



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

November 4, 2014

The Honorable Christopher A. Hart
Acting Chairman
National Transportation Safety Board
490 L'Enfant Plaza, SW
Washington, DC 20594

Dear Acting Chairman Hart:

This letter provides an update on the Pipeline and Hazardous Materials Safety Administration's (PHMSA) recent and future actions to address the National Transportation Safety Board (NTSB) Safety Recommendations R-12-5, R-12-6, R-14-4, R-14-5, and R-14-6. NTSB issued Safety Recommendations R-12-5 and R-12-6 as a result of its investigation of the June 19, 2009 train derailment in Cherry Valley, Illinois. NTSB issued Safety Recommendations R-14-4, R-14-5, and R-14-6 as a result of its participation in Canada's Transportation Safety Board investigation of the July 6, 2013 derailment of a Montreal, Maine & Atlantic freight train in Lac-Mégantic, Quebec, Canada.

On August 1, 2014, PHMSA, in coordination with the Federal Railroad Administration (FRA), published two notices relevant to the above-referenced NTSB Safety Recommendations. The first is an Advance Notice of Proposed Rulemaking (ANPRM) entitled "Hazardous Materials: Oil Spill Response Plans for High-Hazard Flammable Trains" (HM-251B; 79 FR 45079). The second is a Notice of Proposed Rulemaking (NPRM) entitled "Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains" (HM-251; 79 FR 45015). These notices propose changes to the Hazardous Materials Regulations (HMR; 49 C.F.R. Parts 171-180) that are relevant to the above-referenced NTSB Safety Recommendations, including:

- Improved tank car standards for new and existing high-hazard flammable trains (HHFTs), proposed to be defined as a train consisting of twenty or more carloads of Class 3 flammable liquid (NPRM);
- Expanded rail route planning and selection requirements that would include HHFTs (NPRM);

- Enhanced frequency, methods, and documentation requirements for sampling and testing of mined gases and liquids for the purpose of classification and characterization (NPRM); and
- Extended comprehensive oil spill response plan requirements that would include HHFTs (ANPRM).

The comment period on the ANPRM and NPRM closed on September 30, 2014. PHMSA and FRA are currently reviewing comments and anticipate issuing a corresponding NPRM and Final Rule PHMSA's and FRA's completed and planned actions with respect to these NTSB recommendations are discussed below.

R-12-5

Require all newly-manufactured and existing general service tank cars authorized for transportation of denatured fuel ethanol and crude oil in PGs I and II have enhanced tank head and shell puncture resistance systems and top fittings protection that exceed existing design requirements for DOT Specification 111 tank cars.

PHMSA's recent NPRM (HM-251) proposes several enhancements to new and existing tank car designs for HHFTs, providing three alternative options. Table 1, below, outlines PHMSA's proposed safety features by tank car option. These safety features are designed to address the risks associated with transporting Class 3 flammable liquids, including denatured ethanol and crude oil in PGs I and II. All of the proposed options are designed to improve the survivability of tank cars and mitigate the consequences of rail accidents involving DOT Specification 111 tank cars. Specifically, the proposed tank car options include enhancements to improve puncture resistance, provide thermal protection to survive a 100-minute pool fire, and protect top fittings and bottom outlets. These proposed enhancements would result in fewer car punctures, fewer releases from the service equipment (top and bottom fittings), and delayed release of flammable liquid through the pressure relief devices.

Table 1: Safety Features by Tank Car Option

Tank Car	Bottom Outlet Handle	GRL (lbs)	Head Shield Type	Pressure Relief Valve	Shell Thickness	Jacket	Tank Material	Top Fittings Protection	Thermal Protection System	Braking
Option 1: PHMSA and FRA Designed Tank Car	Bottom outlet handle removed or designed to prevent unintended actuation during a train accident	286k	Full-height, 1/2 inch thick head shield	Reclosing pressure relief device	9/16" inch minimum	Minimum 11-gauge jacket constructed from A1011 steel or equivalent. The jacket must be weather-tight	TC-128 Grade B, normalized steel	TIH top fittings protection system and nozzle capable of sustaining, without failure, a rollover accident at a speed of 9 mph	Thermal protection system in accordance with § 179.18	ECP brakes
Option 2: AAR 2014 Tank Car	Bottom outlet handle removed or designed to prevent unintended actuation during a train accident	286k	Full-height, 1/2 inch thick head shield	Reclosing pressure relief device	9/16 inch minimum	Minimum 11-gauge jacket constructed from A1011 steel or equivalent. The jacket must be weather-tight	TC-128 Grade B, normalized steel	Equipped per AAR Specifications Tank Cars, appendix E paragraph 10.2.1	Thermal protection system in accordance with § 179.18	In trains with DP or EOT devices
Option 3: Enhanced CPC 1232 Tank Car	Bottom outlet handle removed or designed to prevent unintended actuation during a train accident	286k	Full Height 1/2 inch thick head shield	Reclosing pressure relief device	7/16 inch-minimum	Minimum 11-gauge jacket constructed from A1011 steel or equivalent. The jacket must be weather-tight	TC-128 Grade B, normalized steel	Equipped per AAR Specifications Tank Cars, appendix E paragraph 10.2.1	Thermal protection system in accordance with § 179.18	In trains with DP or EOT devices
DOT 111A100W1 Specification (Currently Authorized)	Bottom outlets are optional	263K	Optional; bare tanks ½ height; jacket tanks full height	Reclosing pressure relief valve	7/16 inch-minimum	Jackets are optional	TC-128 Grade B, normalized steel ^a	Not required, but when equipped per AAR Specifications Tank Cars, appendix E paragraph 10.2.1	Optional	Not required

Each of the three options proposed in the NPRM would provide improved tank head and shell puncture resistance systems and top fittings protection, as NTSB recommends in Safety Recommendation 12-5. As reflected in Table 1, the enhancements proposed for head shield type, shell thickness, and jacket requirements for all three options would offer improved puncture resistance. And the proposed top fittings protection requirements would also represent enhanced design requirements beyond those of DOT Specification 111 tank cars.

For all three options, PHMSA proposes the timelines in Table 2, below, for phasing out the use of DOT Specification 111 tank cars used as part of HHFTs.

^a For the purposes of this figure, TC-128 Grade B normalized steel is used to provide a consistent comparison to the proposed options. Section 179.200-7 provides alternative materials which are authorized for the DOT Specification 111.

Table 2: HHFT Tank Car Timelines	
Packing Group	DOT 111 Not Authorized After
I	October 1, 2017
II	October 1, 2018
III	October 1, 2020

As part of this phase-out, the NPRM proposes to require retrofitting of existing tank cars that are part of HHFTs to meet the performance standard options outlined in Table 1, above, , except for the requirements for top fittings protection, as the safety benefits of top fittings protection retrofitting is not supported by the corresponding costs. Under this proposed rule, tank cars that are not retrofitted would be retired, repurposed, or operated under speed restrictions for up to five years, based on the packing group assignment of the material.

R-12-6

Recommends that PHMSA require all bottom outlet valves used on newly-manufactured and existing non-pressure tank cars are designed to remain closed during accidents in which the valve and operating handle are subjected to impact forces.

PHMSA has also taken steps to address NTSB's Safety Recommendation R-12-6, regarding bottom outlet valves (BOVs) and operating handles.

In PHMSA's recent NPRM (HM-251), it proposed three enhanced tank car design options for all new and existing tank cars used as part of HHFTs. These options are outlined in Table 1, above, and would all require bottom outlet handles to be removed or designed to prevent unintended actuation during a train accident.

Additionally, PHMSA and the FRA have been working with the Association of American Railroad's Tank Car Committee to review bottom outlet performance and operating mechanisms. This task force develops recommendations to prevent actuation of a BOV in accident and non-accident conditions by:

- evaluating design requirements for a shear plane for connection to the BOV;
- reviewing the strength requirements of the skid protection structure; and
- identifying and evaluating design requirements for a BOV operating mechanism that would prevent an unintended release.

PHMSA will work with the FRA to update NTSB on the task force's progress on this issue.

R-14-4

Work with the Federal Railroad Administration to expand hazardous materials route planning and selection requirements for railroads under Title 49 Code of Federal Regulations 172.820 to include key trains transporting flammable liquids as defined by the Association of American Railroads (AAR) Circular No. OT-55-N and, where technically feasible, require rerouting to avoid transportation of such hazardous materials through populated and other sensitive areas.

PHMSA's recent NPRM (HM-251) proposes to expand the route planning and selection requirements in 49 C.F.R. § 172.820 to apply to HHFTs, as NTSB recommends in Safety Recommendation R-14-4. This proposed rule would require rail carriers to assess available routes using twenty-seven factors, such as proximity to populated and other sensitive areas, when analyzing and selecting routes for HHFTs.

Furthermore, as outlined in PHMSA's June 11, 2014 update, as of July 1, 2014 rail carriers are voluntarily applying the route planning and selection requirements of 49 C.F.R. § 172.820 to trains carrying twenty or more cars of crude oil. As such, during the pendency of PHMSA's rulemaking, route planning and selection requirements have already been extended to HHFTs carrying crude oil.

R-14-5

Revise the spill response planning thresholds contained in Title 49 Code of Federal Regulations Part 130 to require comprehensive response plans to effectively provide for the carriers' ability to respond to worst-case discharges resulting from accidents involving unit trains or blocks of tank cars transporting oil and petroleum products.

PHMSA's recent ANPRM (HM-251B) seeks comments on potential revisions to 49 C.F.R. Part 130 that would expand the applicability of a comprehensive oil spill response plan (OSRP) to HHFTs. Specifically, the ANPRM proposes to modify the threshold measure for comprehensive OSRPs to apply to the capacity of an entire train consist rather than the capacity of a single package. While most HHFTs do not meet the current threshold for comprehensive OSRPs, this proposed change would result in all HHFTs meeting the threshold limit.

The comment period for this ANPRM closed on September 30, 2014, and PHMSA and FRA are currently reviewing comments regarding appropriate threshold measures, the clarity of existing requirements, additional information that should be incorporated into comprehensive OSRP requirements, and associated costs.

R-14-6

Require shippers to sufficiently test and document the physical and chemical characteristics of hazardous materials to ensure the proper classification, packaging, and record-keeping of products offered in transportation.

PHMSA's recent NPRM (HM-251) proposes a new 49 C.F.R. § 173.41 that would explicitly require offerors to have a documented sampling and testing program for mined gases and liquids, which includes crude oil. As proposed, the program would address the following key elements that are designed to ensure proper classification and characterization of mined liquids and gases:

- frequency of sampling and testing to account for appreciable variability of the material, including the time, temperature, means of extraction (including any use of a chemical), and location of extraction;
- sampling at various points along the supply chain to understand the variability of the material during transportation;
- sampling methods that ensure a representative sample of the entire mixture, as packaged, is collected;
- testing methods to enable complete analysis, classification, and characterization of the material under the HMR;
- statistical justification for sample frequencies;
- duplicate samples for quality assurance purposes; and
- criteria for modifying the sampling and testing program.

Additionally, the proposal would require offerors to routinely review and revise these plans as well as retain and provide documentation of them. If we can be of further assistance or answer any additional questions, please do not hesitate to contact Dirk Der Kinderen, NTSB Program Manager, Office of Hazardous Materials Safety, Standards Development Division at 202-366-4460 or by email at Dirk.DerKinderen@dot.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy P. Butters", with a horizontal line extending to the right from the end of the signature.

Timothy P. Butters
Acting Administrator