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## **DEPARTMENT OF TRANSPORTATION**

### **Pipeline and Hazardous Materials Safety Administration**

#### **49 CFR Part 177**

**[Docket Number PHMSA-2007-28119 (HM-247)]**

**RIN: 2137-AE37**

#### **Hazardous Materials: Cargo Tank Motor Vehicle Loading and Unloading Operations**

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

**ACTION:** Withdrawal of notice of proposed rulemaking (NPRM).

**SUMMARY:** PHMSA is closing this rulemaking proceeding under this docket having reconsidered our proposal for additional regulations associated with cargo tank motor vehicle (CTMV) loading or unloading operations. This action is based on the findings of the regulatory assessment, comments to docket of this rulemaking, and completion of a supplementary policy analysis on how best to address the safety risks of bulk loading and unloading operations. As an alternative to new regulatory requirements, PHMSA will be issuing a guidance document to provide best practices for CTMV loading and unloading operations; and will be conducting research to better understand the wide range of human factors that contribute to hazardous materials incidents including those associated with CTMV loading and unloading operations.

**DATES:** Effective [Insert date of publication in the Federal Register], the proposed rule published in the Federal Register on March 11, 2011 at 76 FR 13313 is withdrawn.

**FOR FURTHER INFORMATION CONTACT:** Dirk Der Kinderen, Office of Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, telephone (202-366-8553).

## **SUPPLEMENTARY INFORMATION:**

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### **I. Background**

On March 11, 2011, PHMSA published an NPRM under Docket PHMSA–2007–28119 (76 FR 13313) (HM-247) to amend the hazardous materials regulations (HMR; 49 CFR Parts 171-180) by requiring each person who engages in CTMV loading or unloading operations to perform a risk assessment of its loading and unloading operations and develop and implement safe operating procedures based upon the results of the risk assessment. PHMSA also proposed additional personnel training and qualification requirements for persons who perform these operations.

In the NPRM, PHMSA discussed the safety problem associated with CTMV loading and unloading operations, including:

- A summary of loading and unloading incident data;

- National Transportation Safety Board (NTSB) and Chemical Safety Board (CSB) safety recommendations issued to PHMSA as a result of accident investigations related to bulk loading and unloading operations<sup>1</sup>;
- Recommended operating procedures proposed by the Interested Parties for Hazardous Materials Transportation (Interested Parties) (an informal association of offerors, carriers, and industrial package manufacturers);
- A petition (P-1506) for rulemaking submitted by the Dangerous Goods Advisory Council (DGAC); and
- Comments received in response to PHMSA’s notice of recommended practices published on January 4, 2008 under Docket Number PHMSA–2007–28119 (73 FR 916) (Notice No. 07–9).

In the NPRM, PHMSA indicated that adopting regulations to require offerors, carriers, or facility operators to develop and implement operating procedures governing the loading and unloading of a CTMV would enhance the safety of such operations. We solicited comments on the regulations proposed and the accuracy of PHMSA’s cost and benefits estimates set forth in the preliminary regulatory impact assessment. The NPRM and supporting documents are available for review in the docket for this rulemaking at [www.regulations.gov](http://www.regulations.gov). A summary of the proposed changes is provided in the following Table 1:

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<sup>1</sup> NTSB Safety Recommendations I-02-1, I-02-2, and R-04-10 and CSB Recommendation 2006–06–I–LA–RI. On July 12, 2013 PHMSA published safety advisory guidance (78 FR 41853) on safety precautions and recommended guidance for persons responsible for unloading or transloading hazardous materials from rail tank cars, specifically, heating of rail tank cars for unloading or transloading. The publication of this guidance resulted in the NTSB closing recommendations I-02-1 and I-02-2 as “Closed – Acceptable Alternative Action.”

**Table 1. Proposed New Requirements and Affected Entities**

AFFECTED ENTITIES	NEW REQUIREMENTS
Cargo tank carriers and facilities that engage in part 177 loading or unloading operations	<ul style="list-style-type: none"> <li>• Assess the risks of loading and unloading operations and develop written operating procedures</li> <li>• Train hazmat employees in the relevant aspects of the operational procedures</li> <li>• Annually qualify hazmat employees who perform loading and unloading operations</li> </ul>
Facilities providing transfer equipment for cargo tank loading and unloading operations under part 177	<ul style="list-style-type: none"> <li>• Develop and implement a periodic maintenance schedule to prevent deterioration of equipment and conduct periodic operational tests to ensure that the equipment functions as intended</li> <li>• Ensure that the equipment meets the performance standards in part 178 for specification CTMVs</li> </ul>

**II. Regulatory Assessment**

As part of PHMSA’s initial rulemaking efforts in this area, a preliminary analysis was completed. Through this analysis it was apparent that shipments of hazardous materials (hazmat) by CTMV pose some level of risk to public safety on a daily basis. A 2007 Commodity Flow Survey by the Bureau of Transportation Statistics highlights this by indicating that an estimated 323.5 billion-ton-miles of hazardous materials were transported in 2007 of which approximately a third (104 billion-ton-miles) was transported by truck and an additional 7 percent was by multimodal transport that included truck. We believe we can safely reason that a similar amount is transported annually today, which presents ample opportunity for incidents to occur during the course of highway transportation including during CTMV loading and unloading operations.

As the HMR currently requires function specific training and recordkeeping of this training (See 49 CFR Part 172 Subpart H) and has loading and unloading requirements for transport via public highways (See 49 CFR Part 177 Subpart B), PHMSA expects that most entities already have some manner of documentation surrounding process review, training of

personnel, and maintenance of equipment involved in these operations. Other federal agencies also have requirements associated with loading and unloading operations that encompass bulk transport vehicles. The Occupational Safety and Health Administration (OSHA) Process Safety Management (PSM) standard (See [29 CFR 1910.119](#)) contains requirements for processes that use, store, manufacture, handle, or transport highly hazardous chemicals on-site including bulk-loading and unloading operations involving PSM-covered chemicals. Additionally, the Environmental Protection Agency (EPA) regulations establish a general duty clause for facility owners or operators of facilities that produce, handle, process, distribute, or store certain chemicals. The regulations entail identification of hazards associated with the accidental releases of extremely hazardous substances; prevention of such releases, and minimization of the consequences of releases.

Despite these requirements incidents do continue to occur. An analysis of CTMV loading and unloading incidents during the 10-year period 2000-2009 revealed that, among other causes, human error is the greatest primary cause of accidents. Most human error accidents can be attributed to inattention to detail in performing a loading or unloading function, including failure to follow attendance requirements, leaving valves in open or closed positions, improperly connecting hoses and other equipment, or not disconnecting hoses prior to vehicles having completed fill operation. This leads to accidents such as overfilling receiving tanks, over-pressurizing CTMVs, or loading/unloading incompatible materials. About 3,500 incidents could be attributed to CTMV loading and unloading incidents. These incidents resulted in an estimated \$68 million in societal damages, or \$6.8 million per year, during the 10-year analysis period. Thus, there is a cost to society from CTMV loading and unloading incidents.

Following the publication of the HM-247 NPRM, PHMSA updated the regulatory assessment. The updated analysis estimated benefits associated with the proposed rule from avoidance of incidents at \$1.7 million annually while costs are estimated to be \$1.1 million annually. The overall estimated impacts identified in the analysis are predicated on the level of existing pre-compliance and the overall effectiveness of the regulations. We assume 50 percent<sup>2</sup> of affected entities would already be in compliance with the proposed measures, and that implementation of the proposed regulations would reduce incidents by 40 percent.<sup>3</sup>

Furthermore, in the absence of true data, we rely heavily on estimates of variables used in calculating the benefits and costs, either from previous analyses for other rulemaking efforts or from newly calculated estimates. Although, we did not receive adverse comments on our estimates and also received some supportive comments, we remain concerned about achieving a valid result. Despite the 1.5 benefit-cost ratio PHMSA is concerned that the overall benefit of regulatory action is overestimated based on the role that human error plays in loading and unloading incidents. Due to this uncertainty, PHMSA conducted a supplementary policy analysis to help decision-makers determine whether regulatory action was the best path forward or if non-regulatory approaches may be just as effective. This supplementary analysis is discussed in Section IV of this withdrawal notice.

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<sup>2</sup> The 50 percent compliance rate is based on comments to the docket noting the prevalence of other non-DOT governmental requirements and anecdotal reports of use of industry codes.

<sup>3</sup> The 40 percent effectiveness rate is based on a literature review and our best judgment that indicates this rate is a reasonable estimate of the reduction of human errors should the NPRM be implemented.

### III. Comments on the NPRM

In response to PHMSA's March 11, 2011 NPRM, PHMSA received comments from 44 organizations and individuals:

**Table 2. Commenters to the NPRM**

<b>Commenter</b>	<b>Docket No. PHMSA-2007-28119-XXXX</b>
Agricultural Retailers Association (ARA)	0084
Akzo Nobel Chemicals, Inc.	0097
American Chemistry Council (ACC)	0053; 0085
American Gas Association (AGA)	0075
American Trucking Association (ATA)	0047; 0091
Anonymous	0059, 0061; 0062; 0063; 0064; 0067
Arkema, Inc.	0046
Association of American Railroads	0048
Bayer Material Science	0082
BP Products North America, Inc.	0096
Brian T. Knapp	0086
Dangerous Goods Advisory Council (DGAC)	0065; 0081
Distrigas of Massachusetts, LLC	0078
Dow Chemical Company (Dow)	0070
Dupont Global Logistics	0080
Far West Agribusiness Association (FWAA)	0066
Illinois Fertilizer & Chemical Association (IFCA)	0069
International Brotherhood of Teamsters (IBT)	0089
Institute of Makers of Explosives (IME)	0079
Joyce Dillard	0094
National Association of Chemical Distributors (NACD)	0052; 0087
National Association of State Fire Marshals	0054
National Grid	0050
National Propane Gas Association (NPGA)	0088
National Tank Truck Carriers (NTTC)	0051; 0095
National Transportation Safety Board (NTSB)	0098
New England Fuel Institute	0093
Petroleum Marketers Association of America (PMAA)	0092; 0099
PPG Industries, Inc.	0090
Salt River Project Agricultural Improvement and Power District (SRP)	0073
Sara Thane	0060
Society of Independent Gasoline Marketers of America (SIGMA)	0076
Syngenta Crop Protection	0071
The Chlorine Institute	0083
The Fertilizer Institute (TFI)	0084
U.S. Chemical Safety and Hazard Investigation Board (CSB)	0035; 0100
Utility Solid Waste Activities Group (USWAG)	0049; 0074
Valero Energy Corporation	0068
Veolia ES Technical Solutions, LLC	0077

The comments are available for review in the docket for this rulemaking at [www.regulations.gov](http://www.regulations.gov). The comments generally opposed adoption of this rulemaking and covered the following range of topics associated with the proposed requirements: scope; risk assessment; operating procedures; training and qualification; recordkeeping; and the compliance date. A brief summary of the essence of comments for each topic follows:

**A. Scope**

Commenters noted confusion about the applicability of the proposed rule, namely, how the rulemaking would apply in the absence of a carrier at a facility as well as the extent of the reach of the applicability (e.g., Does it end at the first permanent valve on the receiving equipment?). Additionally, commenters questioned whether there is a minimum threshold before the rulemaking would apply (i.e., 3,000 liters) and whether the rulemaking truly is performance-based rather than prescriptive.

**B. Risk Assessment**

PHMSA proposed to require any person who loads or unloads hazmat or provides transfer equipment to load or unload a CTMV to prepare a risk assessment of the operation. The risk assessment was to include specific minimum measures to address the safety of such operations. PHMSA received a substantial number of comments on the proposed provisions associated with this requirement to conduct a risk assessment. Commenters primarily expressed concern over the possibility of duplication of efforts by facilities and carriers.

**C. Operating Procedures**

PHMSA proposed to require each person who is subject to the risk assessment requirement to develop, maintain, and adhere to an operating procedure for the specific loading or unloading operation based on the completed risk assessment. The operating procedures were

to include provisions that address pre-loading/unloading, loading/unloading, emergency management, post-loading/unloading, design, maintenance and testing of transfer equipment, facility oversight of carrier personnel, and recordkeeping. Commenters questioned the intent of provisions for the maintenance and testing of transfer equipment within the operating procedure requirements. Commenters discussed additional issues such as alternative measures for attendance during a loading operation.

#### **D. Training and Qualification**

PHMSA proposed annual evaluation of hazmat employees performing CTMV loading and unloading operations through measures such as direct observation of routine performance of duties or through practice sessions and drills. Many commenters strongly opposed this proposal. They generally asserted that PHMSA significantly underestimated the costs of such a requirement in the preliminary assessment for the NPRM.

#### **E. Recordkeeping**

PHMSA proposed recordkeeping requirements for the written risk assessment and operating procedure. Several commenters suggested that this proposed requirement to document and retain risk assessments is overly burdensome and unnecessary.

#### **F. Compliance**

Commenters requested an extended compliance date to allow for time to conduct a complete review of current practices and to implement improvements or updates while others suggested that a significant majority of potentially affected entities already have operating procedures in place that would satisfy the regulations set forth in this proposed rule such that an extended compliance period would not be necessary.

#### **IV. Reconsideration of the NPRM**

PHMSA conducts a policy analysis to identify and manage risks in the transportation of hazmat. The policy analysis makes use of a risk management framework that defines the main elements of identified risk(s) and outlines possible ways to address the risk(s). The process begins when a risk in the transportation of hazmat is first assessed (e.g., when a risk is presented to PHMSA through an NTSB safety recommendation), and ends with an agency decision on implementation of an identified approach of how to manage the risk, such as implementing a new regulation.

In consideration of the negative comments on the NPRM and uncertainties about regulatory action as well as the uncertainties of the regulatory assessment, PHMSA conducted a supplementary policy analysis to help decision-makers determine whether this effort is the best course of action. After this policy analysis, we reconsidered our approach to address the safety risks of bulk loading and unloading operations through rulemaking. The analysis raised concerns on the effectiveness of implementing any new regulations covering loading and unloading operations including whether any proposed regulations would be: (1) redundant because the activity is already covered in some manner under the current HMR; (2) impactful in that many of the incidents having occurred in the past would probably continue to occur because of the human element in incidents indicating that further regulation may be ineffective; and (3) confusing to implement without an memorandum of understanding (MOU) among the agencies that have oversight clearly defining roles and enforcement of these types of operations.

The subsequent recommendations of the assessment include (in no particular order of priority): (1) preparing a guidance document that, together with current regulations, provides direction on bulk loading and unloading operational procedures, use of personal protective

equipment, and maintenance and inspection of transfer equipment; (2) engaging in a rigorous outreach campaign to raise awareness; (3) implementing a human factor study associated with bulk loading and unloading operations; and (4) finalizing a (MOU) with the Occupational Safety and Health Administration (OSHA) and, possibly, the Environmental Protection Agency (EPA) in order to specify any new regulatory requirements and enforcement roles. These recommendations are discussed in further detail below.

#### **A. Guidance**

Agency guidance includes any statement of policy, interpretation of a regulation, or any other method used to communicate to the regulated public the agency expectations. Guidance is not legally binding and may not mandate or require a particular action but rather is intended to provide helpful information, clarify a rule's or statute's meaning, or communicate our policy for implementing requirements. Based on concerns raised on the effectiveness of further regulation in the supplementary policy analysis, it is better served that PHMSA prepare a guidance document that provides helpful information on CTMV loading and unloading operations in addition to what is required by regulation. The guidance would cover, in part, training on operational procedures, provision of personal protection equipment, and maintenance and inspection of transfer equipment including emergency shutdown systems and would be based on the content and structure of the proposed regulations in the NPRM. Although not binding as stated earlier, we believe issuing a guidance document still provides an opportunity to enhance safety by clarifying the current requirements, providing helpful information, outlining our expectations for CTMV loading and unloading operations, and clearly attributing human error to loading and unloading incidents.

## **B. Outreach Campaign**

To supplement the abovementioned plans for issuing guidance, PHMSA plans to develop and implement an outreach program to raise awareness of the ongoing risk of CTMV loading and unloading incidents and to educate regulated entities on ways to prevent or mitigate the risks.

## **C. Human Factors Study**

Human factors research involves the study of the way humans relate to the world around them. Human factors certainly play a role in hazmat transportation especially bulk loading and unloading operations because individuals are directly involved (e.g., handling of transfer equipment) and thus, human factors research is included among the priorities of PHMSA's Office of Hazardous Materials Safety (OHMS) research and development (R&D) five-year strategic plan (2012-2017). In general, from review of hazmat incident report data for all incident types, we have found that human error is the fourth-most cited cause of failure as is similarly indicated above in Section II specific to loading and unloading incidents.

The goal of the OHMS R&D program is to enhance the safety mission and identify and mitigate the emerging risks associated with hazmat transportation and to better understand the factors contributing to these risks. This human factors research effort is, among other things, designed to supply information necessary to guide future changes in regulations. OHMS created this priority to examine human involvement in the release of hazmat (e.g., human error), to research regulations that involve human impact, and develop new strategies to reduce human handling errors. Although historically overlooked in hazmat transportation safety research, we view this type of research essential as the safe transportation of all hazmat involves human interaction within the transportation system. This research would involve some manner of assessment of human factors in bulk loading and unloading operations including for CTMV

operations. Results of such research may bear out significant information that can be used to support future rulemaking action.

#### **D. Memorandum of Understanding**

As part of a plan to enhance safety of bulk loading and unloading operations (including CTMV operations), PHMSA had envisioned development of an MOU with OSHA to clarify responsibilities. This plan called for a two-pronged approach of an MOU supplemented by a phased rulemaking approach (i.e., first a rulemaking to address CTMV loading and unloading operations followed by rulemakings for tank cars and other bulk packaging). But, since we are withdrawing this rulemaking, PHMSA does not plan to develop an MOU at this time because development of the MOU was intended to be directly linked to the new regulations proposed in the NPRM.

#### **V. Conclusion**

PHMSA has concluded that adopting the regulations proposed under the NPRM is not the best course of action at this time. PHMSA has based this decision on its concerns that further regulation would create redundancies, confusion, and possibly be ineffective in preventing many of the very same incidents it is intended to address. Non-regulatory approaches are available in the short term that would still provide an opportunity to enhance safety of CTMV loading and unloading operations by raising awareness and communicating our expectations. Key non-regulatory activities include:

1. Issuing a guidance document for CTMV loading and unloading operations;
2. Implementing an outreach campaign to educate the regulated community on current regulatory requirements and best safety practices; and

3. Conducting human factors research to examine human involvement in release of hazmat and to potentially use this to support future consideration of rulemaking to address CTMV loading and unloading operations.

Accordingly, PHMSA is withdrawing the March 11, 2011 NPRM and terminating this rulemaking proceeding.

Issued in Washington, DC on February 10, 2014, under authority delegated in 49 CFR Part 106.

Magdy El-Sibaie  
Associate Administrator for Hazardous Materials Safety  
Pipeline and Hazardous Materials Safety Administration

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