

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: November 7, 1979

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Forwarded to:

Mr. Howard Dugoff  
Administrator  
Research and Special Programs  
Administration  
Department of Transportation  
Washington, D.C. 20590  
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SAFETY RECOMMENDATION(S)

P-79-34

At 4:30 p.m., e.d.t., on July 31, 1979, a man entered a small cellar beneath a commercial greenhouse at 1936 Brodhead Road, Allegheny County, Pennsylvania, struck a match to light a cigarette, and was burned critically when a flash fire erupted. The man died later that night. The fire did only minor damage to the cellar.

The Peoples Natural Gas Company was notified of the accident at 4:36 p.m. A gas serviceman arrived at the site at 5 p.m., evacuated the building, and began checking for leakage on a 12-inch, 80-psig-pressure gas main which came within 5 feet of the greenhouse. The gas main was not shut down. The serviceman, using a spotting bar and a combustible gas indicator (CGI), detected gas leaking around the gas main. A service crew arrived at 6:55 p.m. and excavated the gas main. The excavated pipe showed active general corrosion with some pit holes. Six corrosion-caused leaks and one leaking clamp were detected and repaired.

A 4-inch drain hole in the concrete floor of the greenhouse cellar was located approximately 18 feet from the gas main. The leaking gas could have entered the greenhouse cellar through this drain hole. A gas line from an old gas well, which served the greenhouse boiler room at 20-psig pressure, was located approximately 150 feet from the greenhouse cellar. Bar hole tests conducted between the old gas well and the affected building showed no gas leakage from this system was reaching the accident area.

The bare steel main, designated on company records as P-670, had been installed in 1935 with compression couplings. The gas main extends north and south from the accident site and serves other residences along its route. It had never been surveyed to determine if active corrosion conditions existed, and it had never been cathodically protected. The line had been checked quarterly for leak detection by a line walker who did not use a CGI. The line walker depended on his sense of smell and signs of dead vegetation over the right-of-way. No leaks had been previously detected on this pipeline.

One of the Federal regulations relating to corrosion control of natural gas pipelines, 49 CFR 192.457, states:

(b) Except for cast iron or ductile iron, each of the following buried or submerged pipelines installed before August 1, 1971, must, not later than August 1, 1976, be cathodically protected in accordance with this subpart in areas in which active corrosion is found:

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(3) Bare or coated distribution lines. The operator shall determine the areas of active corrosion by electrical survey, or where electrical survey is impractical, by the study of corrosion and leak history records, by leak detection survey, or by other means.

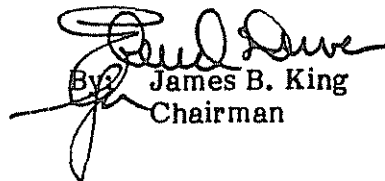
(c) For the purpose of this subpart, active corrosion means continuing corrosion which, unless controlled, could result in a condition that is detrimental to public safety.

Based on this accident investigation, the National Transportation Safety Board has recommended that the Peoples Natural Gas Company conduct an instrument leak survey, conduct a corrosion survey, repair any leaks, and apply cathodic protection where necessary.

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

Monitor, through its State agent, the Pennsylvania Public Utility Commission, the activities of the Peoples Natural Gas Company to survey the 12-inch gas main for leaks and to cathodically protect the gas main where needed. (Class I, Urgent Action) (P-79-34)

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

  
By: James B. King  
Chairman