designates, limits, or prohibits the use of a rail line (other than a rail line owned by a state, political subdivision of a state, or an Indian tribe) for the transportation of hazardous materials, including, but not limited to, the materials specified in § 172.820(a), is preempted. 49 U.S.C. 5125, 20108.

■ 5. Add new Appendix D to part 172, to read as follows.

Appendix D to Part 172—Rail Risk Analysis Factors

A. This appendix sets forth the minimum criteria that must be considered by rail carriers when performing the safety and security risk analyses required by § 172.820. The risk analysis to be performed may be quantitative, qualitative, or a combination of both. In addition to clearly identifying the hazardous material(s) and route(s) being analyzed, the analysis must provide a thorough description of the threats, identified vulnerabilities, and mitigation measures implemented to address identified vulnerabilities.

B. In evaluating the safety and security of hazardous materials transport, selection of the route for transportation is critical. For the purpose of rail transportation route analysis, as specified in § 172.820(c) and (d), a route may include the point where the carrier takes possession of the material and all track and railroad facilities up to the point where the material is relinquished to another entity. Railroad facilities are railroad property including, but not limited to, classification and switching yards, storage facilities, and non-private sidings; however, they do not include an offeror's facility, private track, private siding, or consignee's facility. Each rail carrier must use best efforts to communicate with its shippers, consignees, and interlining partners to ensure the safety and security of shipments during all stages of transportation.

C. Because of the varying operational environments and interconnected nature of the rail system, each carrier must select and document the analysis method/model used and identify the routes to be analyzed.

D. The safety and security risk analysis must consider current data and information as well as changes that may reasonably be anticipated to occur during the analysis year. Factors to be considered in the performance of this safety and security risk analysis include:

1. Volume of hazardous material transported;

2. Rail traffic density,
3. Trip length for route,
4. Presence and characteristics of railroad facilities,
5. Track type, class, and maintenance schedule,
6. Track grade and curvature,
7. Presence or absence of signals and train control systems along the route ("dark" versus signaled territory).
8. Presence or absence of wayside hazard detectors,
9. Number and types of grade crossings,
10. Single versus double track territory,
11. Frequency and location of track turnouts,
12. Proximity to iconic targets,
13. Environmentally sensitive or significant areas,
14. Population density along the route,
15. Venues along the route (stations, events, places of congregation),
16. Emergency response capability along the route,
17. Areas of high consequence along the route, including high consequence targets as defined in § 172.820(c),
18. Presence of passenger traffic along route (shared track),
19. Speed of train operations,
20. Proximity to on-route storage or repair facilities,
21. Known threats, including any non-public threat scenarios provided by the Department of Homeland Security or the Department of Transportation for carrier use in the development of the route assessment,
22. Measures in place to address apparent safety and security risks,
23. Availability of practicable alternative routes,
24. Past incidents,
25. Overall times in transit,
26. Training and skill level of crews, and
27. Impact on rail network traffic and congestion

PART 174—CARRIAGE BY RAIL

■ 6. The authority citation for part 174 continues to read as follows.

Authority: 49 U.S.C. 5101–5128; 49 CFR 1.53.

■ 7. Revise § 174.9 to read as follows:

§ 174.9 Safety and security inspection and acceptance.

(a) At each location where a hazardous material is accepted for transportation or placed in a train, the carrier must inspect each rail car containing the hazardous material, at ground level, for required markings, labels, placards, securing of closures, and leakage. These inspections may be performed in conjunction with inspections required under parts 215 and 232 of this title.

(b) For each rail car containing an amount of hazardous material requiring placarding in accordance with § 172.504 of this subchapter, the carrier must visually inspect the rail car at ground level for signs of tampering, including closures and seals, for suspicious items or items that do not belong, and for other signs that the security of the car may have been compromised, including the presence of an improvised explosive device. As used in this section, an improvised explosive device is a device fabricated in an improvised manner incorporating explosives or destructive, lethal, noxious, pyrotechnic, or incendiary chemicals in its design, and generally includes a power supply, a switch or timer, and a detonator or initiator. The carrier should be

particularly attentive to signs that security may have been compromised on rail cars transporting materials covered by § 172.820 of this subchapter, rail carload quantities of ammonium nitrate or ammonium nitrate mixtures in solid form, or hazardous materials of interest based on current threat information.

(c) If a rail car does not conform to the safety and security requirements of this subchapter, the carrier may not forward or transport the rail car until the deficiencies are corrected or the car is approved for movement in accordance with § 174.50.

(d) Where an indication of tampering or suspicious item is found, a carrier must take appropriate action to ensure the security of the rail car and its contents have not been compromised before accepting the rail car for further movement. If the carrier determines that the security of the rail car has been compromised, the carrier must take action, in conformance with its existing security plan (see subpart I of part 174 of this subchapter) to address the security issues before forwarding the rail car for further movement.

Issued in Washington, DC on April 11, 2008, under the authority delegated in 49 CFR part 1.

Carl T. Johnson,

Administrator

[FR Doc. E8-8185 Filed 4-15-08; 8:45 am]

DEILING CODE 4910-60-P

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Part 209

(FRA-2007-28573)

RIN 2130-AB87

Railroad Safety Enforcement Procedures; Enforcement, Appeal and Hearing Procedures for Rail Routing Decisions

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT)

ACTION: Notice of proposed rulemaking.

SUMMARY: In a separate document published today, the Pipeline and Hazardous Materials Safety Administration is requiring railroad carriers to compile annual data on specified shipments of hazardous materials (security-sensitive materials), use the data to analyze safety and security risks along rail transportation routes where those materials are transported, assess alternative routing options, and make routing decisions based on those assessments. This document proposes procedures to enable railroad carriers to challenge rail routing decisions made by the FRA Associate Administrator for Safety in accordance with PHMSA's requirements.

DATES: Submit comments by June 16, 2008. To the extent possible, we will consider late-filed comments as we develop a final rule.

ADDRESSES: You may submit comments identified by the docket number FRA 2007-28573 by any of the following methods:

- **Federal eRule-making Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.

- **Fax:** 1-202-403-2251.

- **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.

- **Hand Delivery:** U.S. Department of Transportation, Docket Operations, M-30, West Building, Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Instructions: You must include the agency name and docket number FRA-2007-28573 for this notice at the beginning of your comment. Internet users may access comments received by DOT at <http://www.regulations.gov>. Note that comments received may be

posted without change to <http://www.regulations.gov> including any personal information provided. Please see the Privacy Act section of this document.

Comments or those portions of comments FRA determines to include trade secrets, confidential commercial information, or sensitive security information (SSI) will not be placed in the public docket and will be handled separately. If you believe your comments contain trade secrets, confidential commercial information, or SSI, those comments or the relevant portions of those comments should be appropriately marked so that DOT may make a determination. FRA procedures in 49 CFR 209.11 establish a mechanism by which commenters may request confidentiality.

In accordance with 49 CFR 209.11, you may ask FRA to keep information confidential using the following procedures: (1) Mark the document or portions of the document "CONFIDENTIAL" or "CONTAINS CONFIDENTIAL INFORMATION"; (2) send DMS both the original document and a second copy of the original document with the confidential information deleted; and (3) include a separate, detailed statement justifying nondisclosure, explaining why the information is confidential (such as a trade secret, confidential commercial information, or SSI), and referring to the specific legal authority claimed. In your explanation, you should provide enough information to enable FRA to determine whether the information provided is protected by law and must be handled separately.

In addition, for comments or portions of comments that you believe contain SSI as defined in 49 CFR 15.7, you should comply with Federal regulations governing restrictions on the disclosure of SSI. See 49 CFR 1520.9 and 49 CFR 15.9. For example, these sections restrict the sharing of SSI in those with a need to know, set out the requirement to mark the information as SSI, and address how the information should be disposed. Note also when mailing in or using a special delivery service to send comments containing SSI, comments should be wrapped in a manner to prevent the information from being read. FRA and the Transportation Security Administration (TSA) may perform concurrent reviews on requests for designations as SSI.

After reviewing your request for confidentiality and the information provided, FRA will analyze applicable laws and regulations to decide whether to treat the information as confidential. FRA will notify you of the decision to

grant or deny confidentiality. If FRA denies confidentiality, you will be provided an opportunity to respond to the denial before the information is publicly disclosed. FRA will reconsider its decision to deny confidentiality based on your response.

Regarding comments not marked as confidential, prior to posting comments received in response to this notice in the public docket, FRA will review all comments, whether or not they are identified as confidential, to determine if the submission or portions of the submission contain information that should not be made available to the general public. FRA will notify you if the agencies make such a determination relative to your comment. If, prior to submitting your comment, you have any questions concerning the procedures for determining confidentiality or security sensitivity, you may call the individual listed below under FOR FURTHER INFORMATION CONTACT for more information.

FOR FURTHER INFORMATION CONTACT: Roberta Stewart, Trial Attorney, Office of Chief Counsel, RCC-12, Mail Stop 10, FRA, 1120 Vermont Ave., NW, Washington, DC 20590 (telephone 202-493-8027).

SUPPLEMENTARY INFORMATION.

I. Background

On December 21, 2006, the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a notice of proposed rulemaking (PHMSA's NPRM), 71 FR 76834, proposing revisions to the requirements in the hazardous materials regulations (HMR) applicable to the safe and secure transportation of hazardous materials transported in commerce by rail. In today's edition of the Federal Register, PHMSA issued an interim final rule (IFR) on this subject. Specifically, PHMSA is requiring railroad carriers to compile annual data on specified shipments of hazardous materials (security-sensitive materials), use the data to analyze safety and security risks along rail transportation routes where those materials are transported, assess alternative routing options, and make routing decisions based on those assessments. In that IFR, PHMSA also issued clarifications of the current security plan requirements to address on route storage, delays in transit, delivery notification, and additional security inspection requirements for hazardous materials shipments.

The Federal hazardous materials transportation law (Federal hazmat law), 49 U.S.C. 5101 *et seq.*, authorizes the Secretary of the Department of

Transportation (Secretary) to "prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce." The Secretary has delegated this authority to PHMSA (formerly the Research and Special Programs Administration).

The HMR (49 CFR parts 171-180), promulgated by PHMSA under the mandate in 49 U.S.C. 5103(b) govern safety aspects, including security, of the transportation of hazardous material the Secretary considers appropriate. Consistent with this security authority, in March 2003, PHMSA adopted new transportation security requirements for offhous and transporters of certain classes and quantities of hazardous materials and new security training requirements for hazardous materials employees. The security regulations, which are explained in more detail below, require offhous and carriers to develop and implement security plans and to train their employees to recognize and respond to possible security threats.

When PHMSA adopted its security regulations, shippers and railroad carriers were informed these regulations were "the first step in what may be a series of rulemakings to address the security of hazardous materials shipments." 68 FR 14500, 14511 (March 25, 2003). PHMSA also noted that "TSA is developing regulations that are likely to impose additional requirements beyond those established in this final rule," and stated it would "consult and coordinate with TSA concerning security-related hazardous materials transportation regulations." 68 FR 14511.

Enforcement of the HMR has been delegated by the Secretary to modal administrations within DOT. Specifically, FRA is authorized to "carry out the functions vested in the Secretary by 49 U.S.C. 5121(a), (b), (c) and (d), 5122, 5123, and 5124, with particular emphasis on the transportation or shipment of hazardous materials by railroad." 49 CFR 1.49(s).

FRA is the agency within DOT responsible for railroad safety, and is the primary enforcer of safety and security requirements in the HMR pertaining to rail shippers and carriers. FRA inspectors routinely review hazardous materials security plans required by the HMR during site visits to railroad carrier and shipper facilities and may offer suggestions for improving the security plans, as appropriate. If an inspector's recommendations are not implemented, FRA may compel a rail shipper or carrier to make changes to its security plan through its normal

enforcement process. FRA consults with TSA concerning railroad security issues in accordance with the FRA-TSA annex to the DOT-Department of Homeland Security Memorandum of Understanding (DOT-DHS MOU) on transportation security.

PHMSA's NPRM and IFR provide that a railroad carrier may be required to revise its analysis or make changes to a route selected by the carrier to move covered hazardous materials if the route selection documentation or underlying analysis is found to be deficient. In addition, both PHMSA's NPRM and IFR provide that if the carrier's chosen route is found not to be the safest and most secure commercially practicable route available, the FRA Associate Administrator for Safety (Associate Administrator), in consultation with TSA, may require the use of an alternative route until such time as identified deficiencies are satisfactorily addressed. PHMSA's NPRM stated that FRA would establish procedures for railroad carriers to appeal a decision by the Associate Administrator to require the use of an alternative route.

Several comments were submitted regarding the PHMSA NPRM and the possibility that the FRA Associate Administrator could require rerouting. The Association of American Railroads (AAR) questioned whether FRA properly had the authority to require rerouting. The Dow Chemical Company and the Institute of Makers of Explosives suggested that, consistent with fundamental concepts of due process, PHMSA should provide an immediate procedure to appeal an FRA determination to require the use of an alternative route. The Surface Transportation Board (STB) suggested that prior to making a determination requiring the use of an alternative route, FRA and TSA obtain the comments of the STB as to whether the contemplated alternative route(s) would be commercially practicable.

FRA's authority to require the use of an alternative route derives from § 5121(a) of the Federal hazard law. The Secretary is authorized to issue an order, after notice and an opportunity for a hearing, requiring compliance with the Federal hazard law or a regulation, order, special permit, or approval issued under Federal hazard law. The authority provided in 49 U.S.C. 5121(a) has been delegated to FRA "with particular emphasis on the transportation or shipment of hazardous materials by railroad" (49 CFR 1.49(s)), as well as to PHMSA, the Federal Aviation Administration, the Federal Motor Carrier Safety Administration and the United States Coast Guard (with

"particular emphasis" on the respective authority of these agencies).

II. Proposals in This NPRM

As previously noted, in its rail security NPRM, PHMSA stated that FRA would provide a procedure for administrative due process so that a railroad carrier may seek redress of decision by the Associate Administrator that the carrier's routing analysis is deficient and directing a carrier to use a route while the deficiencies are corrected. 71 FR at 76844. This NPRM proposes procedures governing the review of rail routing decisions, including appeal, and those procedures are summarized below. FRA notes in this regard that the procedures are carefully designed so that a carrier is fully informed of deficiencies found by FRA in a carrier's safety and security routing analysis, and that the carrier is permitted to work with FRA to correct those deficiencies. FRA will only require the use of an alternate route if it concludes the carrier's analysis did not satisfy the minimum criteria for performing a safety and security risk analysis, as established by § 172.820 and appendix D to part 172, and that an alternative route poses the least safety and security risks based on the information available to the agency. Moreover, FRA expects to mandate temporary route changes only for the most exigent circumstances.

Section 200.501 provides that if the Associate Administrator determines that a carrier's route selection documentation and underlying analysis are deficient and fail to establish that the route chosen by the carrier is the safest and most secure route, the Associate Administrator will issue a written notice of review ("Notice") to the railroad carrier. The Notice will specifically address each deficiency found in the railroad carrier's route analysis, and may also include suggested mitigation measures that may be taken to remedy the deficiencies, including selection and use of an alternative commercially practicable route. After issuing the Notice, the Associate Administrator will conference with the railroad carrier for a 30-day period (or longer, if necessary, as determined by the Associate Administrator) to resolve the deficiencies. The Associate Administrator will keep a record of all written correspondence with the railroad carrier, as well as written summaries of each meeting and telephone conversation with the carrier pertaining to the Notice.

If, after the close of the 30-day period, the Associate Administrator concludes

that the identified deficiencies have not been satisfactorily resolved, the Associate Administrator will:

(1) Consult with TSA and PHMSA regarding the safety and security of the route proposed by the railroad carrier and any alternative route(s) over which the carrier is authorized to operate that are being considered by the Associate Administrator. A written summary of the recommendations from TSA and PHMSA will be prepared;

(2) Obtain the comments of the STB regarding whether the alternative route(s) under consideration by the Associate Administrator would be commercially practicable; and

(3) After fully considering the input of TSA, PHMSA and STB, render a decision.

In section 209 501(d), there are two possible outcomes of a decision by the Associate Administrator. First, the Associate Administrator may find that the route analysis and documentation provided by the railroad carrier are sufficient to support the route selected by the carrier or that commercial practicability issues preclude the use of an alternative route. In either of those circumstances, the Associate Administrator would conclude the route review without further action, and notify the railroad carrier of the decision in writing.

Alternatively, the Associate Administrator may conclude that the railroad carrier's route analysis does not support the railroad carrier's original selected route, that safety and security considerations establish a significant preference for an alternative route, and that the alternative route is commercially practicable. The Associate Administrator would then issue a second written notice (2nd Notice) to the railroad carrier that specifically identifies deficiencies in the route analysis, including a clear description of the risks that have not been satisfactorily mitigated, explains why the available data and reasonable inferences support an alternative route; and directs the railroad carrier to temporarily use the alternative route determined by the Associate Administrator to be the safest and most secure route. The railroad carrier would be required to start using the alternative route selected by the Associate Administrator within 20 days after the issuance date of the 2nd Notice. The railroad carrier shall use the alternative route until such time as the carrier has adequately mitigated the risks identified by the Associate Administrator on the original route selected by the carrier.

When the Associate Administrator issues a 2nd Notice directing the use of

an alternative route pursuant to section 209 501(d)(2), the Associate Administrator shall make available to the railroad carrier the administrative record rolled upon in issuing the 2nd Notice, including the recommendations of TSA, PHMSA and the STB to FRA.

Within 20 days after the issuance date of the 2nd Notice, the railroad carrier may (1) Comply with the Associate Administrator's directive to use an alternative route while addressing deficiencies in its route analysis identified by the Associate Administrator; or (2) file a petition for judicial review of the Associate Administrator's 2nd Notice. Judicial review would be available in an appropriate United States court of appeals as provided in 49 U.S.C. 5127. The filing of a petition for judicial review will not stay or modify the force and effect of final agency action unless otherwise ordered by the Associate Administrator or the court of appeals.

With respect to enforcement of the new rail security requirements established in PHMSA's IFR, FRA plans to work closely with TSA to develop a coordinated enforcement strategy to include both FRA and TSA inspection personnel. We note in this regard that TSA does not have the authority to enforce safety or security requirements established in the HMR if in the course of an inspection of a railroad carrier, TSA identifies evidence of non-compliance with a DOT security regulation. TSA will provide the information to FRA and PHMSA for appropriate action. TSA will not directly enforce DOT security rules, and will not initiate safety inspections. Consistent with the PHMSA-TSA and FRA-TSA annexes to the DOT-DHS MOU, all the involved agencies will cooperate to ensure coordinated, consistent, and effective activities related to rail security issues.

III. Rulemaking Analyses and Notices

A. Statutory/Legal Authority for This Rulemaking

This NPRM is published under authority of the Federal hazmat law (49 U.S.C. 5101 *et seq.*) Section 5103(b) of Federal hazmat law authorizes the Secretary to prescribe regulations for the safe transportation, including security, of hazardous materials in intrastate, interstate, and foreign commerce. The HMR are issued by PHMSA. 49 CFR 1 53(b) Responsibility for the enforcement of the hazardous materials transportation law and regulations primarily in instances where violations involve railroads and those entities

which ship by rail has been delegated to FRA. 49 CFR 1 49(s).

B. Executive Order 12866 and DOT Regulatory Policies and Procedures

This NPRM is not considered a significant regulatory action under section 3(f) of Executive Order 12866 and, therefore, was not reviewed by the Office of Management and Budget. This NPRM is not significant under the Regulatory Policies and Procedures of DOT (44 FR 11034). The economic impact of this proposed rule is minimal to the extent that preparation of a regulatory evaluation is not warranted.

C. Executive Order 13132

This NPRM has been analyzed in accordance with the principles and criteria contained in Executive Order 13132 ("Federalism"). This proposed rule would not have any direct effect on the States or their political subdivisions. It would not impose any compliance costs; and it would not affect the relationships between the national government and the States or their political subdivisions, or the distribution of power and responsibilities among the various levels of government.

D. Regulatory Flexibility Act and Executive Order 13272

FRA certifies that this proposed rule will not have a significant economic impact on a substantial number of small entities. This proposed rule would apply to carriers of hazardous materials by rail. Some of these entities are classified as small entities, however, there is no economic impact on any person that complies with Federal hazardous materials law and the regulations and orders issued under that law.

E. Paperwork Reduction Act

There are no new information requirements in this proposed rule.

F. Unfunded Mandates Reform Act of 1995

This proposed rule does not impose unfunded mandates under the Unfunded Mandates Act of 1995. It does not result in annual costs of \$128,100,000 or more, in the aggregate, to any of the following: State, local, or Indian tribal governments, or the private sector, and is the least burdensome alternative to achieve the objective of the rule.

G. Environmental Assessment

There are no significant environmental impacts associated with this proposed rule.

H. Energy Impact

Executive Order 13211 requires Federal agencies to prepare a Statement of Energy Effects for any "significant energy action." 66 FR 28355 (May 22, 2001). Under the Executive Order, a "significant energy action" is defined as any action by an agency (normally published in the Federal Register) that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of proposed rulemaking, and notices of proposed rulemaking, that (1)(i) is a significant regulatory action under Executive Order 12866 or any successor order, and (ii) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (2) is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. We have evaluated this proposed rule in accordance with Executive Order 13211, and we have determined that this NPRM is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Consequently, we have determined that this regulatory action is not a "significant energy action" within the meaning of Executive Order 13211.

I. Regulation Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in spring and fall of each year. The RIN contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

List of Subjects in 49 CFR Part 209

Administrative practice and procedure, Hazardous materials transportation, Penalties, Railroad safety, Railroad safety enforcement procedures, Reporting and recordkeeping requirements

Therefore, in consideration of the foregoing, chapter II, subtitle B of title 49 of the Code of Federal Regulations is amended as follows.

PART 209—[AMENDED]

1. The authority citation for part 209 continues to read as follows:

Authority: 49 U.S.C. 5123, 5124, 20103, 20107, 20111, 20112, 20114, 28 U.S.C. 2461 note, and 49 CFR 1.49.

2. Amend § 209.3 by adding the following new definitions:

Associate Administrator means the Associate Administrator for Safety, Federal Railroad Administration, or that person's delegate as designated in writing.

Railroad carrier means a person providing railroad transportation.

3. Add new Subpart F to read as follows:

Subpart F—Enforcement, Appeal and Hearing Procedures for Rail Routing Decisions Pursuant to 49 CFR 172.820

§ 209.501 Review of rail transportation safety and security route analysis.

(a) *Review of route analysis.* If the Associate Administrator for Safety determines that a railroad carrier's route selection, analysis and documentation pursuant to § 172.820 of chapter I of this title is deficient and fails to establish that the route chosen by the carrier is the safest and most secure route, the Associate Administrator shall issue a written notice of review ("Notice") to the railroad carrier. The Notice shall specifically address each deficiency found in the railroad carrier's route analysis. The Notice may also include suggested mitigation measures that the railroad carrier may take to remedy the deficiencies found, including selection of an alternative commercially feasible routing.

(b) *Conference to resolve deficiencies.* After issuing the Notice, the Associate Administrator conferences with the railroad carrier for a thirty (30)-day period, or such longer period as provided by the Associate Administrator, to resolve the deficiencies as identified in the Notice. The Associate Administrator keeps a record of all written correspondence with the railroad carrier and a summary of each meeting and telephone conversation with the railroad carrier that pertains to the Notice.

(c) *Consultation with and comment from other agencies.* If, after the close of the conference period, the Associate Administrator concludes that the issues identified have not been satisfactorily resolved, the Associate Administrator

(1) Consults with the Transportation Security Administration ("TSA") and the Pipeline and Hazardous Materials Safety Administration (PHMSA) regarding the safety and security of the route proposed by the railroad carrier and any alternative route(s) over which the carrier is authorized to operate that are being considered by the Associate Administrator and prepares a written summary of the recommendations from TSA and PHMSA,

(2) Obtains the comments of the Surface Transportation Board ("STB") regarding whether the alternative route(s) being considered by the Associate Administrator would be commercially practicable; and

(3) Fully considers the input of TSA, PHMSA and the STB and renders a decision pursuant to paragraph (d) of this section which shall be administratively final.

(d) *Decision.* (1) If the Associate Administrator finds that the route analysis and documentation provided by the railroad carrier are sufficient to support the route selected by the carrier or that valid issues of commercial practicability preclude an alternative route, the Associate Administrator concludes the review without further action and so notifies the railroad carrier in writing.

(2) If the Associate Administrator concludes that the railroad carrier's route analysis does not support the railroad carrier's original selected route, that safety and security considerations establish a significant preference for an alternative route, and that the alternative route is commercially practicable, the Associate Administrator issues a second written notice (2nd Notice) to the railroad carrier that:

(i) Specifically identifies deficiencies found in the railroad carrier's route analysis, including a clear description of the risks on the selected route that have not been satisfactorily mitigated;

(ii) Explains why the available data and reasonable inferences indicate that a commercially practicable alternative route poses less safety and security risks than the route selected by the railroad carrier, and

(iii) Directs the railroad carrier, beginning within twenty (20) days of the issuance date of the 2nd Notice on the railroad carrier, to temporarily use the alternative route that the Associate Administrator determines is the safest and most secure route until such time as the railroad carrier has adequately mitigated the risks identified by the Associate Administrator on the original route selected by the carrier.

(e) *Actions following 2nd Notice and re-routing directive.* When issuing a 2nd Notice that directs the use of an alternative route, the Associate Administrator shall make available to the railroad carrier the administrative record relied upon by the Associate Administrator in issuing the 2nd Notice, including the recommendations of TSA, PHMSA and STB to FRA made pursuant to paragraphs (c)(1) and (2) of this section. Within twenty (20) days of the issuance date of the Associate

Administrator's 2nd Notice, the railroad carrier may

(1) Comply with the Associate Administrator's directive to use an alternative route while the carrier works to address the deficiencies in its route analysis identified by the Associate Administrator; or

(2) File a petition for judicial review of the Associate Administrator's 2nd Notice, pursuant to paragraph (f) of this section

(f) *Review and decision by Associate Administrator on revised route analysis submitted in response to 2nd Notice*
Upon submission of a revised route analysis containing an adequate showing by the railroad carrier that its

original selected route is the safest and most secure route, the Associate Administrator notifies the carrier in writing that the carrier may use its original selected route

(g) *Appellate review* If a railroad carrier is aggrieved by final agency action, it may petition for review of the final decision in the appropriate United States court of appeals as provided in 49 U.S.C. 5127. The filing of the petition for review does not stay or modify the force and effect of the final agency action unless the Associate Administrator or the Court orders otherwise

(h) *Time* In computing any period of time prescribed by this part, the day of

any act, event, or default from which the designated period of time begins to run shall not be included. The last day of the period so computed shall be included, unless it is a Saturday, Sunday, or Federal holiday, in which event the period runs until the end of the next day which is not one of the aforementioned days

4. In appendix B to part 209, amend the civil penalty guideline table by adding the following entries:

Appendix B to Part 209—Federal Railroad Administration Guidelines for Initial Hazardous Material Assessments

* * * * *

172.820(a)-(e)	General failure to perform safety and security route analysis. <i>Factors to consider are the size of the railroad carrier, and the quantities of hazmat transported.</i>	5,000–10,000
172.820(a)-(e)	Partial failure to complete route analyses; failure to complete a component of the route analysis	5,000
	—Compilation of security-sensitive commodity data	
	—Identification of practicable alternative routes	
	—Consultation with State, local, and tribal officials, as appropriate regarding security risks to high-consequence targets along or in proximity to a route used by the carrier to transport security-sensitive materials	
	—Safety and security route analysis of route used.	
	—Safety and security alternative route analysis.	
172.820(f)	Failure to complete route analyses within the proscribed time frame	2,000
172.820(g)	Failure to include one of the following components in safety and security plan	2,000
	—Procedure for consultation with offerors and consignees to minimize storage of security-sensitive materials incidental to movement	
	—Measures to limit unauthorized access to the materials during storage or delays in transit	
	—Measures to mitigate risk to population centers associated with in-transit storage of the materials.	
	—Measures to be taken in the event of escalating threat levels for the materials stored in transit (Unit of violation is the component. For a total failure to have a security plan, cite § 172.800 and use the penalties provided for that section.)	
172.820(h)	Failure to maintain records and make available to DOT and DHS authorized officials	2,000
172.820(i)	Failure to use route designated by FRA Associate Administrator for Safety	10,000

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