



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: MAR - 6 1996

In reply refer to: P-96-2

Honorable D.K. Sharma
Administrator
Research and Special Programs Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

About 6:45 p.m. on June 9, 1994, a 2-inch-diameter steel gas service line that had been exposed during excavation separated at a compression coupling about 5 feet from the north wall of John T. Gross Towers, an eight-story retirement home operated by the Allentown Housing Authority at Allentown, Pennsylvania. The failed UGI Utilities, Inc., (UGI) service line released natural gas at 55 psig pressure, and the escaping gas flowed underground to Gross Towers. The gas passed through openings in the building foundation, entered the mechanical room through floor vents, and migrated to other building floors.

About 6:58 p.m., the natural gas that had accumulated within the building was ignited, causing an explosion. A second explosion occurred about 5 minutes later. At the time of the explosion, many of the residents were out of the building. The accident resulted in 1 fatality, 66 injuries, and more than \$5 million in property damage.¹

The National Transportation Safety Board determines that the probable cause of the explosion and fire was the failure of the management of Environmental Preservation Associates, Inc., (EPAI) to ensure through project oversight compliance with its own excavation requirements and those of the Occupational Safety and Health Administration. (The EPAI had an excavation adjacent to the UGI service line.) Contributing to the accident was the failure of the EPAI workmen to notify the UGI that the line had been damaged and was unsupported.

Contributing to the severity of the accident was the absence of an excess flow valve (EFV) or a similar device, which could have rapidly stopped the flow of gas once the service line was ruptured. Also contributing to the severity of the accident was the absence of a gas detector,

¹For more information, read Pipeline Accident Report *UGI Utilities, Inc., Natural Gas Distribution Pipeline Explosion and Fire, Allentown, Pennsylvania, June 9, 1994* (NTSB/PAR-96-01).

which could have alerted the fire department and residents promptly when escaping gas entered the building.

An EFV would have operated quickly to stop the gas flow into the separated portion of the service line, thereby preventing the accumulation of enough gas to fuel an explosion. The Safety Board concludes that the consequences of the separation could have been significantly reduced and that probably no one would have been hurt or killed had the UGI installed an EFV in the service line.

When Gross Towers was reconstructed after the accident, the UGI did not offer the housing authority an opportunity to have an EFV installed. Even though the UGI voluntarily installs EFVs in some of its service lines, like most of the gas operators nationwide, it does not usually tell customers what an EFV is, what its benefits are, or that a customer can pay to have one installed. The UGI did not install an EFV in the reconstructed Gross Towers service line because it does not routinely assess the merits of installing EFVs in large service lines or in large gas services that incorporate the use of compression couplings installed in the line near the wall of a building.

The Safety Board has previously discussed with the Research and Special Programs Administration (RSPA) the actions it believed RSPA should take to encourage an increase in the use of EFVs. In a September 28, 1995, Safety Board letter to RSPA, the Board addressed RSPA's plans to issue performance standards and customer-notification requirements for EFVs. The Board noted that the Natural Gas Pipeline Safety Act does not limit RSPA's consideration of EFV use by type of customer, size of service pipe, or operating pressure. The Board urged RSPA to address in its performance standards only those parameters that relate to EFV operating capabilities, such as pressure drop, ability to reset after activation, bleed-by flow rate, and so forth, which are addressed in the Manufacturers Standardization Society's recently approved standard "Excess Flow Valves for Natural Gas Service." Further, the performance standards should not address such factors as service-line diameter, operating pressure, or type of customer because RSPA should not limit EFV use on the basis of the customer's classification or the service line's diameter. This point is particularly true when service line operating parameters are similar and commercial or residential service lines can be protected using the same style or model of EFV.

The Board urged RSPA to ensure that information given to customers be accurate, straightforward, and easy to understand. The Board said that RSPA should require operators to give prospective EFV users the names, addresses, and telephone numbers of alternative sources of information, such as EFV manufacturers or consumer advocacy groups.

The National Transportation Safety Board therefore issues the following safety recommendation to the Research and Special Programs Administration:


Require gas-distribution operators to notify all customers of the availability of excess flow valves; any customer to be served by a new or renewed service line with operating parameters that are compatible with any commercially available excess flow valve should be notified; an operator should not refuse to notify a customer because of the customer's classification or the diameter or operating pressure of the service line. (Class II, Priority Action) (P-96-2)

Also, the Safety Board issues Safety Recommendations P-96-3 to the States and the District of Columbia; P-96-4 through -6 to UGI Utilities, Inc.; P-96-7 to Environmental Preservation Associates, Inc.; P-96-8 through -10 to the Governor of the Commonwealth of Pennsylvania; P-96-11 and -12 to the city of Allentown; P-96-13 to the International Association of Fire Chiefs; P-96-14 through -16 to the Department of Housing and Urban Development; P-96-17 and -18 to the Allentown Housing Authority; P-96-19 to the Associated General Contractors; and P-96-20 to the National Utility Contractors Association.

The Safety Board is vitally interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation P-96-2 in your reply. If you need additional information, you may call (202) 382-0670.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT and GOGLIA concurred in this recommendation.

By:


Jim Hall
Chairman