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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: March 10, 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-80-10 and -11

At 10:11 a.m., c.d.t., on October 24, 1979, an explosion and fire destroyed the county clerk's office building and the adjoining courthouse building, gutted a connecting building which was under construction, and damaged the adjacent houses in Stanardsville, Virginia. Thirteen persons were injured and property was damaged extensively.

The Safety Board's investigation revealed that natural gas had leaked from a break in a 1 1/4-inch coated steel service line, which had been snagged by a backhoe which was being used to dig a footing for an addition to the county clerk's office building. The contractor, owner of the backhoe, was working for Greene County, Virginia.

The backhoe bucket hit the service line and pulled it out of the building wall approximately 3 inches. 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 of the wall.

The service line was owned by Columbia Gas of Virginia, Inc. (Columbia) and was approximately 48 1/2 feet long. 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 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, approximately 20 feet, was considered by Columbia for purposes of operation, maintenance and inspection, to be a customer's

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line and not a company-owned facility. This policy is not in compliance with the Federal regulations (49 CFR 192) for the transportation of natural gas and other gas by pipeline. These regulations establish standards for the design, construction testing, operation, and maintenance of gas distribution and transmission lines. Title 49 CFR 192.3 defines a "service line" as "a distribution line that transports gas from a common source of supply to (a) a customer's meter or the connection to a customer's piping, whichever is farther downstream, or (b) the connection to a customer's piping if there is no customer meter." 1/

As a result of its investigation of an explosion that destroyed a one story brick house in Arlington, Texas, on May 29, 1978, the Safety Board issued the following recommendations:

—to the Lone Star Gas Company:

"Change its operating and maintenance plan to include specific procedures to cover the part of the service lines identified under company policy as yard lines 2/ to be the same as for company-owned service lines. (Class II, Priority Action) (P-79-32)"

—to the Materials Transportation Bureau of the U.S. Department of Transportation:

"Instruct its regional offices and State agencies to immediately direct operators who distinguish yard lines 2/ from service lines to incorporate the same inspection, operation, and maintenance of these lines in their operation and maintenance plan as for the company-owned service lines. (Class II, Priority Action) (P-79-33)"

The investigation disclosed that the Greene County authorities did not invite Columbia to preconstruction meetings or to meet onsite with them to specify which lines might be subjected to damage. At the time of the accident, the "one call" system was not in operation in Greene County; however, it is in use in the adjacent counties of Madison and Culpeper and other counties of Virginia. Approximately 44 of the 90 Virginia counties are using the "one-call" notification system at this time.

The most effective method of preventing excavation-caused damage to underground facilities is to notify the operators of utility companies in advance of the proposed excavation work to allow the operators to mark the location of their facilities before excavation begins. The most efficient and convenient method for excavators to make this notification is through a "one-call" system.

1/ A customer meter is the meter that measures the transfer of gas from an operator to a consumer.

2/ The safety recommendation letters transmitting these recommendations identified a "yard line" as the piping from the outlet side of a curb valve to the inlet side of the customer's meter.

A "one-call" system establishes a center to which an excavator can make one telephone call to effect notification to all the participating underground facility operators of the date and location of a proposed excavation project. The center then alerts each operator so that each of their underground facilities near the work area can be located and marked. There are now 106 "one-call" systems operating in 41 States. Some systems provide Statewide coverage. In a 1978 special study, ^{3/} the Safety Board reported that a 1977 survey of "one-call" systems found a markedly downward trend in damage to underground facilities after the "one-call" systems were established. The greatest number of accidents to underground facilities after the "one-call" was established was attributed to excavators who did not notify the operators of underground facilities before undertaking excavation.

Throughout the country, the "one-call" notification system has been effective in reducing accidents and damage involving underground facilities. As an example, in 1972, the first year that the system was used by the gas, electric, telephone, and water utilities serving the two Maryland counties adjacent to the District of Columbia, there were 2,103 incidents of damage to their underground facilities. During 1976, the last year these statistics were recorded by the one-call center, the number of incidents had been reduced by 1,299 -- a reduction of 61.8 percent. In that same period, "one-call" notifications had increased tenfold.

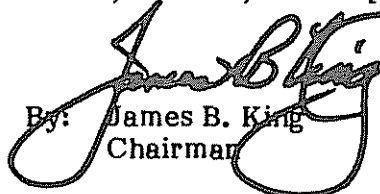
Columbia was approached by the Secretary of the American Public Works Association, Utility Location and Coordination Council, in the spring of 1978, again in the spring of 1979, and again after the accident, and asked if it would be willing to cooperate in the expansion of the "one-call" notification system into Greene County, but it has declined to do so.

The Safety Board believes that similar accidents can be prevented if the parties involved in an excavation project communicate effectively. Therefore, as a result of its investigation of this accident, the National Transportation Safety Board recommends that the Columbia Gas of Virginia, Inc.:

Change its operating maintenance plan to include specific procedures to cover the part of the service lines identified under company policy as 'customer's service lines' in the same manner as company-owned service lines. (Class II, Priority Action) (P-80-10)

In conjunction with other operators of underground facilities in its service area, extend the established 'one-call' notification system to Greene County and other areas of Central Virginia not now covered in the system. (Class II, Priority Action) (P-80-11)

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


By: James B. King
Chairman

^{3/} "Safe Service Life for Liquid Petroleum Pipelines" (NTSB-PSS-78-1).