



# National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

January 11, 2013

The Honorable Cynthia L. Quarterman  
Administrator  
Pipeline and Hazardous  
Materials Safety Administration  
Washington, DC 20590

Dear Administrator Quarterman:

Thank you for your October 19, 2012, letter regarding Safety Recommendations R-92-23, R-01-3, R-07-4, and R-08-13, stated below. The National Transportation Safety Board (NTSB) originally issued Safety Recommendation R-92-23 to the Research and Special Programs Administration (RSPA) on December 31, 1992, as the result of our special investigation of the inspection and testing of railroad tank cars in response to accidents that had occurred in Dragon, Mississippi, and Kettle Falls, Washington, in which a structural failure of the rail tank cars led to the release of hazardous materials.

## R-92-23

Develop and promulgate, with the Federal Railroad Administration [FRA], requirements for the periodic testing and inspection of rail tank cars that help to ensure the detection of cracks before they propagate to critical length by establishing inspection intervals that are based on the defect size detectable by the inspection method used, the stress level, and the crack propagation characteristics of the structural component (requirement based on a damage-tolerance approach).

We note that the Pipeline and Hazardous Materials Safety Administration (PHMSA) published a final rule (HM-216B) at 77 *Federal Register* 37961 on June 25, 2012. The rule amends the Hazardous Materials Regulations (HMR) to incorporate provisions contained in certain widely used or longstanding special permits that have general applicability and established safety records. Such special permits allowed a company or an individual to package or ship a hazardous material in a manner that varies from the regulations, provided the packager and shipper maintain an equivalent level of safety. HM-216B replaces these special permits with an alternative tank car qualification program.

We further note that 49 *Code of Federal Regulations* (CFR) Part 180, *Continuing Qualification and Maintenance of Packagings*, now requires a tank car owner to develop written procedures for a qualification program for tank cars with inspection procedures and intervals, along with acceptance criteria for each prescribed inspection and test. The acceptance criteria must be based on service reliability data or analytical evaluation of the tank car and its

components. With regard to crack detection, the program allows an owner to develop an alternative qualification program suited to the tank car design and use by permitting an alternative inspection and test program or interval based on a damage-tolerance analysis, contingent on FRA approval.

In addition, the FRA has completed two research projects evaluating a variety of nondestructive testing methods, and the Association of American Railroads (AAR) Tank Car Reliability Research task force is evaluating data collected by instrumentation on in-service tank cars, related to the in-train forces. The requirements of this new regulation, along with the research efforts, will provide for periodic testing and inspection of rail tank cars that help to ensure the detection of cracks (using a damage-tolerance approach) before cracks propagate to critical length. Accordingly, Safety Recommendation R-92-23 is classified “Closed—Acceptable Action.”

The NTSB originally issued Safety Recommendation R-01-3 to RSPA on March 12, 2001, as the result of our investigation of the catastrophic rupture of a railroad tank car containing hazardous waste at the Essroc Cement Corporation plant near Clymers, Indiana on February 18, 1999.

#### R-01-3

Evaluate, with the assistance of the Federal Railroad Administration, the Association of American Railroads, and the Railway Progress Institute, the deterioration of pressure relief devices through normal service and then develop inspection criteria to ensure that the pressure relief devices remain functional between regular inspection intervals. Incorporate these inspection criteria into the U.S. Department of Transportation *Hazardous Materials Regulations*.

The NTSB classified a companion recommendation, Safety Recommendation R-01-4, which had been issued to the AAR, “Closed—Acceptable Action” on August 19, 2010. This classification was in response to the AAR’s Tank Car Committee review of thousands of pressure relief device (PRD) inspection data reports, subsequent revision of its PRD inspection report, and incorporation of the new report form with instructions for its use into Appendix U of the 2007 edition of the *AAR Manual of Standard and Recommended Practices—Specifications for Tank Cars*, M-1002.

We note that 49 CFR Section 180.509(k) requires that each tank car owner ensure the qualification of tank car service equipment (including pressure relief) at least once every 10 years. The tank car owner must analyze the service equipment inspection and test results for any given lading and, based on the analysis, adjust the inspection and test frequency to ensure that the design level of reliability and safety of the equipment is met.

We further note that, in lieu of other requirements of this section, an alternative inspection and test procedure or interval may be determined from a damage-tolerance evaluation (which must include a determination of the probable locations and modes of damage due to fatigue, corrosion, and accidental damage) or based on a service reliability assessment (which

must be supported by analysis of systematically collected data). We agree that the new HMR, data collection, and test and inspection requirements will help ensure that PRDs remain functional between regular inspection intervals; accordingly, Safety Recommendation R-01-3 is classified “Closed—Acceptable Action.”

The NTSB issued Safety Recommendation R-07-4 to PHMSA on April 25, 2007, as the result of our investigation of the July 10, 2005, head-on collision of two Canadian National freight trains in Anding, Mississippi.

#### R-07-4

With the assistance of the Federal Railroad Administration, require that railroads immediately provide to emergency responders accurate, real-time information regarding the identity and location of all hazardous materials on a train.

The NTSB notes that, on September 26, 2011, PHMSA initiated a project with the Department of Transportation’s Volpe National Transportation Systems Center, titled “*Hazardous Materials Automated Cargo Communication for Efficient and Safe Shipping*” (HM-ACCESS). On July 6, 2012, the president signed into law the Moving Ahead for Progress in the 21st Century Act (MAP-21), authorizing surface transportation programs of the Department of Transportation for fiscal years 2013 and 2014. Division C, Title III—Hazardous Materials Transportation Safety Improvement Act of 2012, Section 33005, includes a requirement for the Secretary of the Department of Transportation (DOT) to conduct pilot projects to evaluate the feasibility and effectiveness of using paperless hazard communications systems.

We appreciate that PHMSA’s Office of Hazardous Materials Safety is collaborating with modal administrations, law enforcement, emergency response organizations and industry representatives to evaluate the feasibility of allowing the use of electronic shipping papers for hazmat shipments. We are aware that MAP-21 requires the Secretary of the DOT to submit a final report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives’ Committee on Transportation and Infrastructure containing the results of the pilot projects within 2 years of the law’s enactment. In the meantime, pending completion of the recommended action, Safety Recommendation R-07-4 is classified Open—Acceptable Response.”

The NTSB issued Safety Recommendation R-08-13 to PHMSA on May 22, 2008, as the result of our investigation of the October 20, 2006, derailment of a Norfolk Southern Railway Company train with the release of hazardous materials and subsequent fire near New Brighton, Pennsylvania.

#### R-08-13

With the assistance of the Federal Railroad Administration (FRA), evaluate the risks posed to train crews by unit trains transporting hazardous materials, determine the optimum separation requirements between occupied locomotives and hazardous materials cars, and revise 49 *Code of Federal Regulations* 174.85 accordingly.

NTSB staff contacted Mr. Karl Alexy, Director of the FRA's Hazardous Materials Division, who is gathering reviewer comments regarding 49 CFR Part 174. Mr. Alexy confirmed that the FRA will assist PHMSA in amending and enforcing Part 174, but it is the responsibility of PHMSA to publish any changes to the HMR, including to section 174.85, "Position in Train of Placarded Cars Transporting Hazardous Materials," the car buffer standard associated with unit trains.

The FRA informed us that it expects to complete its work in the second quarter of 2013, then PHMSA will have the responsibility for publishing an NPRM proposing any changes needed to Part 174. Pending completion of the recommended action, Safety Recommendation R-08-13 remains classified "Open—Acceptable Response."

We encourage you to submit updates to Safety Recommendations R-07-4 and R-08-13 electronically at the following e-mail address: [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov). To avoid confusion, please do not submit both an electronic copy and a hard copy of the same response.

Thank you for your cooperation.

Sincerely,

Chairman

cc: Ms. Camille Mittelholtz, Acting Director  
Office of Safety, Energy, and Environment  
Office of Transportation Policy