

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: June 23, 1980

Forwarded to:

Mr. D. L. Bell, Jr.
President
Columbia Gas of Virginia, Inc.
99 N. Front Street
Columbus, Ohio 43215

SAFETY RECOMMENDATION(S)

P-80-56 through -58

At 10:12 a.m., c.d.t., on October 24, 1979, an explosion and fire destroyed the Greene County Clerk's office building and the adjoining Greene County Courthouse, gutted a connecting building which was under construction, and damaged nearby buildings in Stanardsville, Virginia. Thirteen persons were injured and the property damage was extensive. 1/

The Safety Board's investigation revealed that natural gas had leaked from a break in a 1 1/4-inch-diameter, coated, steel service line, which had been snagged by a backhoe that was being used to dig a footing for an addition to the county clerk's office building. The construction contractor, owner of the backhoe, was working for Greene County. The backhoe bucket hit the service line and pulled it about 3 inches out of the building wall. The tension on the pipe at the gas meter caused the pipe to crack at an elbow which connected the gas meter to a valve located inside the wall. An excess flow valve 2/ was not installed on the service line, so the rapid release of natural gas into the basement was not prevented. An excess flow valve closes automatically when the gas flow through the valve reaches or exceeds a predetermined flow rate. If an excess flow valve had been installed on the service line at Stanardsville, the gas flow would have been shut off when the service line was ruptured and this accident would have been prevented.

The service line was operated at 15-psig pressure and was buried under approximately 24 inches of cover. This line was connected to the gas main with a

1/ For more detailed information read, "Pipeline Accident Report--Columbia Gas of Virginia, Inc., Explosion and Fire, Stanardsville, Virginia, October 24, 1979" (NTSB-PAR-80-3).

2/ An excess flow valve is a safety device usually installed at the intersection of the service line with the main line. The valve automatically and immediately will shut off gas flow at the main in the event of a service line rupture, preventing hazardous blowing of gas and preventing loss of pressure in the main until repairs are made and service line pressure restored.

weld-on tapping tee and extended from the main, located under the street pavement, to the inlet side of a valve at the curb, and from there to the inlet side of the customer's meter. The original service line had been replaced in 1962, and the segment from the curb valve to the indoor meter, about 20 feet, was considered by Columbia Gas of Virginia, Inc., (gas company) to be a customer's line and not its responsibility. The county had no records of the installation or renovation dates of this line nor were records kept for its maintenance. The county always contracts for repairs and maintenance of its service lines.

The gas company considered the 28.5-foot service line segment from the main to the curb valve to be under its jurisdiction and ownership. The gas company had records for this line and it also had records for the inspection and operation of the customer's service line. However, although the gas company has maps for gas mains, it does not have maps to indicate the exact location of service lines. The gas company believes its use of card records for the location of service lines is more accurate than maps. The gas company believes that if information from those card records is substituted by maps, the maps will not furnish all the information necessary for the proper identification of a service line. However, the card record submitted to the Safety Board for the service line involved in this accident indicated a different pipe length from that actually measured at the accident site by gas company employees. The measurement taken at the accident site was 28.5 feet for the gas company-owned service line and the card record for the same line showed a 33-foot measurement. The gas company should update its maps or card records by performing a survey of its gas distribution system in Stanardsville.

The Safety Board is aware that there are a number of smaller communities similar to Stanardsville served by the gas company where there are no gas company employees permanently stationed. It should be the responsibility of the gas company to train the local authorities (police, fire, or emergency units) in these communities to know where shutoff valves are located and to know how to operate them.

In this case, Columbia Gas Transmission Corporation personnel, who worked for the parent company of the gas company, were located at a compressor station within 3 miles of the accident site. The pipe was broken by the backhoe at 10 a.m., the gas company's Culpeper, Virginia, office was first notified at 10:10 a.m. of the line break, just before the explosion, and that office telephoned the compressor station to request help at the accident site. However, it was not until 10:45 a.m., 33 minutes after the explosion, that the pipeline system was shut down, and it was not until 10:50 a.m. that the first gas company personnel arrived at the accident site. Earlier arrival in this particular case would not have stopped the explosion or the resultant fire and personal injuries, but under different conditions it might have.

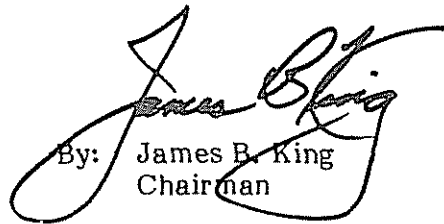
Therefore, as a result of its investigation of this accident, the National Transportation Safety Board recommends that Columbia Gas of Virginia, Inc.:

Update its card records and maps for the gas distribution system in the Stanardsville, Virginia, area to coincide with the actual locations of the area's gas facilities. (Class II, Priority Action)
(P-80-56)

Review its card records and maps to determine whether the inaccuracies found in its Stanardsville, Virginia, records exist in other areas, and if appropriate, expedite action to update the records. (Class II, Priority Action) (P-80-57)

Require in its emergency procedures the training and equipping of local emergency response agencies for the control of gas distribution pipeline failures in areas where qualified gas company employees cannot respond rapidly. (Class II, Priority Action) (P-80-58)

KING, Chairman, McADAMS and GOLDMAN, Members, concurred in these recommendations. DRIVER, Vice Chairman, and BURSLEY, Member, did not participate.


By: James B. King
Chairman