

NATIONAL TRANSPORTATION SAFETY BOARD  
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Forwarded to:

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SAFETY RECOMMENDATION(S)

P-83-4

At 3:20 a.m., m.d.t., on June 28, 1982, a natural gas explosion demolished a house, killed five persons, and critically injured one person at 827 West 18th Street in Portales, New Mexico; the critically injured person died later at a burn treatment center. The gas service line to the house had been damaged 37 days earlier when a contractor's backhoe pulled up the line during conduit excavation work for the local telephone company. At the same time the line was pulled up at the excavation site, the line was pulled out of a compression coupling buried under the street. The pullout at the excavation site was repaired, but the pullout under the street was not repaired until after this accident because the gas company did not detect it when it happened. 1/

The gas service line involved in this accident was part of a typical residential gas service operation. The 3/4-inch-diameter gas service line extended approximately 63 feet from the 2-inch-diameter gas main to the property line of 827 West 18th Street, where it was connected to the customer's 1 1/4-inch-diameter service line, which extended 30 feet to the gas meter on the front of the house. The gas in the system was transmitted at a 25-psig to 60-psig pressure. The gas main and service line were buried at a depth of 28 inches. The house at 827 West 18th Street was the only one on that block that had gas service from the front. Other gas service lines in the area were connected to a 2-inch gas main in an alley behind the 800 block of West 18th Street.

1/ For more detailed information, read Pipeline Accident Report--"The Gas Company of New Mexico, Natural Gas Explosion and Fire, Portales, New Mexico" (NTSB-PAR-83-1).

In 1966, the gas company replaced an old 2-inch-diameter gas main along West 18th Street with a new, coated, wrapped, and cathodically protected 2-inch-diameter steel main. At that time, the bare steel 1 1/4-inch-diameter service line to 827 West 18th Street was replaced with a new 3/4-inch-diameter, coated, and wrapped steel line. The old line was abandoned in place, and the new line was connected with a compression coupling to the existing 1 1/4-inch customer service line at the property line. Later in 1966, the city of Portales installed a water line in the middle of West 18th Street, and to facilitate the construction of the water line, the city asked the gas company to cut the gas service line to 827 West 18th Street. When the water line installation was completed, the gas company reconnected the gas service line by installing two compression couplings and reconnecting the service line. The area was then backfilled, and the road surface was repaved.

The contractor stated that he had visited the gas company to look at maps and to identify locations where the proposed conduit crossed the gas main. The contractor also stated that the gas company told him that he would not encounter any gas lines along West 18th Street until he began to excavate west of South Avenue I. The contractor stated that gas company personnel and telephone company personnel stopped by several times each day to talk and observe the work he was performing.

The contractor stated that a gas company employee had informed him earlier that there were no gas lines in the 800 block of West 18th Street between Golden Acres Road and South Avenue I, and that all service lines for the residential housing in that block were run from the alley behind and not from the front of the property on the street. The gas company has denied that the gas company employee gave the contractor such information.

The maps for the gas mains in Portales are aerial photos of the city which show only the gas mains. The gas company does not enter its gas service lines on these aerial maps. In its investigations of pipeline accidents in Greenwich, Connecticut, on May 25, 1977, in Williamsport, Pennsylvania, on January 25, 1977, and in Mansfield, Ohio, on May 17, 1978, the Safety Board found that the inaccuracy of, or the lack of, system maps caused or contributed to the accidents.

The gas company's Operating and Maintenance Plan, "Operations Mapping, 671.7," states that maps shall be kept in detail and up to date. Contrary to this specific direction, however, maps were not available showing the location of the service line to 827 West 18th Street or any other service line in that area. If the gas service line to the house at 827 West 18th Street had been shown on the gas company maps, presumably it would have been pointed out to the contractor and marked. This lack of mapping of service lines prevented the gas company personnel who discussed the conduit excavation project with the contractor and with the telephone company from identifying all of the gas company's facilities on West 18th Street and marking them. Because telephone company personnel and the contractor had met with gas company personnel before and during the project and because these meetings had resulted in precautions taken at locations shown on gas company maps where the conduit crossed the gas main, the Safety Board believes that had the service line to 827 West 18th Street been made known to the contractor and marked at the site before excavation, it too would have been protected from damage, and this accident would not have happened.

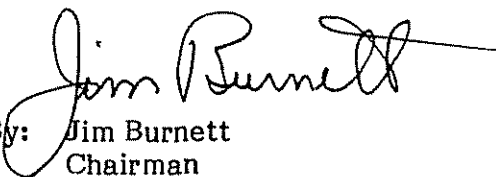
Also, because gas service lines are not shown on the gas company maps, gas company employees relied upon their general knowledge and memory concerning line location. Consequently, the fact that other service lines in the area were connected to a main in the alley behind the 800 block of West 18th Street probably influenced gas company employees to tell the contractor that there were no more lines in his path. This fact probably further influenced gas company personnel on the night of the accident to search for the gas meter in the alley behind the house instead of in the front. While the delay in locating the gas meter in this emergency did not result in any additional loss of life or damage, it demonstrates the importance of having accurate maps or other immediately available records for locating gas facilities.

Therefore, the National Transportation Safety Board recommends that the American Gas Association, the American Public Gas Association, and the National L.P. Gas Association:

Notify its member companies of the circumstances of the accident in Portales, New Mexico, on June 28, 1982, and urge them to include accurate information on their system maps sufficient to identify the existence and location of all their pipeline facilities, and to emphasize to their employees the importance of checking for unseen damage where their facilities have been damaged by excavation operations. (Class II, Priority Action) (P-83-4)

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." (P.L. 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendation(s). Therefore, we would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter.

BURNETT, Chairman, and McADAMS, BURSLEY, and ENGEN, Members, concurred in this recommendation. GOLDMAN, Vice Chairman, did not participate.

  
By: Jim Burnett  
Chairman