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National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: October 12, 1990

In reply refer to: R-90-41

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On February 26, 1989, CSX Transportation, Inc., freight train No. D812-26 derailed at mile post 16.1 while traveling about 43 mph over Consolidated Rail Corporation (Conrail) main track No. 1, near the south end of Conrail's rail yard, Akron, Ohio. Twenty-one freight cars in the train derailed, including nine tank cars filled with butane. The nine tank cars came to rest adjacent to a B.F. Goodrich Chemical Company plant, and butane released from two breached tank cars immediately caught fire. About 1,750 residents were evacuated from a 1-square-mile area. On February 28, 1989, while some of the derailed tank cars were being moved from the accident site, one tank car full of butane rolled off its trucks; as a result, about 25 families were evacuated from a second area.¹

Had the derailment caused more extensive damage to the B.F. Goodrich chemical facility, located adjacent to the railroad tracks, or caused damage to the pipelines transporting chemical products at the facility buildings, the accident could have been much more severe. The storage and production of hazardous materials in close proximity to mainline railroad tracks has long been a concern of the Safety Board.

On March 25, 1981, at Enos, Indiana, a railroad flatcar that had derailed struck three of four 1,000-gallon farm truck tanks loaded with anhydrous ammonia parked near the mainline tracks. Ammonia escaped from one of the breached tanks, mixed with fog, drifted across a divided highway 1/4 mile away, obscured motorists' vision, and led to multiple motor vehicle crashes. The distance from the tanks to the track ranged from about 19 to 40 feet. The flatcar traveled 65 feet from the track before coming to rest. On November 26, 1976, in Belt, Montana, one of several derailed railroad cars struck a 16,000-gallon gasoline storage tank. In the ensuing fire, the entire bulk storage plant burned; 2 persons were killed and 24 others were

¹ National Transportation Safety Board. 1990. Derailment of a CSX Transportation freight train and fire involving butane in Akron, Ohio, February 26, 1989. Hazardous Materials Accident Report NTSB/HZM-90/02. Washington, D.C.

injured. The tank was located about 42 feet from the mainline track; several of the derailed cars traveled more than 100 feet from the track.

In a study of accidents investigated by the Board from 1976 to 1979, the Safety Board found that in 123 of 298 accidents (or about 41 percent), derailed cars traveled more than 50 feet (lateral distance) after leaving the track. In slightly more than 6 percent of the accidents, cars traveled more than 100 feet after leaving the track.

As a result of these accidents, the Safety Board issued the following Safety Recommendations I-82-1 through -4 to the Association of American Railroads (AAR), I-82-5 to the National Association of Regulatory Utility Commissioners (NARUC), I-82-6 to the National Fire Protection Association (NFPA), and I-82-7 to the American National Standards Institute, Inc. (ANSI):

I-82-1

Reevaluate existing practices and standards influencing the placement of hazardous materials storage which may be vulnerable to damage by derailed railroad cars in train accidents.

I-82-2

Based on the results of a reevaluation of existing practices and standards, develop necessary changes in recommended practices to identify and protect vulnerable hazardous materials storage near mainline railroad tracks and disseminate these recommended practices to member companies for implementation.

I-82-3

In coordination with the National Association of Regulatory Utility Commissioners, identify actions States might take to require adequate protection of future hazardous materials storage near mainline railroad tracks against damage by derailed railroad cars in train accidents.

I-82-4

Coordinate development of recommended practices for identifying and protecting hazardous materials storage near mainline railroad tracks with the National Fire Protection Association and the American National Standards Institute, to assure consistency among related recommended safety practices.

I-82-5

Reevaluate State statutes and administrative orders to identify action States might take to improve protection of hazardous materials storage near railroad right-of-way against damage by derailed railroad cars in train accidents, and develop guidelines for State actions if needed.

I-82-6

Reevaluate National Fire Protection Association No. 30 "Flammable and Combustible Liquids Code" to assure adequate protection of hazardous materials storage located near mainline railroad tracks against derailed railroad cars in train accidents.

I-82-7

Reevaluate and amend as necessary American National Standards Institute Standard K61.1-1972, "Safety Requirements for the Storage and Handling of Anhydrous Ammonia," to provide adequate protection of hazardous materials containers located near mainline railroad tracks against derailed railroad cars in train accidents.

In regard to these safety recommendations, the Safety Board notes the efforts of the interindustry task force, established by the Chemical Manufacturers Association (CMA) and the AAR to address the safe transportation of hazardous materials by rail, and Circular OT-55 subsequently issued by the AAR to its members on this subject. The Safety Board has reviewed the circular and believes that it provides valuable guidance on separation distances of hazardous materials from mainline railroad tracks. The Safety Board believes, however, that the AAR should clarify and emphasize in its circular that hazardous materials storage and production facilities (including newly constructed and reconstructed facilities, tank cars, cargo tanks, and portable tanks) should be located no closer than 100 feet from mainline railroad tracks. The AAR in its recent letter of July 25, 1990, addressing Safety Recommendations I-82-1 through -4, and again referencing the work done by the interindustry task force, indicated that it intends to work with the NARUC, the NFPA, and the ANSI to encourage these organizations to adopt recommendations on storage distances contained in Circular OT-55. The Safety Board is aware that the CMA has issued a notice to its members urging them to adopt recommendations on storage distances contained in the AAR's circular.

The Safety Board has previously expressed concern that land-use policies by communities do not take into account transportation-related safety issues, including the location of railroads or high pressure pipelines near populated areas. Because the issues do fall under the jurisdiction of local communities, the Safety Board, as a result of its investigation of a train derailment and subsequent pipeline rupture in San Bernardino, California,² issued safety recommendations to the National Association of Counties and the National League of Cities urging them to inform their members of the land-use guidance for enhancing public safety contained in the National Research Council's Special Report 219, "Pipeline and Public Safety," and encouraging them to develop and implement policies to protect public safety for lands

² National Transportation Safety Board. 1990. Derailment of Southern Pacific Transportation Company freight train on May 12, 1989, and subsequent rupture of Calnev petroleum pipeline on May 25, 1989, San Bernardino, California. Railroad Accident Report NTSB/RAR-90/02. Washington, D.C. 193 p.

adjacent to pipelines and railroads. As the Safety Board stated in its report of the San Bernardino accidents:

The recommended actions in this report are specifically directed to public safety and land-use issues for pipelines, but the Safety Board believes, in principle, the discussion on land use would apply to railroads. Moreover, many of the considerations on land-use limitations for property adjacent to pipelines but not yet developed, also should be applied to land adjacent to railroads that has not been developed.

Similarly, the Safety Board believes that public safety policies on the uses of land adjacent to railroad tracks, including the location of hazardous materials storage and production facilities and the products being transported by rail, should be developed and implemented and has urged the city of Akron to do so. Further, the Safety Board believes that the National League of Cities and the National Association of Counties should inform their members of the circumstances of the accident in Akron, and urge members, when developing or revising land-use policies on the location of hazardous materials storage and production facilities near railroad tracks, to require, as a minimum, setback distances consistent with the AAR study on lateral distances traveled by derailed rail cars and AAR's Circular OT-55 "Recommended Railroad Operating Practices for Transportation of Hazardous Materials."

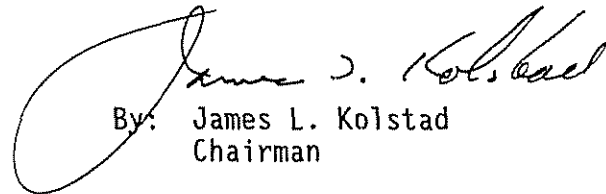
Therefore, the National Transportation Safety Board recommends that the National League of Cities and the National Association of Counties:

Inform your members of the circumstances of the CSX derailment in Akron, Ohio, on February 26, 1989, and urge them, when developing or revising land use policies on the location of hazardous materials storage and production facilities near railroad tracks, to require, as a minimum, setback distances consistent with the Association of American Railroads' (AAR) 1989 study on lateral distances traveled by derailed rail cars and AAR's Circular No. OT-55, "Recommended Railroad Operating Practices for Transportation of Hazardous Materials." (Class II, Priority Action) (R-90-41)

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 actions taken as a result of its safety recommendations and 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-90-41 in your reply.

Also as a result of its investigation of this accident, the Safety Board issued safety recommendations to the CSX Transportation, Inc., the City of Akron, the Association of American Railroads, the Federal Railroad Administration, the International Association of Fire Chiefs, the National Fire Protection Association, the American National Standards Institute, Inc., and the National Association of Regulatory Utility Commissioners.

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, and LAUBER, BURNETT, and HART, Members, concurred in this recommendation.



By: James L. Kolstad
Chairman