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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: August 28, 1978

Forwarded to:

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President
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1515 Wilson Boulevard
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SAFETY RECOMMENDATION(S)

P-78-57

On March 29, 1978, the Oklahoma Natural Gas Company (ONG) dispatched a crew to shut off gas service to a shopping center in Oklahoma City at a regulator vault so that customer service lines could be repaired. The crew was unable to close a valve, inside the vault, that was under water upstream of the regulator, so they disconnected the line on the low-pressure side of the regulator at a 2-inch union and plugged the line without first stopping the flow of gas. There was another valve outside the vault; however, it was paved over with asphalt, and the crew did not attempt to uncover it.

On April 24, 1978, ONG assigned a different crew to restore gas service to the shopping center. At 3:50 p.m., c.s.t., two employees were overcome by gas while attempting to reconnect the 2-inch union without first stopping the flow of gas inside the vault. This crew also had not been able to close the valve inside the vault upstream of the regulator, and they did not try to uncover the valve outside the vault. Instead, the men had removed the plug and stuffed the line with a rag. When the rag was pulled out, however, they were unable to align the union properly to start the threads. The escaping gas filled the 3- by 4- by 6-foot vault within minutes and the men were overcome. Three other ONG employees entered the vault through the 19-inch opening to rescue the men and were also overcome; the crew did not have a respirator at the job site.

One man was pulled out of the vault by other ONG workers and was revived at the scene; however, the other four men died of asphyxiation. A mainline valve finally was turned off, and rescue personnel with air packs arrived and removed the asphyxiated men from the vault. The five men involved in connecting the line in the vault had each been employed by ONG an average of 20 years, and three of them were supervisors. Although ONG has trained its men on the use of air-breathing masks, ventilators, and lifebelts, the company does not have written instructions about where this safety equipment shall be used.

The Safety Board concludes that if the ONG workmen had pumped the water out of the vault and made the valve operable, or if they had uncovered the valve outside the vault so that it could be used to stop the flow of gas before connecting the 2-inch union, this accident would not have occurred. The Safety Board has investigated similar accidents involving gas company employees who were overcome by gas while working in a vault. 1/ In many cases, senior gas men who were acquainted with the hazards of natural gas were involved in these accidents.

Therefore, the National Transportation Safety Board recommends that the American Gas Association:

> Advise its member companies of the circumstances of this accident and urge them to review their operating practices, procedures, and regulations related to personnel working in confined areas. This review should include both promulgation of procedures and enforcement activities. (Class I, Urgent Action) (P-78-57).

KING, Chairman, McADAMS, HOGUE, and DRIVER, Members, concurred in the above recommendation.

By: James B. King
Chairman

1/ "Pipeline Accident Report--Equitable Gas Company, Pittsburgh, Pennsylvania, November 17, 1971," (NTSB-PAR-72-2); National Fuel Gas Company accident, Buffalo, New York, March 26, 1977.