

6. The El Paso Fire Department and the Police Department combined effectively to evacuate the dead and injured, to reroute traffic in the area, and to maintain order.

7. 49 CFR 192.615(d) does not specifically require pipeline operators to use languages other than English in their customer education program.

8. Neither the Federal regulations nor industry standards provide guidance to pipeline operators concerning replacement or protection of disturbed cast-iron piping.

V. PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of the explosion was the ignition of an accumulation of natural gas which had leaked primarily from a broken cast-iron reducer and to a lesser extent from two corrosion leaks in the distribution main. The gas migrated beneath the concrete road surface, permeated the area, entered the apartment complex via the crawl space, and was ignited by an undetermined source.

The uncovering and disturbing of the cast-iron pipe by the gas company in an unsuccessful search for a gas leak 6 days before the accident contributed to the failure of the reducer.

Contributing to the loss of life and the property damage were the failure of the gas company to locate or to confirm positively the existence of a leak, and the failure of both the tenants and the apartment superintendent to notify either the gas company or the fire department of the gas odors which had been detected previously.

VI. RECOMMENDATIONS

The National Transportation Safety Board recommends that:

1. The Office of Pipeline Safety of the Department of Transportation:

(a) Amend 49 CFR 192 to require that cast-iron piping or fittings uncovered during construction or maintenance work in such a way as to weaken their support from below be replaced or reinforced to protect against outside forces which could cause failure. (Recommendation No. P-74-10)

(b) Amend 49 CFR 192.615(d) to require that educational programs intended to enable customers and the general public to recognize and report gas emergencies be printed in English and in other languages which a significant portion of the community served speak and understand. (Recommendation No. P-74-11)

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2. American Society of Mechanical Engineers Gas Piping Standards Committee develop guidelines for pinpointing the location of reported gas leaks. These guidelines should include procedures to determine the degree of hazard that exists as a result of the reported leak. (Recommendation No. P-74-12)

3. The Southern Union Gas Company:

(a) Instruct the maintenance crews concerning the hazards of inadequate support during the filling of recently excavated piping facilities. (Recommendation No. P-74-13)

(b) Improve followup procedures to assure that all reported leaks are located. (Recommendation No. P-74-14)

(c) Initiate a program of instruction for gas customers and the general public concerning the potential hazards of natural gas. This program should include mailing flyers to customers which include names and telephone numbers to be used in emergencies and placing educational material in the news media. This program should, where applicable, be bilingual to reach both the English and non-English speaking communities within the distribution systems. (Recommendation No. P-74-15)

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JOHN H. REED  
Chairman

/s/ FRANCIS H. McADAMS  
Member

/s/ LOUIS M. THAYER  
Member

/s/ WILLIAM R. HALEY  
Member

Isabel A. Burgess, Member, was absent and did not participate in the adoption of this report

February 13, 1974