



U.S. Department
of Transportation

Administrator

1200 New Jersey Avenue, SE
Washington, DC 0590

**Pipeline and Hazardous
Material Safety
Administration**

May 30, 2012

The Honorable Deborah A. P. Hersman
Chairman
National Transportation Safety Board
490 L'Enfant Plaza, SW
Washington, DC 20594

Dear Chairman Hersman:

Thank you for your March 2, 2012 letter concerning NTSB Safety Recommendations R-12-5 through -8. These four (4) recommendations were issued to the Pipeline and Hazardous Materials Safety Administration (PHMSA) as a result of the National Transportation Safety Board's (NTSB) investigation of a train derailment on July 19, 2009, in Cherry Valley, Illinois. The incident occurred at a highway/rail grade crossing and involved the derailment of 15 DOT-111 rail tank cars that led to the release of ethanol, and a subsequent fire. The incident resulted in a fatality, several injuries, the evacuation of nearby residents and close to \$8 million in monetary damages.

NTSB determined that the probable cause of the incident was the washout of the track structure at the grade crossing and failure to notify the train crew of the known washout. It also concluded that inadequate design features of a DOT-111 rail tank car made it susceptible to damage and catastrophic loss of hazardous material during the derailment, and thus, contributed to the severity of the incident.

I have outlined the current status of our progress for each recommendation:

R-12-5

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

I welcome any opportunity to improve the safety of hazardous material packaging. PHMSA is aware of the safety concerns surrounding the design features of DOT-111 rail tank cars and we have work underway to address those concerns. We believe the issue is more complex than only

requiring enhanced design standards for a DOT-111 rail tank car used to transport denatured fuel ethanol or crude oil. As noted in your March 2 letter, the Association of American Railroads (AAR) petitioned PHMSA (Petition P-1577) to adopt enhanced design standards for new DOT-111 rail tank cars used to transport Packing Group (PG) I and II hazardous material (the PG designation indicates the degree of danger of a hazardous material with a PG I material, indicating great danger). PHMSA has accepted the petition and has initiated an advanced notice of proposed rulemaking to request public comment on this petition along several other petitions dealing with rail tank car issues.

There are approximately 45,000 DOT-111 rail tank cars in ethanol and crude oil service versus approximately 130,000 DOT-111 rail tank cars in service for PG I and II hazardous material. Given the large number of rail tank cars that would be impacted by a rulemaking, and to facilitate more timely handling of the rulemaking, stakeholders have requested that PHMSA address rail tank cars in alcohol and crude oil service separately. Requiring all new and existing DOT-111 rail tank cars to comply with enhanced design standards will no doubt be a very costly endeavor. Please be assured that PHMSA will evaluate all relevant options in taking any rulemaking action. We invite and encourage NTSB to comment as we proceed through the regulatory process.

R-12-6

Require that 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 and the Federal Railroad Administration (FRA) are represented on the AAR task force T10.5 Bottom Outlet Operating Mechanisms. The task force is charged with three action items aimed at preventing loss of lading from a bottom outlet valve (BOV) in both accident and non-accident conditions: 1) evaluate design requirements for a shear plane for connection to the BOV; 2) review the strength requirements of the skid protection structure; and 3) identify and evaluate design requirements for a BOV operating mechanism that would prevent an unintended release. PHMSA will work with the FRA to periodically update the NTSB on progress made by the task force and any decision made relating to the adoption of requirements into the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to ensure a BOV remains closed during an accident.

R-12-7

Require that all newly manufactured and existing tank cars authorized for transportation of hazardous materials have center sill or draft sill attachment designs that conform to the revised Association of American Railroads' design requirements adopted as a result of Safety Recommendation R-12-9.

The dynamics of the failure of the tank shell associated with sill attachments that occurred in the Cherry Valley, Illinois, incident is linked to one particular sill design. The FRA, with assistance from PHMSA, is conducting a research project with DOT's Volpe Center and the manufacturer of the rail tank car that failed. We will evaluate the manufacturer's sill design to determine the magnitude and direction of the forces required to reproduce the failure and the boundary conditions (e.g., pinning of the head) at the time of failure. Based on the results of the project, PHMSA, the FRA and the tank car manufacturer will identify and evaluate design modifications that will prevent such a failure from reoccurring. Likewise, we plan to extend our evaluation to include other sill designs to determine if there are any deficiencies associated with these designs in protecting the integrity of the tank shell in an accident in which the draft sill is subjected to significant downward deformation. PHMSA will work with the FRA to periodically update the NTSB on the progress of the research project and any decision made regarding the adoption of new sill design requirements into the HMR as well as the incorporation of any design requirements adopted by AAR as a result of Safety Recommendation R-12-9.

R-12-8

Inform pipeline operators about the circumstances of the accident and advise them of the need to inspect pipeline facilities after notification of accidents occurring in railroad rights-of-way.

PHMSA will soon publish an Advisory Bulletin to all pipeline operators alerting them to the circumstances of the Cherry Valley derailment and reminding them of the importance of assuring that pipeline facilities have not been damaged either during a railroad accident or other event occurring in the right-of-way. Further, the advisory will remind operators of the importance of communicating with rail operators and emergency response officials regarding the presence, depth and location of the pipelines so that heavy equipment moving or being moved on the right-of-way does not damage or rupture the pipeline or otherwise pose a hazard to people working in, and around, the accident location. The advisory will also encourage operators to acquaint rail operators sharing their right-of-way and emergency response officials of their ability to use the 811- Call Before You Dig program to identify and notify underground utilities of an incident that has occurred in the vicinity of their buried facilities.

If you have questions, or comments regarding this or any other hazardous materials or pipeline safety matter, please feel free to contact me directly at 202-366-4433.

Regards,



Cynthia L. Quarterman