

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: October 2, 1980

Forwarded to:

Honorable Howard Dugoff
Administrator
Research and Special Programs
Administration
Department of Transportation
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

P-80-71 and -72

At 11:10 a.m., e.s.t., on February 21, 1980, an explosion and fire destroyed four stores in a shopping complex, severely damaged an adjoining restaurant, and damaged eight cars in Cordele, Georgia. Gas leaking from a 1-inch service line at 22 psig pressure migrated under a concrete block wall, into a service line trench, under a concrete slab floor, and into a jewelry store where it was ignited by an unknown source. Of the eight persons who were injured, three died later as a result of injuries received in the accident. Buildings and nearby automobiles were damaged extensively; no estimate of the dollar loss was made. The gas department construction crew responded promptly to the accident and shut off gas to the affected section of the shopping complex by digging up and closing the tap tee on the gas main. Gas shutoff was completed 40 minutes after the explosion. ^{1/}

On February 18, 1980, a crew from the City of Cordele Gas Department discontinued service and removed the gas meter from a gasoline service station that was being torn down. Since no maps, records, or measurements were available, the crew used a pipe locator to locate the service line and a backhoe and shovel to dig for it. While digging for the service line, the backhoe snagged and broke it at a threaded coupling and pulled it laterally more than 12 inches out of line. The crew removed the remains of the threaded coupling, installed a 1-inch threaded cutoff valve, closed the valve and put a plug in the open end, backfilled the excavation, and left the scene. No further excavation was done to check for possible additional line damage, and no gas leak survey was conducted to check for escaping gas.

^{1/} For more detailed information, read "Pipeline Accident Report--Municipal Gas Department of Cordele, Georgia, Explosion and Fire, Cordele, Georgia, February 21, 1980" (NTSB-PAR-80-5).

During the investigation, a survey revealed heavy concentrations of gas in the south end of the shopping complex, in the parking areas, and around a 6-inch gas main adjacent to the jewelry store. Further investigation revealed that the service line had been pulled from a compression coupling, located approximately 14 feet upstream of the closed valve, when the backhoe snagged it. Natural gas at 22 psig leaked from the broken coupling.

Title 49 CFR 192.615, Emergency Plans, requires that:

"(d) Each operator shall establish a continuing educational program to enable customers, the public, appropriate government organizations, and persons engaged in excavation-related activities to recognize a gas pipeline emergency for the purpose of reporting it to the operator or the appropriate public officials. The program and the media used must be as comprehensive as necessary to reach all areas in which the operator transports gas. The program must be conducted in English and in other languages commonly understood by a significant number and concentration of the non-English speaking population in the operator's area."

Between February 18, 1980, and February 21, 1980, the gas department had not received any complaint of gas odors in the accident area. Interviews conducted by the Safety Board with some injured persons and other witnesses in the accident area revealed that they were not aware of how natural gas should smell. Also, they were not aware of any public education program, initiated by the city of Cordele, which explained the hazards of natural gas or the proper action to take in case of gas odor detection.

The gas department's records show that only 195 gallons of odorant had been injected into the gas distribution system between March and November 1979. Records showing the daily average odorant level were not maintained, as required by 49 CFR 192.625, Odorization of Gas. However, the use of only 195 gallons of odorant in this system over a 9-month period would not be consistent with maintenance of an adequate level of odorization as prescribed by the regulation. Well-odorized gas, leaking at 22 psig pressure from the open end of a 1-inch service line for 3 days before the explosion, should have been easily detected.

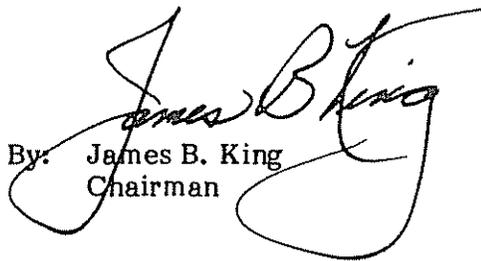
Between 1972 and 1980, the Safety Board investigated 17 pipeline accidents which occurred on municipal gas systems and which caused 25 fatalities and several million dollars in damages. Most of the accidents, like this one, could have been prevented by the application of proper practices and procedures and by adherence to the prescribed regulations.

As a result of this accident, the National Transportation Safety Board recommends that the Research and Special Programs Administration of the Department of Transportation:

Emphasize to its regional field office personnel the importance of requiring all municipal gas operators within their region to comply with 49 CFR 192.615(d). (Class II, Priority Action) (P-80-71)

Survey a representative sample of similar small-sized, municipally-owned, gas distribution systems serving less than 100,000 customers, which are not required to submit written reports of pipeline accidents, to determine their compliance with pipeline safety regulations and safe operating practices. (Class II, Priority Action) (P-80-72)

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


By: James B. King
Chairman