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DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Part 173

[Docket Number PHMSA-2009-0303 (HM-213D)]

RIN: 2137-AE53

Hazardous Materials: Safety Requirements for External Product Piping on Cargo Tanks Transporting Flammable Liquids.

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

ACTION: Withdrawal of notice of proposed rulemaking.

SUMMARY: PHMSA is withdrawing the notice proposing to stop the transportation of flammable liquid material in unprotected external product piping on DOT specification cargo tank motor vehicles as mandated by the “Fixing America’s Surface Transportation Act” or the “FAST Act”. Although PHMSA is withdrawing its rulemaking proposal, the agency will continue to consider methods to improve the safety of transporting flammable liquid by cargo tank motor vehicle. PHMSA will also continue to analyze current incident data and improve the collection of future incident data to assist in making an informed decision on methods to address this issue further, if warranted.

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I. *What action is PHMSA taking?*

PHMSA is withdrawing notice of proposed rulemaking (NPRM) “Hazardous Materials: Safety Requirements for External Product Piping on Cargo Tanks Transporting Flammable Liquids” (HM-213D) published January 27, 2011 (76 FR 4847) under Docket No. PHMSA-2009-0303. This rulemaking proposed to stop flammable liquids from being transported in unprotected product piping (generally referred to as the “wetlines”) on the cargo tank of existing and newly manufactured DOT specification cargo tank motor vehicles.

II. *What did PHMSA propose and why?*

PHMSA proposed to stop the transportation of flammable liquids in unprotected external product piping on DOT specification cargo tank motor vehicles (CTMVs) unless the piping was protected from accident or bottom damages or the piping was designed or

emptied in a way to remove the hazard of containing flammable liquid. PHMSA proposed this change because exposed piping containing flammable liquid can contribute to the severity of accidents involving a CTMV and an automobile, and because we currently do not require external piping containing flammable liquid to be protected like other hazardous material. Except for flammable liquid, § 173.33(e) of the Hazardous Materials Regulations (HMR: Parts 171-180) does not allow the transport of liquid hazardous material in piping of a DOT specification cargo tank motor vehicle unless it is equipped with accident damage or bottom damage protection devices.¹ PHMSA also issued this proposed requirement to fully address the National Transportation Safety Board (NTSB) Safety Recommendation H-98-27. This recommendation reads:

Prohibit the carrying of hazardous materials in external piping of cargo tanks, such as loading lines that may be vulnerable to failure in an accident.

III. Why is PHMSA withdrawing the rulemaking?

PHMSA is withdrawing the rulemaking in accordance with a congressional mandate. On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or "FAST Act".² The Act outlines legislation to improve the Nation's surface transportation infrastructure, including roads, bridges, transit systems, and the rail transportation network. Among its many provisions is a mandate for PHMSA to withdraw this rulemaking no later than thirty days from the date of enactment of the FAST Act (see § 7206 of the Fast Act).

¹ The HMR currently prohibits liquid hazardous materials in Divisions 5.1 (oxidizer), 5.2 (organic peroxide), 6.1 (toxic), and Class 8 (corrosive to skin only) to remain in wetlines after loading or unloading. Due to complications associated with the loading practices and economics of transporting Class 3 flammable liquids, the provision does not apply to flammable liquids.

² See Public Law 114-94, 129; Stat. 1312, December 4, 2015.

IV. *Background on development of this rulemaking.*

Although PHMSA is congressionally mandated to withdraw this rulemaking, below we discuss past and recent actions in development of this rulemaking.

A. Regulatory Assessment.

PHMSA developed the assessment to evaluate regulatory action using data from hazardous materials incident reports over a 12.25-year time period (January 1999 to March 2011). PHMSA used a manual purging system³ as the workable option to address the safety hazard of flammable liquid in unprotected wetlines. Under previous rulemaking efforts, PHMSA identified several technologies and design considerations that could allow operators of CTMVs to address this safety hazard and asked for public input on the practicality of using these options to protect against or prevent the safety hazard.⁴

PHMSA's conclusions regarding the practicality of alternatives remain valid. PHMSA believes a manual purging system is the only workable option based on our understanding of currently available and implemented technologies for addressing this safety hazard.

In developing an analysis of the benefits of the rulemaking, PHMSA considered avoided injuries, property damage, traffic delays, evacuations, emergency response, and environmental damage; in developing an analysis of the costs, we considered the installation, maintenance, and associated impacts of a equipping a CTMV with a manual purging system. PHMSA evaluated various implementation timelines ranging from a 5-

³ The manual purging system is a pneumatic system consisting of tubes, check valves, and a control box installed on a CTMV that uses compressed air to clear the wetlines by forcing the liquid material out of the piping and into the cargo tank body.

⁴ On December 30, 2004, the agency published an NPRM (69 FR 78375) that discussed a number of possible alternative actions.

year period to a 20-year period as the alternative actions. The best-case scenario benefit-cost ratio (BCR) was estimated to be 0.78, based on a 20-year period (which would result in a de facto applicability to new construction only, based on PHMSA's assumption of a 20-year useful service life for a CTMV), and a 7 percent discount rate.⁵ The assessment used the DOT's Value of Statistical Life (VSL) of \$6.1 million at the time, which now has been revised to \$9.2 million. Based on PHMSA's additional review of data following the publication of the NPRM and the outcome of the Government Accountability Office (GAO) audit (discussed below), the number of fatal incidents was reduced from four to three. These two changes were not accounted for in the assessment, but the net effect on the BCR is minor because the increase in benefits from the revised VSL is similar in magnitude to the decrease in benefits associated with the decrease in fatal incidents.

B. Government Accountability Office (GAO) Report and the Moving Ahead for Progress in the 21st Century Act (MAP-21).⁶

The MAP-21, enacted in July 2012, temporarily stopped PHMSA from issuing a final rule and required the GAO to examine the risks of, and alternatives to, transporting flammable liquids in wetlines. The GAO examined PHMSA's process for identifying wetlines incidents among its reported hazardous materials incidents, analyzed how useful PHMSA's incident data from January 1999 through March 2011 are for identifying such incidents, and examined whether the data accurately captured information about the incidents' consequences.

⁵ A BCR is an indicator of the relative benefits of a project to its cost. A BCR of 1.0 indicates the benefits equal the cost. Thus, for the best-case scenario the BCR of 0.78 indicates that the estimated costs of complying with the rulemaking are greater than the estimated safety benefits.

⁶ See Public Law 112-141, 126; Stat. 405, July 6, 2012.

In its final report, the GAO concluded that because PHMSA does not specifically provide an option to indicate a wetlines incident on its incident reporting form, it is difficult to identify the number of wetlines incidents from PHMSA's incident data.⁷ Additionally, due to inaccuracy of the damages associated with incidents, GAO believes the magnitude of the risks wetlines pose to safety is also unclear. It also noted that, although PHMSA has made changes to improve the quality of its incident data, the concerns that GAO identified call into question the usefulness of PHMSA's data for evaluating the benefits of avoiding these incidents—particularly the extent to which a wetlines rule would prevent fatalities. Finally, the GAO stated that PHMSA's economic analysis used to support the NPRM does not account for these limitations and therefore, the analysis does not adequately convey the uncertainty of PHMSA's calculated benefit of the rule. Moreover, GAO concluded that PHMSA's analysis has not adequately addressed the market uncertainty with regard to the technology used as the basis for addressing the safety hazard. See the GAO report for the complete discussion of the GAO audit and summary of conclusions and recommendations.

C. Post-GAO Report Analysis.

Following the GAO report, PHMSA examined the regulatory assessment, taking into account the GAO findings as well as industry comments to help make a determination on whether to withdraw the rulemaking. This analysis also took into account the updated VSL. The analysis considered five scenarios for calculating the estimated societal benefits

⁷ CARGO TANK TRUCKS: Improved Incident Data and Regulatory Analysis Would Better Inform Decisions about Safety Risks, Report to Congressional Committees, GAO-13-721, September 2013, <http://www.gao.gov/assets/660/657755.pdf>

and four scenarios for the estimated costs. This additional analysis served as a sensitivity analysis of the regulatory assessment for the NPRM. The different scenarios for estimated benefits were based on:

- the incident analysis data used in the regulatory assessment—i.e., “incident data”;
- the incident data, including only those incidents involving a fire;
- the incident data plus the Yonkers, NY fatal incident data;
- the incident data, adjusted to account for the GAO recommendations; and
- the incident data, adjusted to account for the GAO recommendations plus the Yonkers, NY fatal incident data.

PHMSA calculated a range of potential BCR outcomes, based on the five scenarios for estimated benefits and the two scenarios for estimated average costs. It is reasonable to assume that the BCR lies somewhere between the highest and lowest BCR outcomes from this analysis. Under the low average cost estimate, in four of the five estimated benefit scenarios the BCR at a 7 percent discount rate was not net beneficial. The BCRs ranged from 0.77 to 1.1 for the low average cost scenario. In comparison, under the high average cost estimate, in all five estimated benefit scenarios the BCR at a 7 percent discount rate was not net beneficial. The BCRs ranged from 0.47 to 0.67 for the high average cost scenario.

D. Commenter Concerns.

In general, most commenters to the NPRM opposed the proposed ban and indicated that they do not believe wetlines containing flammable liquid are a safety risk, citing

PHMSA's own statistics that the frequency of wetlines incidents is low and the frequency of incidents that lead to injury or death is extremely low. They also expressed concerns regarding PHMSA's incident analyses, regulatory assessment, implementation of the rule, and safety impacts of the rule. The remaining commenters either supported the rulemaking on the basis of improved safety for the public or offered suggestions to strengthen or make clearer PHMSA's efforts to address the safety hazard. The opposition comments mainly address PHMSA's incident analysis and development of the costs and benefits of the regulatory assessment. PHMSA summarizes these concerns in greater detail below. This summary of comments is for the benefit of the reader for understanding of stakeholder information presented during the notice and comment portion of this rulemaking. The complete body of comments both in opposition to and support of the rule is available for review at the docket to the rulemaking (www.regulations.gov).

1. *Incident Analysis.*

Commenters questioned whether all incidents and their associated data used in PHMSA's preliminary analyses should be included in the assessment with respect to: 1) the criteria used to decide whether an incident qualified as a wetlines incident; 2) whether deaths, injuries, or any other costs were actually the result of the material contained in the wetlines; and 3) relevance of proposed requirements. For example, they asserted that any incident involving the release of more than fifty gallons⁸ without a fire resulting from a wetlines release should be excluded based on the assumption that a spill of more than fifty

⁸ A basic assumption used in wetlines incident determination is that depending on the number of cargo tank compartments and the size of the product piping, wetlines can contain up to 50 gallons of product.

gallons indicates that there was a breach of the cargo tank itself (e.g., tank shell rupture, damage to an internal valve) such that any action to comply with the proposed performance standard—like purging the wetlines—would not have prevented the larger release of material. Additionally, they argued that data indicating damages not directly linked to wetlines damage or release should not be included. For example, costs associated with damage to the CTMV from a motor vehicle collision should not be included in the total for purposes of the analysis.

PHMSA agrees that only those costs associated with damages to the wetline and release of material from the wetlines should be counted. Unfortunately, under the current format of incident report information it is difficult to parse out the costs of wetlines-related damages from the total body of damages where damages occur beyond those associated with wetlines, unless some assumptions are made. For instance, in the case of an incident involving a fire, PHMSA assumed the fire was started and was propagated by the wetlines release.

Upon consideration of the comments, PHMSA conducted further review of the 172 incidents that were initially determined to be wetlines incidents in our preliminary analyses. Prior to this review, PHMSA became aware that some of the data in our original set of incidents was not accurate and likely led to the critical comments. This data had since been corrected and a revised list of incidents was placed in the docket (8/12/2011; PHMSA-2009-0303-0048). PHMSA also reviewed additional CTMV incidents that occurred from January 1, 2009 to March 31, 2011 to capture more recent data. This review resulted in a final determination of 132 wetlines incidents. A total of 59 incidents where

removed after a review of the original 172 incidents, and 19 incidents were added after a review of more recent data.

2. Benefit and Cost Estimation.

Manual Purging System. Most commenters took issue with PHMSA's estimation of the costs of installing a manual purging system.⁹ In general, they believe PHMSA underestimated the total cost presented through incorrect assumptions and inclusion of cost factors that do not reflect real-world applications. Commenters indicated that PHMSA underestimated the true costs of a manual purging system by, for example, not incorporating a markup cost. Commenters provide a range of cost estimates from \$4,000 to \$10,000. Some also think the regulatory assessment should have been developed using a mix of costs of the manual system and the more expensive automated purging system. Commenters suggest this because they believe that owners will invest in the automated system out of concern that drivers will forget to operate the manual system and because an automated system will provide the added benefit of discovery of a faulty emergency valve and would continue to purge the lines during transportation if such a faulty valve were present. Details of this pricing can be found in the regulatory assessment and other documents submitted to the docket for this rulemaking. PHMSA's post-GAO analysis took into consideration the cost of the automated system.

Operational delays. Many commenters argued that PHMSA has not accounted for delay costs to the shipper or carrier due to operation of a purging system at the loading

⁹ PHMSA used a per-unit price of \$2,300 based on the advertised price of the one manufacturer of purging systems currently designing and installing such systems.

rack of a terminal facility. The delay would be caused by the driver of the CTMV waiting anywhere from three to six minutes for the system to complete the purging process prior to moving the CTMV. Commenters based this on their understanding that the regulations would not allow the vehicle to move until it is essentially empty—only a residue remains in the piping. Completion of the purging process would be an indicator that it is empty.

Weight penalty. PHMSA estimated that a manual purging system is expected to add about 48 pounds to a CTMV. To the extent that a shipper or carrier operates at Federal or State gross weight limits, the shipper or carrier would have to ship less product because of this additional weight. Commenters disagreed with the estimate that only 25% of vehicle trips are at the maximum allowable weight and therefore affected by the additional weight of a purging system. Informal surveys of carriers by the American Trucking Association and the National Tank Truck Carriers found that as much as 80% of trips are at the maximum allowable weight. Again, PHMSA's post-GAO analysis accounted for this.

Yonkers, NY Incident. Commenters believe the Yonkers, NY incident that led to NTSB Safety Recommendation (H-98-27) should not be included in the regulatory assessment for several reasons, including:

- (1) the belief that the fire in the incident was not caused by a wetlines release because the original NTSB accident report concluded that the fire was fed by fuel from the cargo tank compartments, implying a breach of the cargo tank;
- (2) the incident predates the incident analysis period; and

(3) the uncertainty that such an event will ever occur again—no data supports the PHMSA assumption that this is a 20-year event.

E. *Findings.*

Although a safety hazard exists, the regulatory assessment and further analysis indicate that prohibiting the transportation of flammable liquids in wetlines is unlikely to be cost beneficial. Additionally, the GAO report has pointed out a number of uncertainties with the data collection and analysis that would have a direct impact on PHMSA's ability to fully characterize the degree of risk that wetlines containing flammable liquids pose to the safety of transportation.

V. *Conclusion.*

PHMSA is withdrawing this rulemaking in accordance with the FAST Act. PHMSA, however, will continue to examine this issue, particularly by monitoring flammable liquid wetlines incidents, in consideration of any future actions. Likely future actions include non-regulatory initiatives to improve the safety of transporting flammable liquid in unprotected external product piping on CTMVs.

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