

**DEPARTMENT OF TRANSPORTATION****Pipeline and Hazardous Materials Safety Administration****49 CFR Parts 171, 172, 173, and 177**

[Docket No. PHMSA–2011–0345 (HM–233D)]

RIN 2137–AE86

**Hazardous Materials: Requirements for the Safe Transportation of Bulk Explosives (RRR)**

**AGENCY:** Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The Pipeline and Hazardous Materials Safety Administration (PHMSA) is amending the Hazardous Materials Regulations by establishing standards for the safe transportation of explosives on cargo tank motor vehicles and multipurpose bulk trucks transporting materials for blasting operations. This rulemaking is responsive to two petitions for rulemaking submitted by industry representatives: P–1557, concerning the continued use of renewal applications, and P–1583, concerning the incorporation of an industry standard publication. Further, developing these requirements provides wider access to the regulatory flexibility currently only offered by special permits and competent authorities.

The requirements of this final rule mirror the majority of provisions contained in nine widely-used longstanding special permits that have established safety records. These requirements eliminate the need for future renewal requests, thus reducing paperwork burdens and facilitating commerce while maintaining a commensurate level of safety. This final rule authorizes the transportation of certain explosives, ammonium nitrates, ammonium nitrate emulsions, and other specific hazardous materials in both non-bulk and bulk packagings, which are not otherwise authorized under current regulations. These hazardous materials are used in blasting operations on cargo tank motor vehicles and specialized vehicles, known as multipurpose bulk trucks, which are used as mobile work platforms to create blends of explosives that are unique to each blast site. Finally, this rulemaking addresses the construction of new multipurpose bulk trucks.

**DATES:** *Effective Date:* This final rule is effective January 20, 2016.

*Incorporation by reference date:* The incorporation by reference of the

publication listed in this rule is approved by the Director of the Federal Register as of January 20, 2016.

**ADDRESSES:** You may find information on this rulemaking (Docket No. PHMSA–2011–0345) at Federal eRulemaking Portal: <http://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:**

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**SUPPLEMENTARY INFORMATION:****Table of Contents of Supplementary Information**

- I. Executive Summary
- II. Background
  - A. Special Permits
  - B. Petitions for Rulemaking
- III. Incorporation by Reference Discussion Under 1 CFR Part 51
- IV. List of Commenters
- V. Summary and Discussion of Public Comments
  - A. Incorporation by Reference
  - B. Hazardous Materials Table and Special Provision 148
  - C. New Section 173.66 on the Requirements for Bulk Explosives
  - D. Loading and Unloading Language for Class 1 (Explosive) Materials
- VI. Section-by-Section Review of Amendments
  - A. Part 171
  - B. Part 172
  - C. Part 173
  - D. Part 177
- VII. Regulatory Analyses and Notices
  - A. Statutory/Legal Authority for This Rulemaking
  - B. Executive Order 13610, Executive Order 13563, Executive Order 12866, and DOT Regulatory Policies and Procedures
  - C. Executive Order 13132
  - D. Executive Order 13175
  - E. Regulatory Flexibility Act, Executive Order 13272, and DOT Procedures and Policies
  - F. Paperwork Reduction Act
  - G. Regulatory Identifier Number (RIN)
  - H. Unfunded Mandates Reform Act
  - I. Environmental Assessment and Finding of No Significant Impact
  - J. Privacy Act
  - K. Executive Order 13609 and International Trade Analysis
  - L. National Technology Transfer and Advancement Act
  - M. Executive Order 13211

**I. Executive Summary**

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is issuing this final rule, titled “Hazardous Materials: Requirements for the Safe Transportation of Bulk Explosives (RRR),” in order to establish standards

for the safe transportation of explosives on cargo tank motor vehicles (CTMV) and multipurpose bulk trucks (MBTs) transporting materials for blasting operations. This final rule is responsive to two petitions for rulemaking submitted by industry representatives: P–1557, concerning the continued use of renewal applications, and P–1583, concerning the incorporation of an industry standard publication. Further, codifying these new requirements provides wider access to the regulatory flexibility currently offered only by special permits and competent authority approvals. This final rule will eliminate the need for future renewal requests of nine special permits (the transportation of certain explosives, ammonium nitrates, ammonium nitrate emulsions, and other specific hazardous materials in bulk packaging) that have established safety records. These amendments will reduce paperwork burdens and facilitate commerce while maintaining an appropriate level of safety.

PHMSA published a notice of proposed rulemaking (NPRM) on July 15, 2014, under Docket HM–233D (PHMSA–2011–0345). See 79 FR 41185.<sup>1</sup> This final rule addresses comments to the NPRM and amends the existing hazardous materials regulations (HMR; 49 CFR parts 171–180) pertaining to the following:

- Incorporating by reference (IBR) the Institute of Makers of Explosives’ (IME) Safety Library Publication No. 23 “Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3 and Corrosives, Class 8 in Bulk Packaging” (referred to as IME Standard 23).
- Establishing requirements directing manufacturers of newly constructed or modified MBTs to comply with certain National Highway Traffic Safety Administration (NHTSA) requirements known as the Federal Motor Vehicle Safety Standards (FMVSS) found in 49 CFR part 571.

PHMSA is confident that this final rule is of benefit to both the public and the industry, as it will: (1) Eliminate the need for firms to apply individually for the transportation of certain classes of bulk materials in MBTs, (2) provide regulatory flexibility and relief while maintaining a high level of safety, (3) promote safer transportation practices, (4) facilitate commerce, (5) reduce paperwork burdens, (6) protect the

<sup>1</sup> <https://www.federalregister.gov/articles/2014/07/15/2014-16382/hazardous-materials-requirements-for-the-safe-transportation-of-bulk-explosives-rrr>.

public health, welfare, safety, and environment, and (7) eliminate unnecessary regulatory requirements.

In the NPRM, PHMSA encouraged all interested parties, particularly the holders of the nine currently active special permits (discussed in Section II. Background), to submit comments on the proposals discussed. Additionally, we asked that commenters give feedback on the NPRM's preliminary Regulatory Impact Analysis<sup>2</sup> (RIA) and the underlying proposed benefit-cost estimates, and provide additional recommendations to improve the final rule language and increase regulatory flexibility.

## II. Background

### A. Special Permits

In this final rule, PHMSA is amending the HMR by establishing standards for the safe transportation of explosives on CTMVs and MBTs transporting materials for blasting operations. These standards for bulk explosives mirror the majority of provisions contained in nine widely-used longstanding special permits issued by PHMSA under 49 CFR part 107, subpart B (§§ 107.101 to 107.127). A special permit sets forth alternative requirements (variances) to the requirements in the HMR in a way that achieves a safety level at least equal to that required under the regulations or that is consistent with the public interest. Congress expressly authorized DOT to issue these variances in the Hazardous Materials Transportation Act of 1975 as amended. For an in-depth discussion on what special permits are and why incorporating them into the HMR is necessary, please review the Section II. Background preamble discussion in the NPRM (July 15, 2014; 79 FR 41185; 41187).<sup>3</sup>

This final rule incorporates elements of nine special permits (by way of incorporating IME Standard 23) that authorize multipurpose bulk truck operations not specifically permitted under the HMR. These amendments eliminate the need for hundreds of current grantees to reapply for renewal of nine special permits every four years and for PHMSA to process those renewal applications. These nine special permits are:

- *DOT-SP 4453*: Authorizes the transportation in commerce of certain Division 1.5D explosives contained in non-DOT specification bulk, hopper-type tanks. This special permit was

issued in 1980 and is utilized by 22 grantees with acceptable safety performance.

- *DOT-SP 5206*: Authorizes the transportation in commerce of certain Division 1.5D explosives contained in privately operated bulk hopper-type units. This special permit has been in effect since 1980 and is utilized by one grantee with acceptable safety performance.

- *DOT-SP 8453*: Authorizes the transportation in commerce of certain Division 1.5D explosives and Division 5.1 materials contained in DOT specification cargo tanks and certain non-DOT specification cargo tanks and portable tanks. This special permit has been in effect since 1980 and is utilized by 33 grantees with acceptable safety performance.

- *DOT-SP 8554*: Authorizes the transportation in commerce of certain Division 1.5D explosives and/or Division 5.1 oxidizers in the bulk motor vehicles described in the special permit. This special permit has been in effect since 1981 and is utilized by at least 38 grantees with acceptable safety performance.

- *DOT-SP 8723*: Authorizes the transportation in commerce of certain Division 1.5 explosives and/or Division 5.1 oxidizers, in bulk, in DOT specification and non DOT specification packagings described in the special permit. This special permit has been in effect since 1981 and has been utilized by at least 31 grantees with acceptable safety performance.

- *DOT-SP 9623*: Authorizes the transportation in commerce of certain Division 1.5D explosives and Division 5.1 oxidizers in a cargo tank with a dromedary compartment (cargo compartments) containing Division 1.1 explosives mounted directly behind the trailer cab subject to the limitations specified in the special permit. This special permit was issued in 1986 and is utilized by seven grantees with acceptable safety performance.

- *DOT-SP 10751*: Authorizes the transportation in commerce of certain Division 1.1, 1.4, and 1.5 explosives, Division 5.1 oxidizers, and Class 3 combustible liquids in separate containers mounted on the same vehicle frame structure. This special permit was issued in 1994 and is utilized by 16 grantees with acceptable safety performance.

- *DOT-SP 11579*: Authorizes the transportation in commerce of certain Division 1.1B, 1.1D, 1.4B, 1.4D, 1.4S, and 1.5D explosives, Division 5.1 oxidizers, Class 8 materials, and Class 3 combustible liquids in separate containers secured on the same vehicle

frame structure. This special permit was issued in 1996 and is utilized by 65 grantees with acceptable safety performance.

- *DOT-SP 12677*: Authorizes the transportation in commerce of certain Division 1.1, 1.4, and 1.5D explosives, Division 5.1 oxidizers, Class 8 corrosive liquids, and Class 3 combustible liquids in separate containers secured on the same vehicle frame structure. This special permit was issued in 2001 and is utilized by eight grantees with acceptable safety performance.

This final rule benefits the regulated community by incorporating into the HMR these nine special permits (221 grantees) with well-established safety records<sup>4</sup> thus reducing paperwork burdens and facilitating commerce while maintaining an appropriate level of safety.

### B. Petitions for Rulemaking

Two components in this final rule were presented to PHMSA in petitions for rulemaking.

#### 1. Petition No. P-1557

The petition from R&R (P-1557) dated March 23, 2010, asked PHMSA to eliminate the need to operate under the terms and conditions of a special permit for deliveries of certain types of bulk explosives, and to develop bulk explosive requirements in the HMR. R&R Trucking stated that "the request is limited to Explosives, blasting, type E, 1.5D, UN0332, PG [Packing Group] II and Ammonium nitrate emulsion, 5.1, UN3375, PG II, transported on articulated DOT specification CTMVs." Further, the petition stated that "no other hazardous material may be loaded into or carried on the vehicle or any vehicle in a combination of vehicles when transporting either of these materials in the approved bulk packaging." A more detailed description

<sup>4</sup> Over the past 10 years, there have been 43 reported transportation incidents in the U.S. involving multipurpose bulk trucks. During this same period, there has never been a death or major injury attributed to the hazardous materials while in transportation when there was compliance with the regulations. While there has been one incident that resulted in a fatality in that 10 year period, it involved a vehicular crash and human error, and was not attributed to the transportation of the hazardous materials. Overall most incidents (90 percent) resulted in spillage; fewer incidents resulted in vapor dispersion (3 percent), environmental damage (0.5 percent), fire (0.5 percent), waterway infringement (0.4 percent), and explosion (0.1 percent.) Most of the time, the closures or covers in portable tanks failed, causing leaks. Detailed hazardous materials incident reports for hazardous materials incidents specified in § 171.16 may be found at the PHMSA Web site at the following URL: <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Search.aspx>.

<sup>2</sup> See <http://www.regulations.gov> and insert PHMSA-2011-0345-0004 into the "Search for:" box.

<sup>3</sup> <http://www.gpo.gov/fdsys/pkg/FR-2014-07-15/pdf/2014-16382.pdf>.

of P-1557 is available in the Section II. Background preamble discussion in the NPRM (July 15, 2014; 79 FR 41185; 41188).<sup>5</sup>

PHMSA agrees with the petitioner on the merit of establishing requirements for the transportation of bulk explosives in commerce. With the incorporation of IME Standard 23 in this final rule, PHMSA is establishing all relevant and appropriate requirements set out in the current multipurpose bulk transportation special permits,<sup>6</sup> including the special permits under which R&R Trucking operates. It should be noted that while we are not incorporating every provision in all nine special permits, we have established criteria to transport these commodities in conformance with the HMR.

2. Petition No. P-1583

The petition from IME (P-1583) dated May 13, 2011, asked PHMSA to develop bulk explosive requirements in the HMR by incorporating by reference IME Safety Library Publication No. 23, *Recommendations for the Transportation of Explosives Division 1.5, Ammonium Nitrate Emulsions Division 5.1, Combustible Liquids Class 3, and Corrosives Class 8 in Bulk Packagings*. IME’s petition stated that: (1) The long-term, ubiquitous, and safe transport of explosives in bulk form,

including the use of MBT technology, warrant expansion of the HMR to include established requirements of general applicability governing these transportation practices; and (2) the recommendations included in IME Standard 23 represent industry-wide best practices that, collectively, prescribe a higher standard of safety than the requirements included in the special permits currently used to authorize this transportation. A more detailed description of P-1583 is available in the Section II. Background preamble discussion in the NPRM (July 15, 2014; 79 FR 41185; 41189).<sup>7</sup>

PHMSA agrees with the petitioner’s request to develop bulk explosive requirements in the HMR by proposing to incorporate by reference IME Standard 23. Codifying these new requirements in this final rule and incorporating IME Standard 23 into the HMR provides wider access to the regulatory flexibility currently offered only by special permits and competent authority approvals.

Access to the petitions referenced in this final rule can be found at <http://www.regulations.gov> under Docket Numbers “PHMSA-2010-0101” (P-1557), and “PHMSA-2011-0137” (P-1583).<sup>8</sup>

**III. Incorporation by Reference Discussion Under 1 CFR Part 51**

The Institute of Makers of Explosives’ (IME) Safety Library Publication No. 23 “Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3 and Corrosives, Class 8 in Bulk Packaging” (referred to as IME Standard 23) is free and easily accessible to the public via the Web site provided by the parent organization. Access to the IME Standard 23 publication incorporated by reference is also available for public download and review at: <http://www.ime.org/>. Under the “Publications & Products” tab, click the “Safety Library Publications” link<sup>9</sup> and either order a physical copy or download a free PDF copy via email. Also, a copy of the IME Standard 23 publication has been added to the Docket<sup>10</sup> under “PHMSA-2011-0345” at <http://www.regulations.gov>. IME Standard 23 is discussed in VI. Section-by-section Review of Amendments (*A. Part 171-Section 171.7*) of this final rule.

**IV. List of Commenters**

In response to PHMSA’s July 15, 2014 NPRM (79 FR 41185), PHMSA received comments from various stakeholders. The organizations who commented are listed in Table 1:

TABLE 1—LIST OF ORGANIZATIONS COMMENTING ON THE HM-233D NPRM

Assigned docket Number	Name	Docket URL
PHMSA-2011-0345-0005 .....	Institute of Makers of Explosives (IME) .....	<a href="http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0005">http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0005</a> .
PHMSA-2011-0345-0006 .....	Dangerous Goods Advisory Council (DGAC) .....	<a href="http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0006">http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0006</a> .
PHMSA-2011-0345-0007 .....	R&R Trucking (R&R) .....	<a href="http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0007">http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0007</a> .
PHMSA-2011-0345-0008 .....	Council on Safe Transportation of Hazardous Articles (COSTHA).	<a href="http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0008">http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0008</a> .
PHMSA-2011-0345-0009 .....	Council on Safe Transportation of Hazardous Articles (COSTHA) IME Support.	<a href="http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0009">http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0009</a> .
PHMSA-2011-0345-0010 .....	IME Supplemental Comments .....	<a href="http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0010">http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0010</a> .

**V. Summary and Discussion of Public Comments**

Discussed in the following sections is a list of the major amendments PHMSA proposed for adoption into the HMR in the NPRM, a brief synopsis of the comments we received in response to those proposals, and our position regarding those comments received to

the NPRM. Furthermore, the amendments we are finalizing in this final rule are addressed in Section VI. Section-by-section Review of Amendments.

*A. Incorporation by Reference*

In the NPRM, PHMSA proposed to incorporate by reference the latest edition of the technical standard

published by IME, known as “Safety Library Publication No. 23 Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3 and Corrosives, Class 8 in Bulk Packaging” (referred to as IME Standard 23). The intent behind proposing to incorporate by reference IME Standard

<sup>5</sup> <http://www.gpo.gov/fdsys/pkg/FR-2014-07-15/pdf/2014-16382.pdf>.

<sup>6</sup> DOT-SP 4453, DOT-SP 5206, DOT-SP 8453, DOT-SP 8554, DOT-SP 8723, DOT-SP 9623, DOT-SP 10751, DOT-SP 11579, and DOT-SP 12677.

<sup>7</sup> <http://www.gpo.gov/fdsys/pkg/FR-2014-07-15/pdf/2014-16382.pdf>.

<sup>8</sup> <http://www.regulations.gov/>.

<sup>9</sup> [https://www.ime.org/products/category/safety\\_library\\_publications\\_slps](https://www.ime.org/products/category/safety_library_publications_slps).

<sup>10</sup> <http://www.regulations.gov/>.

23 was to establish general requirements of: (1) A single bulk hazardous material for blasting by CTMV; and (2) CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings. PHMSA received general support from the commenters on the principle of utilizing industry consensus standards as a necessary and effective approach, with IME, Dangerous Goods Advisory Council (DGAC), and R&R specifically, endorsing IME Standard 23. We did not receive any comments that opposed our proposals to incorporate this standard and we are adopting it as proposed.

#### B. Hazardous Materials Table and Special Provision 148

As previously discussed, in the NPRM PHMSA proposed to incorporate IME Standard 23 into the HMR and establish requirements of general applicability governing the transportation of: (1) A single bulk hazardous material for blasting by CTMV; and (2) CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings. However, as noted in the NPRM, the HMR does not permit the transportation in bulk packaging of certain Class 1 and Class 5 hazardous materials that are used in commercial blasting operations. This type of transportation is only permitted under a PHMSA special permit. In the NPRM, we proposed that a new Special Provision 148 be added to each entry under Column 7 of the Hazardous Materials Table (HMT) for HMT entries that are listed in IME Standard 23. These HMT entries include certain hazardous materials from the following hazard classes and divisions: Divisions 1.1B, 1.1D, 1.4B, 1.4D, 1.4S and 1.5D explosives; Division 5.1 oxidizers; Class 8 corrosive liquids; and Class 3 combustible liquids. In the NPRM, Special Provision 148 was proposed in order to direct readers to § 173.66, therefore only specific explosives, oxidizers, etc. will be eligible.

PHMSA received general support from the commenters on the principle of revising the HMT and adding a new Special Provision 148 to appropriate HMT entries, with IME offering one suggestion. IME stated that: "IME inadvertently included 'Detonator assemblies, non-electric, for blasting, Division 1.1B, UN0360' in a pre-publication version of IME Standard 23, but removed it from the final copy. This should be removed from the HMT changes in the final rule." We reviewed the comment and agree with IME's suggestion and will revise the regulatory text in this final rule as needed.

We did not receive any comments that opposed our proposals to revise the appropriate HMT entries and add new Special Provision 148. Therefore, in this final rule, we are amending the regulatory text and also removing the HMT entry IME noted in its comments.

#### C. New Section 173.66 on the Requirements for Bulk Explosives

In the NPRM, PHMSA proposed to add a new section to 49 CFR part 173 (§ 173.66), which included specific requirements for newly constructed MBTs and modifications to existing trucks.

##### 1. Section 173.66 Preamble

In the preamble of the new section, prior to paragraph (a), PHMSA proposed requirements for MBTs. We proposed that when § 172.101 allowed that a Class 1 (explosive) material may be packaged in accordance with this section, only the bulk packagings specified for these materials in IME Standard 23 (IBR, see § 171.7 of this subchapter) would be authorized, subject to the requirements of subparts A and B of this part and the special provisions in Column 7 of the § 172.101 table. Therefore, as proposed in the NPRM, an entity operating a MBT under current conditions, such as a special permit, would be subject to operating under the IME Standard 23 document. Furthermore, as proposed in the NPRM, the additional requirements in paragraphs (a), (b), and (c) would apply to: (1) A new MBT constructed after December 31, 2014, or (2) an old MBT that requires modifications due to wear and tear (*i.e.*, re-chassis, etc.).

PHMSA received general support from the commenters on the principle of establishing a new § 173.66 that outlined the requirements for bulk explosives, but the commenters had concerns with specific aspects of the regulations. Regarding compliance dates, IME commented that:

Compliance Date: PHMSA proposes to trigger requirements for compliance with the FMVSS, FSS, and EBDD standards for newly constructed MBTs after December 31, 2014. While we can hope that HM-233D is finalized by December 31, 2014, we request that the mandatory compliance date be triggered by a threshold such as 120 days after the rule is finalized. Additionally, we note that no future effective date is specified for MBTs that are modified. We would suggest that the mandatory compliance date be the same.

Additionally, COSTHA echoed those thoughts in its comment "We would also like to encourage PHMSA to grant the IME request that the mandatory compliance date with the standards for newly constructed MBTs be transitioned

with a threshold such as 120 days after the rule is finalized and that it be aligned with the effective date for MBTs that are modified." In regards to the compliance dates issue, we reviewed the comments and agree with IME's suggestion and will revise the regulatory text in this final rule as needed.

Regarding the overall structure and language prior to paragraph (a) of the new section, R&R commented that:

R&R supports the need for differentiation between transport of: (1) A single bulk hazardous material for blasting by cargo tank motor vehicles and (2) transport by MBT capable of transporting multiple hazmats for blasting in bulk and non-bulk packaging. Two distinctly different types of transportation. Distinction between the two types of transport must be clearly maintained. SLP-23 makes the distinction by having separate sections. In the NPRM, Special Provision 148 makes this distinction, but § 173.66 is vague on the distinction. For clarification § 173.66 should refer to Section 1 of SLP-23 for the standards for transporting a single bulk hazardous material for blasting by cargo tank motor vehicle and to Section 2 of SLP-23 for the standards for cargo tank motor vehicles capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings.

In regards to the clarification of single bulk CTMVs differing from MBTs, we reviewed the comments and agree with R&R's suggestion and will revise the regulatory text in this final rule as needed.

##### 2. Fire Suppression Systems

In the NPRM, in paragraph (a) of § 173.66, we proposed additional requirements regarding fire suppression systems (FSS) for newly constructed and modified MBTs. In addition to complying the usual requirements of the HMR (*e.g.*, placarding, shipping papers, etc.), and the IME Standard 23 per § 171.7 of the HMR, the NPRM proposed that these vehicles would be required to have a FSS that is an engineered system connected to the engine and transmission compartments. The system would be activated by manual switch or passive means in the event of a fire. Additionally, all fire extinguishers used as components of the system would be required to meet the requirements of 49 CFR 393.95(a) and the applicable National Fire Protection Association (NFPA) codes and standards. Further, the NPRM proposed that the FSS's design would be required to be verified and certified by the Design Certifying Engineer (DCE) of the vehicle, and the design would have to be tested through engineering analysis or physical testing to verify the initial design or future modification(s) to the current FSS. The NPRM proposed that the FSS would be

visually inspected annually for defects, flaws, damage, etc., to ensure none are present, and the system would be pneumatically tested every five years to ensure the system is free of debris, leaks, and damage, and to ensure the system will function properly. Finally, the NPRM proposed the DCE must prepare a test report and provide it to the manufacturer of the vehicle and the manufacturer must provide a copy to the owner of the vehicle.

Commenters generally did not support the additional requirements regarding FSS for newly constructed and modified MBTs proposed in the NPRM. For example, IME commented that:

PHMSA acknowledges that “there are too few incident data to estimate and monetize the benefits from a fire suppression system.” Unaware of any death or serious injury attributable to hazmat carried on MBTs since this technology was introduced in the 1970s. There is no off-the-shelf FSS technology; IME isn’t supportive of allowing MBTs to be guinea pigs for field testing FSS technology. SLP-23 already provides a FSS which far exceeds that required for other commercial motor vehicles, including trucks transporting hazmat for which fire is an inherent risk. SLP-23 requires that MBTs be equipped with two fire extinguishers with an Underwriters’ Laboratories (UL) rating of at least 4–A:40–B:C. Current federal regulations require that trucks used to transport placarded quantities of hazmat be equipped with one fire extinguisher having an UL rating of 10B:C. There is no assurance, in an accident where the driver is incapacitated and unable to use the fire extinguishers on the vehicle, that the FSS will have survived the crash and be operational. Every ounce of unnecessary weight added to a vehicle is an ounce of lost payload, this adds up to more trucks on the road to carry the same volume of material, increasing crash risk and generate other societal impacts such as wasted fuel and more air emissions. PHMSA’s requirement is similar to but not the same as the NRCan standard. Given the lack of incident data to show that such systems would increase safety commensurate with the cost, we do not support the NRCan standard or the more onerous PHMSA proposal. IME questions whether PHMSA, instead of NHTSA, is the agency to propose such a vehicle modification. NHTSA is responsible for setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment.

Furthermore, in a set of supplemental comments, IME commented that:

*Safety:* Safety benefits of MBTs have long been demonstrated. There has never been a death or a major injury attributed to blasting agents and oxidizers transported in bulk. We have not been able to identify a single instance where a FSS would have made a difference to the outcome of the incident. No one would guarantee that such a system would be operational in a crash. A FSS would be of no value in suppressing an

engine fire fueled by a tire fire. In a non-crash situation, the driver will already have access to at least two fire extinguishers with a 4–A:40–B:C rating, a standard of safety already surpassing that required on any other commercial motor vehicle operating in the United States.

*Insurance Rates:* The largest insurer of MBTs in the US told IME that adding FSSs to MBTs would have no effect on rates because there is no statistically significant loss experience.

*FSSs in Canada:* We discussed the evolution of and experience with FSSs in Canada. First, industry had little involvement in the FSS standard imposed by Natural Resources Canada (NRCan) through its Mobile Process Unit (MPU) permit system. Thus, it is not correct to represent Canadian industry as “supporting” this standard. Second, it is not correct to represent the PHMSA FSS proposal as being aligned or harmonized with the NRCan standard. The NRCan standard is vastly different than that proposed in HM-233D. The NRCan standard reads in full, “MPUs are also required to have an engineered fire suppression system for the engine compartment. . . . [E]ngineered fire suppression systems must be inspected every 6 months (or sooner if required by other jurisdiction). These systems must be inspected by a qualified and approved facility or person (reg.: NFPA 17, Chap. 11).” NFPA 17 is the National Fire Protection Association’s standard on “Dry Chemical Extinguishing Systems”, and chapter 11, covers the inspection, maintenance and recharging of such systems. While not referenced, chapter 9 of this standard states that “only pre-engineered systems . . . shall be installed on mobile equipment.” PHMSA’s standard is paragraphs long requiring vehicle specific designs that have been verified and certified by a Design Certifying Engineer, including physical testing or engineering analysis. Pre-engineered systems are not allowed. Additionally, PHMSA requires periodic inspections and detailed recordkeeping and retention requirements that differ from the NRCan standard. Based on the NRCan requirement, we can report that installation costs of FSSs in Canada run between \$4,000 and \$6,000, and add between 300–500 pounds to the weight of the vehicle. A typical payload on an MBT is 25,000 pounds, and the cost of a new MBT ranges from \$250,000 to \$500,000. Thus, a NRCan-type FSS would reduce payload between 1.2% and 2%, and would add between 1.2% and 1.6% to the cost of a new MBT. Costs of periodic inspections average \$800 in remote areas and \$150 in more populated areas. NRCan allows companies to obtain NFPA certification for their own employees to conduct inspections.

PHMSA’s position in the NPRM was that fire was a potential hazard in an MBT incident. IME has highlighted the safety record of MBTs which indicates that fire is not typically common with an incident involving these vehicles.<sup>11</sup>

<sup>11</sup> Over the past 10 years, there have been 43 reported transportation incidents in the U.S. involving multipurpose bulk trucks. During this

PHMSA’s engineered FSS as proposed was more stringent and cost prohibitive than a pre-engineered FSS or the NRCan requirement. PHMSA agrees with IME that the FSS proposed in the NPRM exceeded the level of safety established. However, we disagree that PHMSA does not have the authority to include a FSS.

PHMSA acknowledges that the proposed FSS would add weight to the MBT, and that the increased weight would decrease the payload, thereby increasing the number of MBTs on the road. Furthermore, we do agree that the established safety record of MBTs stand for itself and that IME Standard 23 does exceed the federal requirements for fire extinguishers. As such, we have reviewed the comments regarding FSS for newly constructed and modified MBTs and agree with IME’s position. We will revise the regulatory text in this final rule as needed. In addition, PHMSA may revisit the FSS requirement in the future, if a future review of incident data indicates a need.

### 3. Emergency Shut-Off/Battery Disconnect Devices

In the NPRM, in paragraph (b) of § 173.66, we proposed additional requirements for emergency shut-off/battery disconnect for newly constructed and modified MBTs. The NPRM proposed that for these trucks, the batteries for the chassis would be required to have three easily accessible manual disconnect switches. One manual disconnect switch would be located inside the driver’s cab and would not include the ignition; the remaining two manual disconnect switches would be located on each side of the vehicle. Further, the NPRM proposed all three switches would be connected to the positive battery terminal and the line of the switch would be protected from rubbing and abrasion that could cause a short circuit. Finally, the NPRM proposed that the battery disconnect would be required to isolate all manufacturing equipment

same period, there has never been a death or major injury attributed to the hazardous materials while in transportation when there was compliance with the regulations. While there has been 1 incident that resulted in a fatality in that 10 year period, it involved a vehicular crash and human error, and was not attributed to the transportation of the hazardous materials themselves. Overall most incidents (90 percent) resulted in spillage; fewer incidents resulted in vapor dispersion (3 percent), environmental damage (0.5 percent), fire (0.5 percent), waterway infringement (0.4 percent), and explosion (0.1 percent.) Most of the time, the closures or covers in portable tanks failed, causing leaks. Detailed hazardous materials incident reports for hazardous materials incidents specified in § 171.16 may be found at the PHMSA Web site at the following URL: <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Search.aspx>

except critical instrumentation that requires the maintenance of the electrical supply, and that the battery disconnect is tested monthly to ensure proper operation.

Commenters generally did not support the additional requirements of emergency shut-off/battery disconnect devices (EBDD) for newly constructed and modified MBTs. For example, IME commented that:

We agree that any EBDD standard included in a final rule promulgated under this docket should apply only to newly constructed or modified MBTs. However, we disagree with the EBDD standard as proposed. PHMSA's proposal would require MBTs to be equipped with three manual EBDDs, not to include the ignition switch. The cost/benefit of this standard cannot be justified. First, MBT's are the only type of specialized vehicle that is already required to have a manual EBDD in addition to the ignition switch. Yet, PHMSA provides no data to support the need to triple the current EBDD requirement. In fact, PHMSA acknowledges that no death or major injury has been attributed to hazardous materials carried by MBTs—a record that cannot be matched by other bulk hazardous materials that are sensitive to electric charge. Second, in the years since this requirement has been imposed, we are unaware of any instance where EBDDs have been used in an emergency, irrespective of the consequence. Rather, emergency responders simply cut the battery cable as they are trained to do. Third, PHMSA's cost justification does not include the cost to train all emergency responders on the existence and operation of the EBDDs. We would expect these costs to be significant. There are over one million firefighters, alone, in the United States, and over 70 percent of fire departments are volunteer with relatively high-rates of turnover. Fifth, the proposed EBDD standard is inconsistent with the standard required in Canada. PHMSA should not pass up this opportunity to advance the RCC initiative with regard to EBDD requirements. We would support including an EBDD requirement for MBTs that is equivalent to the Canadian EBDD standard.

Additionally, COSTHA echoed those thoughts in its comment that harmonization is essential and that it would be better to harmonize with an equivalent Canadian EBDD standard than impose an entirely new one.

While the cost/benefit of the additional two switches was adequate to justify this requirement, PHMSA agrees with IME that the triple EBDD is redundant. Also, the triple EBDD is not harmonized with the NRCan requirements or IME Standard 23. As such, we have reviewed the comments regarding EBDD for newly constructed and modified MBTs and agree with the commenters' position. We are revising the regulatory text in this final rule as needed. In addition, PHMSA may revisit the EBDD requirement in the future, if

a future review of incident data indicates a need.

#### 4. Federal Motor Vehicle Safety Standard

In the NPRM, in paragraph (c) of § 173.66 we proposed that for newly constructed and modified MBTs, those trucks must be in compliance with the applicable Federal Motor Vehicle Safety Standard (FMVSS) found in 49 CFR part 571. Furthermore, in the NPRM we proposed that the MBT manufacturer must maintain a certification record ensuring the final manufacturing is in compliance with the FMVSS, per the certification requirements found in 49 CFR part 567, and these certification records must be available to DOT representatives upon request.

PHMSA received general support from the commenters on the requirements to be in compliance with the applicable FMVSS found in 49 CFR part 571, with IME offering one comment that: "PHMSA proposes that newly constructed and modified MBTs be in compliance with applicable FMVSS, and that MBT manufacturers maintain a record ensuring that these vehicles are in compliance with the FMVSS certification requirements found in 49 CFR part 567. IME supports these requirements." We did not receive any comments that opposed this requirement, and we are adopting it as proposed.

#### 5. Modified Vehicles

In paragraph (d) of § 173.66 of the NPRM we proposed a definition for the term modification. We proposed that "modification" means any change to the original design and construction of a MBT that affects its structural integrity or lading retention capability (e.g. rechassis, etc.). In the NPRM, we proposed to exclude: (1) A change to the MBT equipment such as lights, truck or tractor power train components, steering and brake systems, and suspension parts, and changes to appurtenances, such as fender attachments, lighting brackets, ladder brackets; and (2) replacement of components such as valves, vents, and fittings with a component of a similar design and of the same size.

PHMSA received general support from the commenters on the addition of a new term for modification, with IME offering one suggestion. IME stated that: "We fully support the proposed definition. However, we suggest that the definitional term be changed to 'Modified' since this is the term PHMSA uses in proposed § 173.66 and the preamble." We agree with IME's suggestion and are revising the

regulatory text in this final rule as needed.

#### D. Loading and Unloading Language for Class 1 (Explosive) Materials

In the NPRM, PHMSA proposed to revise § 177.835 paragraph (a) to state that no Class 1 (explosive) materials may be loaded into, on, or unloaded from any motor vehicle with the engine running, except that the engine of a MBT may be used for the operation of the pumping equipment of the vehicle during loading or unloading. Furthermore, in the NPRM we proposed to add a new paragraph (d) which discussed MBTs and specified that Class 1 (explosive) materials may be packaged in accordance with § 173.66 of this subchapter. However, these materials would be permitted to be transported on the same vehicle with Division 5.1 oxidizers, or Class 8 corrosive materials, and/or Class 3 combustible liquid, n.o.s., NA1993 only under the conditions and requirements set forth in IME Standard 23 (IBR, see § 171.7) and paragraph (g) of § 177.835.

PHMSA received general support from the commenters on the principle of revising loading and unloading language for Class 1 explosive materials in the highway part of the HMR, with DGAC stating that it "supports the proposed revision to § 177.835 which would authorize the engine of the MBT to remain running when used for the operation of pumping equipment during loading and unloading." Additionally, IME states that it "is supportive of the proposed revision to 49 CFR 177.835(a) that seeks to address that vehicles need to run engines to run equipment on MBTs." However, IME did offer one suggestion in that as proposed, "the NPRM only authorized the ability to use a vehicle engine for MBTs, and that pumping equipment is also used to load/unload material from cargo tanks transporting single commodity blasting agents or oxidizers. As such, IME requests that the proposed 49 CFR 177.835(a) provision be modified to provide the same option for these cargo tank vehicles."

We reviewed the comment and agree with IME's suggestion and are thus revising the regulatory text in this final rule as needed. Therefore, single commodity CTMVs are similarly eligible to use the vehicle's engine while operating the pumping equipment of the vehicle during loading or unloading, and it ensures overall regulatory clarity for these specific types of operations.

**VI. Section-by-Section Review of Amendments**

The following is a section-by-section review of the amendments adopted in this final rule:

*A. Part 171*

Section 171.7

Section 171.7 provides a listing of all standards incorporated by reference into the HMR. For this rulemaking, we evaluated a consensus industry standard pertaining to the standards for transporting a single bulk hazardous material for blasting by CTMVs and for CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packaging. These standards include parts on: General requirements; modes of transportation; additional provisions; qualifications, maintenance, and repair of packagings; qualifications of individuals certifying non-DOT specification bulk packaging; placarding and marking requirements; and security and safety of the bulk hazardous materials transported. These standards also include parts on: Purpose and limitations; hazardous materials covered; packagings; operational controls; qualifications, maintenance, and repair of packagings; special provisions; and emergency response, reporting, and training requirements. We determined that the standards provide an enhanced level of safety without imposing significant compliance burdens. These standards have a well-established and documented safety history and their adoption will maintain the high safety standard currently achieved under the HMR. Therefore, we are adding and revising the incorporation by reference material under the following organization:

Paragraph (r)(2) is revised to add the *Institute of Makers of Explosives* IME Standard 23, IME Safety Library Publication No. 23 (IME Standard 23), Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3, and Corrosives, Class 8 in Bulk Packagings, October 2011 Edition.

*B. Part 172*

Section 172.101

Section 172.101 provides the instructions for using the HMT and the HMT itself. In this final rule, PHMSA is revising “Column (7) Special Provisions” of the HMT by adding Special Provision 148 to the list of entries. In this final rule, new Special Provision 148 is added to § 172.102(c)(1)

and assigned to the HMT entries in Table 2:

**TABLE 2—LIST OF HMT ENTRIES ADDING SPECIAL PROVISION 148**

Hazardous materials descriptions and proper shipping names	Identification Nos.
Acetic acid solution, not less than 50 percent but not more than 80 percent acid, by mass.	UN2790
Acetic acid solution, with more than 10 percent and less than 50 percent acid, by mass.	UN2790
Ammonium nitrate based fertilizer	UN2067
Ammonium nitrate emulsion or Ammonium nitrate suspension or Ammonium nitrate gel, intermediate for blasting explosives.	UN3375
Ammonium nitrate-fuel oil mixture containing only prilled ammonium nitrate and fuel oil.	NA0331
Ammonium nitrate, liquid (hot concentrated solution).	UN2426
Ammonium nitrate, with not more than 0.2% combustible substances, including any organic substance, calculated as carbon, to the exclusion of any other added substance.	UN1942
Articles, explosive, n.o.s	UN0349
Boosters, without detonator	UN0042
Combustible liquid, n.o.s	NA1993
Cord, detonating, flexible	UN0065
Cord, detonating, flexible	UN0289
Corrosive liquid, acidic, organic, n.o.s.	UN3265
Detonator assemblies, non-electric, for blasting.	UN0361
Detonator assemblies, non-electric, for blasting.	UN0500
Detonators, electric, for blasting	UN0030
Detonators, electric, for blasting	UN0255
Detonators, electric, for blasting	UN0456
Detonators, non-electric, for blasting.	UN0455
Explosive, blasting, type A	UN0081
Explosive, blasting, type B or Agent blasting, Type B.	UN0331
Explosive, blasting, type E	UN0241
Explosive, blasting, type E or Agent blasting, Type E.	UN0332
Hypochlorite solutions	UN1791
Nitrites, inorganic, aqueous solution, n.o.s.	UN3219
Oxidizing liquid, n.o.s	UN3139
Oxidizing solid, n.o.s	UN1479

Section 172.102 Special Provisions

Section 172.102 lists special provisions applicable to the transportation of specific hazardous materials. Special provisions contain packaging requirements, prohibitions, and exceptions applicable to particular quantities or forms of hazardous materials. PHMSA is adopting the following revision to § 172.102, special provisions:

Special Provision 148

In this final rule, PHMSA is adding new Special Provision 148 to § 172.102(c)(1) and assigning it to numerous HMT entries (see the previous section: Section 172.101). Special Provision 148 states that for domestic transportation, the HMT entries that are assigned Special Provision 148 are directed to § 173.66 for: (1) The standards for transporting a single bulk hazardous material for blasting by cargo tank motor vehicles (CTMV); and (2) the standards for CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings.

Special Provision 163

Special Provision 163 currently requires “UN3375, Ammonium nitrate emulsion or Ammonium nitrate suspension or Ammonium nitrate gel, intermediate for blasting explosives” to “satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see § 171.7 of this subchapter).” For bulk packages, Test 8(d) of Test Series 8 applies. This testing is in addition to the requirements in Special Provision 147 and therefore must be completed prior to approval by the Associate Administrator. Although not addressed in the HM–233D NPRM or this final rule’s regulatory text, we included this non-substantive clarification in order to highlight the requirement to pass Test 8(d) when transporting applicable substances in a bulk packaging.

*C. Part 173*

Section 173.66

In this final rule, PHMSA is adding a new § 173.66 that provides the requirements for a hazardous material to be permitted for transport in accordance with this section (per Special Provision 148 in § 172.102(c)(1)), and only the bulk packagings specified for these materials in IME Standard 23 (IBR, see § 171.7 of this subchapter) are authorized, subject to the requirements of subparts A and B of this part and the special provisions in Column 7 of the § 172.101 table. (See Section I of IME Standard 23 for the standards for transporting a single bulk hazardous material for blasting by CTMVs, and Section II of IME Standard 23 for the standards for CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings.) As provided by this new section, an entity operating these types of vehicles would no longer operate under a special permit, and would instead be subject to operating

under the IME Standard 23 document. Furthermore, the additional requirements in paragraph (a) would apply to: (1) A new multipurpose bulk truck constructed after 120 days from publication of the final rule in the **Federal Register**, or (2) an old multipurpose bulk truck that is modified due to wear and tear (*i.e.*, re-chassis, etc.) after 120 days from publication of the final rule in the **Federal Register**.

In paragraph (a), we require that for newly constructed and modified MBTs, those trucks must be in compliance with the applicable FMVSS found in 49 CFR part 571. Furthermore, the multipurpose bulk truck manufacturer must maintain a certification record ensuring the final manufacturing is in compliance with the FMVSS, per the certification requirements found in 49 CFR part 567, and these certification records must be available to DOT representatives upon request.

In paragraph (b), we state that the term “modified” means any change to the original design and construction of a MBT that affects its structural integrity or lading retention capability, (*e.g.* re-chassis, etc.). Excluded from this category are the following: (1) A change to the MBT equipment such as lights, truck or tractor power train components, steering and brake systems, and suspension parts, and changes to appurtenances, such as fender attachments, lighting brackets, ladder brackets; and (2) replacement of components such as valves, vents, and fittings with a component of a similar design and of the same size.

By finalizing these requirements, PHMSA is echoing the majority of provisions contained in nine widely-used longstanding special permits that have established safety records. These requirements will eliminate the need for future renewal requests, thus reducing paperwork burdens and facilitating commerce while maintaining an appropriate level of safety.

#### D. Part 177

##### Section 177.835

Section § 177.835 provides the loading and unloading requirements for Class 1 explosive materials. In this final rule, we are revising paragraph (a) to state that no Class 1 explosive materials may be loaded into, on, or unloaded from any motor vehicle with the engine running, except that the engine of a MBT (see paragraph (d) of this section) and the engine of a cargo tank motor vehicle transporting a single bulk hazardous material for blasting may be used for the operation of the pumping

equipment of the vehicle during loading or unloading. Furthermore, we are adding a new paragraph (d) which provides requirements for MBTs and specifies that Class 1 explosive materials may be packaged in accordance with § 173.66 of this subchapter. However, these materials would be permitted to be transported on the same vehicle with Division 5.1 oxidizing materials, or Class 8 corrosive materials, and/or Class 3 combustible liquid, n.o.s., NA1993 only under the conditions and requirements set forth in IME Standard 23 (IBR, see § 171.7 of this subchapter) and paragraph (g) of this section (§ 177.835).

## VII. Regulatory Analyses and Notices

### A. Statutory/Legal Authority for This Rulemaking

This final rule is published under the authority of 49 U.S.C. 5103(b), which authorizes the Secretary of Transportation to prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce. The 49 U.S.C. 5117(a) authorizes the Secretary of Transportation to issue a special permit from a regulation prescribed in 5103(b), 5104, 5110, or 5112 of the Federal Hazardous Materials Transportation Law to a person transporting, or causing to be transported, hazardous material in a way that achieves a safety level at least equal to the safety level required under the law, or consistent with the public interest, if a required safety level does not exist. The final rule amends the regulations by incorporating IME Standard 23 and provisions from certain widely-used longstanding special permits that have established a history of safety and which may, therefore, be converted into the regulations for general use.

### B. Executive Order 13610, Executive Order 13563, Executive Order 12866, and DOT Regulatory Policies and Procedures

This final rule is not considered a significant regulatory action under Executive Order (E.O.) 12866 (“Regulatory Planning and Review”), as supplemented and reaffirmed by E.O. 13563 (“Improving Regulation and Regulatory Review”), stressing that, to the extent permitted by law, an agency rulemaking action must be based on benefits that justify its costs, impose the least burden, consider cumulative burdens, maximize benefits, use performance objectives, and assess available alternatives, and the Regulatory Policies and Procedures of

the Department of Transportation (44 FR 11034). Both the preliminary NPRM and the final rule regulatory impact assessments discussing the benefits and costs of this action are available for review in the public docket for this rulemaking (filed under “PHMSA–2011–0345” at <http://www.regulations.gov>).

Executive Order 13563 is supplemental to and reaffirms the principles, structures, and definitions governing regulatory review that were established in Executive Order 12866 Regulatory Planning and Review of September 30, 1993. Executive Order 13563, issued January 18, 2011,<sup>12</sup> notes that our nation’s current regulatory system must not only protect public health, welfare, safety, and our environment but also promote economic growth, innovation, competitiveness, and job creation.<sup>13</sup> Further, this executive order urges government agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public. In addition, federal agencies are asked to periodically review existing significant regulations, retrospectively analyze rules that may be outmoded, ineffective, insufficient, or excessively burdensome, and modify, streamline, expand, or repeal regulatory requirements in accordance with what has been learned.

Executive Order 13610, issued May 10, 2012, urges agencies to conduct retrospective analyses of existing rules to examine whether they remain justified and whether they should be modified or streamlined in light of changed circumstances, including the rise of new technologies.<sup>14</sup>

By building off of each other, these three Executive Orders require agencies to regulate in the “most cost-effective manner,” to make a “reasoned determination that the benefits of the intended regulation justify its costs,” and to develop regulations that “impose the least burden on society.”

In this final rule, PHMSA amends the HMR to incorporate alternatives this agency has permitted under widely-used longstanding special permits and competent authority approvals with established safety records that we have determined meet the safety criteria for inclusion in the HMR. Incorporation of IME Standard 23 into the regulations of general applicability will provide

<sup>12</sup> <http://www.gpo.gov/fdsys/pkg/FR-2011-01-21/pdf/2011-1385.pdf>.

<sup>13</sup> See <http://www.whitehouse.gov/the-press-office/2011/01/18/improving-regulation-and-regulatory-review-executive-order>.

<sup>14</sup> See <http://www.gpo.gov/fdsys/pkg/FR-2012-05-14/pdf/2012-11798.pdf>.



shippers and carriers with additional flexibility to comply with established safety requirements, thereby reducing transportation costs and increasing productivity. In addition, the final rule will reduce the paperwork burden on industry and this agency resulting from putting an end to the need for renewal applications for special permits. As such, nine special permits with 221 grantees will no longer be needed. Taken together, the provisions of this final rule will promote the continued safe transportation of hazardous materials while reducing transportation costs for the industry and administrative costs for the agency.

In accordance with the guidance provided by OMB Circular A-4<sup>15</sup> on the development of regulatory analysis as required under Section 6(a)(3)(c) of Executive Order 12866, the Regulatory Right-to-Know Act, and a variety of related authorities, the Final Rule regulatory impact assessment addresses the following:

- Describes the need for the regulatory action
- Defines the baseline
- Sets the timeframe of analysis
- Identifies a range of regulatory alternatives
- Identifies the consequences of regulatory alternatives
- Quantifies and monetizes the benefits and costs or evaluates non-quantified costs and benefits
- Discounts future benefits and costs

This analysis discusses the individual (requirement area by requirement area) costs and benefits. The remainder of this section presents an overview of the factors considered for the analysis in accordance with OMB guidelines. As this is the regulatory analysis for the final rule, only the alternative adopted is analyzed.

#### 1. Need for the Regulatory Action

Our agency's mission is to protect people and the environment from the risks of hazardous materials transportation. To do this, PHMSA establishes national policy; sets and enforces standards, educates, and conducts research to prevent incidents; and prepares the public and first responders to reduce consequences if an incident does occur.

<sup>15</sup> [https://www.whitehouse.gov/omb/circulars\\_a004\\_a-4/](https://www.whitehouse.gov/omb/circulars_a004_a-4/).

PHMSA's vision is that no harm results from the transportation of hazardous materials, and it is committed to reducing the risk of harm to people and the environment resulting from the transportation of hazardous materials. PHMSA does not accept death as an inevitable consequence of transporting hazardous materials and works continuously to find new ways to reduce risk of death, injury, environmental and property damage, and transportation disruptions.

This rulemaking action is necessary to provide regulatory flexibility and eliminate the need for future renewal requests, thus reducing paperwork burdens and facilitating commerce while maintaining an appropriate level of safety. The final rule would be beneficial to stakeholders by reducing paperwork and providing regulatory flexibility for industry; reducing administrative costs for the Federal Government while maintaining an appropriate level of safety; and facilitating commerce.

This rulemaking adopts a combination of features including incorporating into the HMR by reference IME Standard 23, and complying with certain NHTSA requirements. PHMSA believes this final rule will benefit both the public and the industry, as it will:

- Eliminate the need for firms to apply individually for the transportation of certain classes of bulk materials in CTMVs
- Provide regulatory flexibility and relief while maintaining a high level of safety
- Promote safer transportation practices
- Facilitate commerce
- Reduce paperwork burdens
- Protect the public health, welfare, safety, and environment
- Eliminate unnecessary regulatory requirements

Finally, with this rulemaking amending the HMR by incorporating IME Standard 23, the majority of provisions from nine special permits will be incorporated since those permits were used as the basis to create IME Standard 23.

#### 2. Baseline

Explosives are used for many purposes. According to the Bureau of Alcohol, Tobacco, Firearms and Explosives, explosives are used "in areas such as mining, oil and gas exploration; demolition; avalanche

control; and the use of explosives in special industrial tools, fire extinguishers, air bag inflators, fireworks; and specials effects in the entertainment industry."<sup>16</sup> The largest user is the mining industry, where coal mining alone accounts for 67 percent of total U.S. explosives consumption.<sup>17</sup>

Bulk explosives are transported by MBTs and Articulated Cargo Tank Vehicles (ACTVs). According to IME, there are approximately 1,500 MBTs on highways in any given year.<sup>18</sup> These trucks make, on average, 350,000 trips covering tens of millions of miles. The average truck payload is 12.5 tons.<sup>19</sup>

The IME estimates are confirmed by the information in the Commodity Flow Survey (CFS) published by the Bureau of Transportation Statistics and the U.S. Census Bureau.<sup>20</sup> The most recent CFS shows the value, amount, and hazardous materials weight-distance traveled by truck (referred to as "ton-miles") for shipments of Hazard Class 1, Hazard Class 5, and Hazard Class 8 commodities considered under this analysis (see Table 3).<sup>21</sup> CTMVs transported 8.2 million tons of commodities worth \$8.1 billion more than 1.7 billion ton-miles in 2012.

<sup>16</sup> Bureau of Alcohol, Tobacco, Firearms and Explosives. *Explosives Industry*. Retrieved from <http://www.nibin.gov/content/Explosives/explosives-industry>.

<sup>17</sup> *GlobalSecurity.org. Explosives—Mining Types*. Retrieved from <http://www.globalsecurity.org/military/systems/munitions/explosives-mining1.htm>.

<sup>18</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks*. Institute of Makers of Explosives.

<sup>19</sup> Supplemental comments from the Institute of Makers of Explosives on PHMSA HM-233D Notice of Proposed Rulemaking. Retrieved from <http://www.regulations.gov/#!documentDetail;D=PHMSA-2011-0345-0010>.

<sup>20</sup> Bureau of Transportation Statistics, & U.S. Census Bureau. *2012 Commodity Flow Survey*. Retrieved from <http://www.census.gov/econ/cfs/>.

<sup>21</sup> Includes: UN2790, UN2067, UN3375, NA0331, UN2426, UN1942, UN0349, UN0042, UN0065, UN0289, UN3265, UN0361, UN0500, UN0030, UN0255, UN0456, UN0455, UN0081, UN0331, UN0241, UN0332, UN1791, UN3219, UN3139, and UN1479. UN0360 was not included due to a request by IME to remove this commodity from consideration. NA1993 is a Class 3 commodity that was not included either. This gives an underestimate of the total values, which is counterbalanced by the fact that not all shipments of the above commodities will be subject to HM-233D.

TABLE 3—HAZARDOUS MATERIAL SHIPPED BY PRIVATE AND FOR-HIRE TRUCKS BY HAZARD CLASS IN THE UNITED STATES<sup>22</sup>

Hazard class	Value 2012 (million \$)	Tons 2012 (thousands)	Ton-miles 2012 (millions)	Average miles per shipment
Hazard Class 1, Explosives .....	5,282	3,225	535	166
Hazard Class 5, Oxidizers and Organic Peroxides .....	1,651	4,471	998	223
Hazard Class 8, Corrosive Materials .....	1,215	547	200	366
Total .....	8,148	8,243	1,733	210

Source: 2012 CFS Hazardous Materials tables.

On average, trucks travel 210 miles per shipment, which falls inside the 200–500 mile range in the Federal Highway Administration’s (FHWA) Freight Facts and Figures 2011. Trucks in the 200–500 mile range average 76,000 miles of travel a year.<sup>23</sup> With an average load of 12.5 tons, each CTMV accounts for 950,000 ton-miles annually (76,000 miles \* 12.5 tons). Therefore, we estimate that there were 1,824 CTMVs in 2012 (1.7 billion ton-miles/950,000 ton-miles).

Three of the commodities (UN0331/NA0331, UN0332, and UN3375) with an annual ton-mileage of 539 million were transported by both ACTVs and MBTs,<sup>24</sup> while the remaining commodities were transported by MBT only. Therefore, commodities UN0331/NA0331, UN0332, and UN3375 are the

only impacted commodities not exclusively transported by MBT. Sharing out the ton-miles equally between ACTVs and MBTs for those three commodities results in an ACTV population estimate of 284 ((0.5 \* 539 million ton-miles)/950,000 ton-miles per CTMV). We estimate that there are 1,540 MBTs (1,824 CTMVs—284 ACTVs), which is close to IME’s 1,500 estimate.

Estimates derived from the Federal Motor Carrier Safety Administration (FMCSA) Motor Carrier Management Information System (MCMIS) Catalog can confirm the 2012 CFS estimate of 1,824 trucks.<sup>25</sup> MCMIS data from 2015 show that firms that transport explosives and oxidizers have the following number of hazardous material vehicles in their fleet:<sup>26</sup>

- 19 percent of the firms transporting hazardous materials have 1 vehicle in their fleet
- 34 percent have between 2 and 5 vehicles
- 11 percent have between 6 and 9 vehicles
- 15 percent have between 10 and 24 vehicles
- 13 percent have between 25 and 99 vehicles
- 8 percent have 100 vehicles or more

PHMSA data detailing the applications for the special permits show that 100 firms were involved in obtaining permits for the nine special permits referred to above.<sup>27</sup> All were applications for renewals, party-to status, or modifications. By sharing the 100 firms using the percentages from MCMIS data, we can assume that the 100 firms have the number of vehicles in the fleet as illustrated in the following Table 4:

TABLE 4—CTMV FLEET ESTIMATES

Number of firms A	MCMIS-based estimate of the number of vehicles per firm B	Number of vehicles in the fleet—low estimate C = A * B [lower bound]	Number of vehicles in the fleet—high estimate D = A * B [upper bound]
19 .....	1 .....	19	19
34 .....	2 to 5 .....	68	170
11 .....	6 to 9 .....	66	99
15 .....	10 to 24 .....	150	360
13 .....	25 to 99 .....	325	1287
8 .....	100 or more <sup>28</sup> .....	800	1000
Total .....	.....	1,428	2,935

If we assume that 100 firms use the special permits under consideration, the fleet of vehicles transporting the classes of hazardous materials that are under these special permits has approximately between 1,428 and 2,935 vehicles. The

estimate of 1,824 CTMVs falls into this range.

*Incidents associated with the transportation of explosives.* Based on analysis of the incident data from 2005 through 2014 that are associated with the special permits under consideration,

the transportation of bulk explosives that were granted special permits do not have a high rate of accidents, especially considering the number of trips completed and the miles driven per year. According to PHMSA incident data from 2005 through 2014, there were

<sup>22</sup> Some commodities subject to HM–233D were not listed in the 2012 CFS, and other HM–233D subject commodities with missing values were filled by sharing out the residual for the aggregate hazard class.

<sup>23</sup> FHWA. *Freight Facts and Figures 2011*, Table 3–7. Retrieved from [http://www.ops.fhwa.dot.gov/freight/freight\\_analysis/nat\\_freight\\_stats/docs/11factsfigures/table3\\_7.htm](http://www.ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/11factsfigures/table3_7.htm).

<sup>24</sup> IME Standard 23.

<sup>25</sup> FMCSA. *Online safety data resources*. Retrieved from <http://www.fmcsa.dot.gov/safety/research-and-analysis/online-safety-data-resources>.

<sup>26</sup> The census identifies those trucks that transport hazardous materials in quantities large enough to require a placard under the HMR at 49 CFR 177.823.

<sup>27</sup> Accessed and downloaded for the nine special permits impacted by HM–233D in May 2015 (<http://www.phmsa.dot.gov/hazmat/regs/sp-a/special-permits/search>).

<sup>28</sup> For the “High Estimate” to the firms having 100 or more vehicles, PHMSA approximated 125 vehicles in order to estimate a plausible range.

43 incidents associated with the nine special permits considered in this analysis.<sup>29</sup>

*Risks from incidents.* The risks to the public and/or the environment from the transportation of explosives are difficult to estimate because there are few incidents. A FMCSA report on cargo tank rollovers notes CTMVs are less prone to rollover than similar vehicles.<sup>30</sup> The report estimates a rollover rate of 0.34 rollovers per million miles traveled for vehicles with a lower center of gravity (similar to CTMVs) and 0.39 rollovers per million miles for nominal vehicles. Vehicles with a center of gravity height and wheel width similar to those of CTMVs (e.g., those with a lower center of gravity) may experience 87 rollovers, while vehicles with a higher center of gravity wheel height and wheel width (e.g., nominal vehicles) experience 100 rollovers.<sup>31</sup> Incidents associated with vehicles covered by the special permits included in this analysis are rare. In fact, according to a DOT study on intermodal explosives, the authors noted, “The risk of transporting explosives by highway compares

favorably with transportation of other hazardous materials.”<sup>32</sup>

For transporting explosives safely, the United Nations devised a “Hazard Divisions classification system.”<sup>33</sup> The hazardous materials considered under this final rule are Class 5 Oxidizers,<sup>34</sup> Class 8 Corrosive substances, other combustible explosives (not elsewhere classified), and Class 1 explosives that are categorized into six different divisions that indicate their main hazard characteristics. The Class 1 divisions and their main hazard characteristics are:

- Division 1.1 for explosives with mass explosion hazard
- Division 1.2 for explosives with a projection hazard
- Division 1.3 for explosives with a fire hazard
- Division 1.4 for explosives with no significant explosion, projection, or fire hazard
- Division 1.5 for explosives with a mass explosion hazard but are so insensitive, there is very low probability of initiation or of transition from burning to detonation under normal transport conditions
- Division 1.6 for extremely insensitive articles that do not have a mass explosive hazard. This division is composed of articles that contain only extremely insensitive detonating substances and that demonstrate a negligible probability of accidental initiation or propagation

The transport of industrial explosives in some instances can increase the risk of death, injury, product loss, and property and environmental damage.

Impact on the local economy and community resources: Incidents that cause fires, explosions, road closures, evacuations, or other such events have the potential to increase the demand for community resources. There is typically an increased demand for assistance from first responders and firefighters to control fires, and from police and other law enforcement personnel to control traffic and assist in possible evacuations. These releases may also prompt demand for services from engineers or other public workers to address utility and infrastructure problems. Releases can cause business interruptions or loss of fuel supplies,

such as natural gas, gasoline, and home heating oil. Although the potential for releases to cause displacement of populations near or around fires or explosions is remote, these releases could cause the need for permanent or temporary shelter, putting more strain on community resources. Combined effects on businesses, transportation, and other economic resources can exacerbate response and recovery issues.

Impact on the environment: Spills and releases can cause environmental damage, impact wildlife, and contaminate drinking water supplies.

Health hazards: Releases, depending on their mode and severity, can cause many health hazards, including toxicity, dizziness, asphyxiation, irritation, and burns. Accidents and incidents have commanded attention from Congress, stakeholders, constituents, and environmental groups.

*Factors contributing to failures.* Many factors can contribute to failures. Of the 43 incidents reported to PHMSA from 2005 through 2014 involving the nine special permits in the rulemaking, 12 incidents involved one or more vehicles crashing and 14 involved vehicle rollovers (see Table 5). Other factors included human error and loose closure components. This was out of the 34 incidents for which the factors of failure were recorded, while for the other nine incidents, factors of failure were either not applicable or not recorded. There was spillage in 32 recorded incidents involving at least one hazardous material, and six incidents affected the environment. There were no injuries, fatalities, or hospitalizations related to hazardous materials. There were two fatalities, one of which was related to a rollover accident while the other was of an unknown cause.

Each incident report includes data on up to three parts that failed, how they failed, and the cause of failure(s) for each hazardous material. In total, data was recorded for 35 incidents on the parts that failed and for 35 incidents on how they failed. The part that failed most frequently was the closure or cover. Leaking or torn off/damaged closures were the most common methods of failure. In eight incidents, the description of how they failed was not recorded or not applicable, and in eight incidents, failure of parts was not recorded or not applicable.

<sup>29</sup> Over the past 10 years, there have been 43 reported transportation incidents in the U.S. involving multipurpose bulk trucks. During this same period, there has never been a death or major injury attributed to the hazardous materials while in transportation when there was compliance with the regulations. While there has been 1 incident that resulted in a fatality in that 10 year period, it involved a vehicular crash and human error, and was not attributed to the transportation of the hazardous materials themselves. Overall most incidents (90 percent) resulted in spillage; fewer incidents resulted in vapor dispersion (3 percent), environmental damage (0.5 percent), fire (0.5 percent), waterway infringement (0.4 percent), and explosion (0.1 percent.) Most of the time, the closures or covers in portable tanks failed, causing leaks. Detailed hazardous materials incident reports for hazardous materials incidents specified in § 171.16 may be found at the PHMSA Web site at the following URL: <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Search.aspx>.

<sup>30</sup> FMCSA. (2007). *Cargo tank roll stability study: Final report*. Washington, DC: Battelle. Retrieved August 6, 2015, from <http://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Cargo%20Tank%20Roll%20Stability%20Study%20Final%20Report%20April%202007.pdf>.

<sup>31</sup> FMCSA. (2007). *Cargo tank roll stability study: Final report*. Washington, DC: Battelle. Retrieved August 6, 2015, from <http://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Cargo%20Tank%20Roll%20Stability%20Study%20Final%20Report%20April%202007.pdf>.

<sup>32</sup> DOT. (2003, February). *Intermodal explosives working group report*.

<sup>33</sup> Retrieved June 18, 2012, from [http://www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.50-UN\\_Explosive\\_Classification\\_System\\_and\\_Codes\(V.1\).pdf](http://www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.50-UN_Explosive_Classification_System_and_Codes(V.1).pdf).

<sup>34</sup> These are not technically explosives but can explode under certain circumstances.

TABLE 5—FACTORS CONTRIBUTING TO FAILURES, 2005–2014

Factors of failures	Number of incidents	Percentage
Rollover accident .....	14	41.18
Vehicular crash or accident damage .....	12	35.29
Loose closure component .....	2	5.88
Human error .....	2	5.88
Other <sup>35</sup> .....	4	11.76
Total .....	34	100

Source: PHMSA Incident Reports Database.<sup>36</sup>

TABLE 6—PARTS CONTRIBUTING TO FAILURES, 2005–2014

Parts failed	Number of incidents	Percentage
Cover/body/closure .....	20	57.14
Discharge valve or coupling .....	4	11.43
Vent .....	4	11.43
Hose adaptor or coupling .....	2	5.71
Other <sup>37</sup> .....	5	14.28

Source: PHMSA Incident Reports Database.<sup>38</sup>

TABLE 7—HOW IT FAILED, 2005–2014

How failed	Number of incidents	Percentage
Leaked .....	13	37.14
Torn off or damaged .....	11	31.42
Burst or ruptured .....	4	11.43
Ripped or torn .....	2	5.71
Vented .....	2	5.71
Other <sup>39</sup> .....	3	8.57
Total .....	35	100

Source: PHMSA Incident Reports Database.<sup>40</sup>

### 3. Timeframe for the Analysis

PHMSA estimates that the economic effects of this rulemaking, once finalized and adopted, will be sustained for many years into the future. Notwithstanding this, because of the difficulty of and uncertainty associated with forecasting industry effects into the far future, PHMSA assumes a 10-year period to quantify and monetize the costs and

<sup>35</sup> All other factors—including corrosion, deterioration or aging, and dropped or misaligned material component/device—had 1 incident out of the 34 incidents (2.94 percent).

<sup>36</sup> <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Welcome.aspx>.

<sup>37</sup> All other parts—including bottom outlet valves, hoses, liquid valves, manway or dome covers/gaskets, and tank shells—had 1 incident out of 35 incidents (2.86 percent).

<sup>38</sup> <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Welcome.aspx>.

<sup>39</sup> All other factors including structural, failed to operate, and cracked had 1 incident out of 35 incidents (2.86 percent).

<sup>40</sup> <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Welcome.aspx>.

benefits and demonstrate net effects of the final rule.

### 4. Calculating Costs and Benefits

Costs to the public and PHMSA accrue from the requirements set forth in the regulations and the enforcement methods and procedures adopted to carry out the objectives of the rules and regulations. Examples of costs include (but are not limited to) goods and services required to comply with the regulation; measures of productivity, such as losses related to work time; incident-related death, illness, or disability; and payments to standard-setting organizations for the standards.

Typically, the benefits of rules are derived from health and safety factors. Since the federal regulatory agencies often design regulations to reduce risks to life, evaluation of the benefits of reducing fatality risks can be the key part of the analysis. In this case, the societal costs (e.g., death, injuries, property damage, other losses) are minimal, since there are no deaths or injuries. The societal costs in this

analysis are derived solely from property damage and other losses associated with the incidents. Most of the benefits from the rule will be related to cost savings. Examples of benefits in the form of reduced expenditures include (but are not limited to) private-sector savings, government administrative savings, gains in work time, and reduced costs of compliance.

### 5. Societal Costs and Potential Benefits

The value of lives saved, injuries prevented, and property damage avoided serve as the basis for calculating societal costs, which in turn represent the potential benefits of a regulation. To determine the cost to society of incidents, we use pertinent historical incident data.

According to PHMSA incident data from 2005 through 2014, there were 43 incidents associated with the nine special permits being considered in this analysis, including two vehicular crash fatalities that were not hazardous material related. PHMSA does not include the incidents that were deemed

not related to hazardous materials in the calculation of societal costs. For this analysis, the societal costs and potential benefits accrue from the material loss,

carrier damage, property damage, and remediation costs (heretofore referred to as damages and losses). Table 8 lays out the damages and losses (over a 10-year

period) related to the nine special permits under consideration.

TABLE 8—VALUE OF MATERIAL LOSS, CARRIER DAMAGES, PROPERTY DAMAGES, RESPONSE, AND CLEANUP COSTS RELATED TO THE NINE SPECIAL PERMITS, 2005–2014

	Material loss	Carrier damage	Property damage	Response cost	Cleanup cost	All costs
Total amount reported .....	\$314,504	\$3,894,903	\$94,667	\$321,256	\$286,286	\$4,911,616
Average amount per year .....	31,450	389,490	9,466	32,125	28,928	491,162

Source: PHMSA Incident Reports Database.<sup>41</sup>

The total annual societal costs (potential benefits), associated damages, and losses for the nine special permits being considered under this analysis are approximately \$491,000.

6. Summary of Comments Relating to Costs and Benefits Estimates

For the HM–233D NPRM, PHMSA received two sets of comments from IME and one set of comments from R&R.<sup>42 43</sup> Comments relevant to the preliminary NPRM RIA included comments on the FSSs and EBDDs requirements of the proposed rule as well as comments concerning the differences between MBTs and ACTVs.

*Comments related to FSSs.* In their comments dated September 11, 2014, and November 21, 2014, IME outlined arguments against including a FSS requirement in the HM–233D rulemaking. IME stated that MBTs, which are subject to the FSS requirement in the proposed rule, have a proven safety record and that they would not want their MBTs to be the “guinea pigs” for field testing the FSS technology. Further, IME stated that there have been no deaths or serious injuries attributable to hazardous materials carried on MBTs since the technology was introduced in the 1970s and that the safety benefits of FSS may be negligible, as there is no guarantee that a FSS will be operational after a crash. Also, IME Standard 23 already requires MBTs to be equipped with two fire extinguishers with an Underwriters’ Laboratories (UL) rating of at least 4–A:40–B:C, stronger than the current requirement of one fire extinguisher with a UL rating of 10B:C. Finally, IME stated that consequently, Nobel Insurance Services, the largest insurer of

MBTs in the U.S., told IME that adding FSSs to MBTs would not have an effect on rates because there would be no significant loss of experience.

Regarding the implementation of the FSS requirement in Canada, IME notes that it is not correct to represent Canadian industry as “supporting” this standard; the FSS standard was imposed by NRCan through its Mobile Process Unit permit system and did not include the industry in the process.<sup>44</sup> Furthermore, IME states the PHMSA FSS requirement is different from the NRCan standard. In Canada, pre-engineered FSS technology is permitted, while the PHMSA standard does not permit this type of technology and the standard requires vehicle-specific designs that have already been certified by a DCE, including physical testing or engineering analysis. IME states that unlike the NRCan standard, PHMSA also requires periodic inspections and detailed recordkeeping and retention requirements. Ultimately, given the lack of incident data to show that FSSs would increase safety commensurate with the cost, IME does not support the NRCan FSS standard or the more onerous PHMSA FSS proposal.

Estimating the costs based off the NRCan requirement, IME reports that installation costs of FSSs in Canada are between \$4,000 and \$6,000, which does not include periodic maintenance, testing requirements, or recordkeeping. IME states each FSS would add 300–500 pounds of weight to the vehicle, and a typical payload of an MBT is 25,000 pounds, and a new MBT ranges from \$250,000 to \$500,000. Therefore, IME states an NRCan-type FSS would reduce payload between 1.2 percent and 2 percent, and the cost of a new MBT would increase by 1.2 percent to 1.6 percent. Periodic inspections cost an average of \$800 in remote areas and \$150 in more populated areas.

IME questioned if PHMSA has the jurisdiction to impose a truck safety standard on MBTs or any motor vehicle. Congress delegated PHMSA with the authority to develop regulations and standards for packaging to ensure the safe transportation of hazardous materials, while NHTSA has the authority to set safety performance standards for motor vehicles and motor vehicle equipment, per 49 U.S.C. chapter 301.

*Comments related to EBDDs.* In comments dated September 11, 2014, IME agreed that in a final rule, the EBDD standard should apply only to newly constructed or modified MBTs. IME, however, did not believe that the proposal for a requirement of three EBDDs was justified. MBTs are already required to have a manual EBDD in addition to the ignition switch, a requirement that no other specialized vehicle has. Moreover, PHMSA acknowledged that no death or major injury has been attributed to hazardous materials carried by MBTs,<sup>45</sup> which is a record that cannot be matched by other bulk hazardous materials that are sensitive to electric charge. IME was unaware of any instance where an emergency has warranted the use of EBDDs, irrespective of the consequence. IME states the battery cable is cut by emergency responders as they are trained to do, and that the cost of training all emergency responders is not included in PHMSA’s cost calculation. Finally, IME states these costs would be significant given there are more than 1 million firefighters in the U.S., and more than 70 percent of fire departments are volunteer-based, with relatively high rates of turnover. The proposed standard for EBDDs is inconsistent with Canada’s standard requirements. IME would support an EBDD requirement that harmonizes with the Canadian EBDD standard.<sup>46</sup>

<sup>41</sup> <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Welcome.aspx>.

<sup>42</sup> Retrieved from <http://www.regulations.gov/#!docketBrowser;pp=25;po=0;dt=PS;D=PHMSA-2011-0345>.

<sup>43</sup> Other comments received from the Dangerous Goods Advisory Council and the Council on Safe Transportation of Hazardous Articles are supportive of the rulemaking and IME’s comments.

<sup>44</sup> A Mobile Process Unit is the Canadian equivalent of a MBT.

<sup>45</sup> 79 FR 41188 (July 15, 2014), FN 2.

<sup>46</sup> NRCan. (2011, September). *Requirements for Bulk Mobile Process Units*. pp. 11.

*Comments on MBT and ACTV differences.* In the comments submitted on September 15, 2014, R&R argued for a clearer distinction in the rulemaking between cargo tank motor vehicles transporting single bulk hazardous materials (e.g., ACTVs) and MBTs. Regarding commodity transportation, ACTVs transport single bulk hazardous materials for blasting while MBTs transport multiple hazardous materials for blasting in bulk and non-bulk packaging. In IME Standard 23, IME clarifies the distinction by having two separate sections for the two types of vehicles and transports. Further, although Special Provision 148 makes this distinction, § 173.66 is not clear in this distinction because it only refers to bulk packaging and not to the type of transport. According to R&R, this portion should refer back to Sections 1 and 2 of IME Standard 23 for the standards for transporting a single bulk hazardous material for blasting by cargo tank motor vehicle and for MBTs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packaging, respectively. Furthermore, R&R requested clarification on the status of UN3375 ammonium nitrate (AN) emulsion, 5.1 oxidizer, an explosive precursor. If “these materials” refer back to Class 1 explosive materials, UN3375 is not included in the authorization to transport in bulk without a special permit, and therefore, R&R states that clarification is needed on the status of UN3375.

*Comments summary.* IME strongly opposed including the FSS requirement in the HM–233D rulemaking and provided numerous arguments and data to back up their point of view. Consequently, PHMSA decided not to include the FSS requirement in the final rule. Therefore, discussion of it is not a cost or benefit component of the Final Rule RIA, and costs estimates of the FSS—taking comment input into account—are outlined in Appendix A of the Final Rule regulatory analysis in the docket.

IME also opposed the specifics of the EBDD requirement in the HM–233D rulemaking, stating that they would support an EBDD requirement that harmonizes with the Canadian standard. As IME Standard 23 already includes an EBDD requirement, PHMSA decided to remove this requirement from the final rule as well. Therefore, discussion of this is not included in the Final Rule regulatory analysis in the docket.

R&R argued for clarifications to be made to the HM–233D rulemaking, in particular, to draw a clearer delineation between ACTVs and MBTs. PHMSA

incorporated these clarifications into their rulemaking, and the Final Rule regulatory analysis in the docket was updated to make a clearer distinction between ACTVs and MBTs.

## 7. The Final Rule

### a. Definition of the Scope and Parameters of the Analysis

PHMSA is amending the HMR by establishing standards for the safe transportation of bulk explosives. This rulemaking is responsive to two petitions for rulemaking submitted by industry representatives: P–1557, concerning the continued use of renewal applications, and P–1583, concerning the incorporation by reference into the HMR of an industry standard publication. Further, developing these requirements would provide wider access to the regulatory flexibility currently only offered by special permits and competent authorities.

By implementing these requirements, PHMSA will be mirroring the majority of provisions contained in nine widely-used longstanding special permits that have established safety records.

- The driver qualification and training program audits text in IME Standard 23 (page 14) mirrors that of DOT–SP 10751 (page 4), DOT–SP 11579 (page 7), and DOT–SP 12677 (page 5). This text covers the driver’s license, endorsement, and training requirements for drivers transporting explosive materials. Similar text also appears in IME Standard 23 Section 1.

- The packaging requirements for transport of Division 1.5 and Division 5.1 hazardous materials in IME Standard 23 (pages 12–13) excerpts text from DOT–SP 10751 (page 3), DOT–SP 11579 (page 4), and DOT–SP 12677 (page 3).

- IME Standard 23 (page 13) outlines the operational controls dealing with carriage restrictions, the placement of materials and containers inside cargo tanks, and the handling and maintenance of cargo tanks. These are mirrored in DOT–SP 12677 (page 4), DOT–SP 10751 (page 3), and DOT–SP 11579 (page 6).

- Tire specification and tire pressure monitoring standards in IME Standard 23 (page 14) are mirrored in DOT–SP 12677 in (pages 6–7). Tire specification requirements stipulate that the tire be no more than six years old and outline the minimum tread depth of both the steering axle and other tires. Tire pressure standards describe when they should be replaced and when tire pressure should be measured. However, text specifying the frequency of tire pressure checks in the special permits is not equivalent to that in IME Standard 23.

- Emergency battery disconnect standards covered in IME Standard 23 (page 15) are covered in DOT SP–12677 (page 8) and DOT SP–11579 (page 10). Stipulations include that the switch needs to be located 24 inches from the battery terminal, and each switch must be

tested once per calendar month and be repaired in the event of malfunction and failure.

- The emergency response, reporting, and training provision in IME Standard 23 (page 15) is described in DOT–12677 (page 10) and DOT–11579 (page 12). This provision describes procedures for reporting and investigation accidents. A slight difference in reporting requirements between IME Standard 23 and the special permits is that IME Standard 23 requires an incident report forwarded to PHMSA within 45 days, while the special permits stipulate that the incident report must be completed within 30 days and then sent to PHMSA within 15 days of its completion.

In this final rule, PHMSA is revising the HMR by amending the regulations to establish standards for the safe transportation of bulk explosives. These final rule requirements include the following:

- Incorporation of IME Standard 23 into the HMR. PHMSA will incorporate IME Standard 23 and establish requirements of general applicability governing the transportation of bulk explosive materials. As such, PHMSA will revise the 49 CFR 171.7 material incorporated by reference to include IME Standard 23, and establish a new section for the bulk explosives requirements.

- Requirements for both existing CTMVs and new construction of CTMVs, including modifications.

By incorporating these requirements, PHMSA will be echoing the majority of provisions contained in nine widely-used longstanding special permits that have established safety records. These revisions are intended to eliminate the need for future renewal requests, thus reducing paperwork burdens and facilitating commerce while maintaining an appropriate level of safety.

### b. IME Standard 23

IME Standard 23 recommends standards for MBT straight trucks that typically transport multiple hazardous materials in support of blasting operations and articulated cargo tanks that carry a single bulk blasting agent or oxidizer. The analysis presented here mainly addresses the costs and benefits associated with the operation of MBTs. Where applicable, it also addresses the costs and benefits associated with the operation of ACTVs.

IME Standard 23 was developed with input from IME members, stakeholders, and PHMSA. Federal agencies often incorporate standards, especially if the standards do not compromise the level of safety.<sup>47</sup> PHMSA typically incorporates non-consensus standards (as was the case with the incorporation

<sup>47</sup> OMB Circular A119. [https://www.whitehouse.gov/omb/circulars\\_a119/](https://www.whitehouse.gov/omb/circulars_a119/).

of the rail special permits)<sup>48</sup> through an NPRM that is published in the **Federal Register**, providing the regulated community and the public an opportunity to comment. This ensures transparency in the rulemaking process.

The adoption of IME Standard 23 in the HMR affords the following advantages:

- IME Standard 23 is more comprehensive and has stricter standards than the special permits, and it may eliminate some duplicative functions, such as tire pressure inspections under special permits, which are already included in Commercial Vehicle Safety Alliance standards that FMCSA uses but have not incorporated into the HMR. IME Standard 23 requires tire pressure checks before each day at the start of the trip but does not require firms to perform the tire pressure checks before each departure onto a public road.

- IME Standard 23 has a provision that prevents caking of AN into a solid mass.
- IME Standard 23 eliminates the need for special permits and the need for renewals, party-to status, or modifications, thus saving industry and agency resources because it lessens burdens common to applying for and reviewing special permits.
- IME Standard 23 is explicit, unambiguous, targeted, and simple to understand and follow.

The major disadvantages are the following:

- Regulations may need to be reevaluated and changed at appropriate intervals to keep pace with technological enhancements and other matters. However, IME will perform this at no charge to PHMSA. IME will also publish the revised standards free of charge to the public.<sup>49</sup>

- PHMSA will not be evaluating the applicant firm's fitness as it currently does in Phase 2 of the special permit application process.

- PHMSA may have to invest more time on compliance inspections.

### c. Analysis of Costs

Below is an analysis of costs associated with the various provisions under IME Standard 23 that affect its incorporation into the HMR.

*Costs associated with fire extinguishers.* IME Standard 23 requires a minimum of two fire extinguishers rated 4–A:40B:C for MBTs. Current Federal regulations require a minimum of one fire extinguisher rated 10B:C. Fire extinguishers rated 4–A:40B:C are more powerful than 10B:C fire extinguishers

<sup>48</sup> For example, in June 2012, PHMSA published a final rule to incorporate provisions contained in certain widely used or longstanding rail special permits that have general applicability and established safety records rail special permits into the HMR. The incorporation by reference of certain publications listed in foregoing the rule was previously approved by the Director of the Federal Register on October 1, 2003, and March 16, 2009.

<sup>49</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks*. Institute of Makers of Explosives.

and can be used for more types of fires.<sup>50</sup> IME makes the following estimates:<sup>51</sup>

- Fire extinguishers could be affixed in 8 hours.
- The cost for 2 fire extinguishers is approximately \$250.
- The labor costs for installing the fire extinguishers are estimated at \$280.
- The cost associated with the MBT downtime is approximately \$560.
- Approximately 25 percent of MBTs would need to acquire and affix the extinguishers.

Using IME data, we estimate that the cost to equip 385 MBTs (25 percent of the 1,540 MBTs in service) with fire extinguishers would be approximately \$419,650 ((\$250 for the fire extinguishers + \$280 labor costs + \$560 vehicle downtime) \* 385 MBTs). This would be a one-time cost. There will be annual maintenance costs, but we believe these costs will be negligible (somewhere between \$0 and \$5 per MBT over a 10-year period). Each vehicle should already have at least one fire extinguisher on board per DOT regulations.<sup>52</sup> IME estimates that the fire extinguisher has a longer life than the MBT; therefore, we estimate that there would be no annual costs to industry resulting from this requirement.

*Costs associated with working pressure limits.* IME Standard 23 limits the maximum allowable working pressure of an MBT cargo tank to 35 pounds per square inch. This measure is intended to help prevent a buildup of pressure in the tank, which could result in a mass detonation of the contents in a fire.<sup>53</sup> IME estimates that most MBTs already meet this standard and that, at most, 10 percent of the MBTs (or 154 MBTs) would need a retrofit.<sup>54</sup> According to IME, the cost of retrofitting each MBT would be about \$3,000.<sup>55</sup> The cost to industry to retrofit 154 MBTs would be approximately \$462,000, a one-time cost.

*Costs associated with periodic tests and inspections of non-DOT specification cargo tanks.* IME Standard 23 requires that non-DOT specification

<sup>50</sup> *Portable fire extinguishers*. Retrieved from <http://www.ci.garden-grove.ca.us/fire/extinguishers>.

<sup>51</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks*. Institute of Makers of Explosives.

<sup>52</sup> FMCSA. *Part 393: Parts and accessories necessary for safe operation*. Retrieved from <http://www.fmcsa.dot.gov/regulations/title49/section/393.95>.

<sup>53</sup> This does not have an effect on the capacity of an MBT.

<sup>54</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks*. Institute of Makers of Explosives.

<sup>55</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks*. Institute of Makers of Explosives.

cargo tanks be inspected essentially in the same way as specification tanks. This requires competence training of inspectors and physical inspections as described in Appendix B of IME Standard 23. IME estimates that 75 percent of the MBTs with non-specification tanks are in substantial compliance with IME Standard 23 in this regard. According to IME, the annual cost of performing inspections and testing for noncompliant vehicles is approximately \$3,500 per vehicle.<sup>56</sup> Assuming that 25 percent of MBTs (or 385 vehicles) would need to comply, the annual cost of complying is \$1,347,500 (385 MBTs not in compliance \* \$3,500 for inspection and tests per vehicle).

*Costs associated with the nameplate.* IME Standard 23 requires that a nameplate be affixed to the vehicle describing its design characteristics. According to IME, virtually all MBTs will need a retrofit, costing an average of about \$125 per truck for a total cost of \$192,500 (\$125 \* 1,540 MBTs).<sup>57</sup> This is a one-time cost.

*Costs associated with accident investigations.* IME Standard 23 requires companies to provide PHMSA with an incident investigation report of all CTMV crashes. This report may be an internal investigation because: (1) some companies are self-insured, and (2) some insurance companies will not allow their reports to be released. An independent accident investigation of a CTMV crash would be conducted only if PHMSA requests it. IME estimates that this would be necessary once a year under IME Standard 23. An independent accident investigation of an MBT crash costs about \$10,000.<sup>58</sup> Therefore, the annual cost associated with accident investigations would be \$10,000 per year.

*Costs associated with driver training after preventable accidents.* IME Standard 23 requires that drivers involved in preventable accidents (as defined in 49 CFR 385.3) while operating a CTMV be retrained if the driver remains employed by the motor carrier. The IME Standard 23 requirement is similar to the requirement in the current applicable special permits, even though IME Standard 23 clarifies that the carrier does not have a responsibility to

<sup>56</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks*. Institute of Makers of Explosives.

<sup>57</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks*. Institute of Makers of Explosives.

<sup>58</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks*. Institute of Makers of Explosives. Similar inferences can be made for ACTVs.

continue to employ the driver. Driver training costs are variable, depending on the amount of training needed and required by the rule. Truck driver courses cost about \$5,000 per driver.<sup>59</sup> As noted earlier, there are on average approximately four incidents per year under special permits. If the trend continues in future years under IME Standard 23, the cost of driver training to the industry is expected to be about \$20,000 per year (4 \* \$5,000), providing the drivers are not terminated; however,

if the firm has to train new drivers, the cost is expected to be the same.

*Costs associated with maintaining and updating IME Standard 23.* The cost of standard development is spread among many standards that IME makes available to the public. Some standards require more resources than others do. IME estimates that the annual cost for maintaining and updating IME Standard 23 is about \$50,000. IME is prepared to bear the cost of maintaining IME Standard 23 and updating it at no cost

to PHMSA, once it is incorporated into the HMR. This cost is included in the total cost to industry; this is an ongoing expenditure that is an integral part of industry's management and operation.

*Summary of all costs associated with the final rule.* Incorporating IME Standard 23 into the HMR will result in a one-time cost of approximately \$1.1 million and an annual cost of approximately \$1.4 million. The following Table 9 details the expected costs:

TABLE 9—COSTS ASSOCIATED WITH THE FINAL RULE

Cost items	One-time costs	Recurring annual costs
Fire Extinguishers .....	\$419,650	\$0
Work Pressure Limit .....	462,000	0
Periodic Inspections .....	0	1,347,500
Nameplate .....	192,500	0
Accident Investigation .....	0	10,000
Driver Training .....	0	20,000
Maintaining/Updating IME Standard 23 .....	0	50,000
Total .....	1,074,150	1,416,500

#### d. Analysis of Benefits

The benefits associated with the final rule are the sum of the benefits of incorporating IME Standard 23 into the HMR and any benefits that may accrue from existing and new trucks meeting the additional requirements described above. The annual benefits from the incorporation of IME Standard 23 into the HMR are described below.

*Cost savings to industry from no longer having to apply for the nine special permits.* According to PHMSA data from May 2015, 305 requests for the nine special permits were submitted, with an average life span of 3.132 years (approximately 97 [305 requests/3.132 years] requests per year).<sup>60</sup> There were no requests for new permits; all 305 were party-to special permits, modifications, or renewals. According to IME, the industry spends approximately \$825 for each renewal, party-to status, or modification special permit request. Since none of the applications involved new permits, the

annual cost to industry would be \$80,025 (97 permit applications per year \* \$825).

*Cost savings to PHMSA from no longer having to review and approve applications for the nine Special Permits.* PHMSA spends approximately \$414 per application.<sup>61</sup> The annual total cost to PHMSA for the application and review process is \$40,158 (\$414 per application \* 97).

*Cost savings to industry associated with not having to check tire pressure before each departure onto the public roads.* The special permits contain a requirement to check and record the pressure in each tire before each regulated movement on a public road, while IME Standard 23 contains a requirement to only check tire pressure before the initial trip of the day, which would be part of a routine pre-trip inspection and should not add any additional cost.<sup>62</sup> For the calculation of costs ensuing from the requirement to check tire pressure before each

departure onto public roads (based on information from IME and using inferences for CTMVs), PHMSA assumes the following:

- Drivers of CTMVs earn approximately \$35 per hour, including overhead.<sup>63</sup>
- Drivers perform work-related activities about 250 days per year for approximately 14 hours for each of those 250 days. The 14-hour day consists of driving (which, under current U.S. regulations, is restricted to 11 driving hours during a 14-hour workday),<sup>64</sup> non-driving (such as loading, unloading, performing required tire checks, and doing paperwork), and rest breaks. According to a DOT study, commercial motor vehicle drivers spend approximately 66 percent of their workday driving; 23 percent performing non-driving activities; and the remaining 11 percent resting, eating, and sleeping while on duty.<sup>65</sup>
- In 2014, a gallon of diesel fuel cost \$3.83.<sup>66</sup>
- The cost per day to operate a CTMV in compliance with special permits is \$560.
- Checking tire pressure takes approximately 30 minutes per day, according to an IME estimate. PHMSA believes this

<sup>59</sup> Professional Truck Driver Institute. *Frequently asked questions by prospective students, schools & the general public.* <http://www.ptdi.org/errata/FAQs.pdf>.

<sup>60</sup> Accessed and downloaded for the nine special permits impacted by HM-233D in May 2015 from <http://www.phmsa.dot.gov/hazmat/regs/sp-a/special-permits/search>.

<sup>61</sup> Estimate provided by the Special Permits and Approvals Division via email on July 17, 2012.

<sup>62</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks.* Institute of Makers of Explosives.

<sup>63</sup> According to the U.S. Department of Labor Bureau of Labor Statistics (BLS) May 2014

occupational wage statistics for "53-3032 Heavy and Tractor-Trailer Truck Drivers," the mean hourly wage is \$20.16 per hour or \$30.24 per hour, using a 50-percent overhead factor. See: <http://www.bls.gov/oes/current/oes533032.htm>. The BLS wage estimate is less than the IME estimate because the BLS estimate includes drivers of all tractor trailers and trucks with a capacity of 26,000 pounds. PHMSA is using IME's wage estimate for this cost analysis because the IME wage estimate relates to MBT drivers considered under this final rule.

<sup>64</sup> DOT. (2013, July 1). New hours-of-service safety regulations to reduce truck drive fatigue begin today [Press release]. Retrieved from <http://www.transportation.gov/briefing-room/new-hours-service-safety-regulations-reduce-truck-driver-fatigue-begin-today>.

<sup>65</sup> Blanco, M., Hanowski, R.J., Olson, R.L., Morgan, J.F., Socolich, S.A., Wu, S., & Guo, F. (2011, May). *The impact of driving, non-driving work, and rest breaks on driving performance in commercial motor vehicle operations.* Virginia Polytechnic Institute and State University & FMCSA.

<sup>66</sup> U.S. Energy Information Administration. (2015, August). *Weekly retail gasoline and diesel prices.* Retrieved from [http://www.eia.gov/dnav/pet/pet\\_pri\\_gnd\\_dcus\\_nus\\_a.htm](http://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_nus_a.htm).



may be an overestimation but has included it in the absence of an alternative value.

Under the assumptions above, the cost per year for the tire checks is approximately \$4,375 per year per CTMV (\$35 driver wage per hour of work \* 0.5 hours per tire pressure check \* 250 work days/year).

Vehicles idle during the tire check, and PHMSA estimates that they consume 1 gallon of fuel per hour. The fuel costs per year per vehicle are \$479 (\$3.83 per gallon of diesel \* 0.5 hours per tire pressure check \* 250 workdays). Additionally, the industry estimates that the daily time needed to check tire pressure (*i.e.*, 30 minutes per day)

translates to a lost time equivalent of approximately 0.036 workdays (0.5 hours per day/14-hour workday). Thus, the lost productive time of CTMVs costs \$5,040 (0.036 lost time per workday \* 250 workdays/year \* \$560 to operate a CTMV per day) per year. See the following Table 10:

TABLE 10—ANNUAL COSTS PER VEHICLE ASSOCIATED WITH TIRE PRESSURE CHECKS

Average amount of time per day	Labor cost per year per CTMV	Fuel cost per year per CTMV	CTMV downtime per year	Total annual cost per CTMV
30 minutes .....	\$4,375	\$479	\$5,040	\$9,894

The annual cost per vehicle associated with the tire-pressure check requirement is \$9,894, which is an annual cost to industry from the tire pressure test requirement of approximately \$18,046,656 (\$9,894 total cost per vehicle per year \* 1,824 CTMVs).

*Cost savings to industry from reduced caking incidence.* There is a savings from the IME Standard 23 requirement relating to caking. If left sitting for several days, ammonium nitrate (AN) can absorb moisture from the air, allowing it to cake into a solid mass that is extremely difficult to break up. AN is highly hygroscopic; that is, it readily absorbs water from the atmosphere. AN is also highly water-soluble. If AN sits undisturbed in a bulk container long enough, it will absorb water and the prills will dissolve slightly around the edges. A prill is a small aggregate or globule of a material, most often a dry sphere, formed from a melted liquid. A drop in temperature will then cause the prills to solidify into a solid mass. IME Standard 23 counteracts this by unloading the transport container. Almost all bulk trucks will have AN prills in them at some point, making them susceptible to caking. Routine maintenance requirements under IME Standard 23 do not permit caking of the contents of an MBT to occur. IME Standard 23 specifies that if the interior surfaces of bulk packaging are not smooth and free of obstructions, the bulk packaging is to be inspected and cleaned “to prevent caking and/or drying-out of the bulk hazardous material.” IME Standard 23 further specifies that bulk hazardous materials not be allowed to remain in the bulk packaging for any period of time that could result in caking. IME Standard 23 recommends that the equipment be cleaned as needed to minimize the accumulation and packing of the bulk hazardous materials in the bulk

packaging. IME notes that instances of caking currently occur 5 to 10 times annually and cost about \$12,000 to remediate each time.<sup>67</sup> There is no additional cost to industry to comply with the requirement in IME Standard 23 that helps prevent caking. Thus, this preventive requirement represents a savings to industry on average of \$90,000 per year (assuming an average of 7.5 (*i.e.*, the average of 5 and 10) caking incidents per year \* \$12,000 per incident for remediation).

*Cost savings to the public from the IME standard.* There are many resources and costs involved in the development and revision of standards.<sup>68</sup> According to the Administrative Conference of the United States report, “agencies are legally required to identify the specific version of material incorporated by reference and are prohibited from incorporating material dynamically. When an updated version of the incorporated material becomes available, the regulation must be updated if PHMSA wants the regulation to incorporate the new version.”<sup>69</sup> In

<sup>67</sup> Santis, L. *Cost analysis of SLP-23, special permits, and Canadian standards for bulk trucks.* Institute of Makers of Explosives.

<sup>68</sup> ANSI notes that standard-setting organizations charge for standards because “every standard is a work of authorship and, under U.S. and international law, is copyright protected, giving the owner certain rights of control and remuneration that cannot be taken away without just compensation. In addition, there are many costs associated with developing, maintaining, and distributing standards—all of which can be reflected in the price of a standard.” ANSI. *Why voluntary consensus standards incorporated by reference into Federal Government regulations are copyright protected.* Retrieved August 18, 2012, from <http://publicaa.ansi.org/sites/apdl/Documents/News%20and%20Publications/Critical%20Issues/Copyright%20on%20Standards%20in%20Regulations/Copyright%20on%20Standards%20in%20Regulation.pdf>.

<sup>69</sup> Administrative Conference of the United States. (Memorandum). (2011, October 19). Retrieved August 7, 2015, from <https://www.acus.gov/sites/default/files/documents/Revised-Draft-Recommendation-10-19-11.pdf>.

addition, if the standard is copyrighted—as is often the case with voluntary consensus standards—there are concerns with what might constitute “fair use” under Section 107 of the Copyright Act. There are fees for licensing the standards. The costs associated with paying a fee for the standards will affect small businesses and may cause small businesses to leave the market.

According to IME information, the resources and costs associated with development and updating include the following:

- Staff and equipment to manage the administration process. IME spends about \$1 million annually on this.
- Volunteer members to attend meetings and develop text. Teleconferencing saves some resources and travel costs; IME estimates that a typical member invests about a quarter of a person-year in IME activities. The cost is not quantified.
- For meetings, IME spends approximately \$100,000 per year.
- IME spends approximately \$50,000 per year to maintain IME Standard 23.
- IME spends approximately \$100,000 per year for videos, posters, and publications.

IME will make the standard available at no charge, which represents a cost saving to the public of about \$1.3 million.<sup>70</sup> This is cost saving to the users, since there are several factors that impact the price of a standard. According to the American National Standards Institute (ANSI), the price charged by standard setters includes the costs of: (1) Developing and maintaining the standards; (2) supporting the users of the standards and educating Federal, State, and local government regulators and legislators about the value of the standards; (3) paying for intellectual property rights; and (4) paying for the production, warehousing, and distribution costs associated with

<sup>70</sup> Assumes non-quantified costs of \$50,000 for volunteer members.

disseminating the standards.<sup>71</sup> Based on IME's experience with developing, maintaining, providing assistance to users and others, and disseminating standards, we estimate that the total annual costs for the development and maintenance of standards would likely be more than \$1.3 million because of an undetermined licensing fee additional to the other cost elements.

*Cost savings to industry from reduced paperwork burden.* According to the Paperwork Reduction Act supporting statement that was prepared for the HM-245 rule that incorporated "Certain Cargo Tank Special Permits" into the HMR, PHMSA estimated a 1-hour special permit renewal time. PHMSA estimates that the fully loaded wage rate for the employee who fills out the permits (e.g., a compliance officer) is \$32.69 per hour; the fully loaded wage rate is \$49.04 (\$32.69 \* 1.5) per hour.<sup>72</sup>

The annual cost savings to industry associated with the reduced paperwork is approximately \$4,757 (\$49.04 hourly wage rate for a compliance officer \* 97 fewer special permits).

*Cost savings from incorporating the NHTSA requirement.* The NHTSA requirement in the final rule is expected to reduce regulatory and administrative burden without negatively affecting transportation safety. There are likely to be no significant marginal costs or benefits associated with this requirement. NHTSA is the U.S. Government agency responsible for implementing and enforcing the National Traffic and Motor Vehicle Safety Act of 1966, as amended, 49 U.S.C. chapter 301 (the Vehicle Safety

Act), and certain other laws relating to motor vehicle safety. Under that authority, NHTSA issues and enforces the FMVSS that apply to motor vehicles and to certain items of motor vehicle equipment. The Vehicle Safety Act requires that motor vehicles and regulated items of motor vehicle equipment manufactured for sale in the United States be certified to comply with all applicable FMVSS. Before offering a motor vehicle or motor vehicle equipment item for sale in the United States, the fabricating manufacturer must: (1) Designate a permanent resident of the United States as its agent for service of process if the fabricating manufacturer is not located in the United States (49 CFR part 551, subpart D Service of Process on Foreign Manufacturers and Importers), and (2) submit to NHTSA identifying information on itself and on the products it manufactures to the FMVSS, not later than 30 days after the manufacturing process begins (49 CFR part 566 Manufacturer Identification).

*Summary of all benefits associated with the final rule.* Incorporating IME Standard 23 into the HMR will result in annual quantified cost savings of approximately \$19.5 million (see Table 11).

TABLE 11—BENEFITS ASSOCIATED WITH THE FINAL RULE

Cost savings items	Cost savings per year
Industry savings from no longer having to submit special permit applications	\$80,025

TABLE 11—BENEFITS ASSOCIATED WITH THE FINAL RULE—Continued

Cost savings items	Cost savings per year
PHMSA savings from special permit application review ..	40,158
Industry savings from no longer having to do tire checks prior to departures across public roads .....	18,046,650
Savings to industry from remediation resulting from caking incidents experienced under current operations under special permits .....	90,000
Minimum savings to the public from making IME Standard 23 available to the public at no cost, updating and maintaining the publication .....	1,300,000
Reduced paperwork burden	4,757
<b>Total .....</b>	<b>19,561,590</b>

8. Summary of Costs and Benefits From Adopting the Final Rule

Under the final rule, the one-time costs are about \$1.1 million and the recurring annual costs are about \$1.4 million. The benefits account for approximately \$19.6 million (see Table 12). The net present value of costs discounted at three percent and seven percent over 10 years are about \$13.1 million and \$11.0 million, respectively. The present value of the \$19.6 million discounted at three percent and seven percent over 10 years is about \$171.9 million and \$147.0 million, respectively.

TABLE 12—COSTS AND BENEFITS ASSOCIATED WITH THE FINAL RULE

Cost items	One-time costs	Recurring annual costs	Benefits (cost savings) per year
Industry applications for special permits .....	\$0	\$0	\$80,025
PHMSA review of special permit applications .....	0	0	40,158
Tire pressure checks .....	0	0	18,046,650
Fire extinguishers .....	419,650	0	0
Working pressure limit .....	462,000	0	0
Caking .....	0	0	90,000
Periodic inspections/tests .....	0	1,347,500	0
Nameplate .....	192,500	0	0
Accident investigations .....	0	10,000	0
Driver training .....	0	20,000	0
Maintaining/updating IME Standard 23 .....	0	50,000	1,300,000
Reduced paperwork burden .....	0	0	4,757
<b>Total .....</b>	<b>1,074,150</b>	<b>1,427,500</b>	<b>19,561,590</b>

<sup>71</sup> ANSI. *Why charge for standards?* Retrieved from [http://www.ansi.org/help/charge\\_standards.aspx?menuid=help](http://www.ansi.org/help/charge_standards.aspx?menuid=help).

<sup>72</sup> PHMSA-based labor costs on the "Compliance Officer" occupation for wages, and accounted for fringe benefits of 50 percent to estimate the full

labor cost. See: BLS Occupational Employment Statistics <http://www.bls.gov/oes/current/oes131041.htm>.

The annualized costs of the rule discounted at three percent are \$1.3 million and at seven percent are approximately \$1.1 million (see Table 13). The annualized benefits at three percent are approximately \$17.2 million

and, at seven percent, \$14.7 million. The annualized net benefits of the final rule at three percent are approximately \$15.9 million (\$17.2 million in annualized benefits and \$1.3 million in annualized costs) and at seven percent

are approximately \$13.6 million (\$14.7 million in annualized benefits and \$1.1 million in annualized costs). Table 13 summarizes these annual values:

TABLE 13—ANNUAL AND ANNUALIZED VALUES  
[\$ Millions]

Values	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Costs .....	\$2.5	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4
Benefits .....	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
Net Benefits .....	17.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1
<b>Annualized Values at 3% Discount Rate</b>										
Costs .....	1.3									
Benefits .....	17.2									
Net Benefits .....	15.9									
<b>Annualized Values at 7% Discount Rate</b>										
Costs .....	1.1									
Benefits .....	14.7									
Net Benefits .....	13.6									

C. Executive Order 13132: Federalism

Executive Order 13132 requires agencies to assure meaningful and timely input by state and local officials in the development of regulatory policies that may have “substantial direct effects 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.”

This final rule was analyzed in accordance with the principles and criteria contained in Executive Order 13132 (“Federalism”), and the President’s memorandum on “Preemption” published in the **Federal Register** on May 22, 2009 (74 FR 24693).<sup>73</sup> This final rule preempts state, local and Indian tribe requirements but does not amend any regulation that has substantial 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 governments. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply. Federal hazardous material transportation law, 49 U.S.C. 5101–5128, contains an express preemption 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 materials;
- (2) The packing, repacking, handling, labeling, marking, and placarding of hazardous materials;
- (3) The preparation, execution, and use of shipping documents related to hazardous materials 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 materials; or
- (5) The designing, manufacturing, fabricating, inspecting, marking, maintaining, reconditioning, repairing, or testing a package, container or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce.

This final rule addresses covered subject items (2), (3), and (5) and would preempt any State, local, or Indian tribe requirements concerning these subjects unless the non-Federal requirements are “substantively the same” as the Federal requirements. Furthermore, this final rule is necessary to update, clarify, and provide relief from regulatory requirements.

Federal hazardous materials transportation law provides at 49 U.S.C. 5125(b)(2) that if PHMSA issues a regulation concerning any of the covered subjects, PHMSA 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 proposes the effective date of federal preemption will be 90 days from publication of the final rule in this matter in the **Federal Register**.

D. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This final rule was analyzed in accordance with the principles and criteria contained in Executive Order 13175 (“Consultation and Coordination with Indian Tribal Governments”). Because this final rule does not have tribal implications and does not impose substantial direct compliance costs on Indian tribal governments, the funding and consultation requirements of Executive Order 13175 do not apply. Furthermore, we did not receive any comments to the NPRM or requests for consultation from Indian tribes during this rulemaking process.

E. Regulatory Flexibility Act, Executive Order 13272, and DOT Procedures and Policies

The Regulatory Flexibility Act of 1980 (RFA), as amended, requires Federal agencies to conduct a separate analysis of the economic impact of rules on small entities, taking into account the particular concerns of small entities when developing, writing, publicizing, promulgating, and enforcing

<sup>73</sup> <http://www.gpo.gov/fdsys/pkg/FR-2009-05-22/pdf/E9-12250.pdf>

regulations. Under Section 603(b) of the RFA, each final Regulatory Flexibility Analysis is required to address:

1. A statement of the need for, and objectives of, the rule.
2. A summary of the significant issues raised by public comments in response to the Initial Regulatory Flexibility Analysis, a summary of the assessment of the agency of such issues, and a statement of any changes made in the final rule as a result of such comments.
3. The kind and number of small entities to which the final rule will apply.
4. The projected reporting, recordkeeping, and other compliance requirements of the final rule.
5. A description of the steps the agency has taken to minimize the significant adverse economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each of the other significant alternatives to the rule considered by the agency was rejected.

A discussion of these requirements follows.

1. Need for the Rule

The objective of this rulemaking is to develop a set of standards related to the safe transportation of bulk explosives in CTMVs that will no longer require the need to apply for or become a party to a special permit, as the standard will be in the HMR. This rulemaking action is necessary to provide regulatory flexibility and relief while protecting public health, welfare, safety, and the environment. The final rule will be beneficial to stakeholders by reducing paperwork for industry and government while maintaining an appropriate level of safety, which promotes safer transportation practices. Finally, this rulemaking action facilitates commerce

and eliminates unnecessary regulatory requirements. The intended effects of this rulemaking would provide enhanced flexibility for industry transporting hazardous materials in commerce while maintaining an appropriate level of safety. The rulemaking would amend the HMR by incorporating IME Standard 23 and therefore include the requirements of nine special permits that were used to create IME Standard 23.

2. Comments Received on the NPRM Relating to Small Entity Impact

PHMSA did not receive any comments specifically relating to the impact of the proposed rule on small entities. A more extensive discussion of the comments relating to the impact of the requirements proposed in the NPRM is provided in Section 2.7 of the Final Rule Regulatory Impact Analysis (RIA).

For the HM-233D NPRM, PHMSA received two sets of comments from IME and one set of comments from R&R.<sup>74 75</sup> IME strongly opposed including the FSS requirement in the HM-233D rulemaking and provided numerous arguments and data to back up their point of view. These included:

1. No deaths and serious injuries have been attributable to hazardous materials carried on MBTs.
2. There is no guarantee that a FSS will be operational after a crash.
3. The Natural Resources Canada FSS will increase the cost of a MBT by 1.2 percent to 1.6 percent.

IME also opposed the specifics of the requirement for EBDDs in the HM-233D rulemaking, stating that they would support an EBDD requirement that harmonizes with the Canadian standard. R&R argued for clarifications needed to be made to the HM-233D rulemaking, in particular, to draw a clearer delineation between MBTs and ACTVs that carry one commodity.

3. A Description of and, Where Feasible, an Estimate of the Number of Small Entities To Which the Final Rule Will Apply

By amending the HMR, this action will likely affect only existing holders of the nine special permits. Firms newly engaged in the transportation of bulk explosives will benefit from the elimination of the special permit application process. Manufacturers of MBTs will also be affected by the final rule, as they have to comply with the Federal Motor Vehicle Safety Standard part of the rule.

PHMSA data detailing the applications from firms for the special permits under consideration show that 100 firms were involved in obtaining permits for the nine special permits referred to above.<sup>76</sup> All were applications for renewals, party-to status, or modifications. Of the 100 firms, we found 83 percent to be small and 17 percent to be large. The size of firm was determined using the U.S. Small Business Administration (SBA) size standard.<sup>77</sup> SBA bases the size standard on the firm's North American Industry Classification System (NAICS) code and either average number of employees or average annual revenue. The NAICS code, number of employees, and annual revenue were mostly found on Manta.<sup>78</sup> When there was no information on revenue or employees in Manta, FindTheCompany was used.<sup>79</sup> In the data, five percent of firms did not have an associated NAICS code, and three percent of firms did not have revenue or employee information. As small firms are less likely to have public information associated with them, these firms were classified as small.

There were 29 different NAICS codes, as shown in the following Table 14. Of the 100 firms, 83 were small businesses.

TABLE 14—NUMBER OF SMALL BUSINESSES BY NAICS CODE

NAICS code	Number of businesses	Number of small businesses	Percentage of small businesses
424690 .....	25	24	96
325920 .....	18	14	78
484230 .....	10	6	60
238910 .....	9	6	67
236115 .....	2	2	100
236210 .....	2	2	100
237110 .....	2	1	50

<sup>74</sup> Retrieved from <http://www.regulations.gov/#!docketBrowser;rpp=25;po=0;dc=PS;D=PHMSA-2011-0345>.

<sup>75</sup> Other comments received from the Dangerous Goods Advisory Council and the Council on Safe Transportation of Hazardous Articles are supportive of the rulemaking and IME's comments.

<sup>76</sup> Accessed and downloaded for the nine special permits impacted by HM-233D in May 2015 (<http://www.phmsa.dot.gov/hazmat/regs/sp-a/special-permits/search>).

<sup>77</sup> SBA, *Table of small business standards matched to North American Industry Classification*

*System codes*. Retrieved from [https://www.sba.gov/sites/default/files/files/Size\\_Standards\\_Table.pdf](https://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf).

<sup>78</sup> Manta. <http://www.manta.com>.

<sup>79</sup> FindTheCompany. <http://www.findthecompany.com/>.

TABLE 14—NUMBER OF SMALL BUSINESSES BY NAICS CODE—Continued

NAICS code	Number of businesses	Number of small businesses	Percentage of small businesses
237310	2	2	100
237990	2	2	100
423990	2	2	100
484121	2	1	50
541990	2	2	100
212311	1	1	100
212312	1	1	100
213111	1	1	100
213113	1	1	100
213115	1	0	0
238220	1	1	100
238990	1	1	100
423610	1	0	0
444110	1	1	100
484110	1	1	100
485999	1	0	0
488210	1	1	100
531130	1	1	100
561499	1	1	100
562112	1	1	100
813920	1	1	100
999900	1	1	100
Not available	5	5	100
Total	100	83	83

Source: PHMSA Special Permits Database and Econometrica calculations.

4. A Description of the Projected Reporting, Recordkeeping, and Other Compliance Requirements of the Final Rule

The RIA estimated the number of CTMVs to be 1,824, of which 1,540 were

estimated to be MBTs and 284 were estimated to be ACTVs. PHMSA assumes a uniform distribution of MBTs among small and large firms, even though large firms operate a significant proportion of the MBTs in service.<sup>80</sup> Thus, small firms operate 1,278 MBTs

(1,540 MBTs in service \* 83 percent small business entities) and 236 ACTVs (284 ACTVs in service \* 83 percent small business entities), giving a total of 1,514 CTMVs, as shown in the following Table 15:

TABLE 15—NUMBER AND TYPES OF TRUCKS OPERATED BY SMALL BUSINESSES

Type of truck	Total trucks	Percentage operated by small businesses	Trucks operated by small businesses
MBT	1,540	83	1,278
ACTV	284	83	236
CTMV	1,824	83	1,514

Source: RIA and Econometrica calculations.

A discussion of the impacts of the final rule on small businesses is included below.

Costs to Small Businesses

Costs associated with tire pressure checks. IME Standard 23 contains a requirement to check tire pressure before the initial trip of the day. This would be part of a routine pre-trip inspection and is not expected to add costs.

Costs associated with fire extinguishers. IME Standard 23 requires

a minimum of two fire extinguishers rated 4–A:40B:C. IME estimates that approximately 25 percent of the MBTs in service would need to acquire and affix the fire extinguishers. Assuming these MBTs are distributed uniformly across all firms, small businesses will need to acquire and affix fire extinguishers to 320 MBTs (1,278 MBTs \* 0.25 MBTs in service would need to acquire and affix the fire extinguishers) at a total cost of \$348,800 [(\$250 for the fire extinguishers + \$280 labor costs +

\$560 vehicle downtime) \* 320 MBTs]. This is expected to be a one-time cost.

Costs associated with working pressure limits. IME Standard 23 limits the maximum allowable working pressure of an MBT cargo tank to 35 pounds per square inch. IME estimates that at most 10 percent of the MBTs would need a retrofit to meet this standard. Assuming these MBTs are distributed uniformly across all firms, small businesses will need to retrofit 128 MBTs (1,278 MBTs \* 0.10 MBTs

<sup>80</sup> Based on data from the 2015 Federal Motor Carrier Safety Administration Motor Carrier Management Information System Catalog, 8 firms

have 100 or more CTMVs in their fleets, so a more complex analysis would remove those 8 large firms and 800 CTMVs from the calculations. Thus, the

analysis presented in this Final Rule Regulatory Flexibility Analysis may actually overstate the impact on small businesses.

would need a retrofit to meet this standard) at a total cost of \$384,000 (\$3,000 for the retrofit \* 128 MBTs). This is a one-time cost.

*Costs associated with periodic tests and inspections of non-DOT specification cargo tanks.* IME Standard 23 requires that non-DOT specification cargo tanks be inspected essentially in the same way as specification tanks. This requires competence training of inspectors and physical inspections as described in Appendix B of IME Standard 23. IME estimates that 25 percent of the MBTs with non-specification tanks are not in compliance with IME Standard 23 in this regard. Assuming these MBTs are distributed uniformly across all firms, small businesses will need to conduct tests and inspections on 320 MBTs (1,278 MBTs \* 0.25 MBTs with non-specification tanks are not in compliance with IME Standard 23 in this regard) at an annual cost of

\$1,120,000 (\$3,500 per inspection and test \* 320 MBTs). This is a recurring cost.

*Costs associated with the nameplate.* IME Standard 23 requires that a nameplate be affixed to the vehicle describing its design characteristics. PHMSA assumes that all MBTs will need to affix a nameplate. For small businesses, the total cost associated with the nameplate is \$159,750 (\$125 per nameplate \* 1,278 MBTs). This is a one-time cost.

*Costs associated with accident investigations and driver training after preventable accidents.* IME Standard 23 requires companies to provide PHMSA with an incident investigation report of all CTMV crashes. This report may be an internal investigation because: (1) Some companies are self-insured, and (2) some insurance companies will not allow their reports to be released. An independent accident investigation of a CTMV crash would be conducted only

if PHMSA requests it. IME estimates that under IME Standard 23 this would be necessary once a year. An independent accident investigation of a MBT or ACTV crash costs about \$10,000. In addition, four incidents per year will require driver training at the cost of \$20,000 (\$5,000 per training \* 4 incidents). Assuming incidents over time are distributed uniformly among all firms, small businesses will have an expected annual cost of \$24,900 per year [(\$10,000 for investigations + \$20,000 for training) \* 0.83 small entities].

*Costs summary.* The total one-time cost borne by small businesses associated with the final rule is \$892,550; approximately \$90,000 per year over a 10-year period. The total recurring cost borne by small businesses is expected to be \$1,144,900 per year. The following Table 16 summarizes these costs.

TABLE 16—COST OF FINAL RULE REQUIREMENTS

Cost item	One-time cost	Annual cost
Fire Extinguishers .....	\$348,800	.....
Working Pressure Limit .....	384,000	.....
Periodic Test and Inspections .....		\$1,120,000
Nameplate .....	159,750	.....
Accident investigations and driver training .....		24,900
<b>Total .....</b>	<b>892,550</b>	<b>1,144,900</b>

Source: RIA and Econometrica calculations.

Benefits to Small Businesses

*Savings from applications.* Incorporating IME Standard 23 into the HMR will eliminate nine special permits and the costs associated with preparing and submitting applications for these special permits. Assuming the 97 special permit applications per year are distributed uniformly among small and large firms, small businesses account for approximately 81 (97 \* 0.83 small entities) applications per year. Thus, small businesses will save \$66,825 (81 special permit applications \* \$825 per special permit party-to or renewal application) per year.

*Savings from tire pressure checks.* The special permits require that tires must be checked and the pressure of each tire recorded before each departure onto or across a public road, which adds a cost of \$18,046,650 annually to operating requirements for the 1,824 CTMVs in service, a cost not incurred by any other hazardous materials trucking operation. Under the incorporation of IME Standard 23 into the HMR, the mandate to check and record tire pressures before each on-

road departure would no longer apply. This will represent a cost saving of \$14,978,720 (\$18,046,650 for operating requirements \* 0.83 small entities) per year to small businesses.

*Savings from caking remediation.* The caking requirement in IME Standard 23 will eliminate the cost of remediating caking in the bulk packaging. Assuming the 7.5 caking incidents per year are distributed uniformly among small and large firms, the caking requirement will represent a cost savings of \$74,700 (\$12,000 to remediate caking \* 7.5 caking incidents per year \* 0.83 small entities) per year.

*Benefits summary.* The total cost savings for small businesses associated with the final rule are estimated at \$15,120,245 (\$66,825 savings from applications + \$14,978,720 savings from tire pressure checks + \$74,700 savings from caking remediation) per year (see following Table 17). The benefits far outweigh the costs.

TABLE 17—ANNUAL BENEFITS ASSOCIATED WITH FINAL RULE

Cost savings items	Annual cost savings
Applications .....	\$66,825
Tire pressure checks .....	14,978,720
Caking remediation .....	74,700
<b>Total .....</b>	<b>15,120,245</b>

Source: RIA and Econometrica calculations.

5. Steps Taken To Mitigate the Impact of the Rule on Affected Small Entities

PHMSA has not excluded small entities from any of the requirements of the final rule. However, PHMSA has removed the FSS and emergency shut-off/battery disconnect device requirements—included in the proposed rule—from the final rule, which will mitigate many of the cost impacts of the rule for small entities. Since costs are distributed evenly across firms, but large firms have higher revenues than small firms, the reduced costs would have a larger impact on small-firm profitability than on large-firm profitability.

## An Identification of All Federal Rules That May Duplicate, Overlap, or Conflict With the Final Rule

PHMSA is revising the HMR by amending the regulations to establish standards for the safe transportation of bulk explosives. The final rule has a detailed explanation of all the requirements. None of the existing Federal rules duplicate, overlap, or conflict with the final rule.

### Conclusion

This final rule has been developed 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 to ensure that potential impacts of draft rules on small entities are properly considered. In summary, the final rule provides substantial benefits to small entities as demonstrated above.

### F. Paperwork Reduction Act

PHMSA currently has an approved information collection under Office of Management and Budget (OMB) Control Number 2137–0051, entitled “Rulemaking, Special Permits, and Preemption Requirements.” This final rule may result in a decrease in the annual burden and costs under OMB Control Number 2137–0051 due to adopting changes to incorporate IME Standard 23 and certain provisions contained in certain widely-used or longstanding special permits that have an established safety record.

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. Section 1320.8(d), title 5, Code of Federal Regulations requires that PHMSA provide interested members of the public and affected agencies an opportunity to comment on information and recordkeeping requests.

This final rule identifies revised information collection requests that PHMSA will submit to OMB for approval based on the requirements in this final rule. PHMSA has developed burden estimates to reflect changes in this final rule and estimates that the information collection and recordkeeping burdens would be revised as follows:

OMB Control No. 2137–0051:  
 Net Decrease in Annual Number of Respondents: 100.  
 Net Decrease in Annual Responses: 100.  
 Net Decrease in Annual Burden Hours: 200.

Net Decrease in Annual Burden Costs: \$5,000.

Requests for a copy of this information collection should be directed to Steven Andrews or T. Glenn Foster, Office of Hazardous Materials Standards (PHH–12), Pipeline and Hazardous Materials Safety Administration, 1200 New Jersey Avenue SE., Washington, DC 20590–0001, Telephone (202) 366–8553.

### 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 contained in the heading of this document may be used to cross-reference this action with the Unified Agenda.

### H. Unfunded Mandates Reform Act of 1995

This final rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of \$155 million or more to either state, local or tribal governments, in the aggregate, or to the private sector, and is the least burdensome alternative that achieves the objective of the rule.

### I. Environmental Assessment and Finding of No Significant Impact

The National Environmental Policy Act, 42 U.S.C. 4321–4375, requires that federal agencies consider the consequences of major Federal actions and prepare a detailed statement on actions significantly affecting the quality of the human environment. The Council on Environmental Quality (CEQ) regulations require federal agencies to conduct an environmental review considering: (1) The need for the action; (2) alternatives to the action; (3) probable environmental impacts of the action and alternatives; and (4) the agencies and persons consulted during the consideration process [40 CFR 1508.9(b)].

#### 1. Introduction

PHMSA is amending the HMR by establishing standards for the safe transportation of bulk explosives. This rulemaking specifically focuses on reviewing the Institute of Makers of Explosives (IME)’s Safety Library Publication 23 (IME Standard 23): Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3, and Corrosives, Class 8 in Bulk

Packagings and nine special permits related to multipurpose bulk trucks (MBTs) used to transport various explosives, oxidizers, flammable liquids, and corrosive liquids on the same transport vehicle. The objective of this rulemaking is to develop a set of standards related to the safe transportation of these materials in MBTs that will no longer require a special permit because the standard will be in the HMR.

Through this final rule PHMSA is incorporating IME Standard 23 and establishing requirements of general applicability governing the transportation of bulk explosive materials. In addition, PHMSA is requiring compliance with Federal Motor Vehicle Safety Standard (FMVSS).

#### 2. Background

This rulemaking is responsive to two petitions for rulemaking submitted by industry representatives, P–1557 concerning the elimination of the need to operate under special permits by incorporating them into the HMR, and P–1583 concerning the incorporation of an industry standard publication. Further, developing these requirements would provide wider access to the regulatory flexibility currently only offered by special permit and competent authorities.

This rulemaking specifically focuses on reviewing IME Standard 23: Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3, and Corrosives, Class 8 in Bulk Packagings and nine special permits related to MBTs used to transport various explosives, oxidizers, flammable liquids, and corrosive liquids on the same transport vehicle. The objective of this rulemaking is to develop a set of standards related to the safe transportation of these materials in MBTs that will no longer require the need to apply for a special permit as the standard will be in the HMR.

This final rule is published under the authority of 49 U.S.C. 5103(b), which authorizes the Secretary to prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce. The 49 U.S.C. 5117(a) authorizes the Secretary of Transportation to issue a special permit from a regulation prescribed in 5103(b), 5104, 5110, or 5112 of the Federal Hazardous Materials Transportation Law to a person transporting, or causing to be transported, hazardous material in a way that achieves a safety level at least

equal to the safety level required under the law, or consistent with the public interest, if a required safety level does not exist. The final rule amends the regulations by incorporating provisions from certain widely used and longstanding special permits that have established a history of safety and that may, therefore, be converted into the regulations for general use.

### 3. Purpose and Need

PHMSA amends the HMR to establish standards for the safe transportation of bulk explosives. Developing such provisions of the HMR is intended to provide wider access to the regulatory flexibility that currently only is offered by way of obtaining a special permit. For example, the adoption of a regulatory standard in the HMR would eliminate the need for persons who hold a special permit to apply for renewal in the future.

In this final rule, PHMSA is revising the HMR by amending the regulations to establish standards for the safe transportation of bulk explosives. The following is a description of the action and the need for the action.

#### a. Incorporation of IME Standard 23 Into the HMR

Action: PHMSA incorporates IME Standard 23 and establishes requirements of general applicability governing the transportation of bulk explosive materials. As such, PHMSA revises the 49 CFR 171.7 table of material incorporated by reference to include IME Standard 23, and establish a new section for the bulk explosives requirements.

Need: PHMSA has concluded that the incorporation of IME Standard 23 into the HMR will provide wider access to the regulatory flexibility currently only offered by special permit and competent authorities. PHMSA believes this will benefit the government and the industry, as it will eliminate the need for firms to apply individually to transport certain classes of bulk materials in MBTs, provide regulatory flexibility and relief while maintaining an high level of safety, promote safer transportation practices, facilitate commerce, reduce paperwork burdens, and eliminate unnecessary regulatory requirements.

#### b. Federal Motor Vehicle Safety Standards for New Construction and Modified Multipurpose Bulk Trucks

Action: New or modified multipurpose bulk trucks constructed 120 days after the publication date of the final rule must be in compliance with the FMVSS found in 49 CFR part

571, as applicable. Furthermore, the multipurpose bulk truck manufacturer must maintain a certification record ensuring the final manufacturing is in compliance with the FMVSS, per the certification requirements found in 49 CFR part 567. These certification records must be made available to DOT representatives upon request.

Need: This specifies that all new construction and modified MBTs must conform to the FMVSS requirements.

### 4. Public Involvement

This rulemaking is responsive to two petitions for rulemaking submitted by industry representatives, P-1557 concerning the elimination of the need to operate under special permits by incorporating them into the HMR, and P-1583 concerning the incorporation of an industry standard publication. Developing these requirements would provide wider access to the regulatory flexibility currently only offered by special permit and competent authorities.

### 5. Market Segments Affected and Requirements of the Final Rule

This final rule incorporates elements of nine special permits that authorize multipurpose bulk truck operations not specifically permitted under the HMR. The amendments will eventually eliminate the need for current grantees to reapply for renewal of special permits every four years and for PHMSA to process those renewal applications. It will also allow other operators to transport bulk explosives without a special permit, provided that the operators conform to the requirements of this rule, including those explicitly stated in IME Standard 23.

### 6. Alternatives Considered

#### Alternative 1: No Action.

This would not be the preferred alternative. Under this option, PHMSA would continue existing requirements for special permits to transport bulk explosives by taking no action. However, PHMSA believes that there are considerable benefits (both environmental and economic) to taking action provided that a high level of safety is maintained. If no action is taken there will be no beneficial or adverse environmental effects compared to the status quo. Finally, this alternative would not impose any costs, but it would prevent the opportunity to realize any efficiency benefits.

#### Alternative 2: PHMSA Defers to Voluntary Standards.

This would not be the preferred alternative. Under this option, PHMSA will defer to voluntary standards

developed through organizations or trade associations. PHMSA will likely participate in standard-setting to develop standards that meet safety criteria that are in the interest of the United States. While compliance with voluntary standards is thought to be high by industry participants, firms do not have to comply with them, since they are voluntary. This creates some concern since the non-adoption may mean that those firms may not comply with minimum safety standards. A review of this alternative leads to a possibility that important environmental safety measures would not be implemented as completely as they would under alternative (5). For example, the provisions: (1) Any non-DOT specification cargo tanks, portable tanks, sift-proof closed vehicles and closed bulk bins must be qualified, inspected, and maintained essentially the same as a DOT-specification bulk container (as set out in Appendix B of IME Standard 23); and (2) inspectors conducting inspections of non-DOT non-specification tanks must meet training qualifications outlined in Appendix B, would not be implemented if this alternative (#2: PHMSA Defers to Voluntary Standards) was selected. While there may be certain beneficial environmental effects with this alternative, there are certainly drawbacks too. Furthermore, this alternative does not ensure the level of safety that alternative (5) would because firms may not comply with a voluntary standard.

#### Alternative 3: Incorporate Special Permits That Have a Good Safety Record Into the HMR.

This would not be the preferred alternative. Under this option, PHMSA would incorporate seven of the nine special permits into the HMR. These seven special permits have very good safety records. By incorporating these special permits, PHMSA would need to work through the Federal rulemaking process to modify the HMR in response to technological enhancements and other matters relating to the transportation of the bulk explosives covered under the seven special permits. It may be more advantageous to incorporate standards developed by industry than for PHMSA to develop its own standards and incorporate them into the HMR. There may be beneficial environmental effects with this alternative, but not to the extent of the final action because this alternative is not as comprehensive.

#### Alternative 4: Adopt Other National or International Standards.

This would not be the preferred alternative. Under this option, PHMSA



would adopt other national or international standards, such as those used by Canada, Australia, or the United Nations. These other standards do not conform well to existing U.S. law and to the nine special permits. For example, the U.S. Bridge Law (USBL) provides known standards for bridge construction, by, among other requirements, placing restrictions on the overall size of MBTs in service in the United States. Other standards do not conform to the USBL. Also, these standards are implemented in ways that may not be possible within the regulatory framework in the United States. This alternative will not have beneficial environmental effects beyond the status quo.

#### Alternative 5: Incorporate IME Standard 23 Into the HMR With Additional Features

This option is the preferred alternative, because it would provide regulatory flexibility without imposing burdensome costs. IME Standard 23 recommends standards for MBT straight trucks that typically transport multiple hazardous materials in support of blasting operations and articulated cargo tanks that carry a single bulk blasting agent or oxidizer. Under this option, PHMSA would incorporate IME Standard 23 into the HMR with additional features. This rulemaking specifically adopts a combination of features, including incorporating by reference (IBR) the Institute of Makers of Explosives' (IME) Safety Library Publication No. 23 "Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3 and Corrosives, Class 8 in Bulk Packaging" (referred to as IME Standard 23), and complying with certain NHTSA requirements. The requirements are more comprehensive and have stricter standards than the nine special permits, and may eliminate some duplicative functions covered by other industry standards. While IME Standard 23 may need to be re-evaluated and changed to keep pace with technological enhancements and other matters, IME will perform this and publish the revised standards free of charge. IME Standard 23 was developed with input of IME members, stakeholders, and PHMSA. There are beneficial effects with the final action that are superior to those achieved by the other alternatives, and these environmental benefits (direct, indirect, and cumulative) are discussed below.

#### 7. Analysis of Environmental Impacts

Routes used to transport bulk explosives traverse a variety of environments—from highly populated urban sites to remote, unpopulated rural areas. PHMSA manages the transportation of specific hazardous materials, including bulk explosives, with special permits that must achieve a level of safety at least equal to the level of safety achieved when transported under the HMR.

The physical environment potentially affected by the final rule includes the airspace, water resources (*e.g.*, oceans, streams, lakes), cultural and historical resources (*e.g.*, properties listed on the National Register of Historic Places), biological and ecological resources (*e.g.*, coastal zones, wetlands, plant and animal species and their habitat, forests, grasslands, offshore marine ecosystems), and special ecological resources (*e.g.*, threatened and endangered plant and animal species and their habitat, national and state parklands, biological reserves, Wild and Scenic Rivers) that exist directly adjacent to and within the vicinity of roads and routes used in the transportation of bulk explosives.

The final rule incorporates IME Standard 23 into the HMR and eliminates nine special permits. IME Standard 23 is more comprehensive and has stricter standards than the nine special permits, and it may eliminate some duplicative functions covered by other industry standards.

**Direct Effects:** The final rule will not increase and may decrease the frequency or severity of motor carrier incidents involving bulk explosives, as IME Standard 23 is more comprehensive and has stricter standards than the existing special permits. PHMSA assessment suggests that there are no adverse significant environmental impacts associated with the final rule.

**Indirect Effects:** The final rule will not increase and may decrease the frequency or severity of motor carrier incidents involving bulk explosive, and thus will not have an adverse indirect effect on the environment. PHMSA assessment suggests that there are no adverse significant environmental impacts associated with the final rule.

**Cumulative Effects:** The final rule will not increase and may decrease the frequency or severity of motor carrier incidents involving bulk explosives, as IME Standard 23 is more comprehensive and has stricter standards than the existing special permits. PHMSA assessment suggests that there are no adverse significant environmental impacts associated with the final rule.

#### 8. Comments From Agencies and Public

In considering the potential environmental impacts of the final action, PHMSA does not anticipate that permitting the new alternative would result in any significant impact on the human environment because the process through which special permits for bulk explosives are developed and certified has historically demonstrated an equivalent level of safety of the HMR.

#### 9. Conclusion

Given that this rulemaking amends the HMR to permit an alternative with equivalent and established safety records, these changes in regulation have the potential to increase safety and environmental protections. In the NPRM PHMSA solicited comments about potential environmental impacts associated with this rulemaking from other agencies, stakeholders, and citizens; and we did not receive anything specific to these issues.

#### J. Privacy Act

In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these comments, without edit, including any personal information the commenter provides, to [www.regulations.gov](http://www.regulations.gov), as described in the system of records notice (DOT/ALL-14 FDMS), which can be reviewed at [www.dot.gov/privacy](http://www.dot.gov/privacy).

#### K. Executive Order 13609 and International Trade Analysis

Under E.O. 13609, agencies must consider whether the impacts associated with significant variations between domestic and international regulatory approaches are unnecessary or may impair the ability of American business to export and compete internationally. In meeting shared challenges involving health, safety, labor, security, environmental, and other issues, international regulatory cooperation can identify approaches that are at least as protective as those that are or would be adopted in the absence of such cooperation. International regulatory cooperation can also reduce, eliminate, or prevent unnecessary differences in regulatory requirements.

Similarly, the Trade Agreements Act of 1979 (Public Law 96-39), as amended by the Uruguay Round Agreements Act (Public Law 103-465), prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. For purposes of these requirements, Federal agencies may participate in the establishment of

international standards, so long as the standards have a legitimate domestic objective, such as providing for safety, and do not operate to exclude imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards.

PHMSA participates in the establishment of international standards in order to protect the safety of the American public, and we have assessed the effects of the final rule to ensure that it does not cause unnecessary obstacles to foreign trade. Accordingly, this rulemaking is consistent with E.O. 13609 and PHMSA's obligations under the Trade Agreement Act, as amended.

#### *L. National Technology Transfer and Advancement Act*

The National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) directs federal agencies to use voluntary consensus standards in their regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g. specification of materials, test methods, or performance requirements) that are developed or adopted by voluntary consensus standard bodies.

This final rule involves one technical standard: IME Standard 23, IME Safety Library Publication No. 23 (IME Standard 23), "SLP 23: Recommendations for the Transportation of Explosives Division 1.5, Ammonium Nitrate Emulsions Division 5.1, Combustible Liquids Class 3, and Corrosives Class 8 in Bulk Packagings," October 2011 version. This consensus technical standard is listed in 49 CFR 171.7.

#### *M. Executive Order 13211*

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 a notice of inquiry, advance NPRM, and NPRM) 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.

PHMSA has evaluated this action in accordance with Executive Order 13211. See the environmental assessment section for a more thorough discussion of environmental impacts and the supply, distribution, or use of energy. PHMSA has determined that this action will not have a significant adverse effect on the supply, distribution, or use of energy. Consequently, PHMSA has determined that this regulatory action is not a "significant energy action" within the meaning of Executive Order 13211.

#### **List of Subjects**

##### *49 CFR Part 171*

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements, Definitions and abbreviations.

##### *49 CFR Part 172*

Hazardous materials transportation, Hazardous waste, Labeling, Markings, Packaging and containers, Reporting and recordkeeping requirements, Security measures.

##### *49 CFR Part 173*

Hazardous materials transportation, Incorporation by reference, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

##### *49 CFR Part 177*

Hazardous materials transportation, Incorporation by reference.

#### **The Final Rule**

In consideration of the foregoing, we are amending title 49 CFR 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; Pub. L. 101–410 section 4 (28 U.S.C. 2461 note); Pub. L. 104–134, section 31001; 49 CFR 1.81 and 1.97.

- 2. In § 171.7, paragraph (r)(2) is added to read as follows:

##### **§ 171.7 Reference material.**

\* \* \* \* \*

(r) \* \* \*

(2) IME Standard 23, IME Safety Library Publication No. 23 (IME Standard 23), Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3, and Corrosives, Class 8 in Bulk Packaging, October 2011, into §§ 173.66(intro); 177.835(d).

\* \* \* \* \*

#### **PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, TRAINING REQUIREMENTS, AND SECURITY PLANS**

- 3. The authority citation for part 172 continues to read as follows:

**Authority:** 49 U.S.C. 5101–5128, 44701; 49 CFR 1.81, 1.96 and 1.97.

- 4. In § 172.101, the Hazardous Materials Table is amended by revising the following entries to read as follows:

##### **§ 172.101 Purpose and use of hazardous materials table.**

\* \* \* \* \*

§ 172.101—HAZARDOUS MATERIALS TABLE

(1) Symbols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or division	(4) Identification Nos.	(5) PG	(6) Label codes	(7) Special provisions (§ 172.102)	(8) Packaging (§ 173.***)		(9) Quantity limitations		(10) Vessel stowage		
							Exceptions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo aircraft only (9B)	Location (10A)	Other (10B)
	Acetic acid solution, not less than 50 percent but not more than 80 percent acid, by mass.	8	UN2790	II	8	148, A3, A6, A7, A10, B2, IB2, T7, TP2.	154	202	242	1 L	30 L	A	
	Acetic acid solution, with more than 10 percent and less than 50 percent acid, by mass.	8	UN2790	III	8	148, IB3, T4, TP1	154	203	242	5 L	60 L	A	
	Ammonium nitrate based fertilizer.	5.1	UN2067	III	5.1	52, 148, 150, B120, IB8, IP3, T1, TP33.	152	213	240	25 kg	100 kg	B	25, 59, 60, 66, 117, 124*
	Ammonium nitrate emulsion or Ammonium nitrate suspension or Ammonium nitrate gel, intermediate for blasting explosives.	5.1	UN3375	II	5.1	147, 148, 163, IB2, IP16.	None	231	251	Forbidden	Forbidden	D	25, 59, 60, 66, 124
D	Ammonium nitrate-fuel oil mixture containing only prilled ammonium nitrate and fuel oil.	1.5D	NA0331	II	1.5D	148	None	62	None	Forbidden	Forbidden	03	25, 19E
	Ammonium nitrate, liquid (hot concentrated solution).	5.1	UN2426		5.1	148, B5, T7	None	None	243	Forbidden	Forbidden	D	59, 60, 124
	Ammonium nitrate, with not more than 0.2% combustible substances, including any organic substance catalyzed as carbon, to the exclusion of any other added substance.	5.1	UN1942	III	5.1	148, A1, A29, B120, IB8, IP3, T1, TP33.	152	213	240	25 kg	100 kg	A	25, 59, 60, 66, 116, 124
G	Articles, explosive, n.o.s.	1.4S	UN0349	II	1.4S	101, 148, 382	None	62	None	25 kg	100 kg	01	25
	Boosters, without detonator.	1.1D	UN0042	II	1.1D	148	None	62	None	Forbidden	Forbidden	04	25
D G	Combustible liquid, n.o.s.	Comb liq	NA1993	III	None	148, IB3, T1, T4, TP1.	150	203	241	60 L	220 L	A	

Cord, detonating, flexible.	1.1D	UN0065	II	1.1D	102, 148	63(a)	62	None	Forbidden	04	25
Cord, detonating, flexible.	1.4D	UN0289	II	1.4D	148	None	62	None	Forbidden	02	25
G Corrosive liquid, acidic, organic, n.o.s.	8	UN3265	I	8	A6, B10, T14, TP2, TP27.	None	201	243	0.5 L	B	40
			II	8	148, B2, IB2, T11, TP2, TP27.	154	202	242	1 L	B	40
			III	8	IB3, T7, TP1, TP28	154	203	241	5 L	A	40
G Detonator assemblies, non-electric, for blasting.	1.4B	UN0361	II	1.4B	103, 148	63(f), 63(g)	62	None	Forbidden	05	25
	1.4S	UN0500	II	1.4S	148, 347	63(f), 63(g)	62	None	25 kg	01	25
G Detonators, electric, for blasting.	1.1B	UN0030	II	1.1B	148	63(f), 63(g)	62	None	Forbidden	05	25
	1.4B	UN0255	II	1.4B	103, 148	63(f), 63(g)	62	None	Forbidden	05	25
G Detonators, electric, for blasting.	1.4S	UN0456	II	1.4S	148, 347	63(f), 63(g)	62	None	25 kg	01	25
	1.4S	UN0455	II	1.4S	148, 347	63(f), 63(g)	62	None	25 kg	01	25
G Explosive, blasting, type A.	1.1D	UN0081	II	1.1D	148	None	62	None	Forbidden	04	25, 19E, 21E
	1.5D	UN0331	II	1.5D	105, 106, 148	None	62	None	Forbidden	03	25, 19E
G Explosive, blasting, type E.	1.1D	UN0241	II	1.1D	148	None	62	None	Forbidden	04	25, 19E
	1.5D	UN0332	II	1.5D	105, 106, 148	None	62	None	Forbidden	03	25, 19E
G Hypochlorite solutions.	8	UN1791	II	8	148, A7, B2, B15, IB2, IP5, N34, T7, TP2, TP24.	154	202	242	1 L	B	26
			III	8	IB3, N34, T4, TP2, TP24.	154	203	241	5 L	B	26
G Nitrites, inorganic, aqueous solution, n.o.s.	5.1	UN3219	II	5.1	148, IB1, T4, TP1	152	202	242	1 L	B	46, 56, 58, 133
			III	5.1	IB2, T4, TP1	152	203	241	2.5 L	B	46, 56, 58, 133
G Oxidizing liquid, n.o.s.	5.1	UN3139	I	5.1	62, 127, A2, A6	None	201	243	Forbidden	D	56, 58, 138
			II	5.1	62, 127, 148, A2, IB2	152	202	242	1 L	B	56, 58, 138
			III	5.1	62, 127, 148, A2, IB2	152	203	241	2.5 L	B	56, 58, 138



\* \* \* \* \*

■ 5. In § 172.102(c)(1), special provision 148 is added to read as follows:

**§ 172.102 Special provisions.**

\* \* \* \* \*

(c) \* \* \*

(1) \* \* \*

148. For domestic transportation, this entry directs to § 173.66 for:

a. The standards for transporting a single bulk hazardous material for blasting by cargo tank motor vehicles (CTMV); and

b. The standards for CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings (*i.e.*, a multipurpose bulk truck (MBT)).

\* \* \* \* \*

**PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS**

■ 6. The authority citation for part 173 continues to read as follows:

**Authority:** 49 U.S.C. 5101–5128, 44701; 49 CFR 1.81, 1.96 and 1.97.

■ 7. In Subpart C, § 173.66 is added to read as follows:

**§ 173.66 Requirements for Bulk Packagings of Certain Explosives and Oxidizers.**

When § 172.101 of this subchapter specifies that a hazardous material may be transported in accordance with this section (per special provision 148 in § 172.102(c)(1)), only the bulk packagings specified for these materials in IME Standard 23 (IBR, see § 171.7 of this subchapter) are authorized, subject to the requirements of subparts A and B of this part and the special provisions in Column 7 of the § 172.101 table. See Section I of IME Standard 23 for the standards for transporting a single bulk hazardous material for blasting by cargo tank motor vehicles (CTMV), and Section II of IME Standard 23 for the standards for CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-

bulk packagings (*i.e.*, a multipurpose bulk truck (MBT) authorized to transport the Class 1 (explosive) materials, Division 5.1 (oxidizing) materials, Class 8 (corrosive) materials, and Combustible Liquid, n.o.s., NA1993, III, as specified in IME Standard 23 (also see § 177.835(d) of this subchapter)). In addition, the requirements in paragraph (a) of this section apply to: A new multipurpose bulk truck constructed after April 19, 2016; and a modified existing multipurpose bulk truck after April 19, 2016 (see § 173.66(b) regarding the term *modified*).

(a) *Federal Motor Vehicle Safety Standard (FMVSS)*. Multipurpose bulk trucks must be in compliance with the FMVSS found in 49 CFR part 571, as applicable. Furthermore, the multipurpose bulk truck manufacturer must maintain a certification record ensuring the final manufacturing is in compliance with the FMVSS, in accordance with the certification requirements found in 49 CFR part 567. These certification records must be made available to DOT representatives upon request.

(b) *Modified*. The term *modified* means any change to the original design and construction of a multipurpose bulk truck (MBT) that affects its structural integrity or lading retention capability, (*e.g.* rechassisising, etc.). Excluded from this category are the following:

(1) A change to the MBT equipment such as lights, truck or tractor power train components, steering and brake systems, and suspension parts, and changes to appurtenances, such as fender attachments, lighting brackets, ladder brackets; and

(2) Replacement of components such as valves, vents, and fittings with a component of a similar design and of the same size.

**PART 177—CARRIAGE BY PUBLIC HIGHWAY**

■ 8. The authority citation for part 177 continues to read as follows:

**Authority:** 49 U.S.C. 5101–5128; sec. 112 of Pub. L. 103–311, 108 Stat. 1673, 1676 (1994); sec. 32509 of Pub. L. 112–141, 126 Stat. 405, 805 (2012); 49 CFR 1.81 and 1.97.

■ 9. In § 177.835, paragraph (a) is revised and paragraph (d) is added to read as follows:

**§ 177.835 Class 1 materials.**

\* \* \* \* \*

(a) *Engine stopped*. No Class 1 (explosive) materials may be loaded into or on or be unloaded from any motor vehicle with the engine running, except that the engine of a multipurpose bulk truck (see paragraph (d) of this section) and the engine of a cargo tank motor vehicle transporting a single bulk hazardous material for blasting may be used for the operation of the pumping equipment of the vehicle during loading or unloading.

\* \* \* \* \*

(d) *Multipurpose bulk trucks*. When § 172.101 of this subchapter specifies that Class 1 (explosive) materials may be transported in accordance with § 173.66 of this subchapter (per special provision 148 in § 172.102(c)(1)), these materials may be transported on the same vehicle with Division 5.1 (oxidizing) materials, or Class 8 (corrosive) materials, and/or Combustible Liquid, n.o.s., NA1993 only under the conditions and requirements set forth in IME Standard 23 (IBR, see § 171.7 of this subchapter) and paragraph (g) of this section. In addition, the segregation requirements in § 177.848 do not apply.

\* \* \* \* \*

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**Marie Therese Dominguez,**

*Administrator, Pipeline and Hazardous Materials Safety Administration.*

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