

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

DP-20

Log R-494

ISSUED: March 6, 1985

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Forwarded to:

Honorable John H. Riley  
Administrator  
Federal Railroad Administration  
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

R-85-12

At 6:30 a.m., c.s.t., on February 4, 1985, anhydrous hydrogen fluoride under pressure escaped through a fracture in the head of a partly loaded tank car (NATX 9408) located in Conrail's Receiving Yard at Elkhart, Indiana. During the next 4 hours, the anhydrous hydrogen fluoride formed a vapor cloud and drifted about 500 yards north and northwesterly, prompting local emergency response officials to evacuate 1,500 persons from a 1.1-mile-square area. Residents were kept from their homes for 9 hours, and 56 persons were treated at area hospitals for eye and skin irritations.

Tank car NATX 9408, DOT Specification 112S400W, was manufactured in 1962 by North American Tank Car Corporation and is leased to the Allied Corporation (Allied). After the car was purged and cleaned of anhydrous hydrogen fluoride, it was inspected on February 12, 1985, at Allied's plant at Nitro, West Virginia, using x-ray, ultrasonic, and dye-penetrant inspection techniques. These inspections located 12-inch fracture in the tank head beginning at the welded connection of the tank head and the rail car's stub sill. A 4-inch fracture also was discovered branching from the 12-inch fracture. A similar tank car (NATX 9405), manufactured to the same drawing specification as tank car NATX 9408, leased to Allied and in anhydrous hydrogen fluoride service, also was inspected and a crack was found in this tank at the same location of the fracture in NATX 9408. This crack, however, was not leaking.

The Safety Board's investigation into the hazardous material release is ongoing and a section of the tank head of NATX 9408 is currently undergoing metallurgical examination to aid in identifying the failure mechanism. However, the finding of cracks virtually in the same location in the two like tank cars is, in the Board's opinion, significant and requires prompt remedial action, at least for those cars manufactured under the same drawing specification, to prevent further releases of hazardous materials.

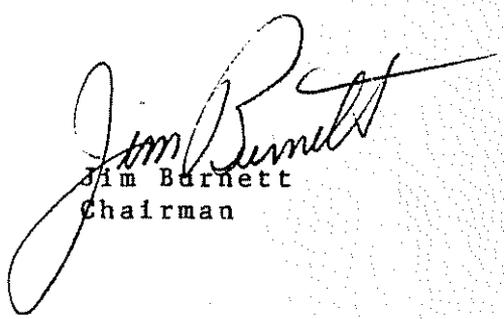
Allied operates 12 tank cars similar to NATX 9408 which also were constructed during the 1960's. Moreover, an estimated 70 additional tank cars were built from the same drawing specifications as NATX 9408 and now are being operated by other shippers. Each of these 82 tank cars should be removed from service immediately and inspected nondestructively in the area of the tank head connection to the rail car's stub sill. The cars should not be returned to service until this area is determined to be free of cracks or suitable repairs are made.

Therefore, the National Transportation Safety Board recommends that the Federal Railroad Administration, in conjunction with the Association of American Railroads:

Require that all DOT Specification 112 tank cars built to the same drawing specifications as NATX 9408, be removed from service promptly for inspection using appropriate nondestructive inspection techniques, and that any car found defective not be returned to service until the defect is corrected. (R-85-12) (Class I, Urgent Action)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member, concurred in this recommendation.

By:

  
Jim Burnett  
Chairman