



Log P-313D

**National Transportation Safety Board**  
Washington, D.C. 20594  
**Safety Recommendation**

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**Date:** MAR - 6 1996

**In reply refer to:** P-96-8 through -10

Honorable Tom Ridge  
Governor  
State of Pennsylvania  
Room 225, Main Capitol Building  
Harrisburg, Pennsylvania

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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.<sup>1</sup>

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 (OSHA). (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,

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<sup>1</sup>For 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.

Pennsylvania can reduce the chance of a gas line being damaged by excavation by requiring the excavator to use paint or flags to mark the area that he proposes to excavate before the facility operator marks the locations of buried facilities. Had the area of proposed excavation been marked when the UGI's employee marked the location of the service line, he could have seen how close the service line was to the proposed excavation. Had he known how close the line was, he probably would have told his supervisor that there was a potential problem. The Safety Board believes that Pennsylvania should make its excavation-damage prevention program more effective by requiring that the excavator mark the area to be excavated before the facility operators mark the locations of their facilities.

Several States, including Connecticut and Massachusetts, require all excavators and buried-facility operators to participate in their damage-prevention programs. Also, they have recognized the ineffectiveness of trying to enforce damage-prevention laws through the courts. Connecticut and Massachusetts, as well as other States, have a single agency that has the authority to administer the program for its State. The agency is responsible for overseeing compliance, assessing penalties, and educating related industries and the public about the program's purpose, requirements, and penalties. The two States report that since converting to an administrative program, they have achieved effective compliance with their excavation-damage prevention programs and significant reductions in the amount of excavation-caused damage.

In its first year of operating under administratively enforced sanctions, excavation notifications in Massachusetts increased 100 percent, and the number of pipeline-damage incidents decreased from 1,200 to 300. The State reported that it had collected more than \$300,000 in violation fines, which more than paid for its safety enforcement efforts. The manager of Connecticut's Call Before You Dig, the State's one-call excavation-notification program, reported that improved publicity and enforcement of its damage-prevention program resulted in a 60-percent decrease in the number of excavation-caused accidents.

In Pennsylvania, however, not all excavators and buried-facility operators are required to participate in the damage-prevention program, and enforcing the program is the responsibility of the attorney general's office, an office that must devote much of its time to prosecuting far more serious violations. The Safety Board concludes that Pennsylvania is unable to effectively prevent excavation-caused damage because not all excavators and buried-facility operators are required to participate in the State's program, because excavators are not required to premark proposed excavations, and because the State does not have an effective way of overseeing and enforcing compliance with the program.

The National Transportation Safety Board therefore issues the following safety recommendations to the Governor of the Commonwealth of Pennsylvania:

Require any person or entity that excavates to participate in the State's excavation-damage prevention program. (Class II, Priority Action) (P-96-8)

Designate a single State agency responsible for the State's excavation-damage prevention program; give the agency the power to levy administrative penalties. (Class II, Priority Action) (P-96-9)


Require each excavator to outline the area of the proposed excavation before asking the facility operators to mark the locations of their facilities. (Class II, Priority Action) (P-96-10)

Also, the Safety Board issues Safety Recommendations P-96-2 to the Research and Special Programs Administration; 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-96-11 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 National Transportation Safety Board is an independent Federal agency with the statutory responsibility "to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). 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 recommendations in this letter. Please refer to Safety Recommendations P-96-8 through -10 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 these recommendations.

By:

  
Jim Hall  
Chairman