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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: November 14, 1980

Forwarded to:

Honorable Howard Dugoff
Administrator
Research and Special Programs
Administration
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

P-80-74

About 7:30 a.m., c.d.t., on August 7, 1978, in Lafayette, Louisiana, natural gas at 15 psig pressure escaped from a corrosion leak in an inactive 1-inch steel service line and migrated beneath a concrete slab and into a building where it ignited. The resulting explosion and fire injured six persons and destroyed the building and its contents.

When the service line was installed by the Central Louisiana Electric Company, Inc., in the early 1960's, it was mill-coated with a coal-tar epoxy and the fittings were field-wrapped with tape. Later, a concrete slab was poured over the line, possibly depressing it into contact with a 4-inch cast-iron sewerline.

In 1973, service to the building was deactivated by removing the meter and capping the line, in compliance with 49 CFR 192.727, which was amended effective November 3, 1972, to exempt service lines from the requirement that they be disconnected at the gas source. Under the amended rule, the service line was required to be maintained under cathodic protection and periodically surveyed for gas leaks. Some time between 1975 and 1976, magnesium anodes were installed on the gas piping system, including the service line.

The Safety Board's investigation revealed that the coating on the service line had been damaged and that a corrosion hole had developed where the service line made contact with the sewerline or was shielded from cathodic protection by the sewerline. Information received from the Louisiana Office of Conservation, Pipeline Division, the State agency that regulates pipeline operations in Louisiana, showed that in March 1978, the Central Louisiana Electric Company, Inc., the pipeline operator, conducted an electrical survey of the line's cathodic protection. The survey showed no abnormality. An engineering consultant, employed by the electric company, inspected the pipe after the accident and reported that the size of the corrosion hole suggested that corrosion could have begun before the installation of anodes. Because of the proximity of the sewerline and/or actual electrical contact with the sewerline, the corrosion probably continued after the magnesium anodes were installed.

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When the post-accident electrical tests were being conducted, the electric company also performed a leak survey, using a combustible gas indicator (CGI). However, since the CGI can only detect gas under concrete slabs when cracks exist through the concrete or if holes have been drilled through the concrete to the soil below, no leakage was found. Since the accident, the Safety Board has learned that the electric company has contracted for additional cathodic protection work on this portion of the system. At the request of the Louisiana Office of Conservation, the electric company has acquired flame ionization units for use as an additional check for gas leakage on its total system. The electric company is currently training its personnel in the use and operation of these instruments.

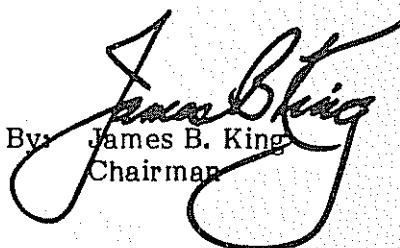
On June 17, 1975, in a similar accident, there was an explosion and fire in a house in Stroudsburg, Pennsylvania. The Safety Board's investigation disclosed that gas had been leaking into the basement of the house from a corrosion hole in an inactive gas service line that had been capped, but was still under pressure. No gas had been used from the service line for more than 8 years.

The Safety Board is concerned that the potential for an inactive service line to become a hazard to public safety increases with time, regardless of the amount or quality of protection applied. An inactive line should be required to be abandoned after a specific period of time. The Board has been informed that some individual States have regulations for the physical disconnection and purging of inactive service lines after a prescribed time period; Michigan specifies 5 years and Florida specifies 3 years. The Board believes that a time requirement for abandonment of inactive service lines should be specified in the Federal regulations for gas pipelines.

Therefore, the National Transportation Safety Board recommends that the Research and Special Programs Administration:

Initiate rulemaking to prescribe a time limit when an inactive service line would be required to be abandoned and physically disconnected from the main. (Class II, Priority Action) (P-80-74)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in this recommendation.

By: 
James B. King
Chairman