



National Transportation Safety Board

Washington, D.C. 20594

MAY 5 1998

Office of the Chairman

Ms. Kelley S. Coyner
Acting Administrator
Research and Special Programs Administration
Washington, D.C. 20590

Dear Ms. Coyner:

Thank you for your February 2, 1998, letter concerning National Transportation Safety Board Safety Recommendation R-92-23. This recommendation resulted from a 1992 Safety Board special investigation of the inspection and testing of railroad tank cars.

Safety Recommendation R-92-23 urged the Research and Special Programs Administration (RSPA) to 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 (requirements based on a damage tolerance approach). The Safety Board notes that RSPA has published 60 FR 49048 requiring that each tank car facility develop procedures for evaluating the inspection and test techniques employed, including the accessibility of the area to be tested, the sensitivity and reliability of the techniques, and the minimum detectable crack length. The Safety Board further notes that the FRA has funded a research contract to establish minimum thresholds of damage detection through the use of probability of detection curves and is exploring methods for performing a reliability assessment of the tank structure, such as damage tolerance analysis.

Despite these positive aspects, the Safety Board notes that the inspection and testing requirements issued under docket HM-201 are based on accumulated and average mileage for the tank car fleet rather than on damage tolerance principles. The Board recognizes that full implementation of an inspection and testing program based on damage tolerance principles will take several years. Therefore, the Safety Board considers the inspection and testing requirements published under docket HM-201 as interim measures while RSPA and the FRA continue to work with the Association of American Railroads and other industry associations toward full implementation of damage tolerance principles for inspecting and testing tank cars. We support these efforts and request that RSPA continue to provide periodic updates on the progress



toward implementing a damage-tolerance-based program. Safety Recommendation R-92-23 remains classified "Open--Acceptable Response."

Sincerely,



Jim Hall
Chairman

cc: Dr. Donald R. Trilling, Director
Office of Environment, Energy and Safety