SP-20

National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation Log R-89/55

Date: July 14, 1989

In Reply refer to: R-89-55

Mr. Dwayne O. Andrews
Chairman of the Board and
Chief Executive Officer
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About 11:44 a.m. central daylight savings time on July 30, 1988, Iowa Interstate Railroad Ltd. (IAIS) freight trains Extra 470 West and Extra 406 East collided head on within the yard limits of Altoona, Iowa, about 10 miles east of Des Moines, Iowa. All 5 locomotive units from both trains; 11 cars of Extra 406 East; and 3 cars, including 2 tank cars containing denatured alcohol, of Extra 470 West derailed. The denatured alcohol, which was released through the pressure relief valves and the manway domes of the two derailed tank cars, was ignited by the fire resulting from the collision of the locomotives. Both crewmembers of Extra 470 West were fatally injured; the two crewmembers of Extra 406 East were only slightly injured. The estimated damage (including lading) as a result of this accident exceeded $1 million.[1]

The investigation of this accident revealed that the loading of hazardous materials into tank cars at Archer Daniels Midland's (ADM) Cedar Rapids plant was performed by operators with minimum supervision from their immediate supervisor, the foreman of alcohol production at the plant. The foreman acknowledged that, aside from the operator loading the tank car, no other employee at the plant routinely inspects the manway or valves on the tank cars before the tank car is released to the railroad. The foreman's statement that he will go to the loading area only if there is a problem, and the superintendent's statement that he depends upon the competency of the foreman and the loader to properly load the tank cars suggest that there is no effective supervision and evaluation of the loader's performance.

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[1] For more detailed information, read Railroad Accident Report--"Head-on Collision Between Iowa Interstate Railroad Extra 470 West and Extra 406 East with Release of Hazardous Materials near Altoona, Iowa on July 30, 1988" (NTSB/RAR-89/04).

The investigation also revealed that written procedures for loading tank cars that existed at the time of the accident were minimal. Further, even the procedures put in writing following the accident do not provide sufficient guidance to be effective. For example, there are no criteria for operators to determine when manway gaskets should be changed, and the written guidance for securing the manways does not specify whether manway bolts should be evenly torqued or how much torque should be applied. The written procedures also do not require the operator to check whether the mounting bolts for the pressure relief valves are torqued, or otherwise provide guidance about the pressure relief valves. The Safety Board is concerned that without detailed written procedures, the loading of tank cars becomes a far too subjective activity. The Safety Board believes that this is particularly true when the only type of training given to the operators is on-the-job training.

The Safety Board found in its investigation of a vinyl chloride monomer tank car fire at the Formosa Plastics Corporation plant in Baton Rouge, Louisiana, on July 30, 1983,[2] that the failure to provide written procedures for its loading employees contributed to the cause of the accident. The Safety Board, consequently, recommended that the Formosa Plastics Corporation:

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> Establish a training program and loading turnover procedures for supervisors and employees assigned to load hazardous materials for transportation.

The Formosa Plastics Corporation subsequently developed a training program and developed procedures and a checkoff list to be used for its employees in the loading of the tank cars.

While the Board cannot conclude whether the manways had been adequately secured by ADM before releasing ADMX 29477 and ADMX 29494 for transportation, or that the pressure relief valves were mounted securely, the Safety Board believes that the absence of detailed written procedures, of an adequate employee training and evaluation program, and of appropriate corporate oversight increases the likelihood of future releases of hazardous materials.

Therefore, as a result of its investigation, the National Transportation Safety Board recommends that the Archer Daniels Midland Company:

> Develop written procedures for loading and preparing rail tank cars for transportation at the various plants and develop and implement employee training and evaluation programs consistent with the written procedures. (Class II, Priority Action) (R-89-55)

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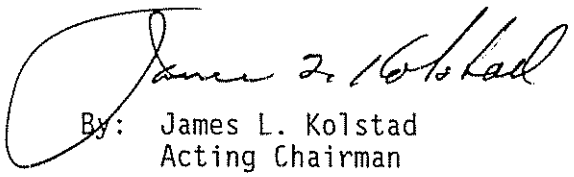
[2] Railroad Accident Report--"Vinyl Chloride Monomer Release from a Railroad Tank Car and Fire, Formosa Plastics Corporation Plant, Baton Rouge, Louisiana, July 30, 1983" (NTSB/RAR-85/08).

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "... to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation R-89-55 in your reply.

Also, the Safety Board issued Safety Recommendations R-89-37 through -44 to the Iowa Interstate Railroad; R-89-45 through -51 to the Federal Railroad Administration; R-89-52 through -54 to the Research and Special Programs Administration; R-89-56 to the Chemical Manufacturers Association and the National Industrial Transportation League; R-89-57 and -58 to the American Short Line Railroad Association; R-89-59 and -60 to the Association of American Railroads; and R-89-61 to the CSX Transportation Company, the Chicago North Western Transportation Company, and METRA. Also, the Safety Board reiterated Safety Recommendation R-87-17 to the Research and Special Programs Administration.

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in this recommendation.



By: James L. Kolstad
Acting Chairman