

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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ISSUED: July 20, 1983

Forwarded to:

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President and Chief Executive Officer
Interstate Power Company
1000 Main Street
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SAFETY RECOMMENDATION(S)

P-83-21

At 11:15 a.m., c.d.t., on July 12, 1983, an explosion followed by an intense fire destroyed a 10-apartment building at 2351B South Lakeview Drive and extensively damaged a 10-apartment building at 2351A South Lakeview Drive in Clear Lake, Iowa. Two Interstate Power Company (gas company) employees received minor injuries, and property damage was estimated to be \$1 million. None of the residents of the buildings was injured, even though many people were in building 2351B at the time of the explosion.

Just before 8 a.m., two residents who had just exited building 2351B smelled a strong odor of gas in front of the building. One resident reported the odor to the gas company by telephone, and the other resident continued his trip to a nearby store. About 8:10 a.m., the two residents again met outside buildings 2351A and 2351B and smelled heavy gas odors in front of both buildings. The resident who earlier had telephoned the gas company again telephoned the gas company and reported that he smelled a "bad gas odor;" he does not recall the precise time of this report.

When the gas company clerk received the first report of the gas odor at building 2315B, the clerk wrote down the report but, at the time of the call, did not enter it into a computer that records the time and develops a work order from the information entered. The computer entry for that day indicates that only one report was received and entered in the computer at 8:48 a.m.

A gas company serviceman, who was in the office at the time the first report was received, left for the location of the reported leak; he said that he arrived between 8:30 a.m. and 9 a.m. He stated that as he got out of his truck, he smelled the odor of gas, and the audible alarm on his gas detector sounded. As he approached building 2351B, the alarm intensified, which indicated a higher concentration of gas. He then talked with the resident who had reported the gas odor and went with him into the basement of the building. The resident stated that he told the serviceman his fear of turning on the electric lights; however, the serviceman advised the resident that the situation was not that serious, so the resident turned on the lights.

After leaving the basement, the gas serviceman used his radio in an attempt to contact by radio the construction and maintenance crew, which was working on the opposite side of Clear Lake. Unable to make radio contact, he contacted the gas company office by radio and advised the clerk that his gas detector was "going wild" and that he needed assistance. The clerk was able to contact the crew at 10 a.m.; the crew arrived at the South Lakeview Drive location at 10:20 a.m.

At this time, gas odors were noted to be strong outside both buildings and were stronger within the 10-foot-wide alley between the two buildings. The crew excavated near the southwest corner of building 2351A and exposed a 2-inch-diameter polyethylene (PE) main, which transported gas at 60 psig, that lay beneath a concrete sidewalk in front of the buildings. The excavated area was tested using a combustible gas indicator (CGI) to determine the amount of gas within the soil. Readings of 100 percent of the lower explosive limit were obtained in test holes over the main and at the sides of the excavation. The crew noted that gas was blowing slightly from the test holes nearer to building 2351A.

At 11:15 a.m., while some of the crewmembers were in the excavation attempting to squeeze the main closed, using a tool made for that purpose, an explosion occurred inside building 2351B, and fire engulfed both buildings. During the 2 1/2 hours before the explosion that gas company employees were aware of the gas odors, none of the employees, including the division superintendent who arrived soon after the construction and maintenance crew, took any action to warn or to evacuate residents within either of the two buildings, or to check for the presence of gas in another nearby building in the same complex.

After the explosion, the crew excavated and exposed the 2-inch-diameter PE gas main at a location upstream and squeezed the main closed to stop the flow of gas to the burning buildings. Later, after the fire was extinguished, the main in front of the buildings was exposed and a 1 1/2-inch-long crack was found in the fusion joint located in front of building 2351B.


The Safety Board's investigation of this joint failure and of other matters relating to this accident is continuing. While the Safety Board has found that the gas company's emergency response procedures contained instructions for the investigation of leak reports, classification of the severity of leaks, and requirements to make the area safe by controlling the escape of gas and by evacuating persons from the affected area, interviews with the gas company personnel responding to this accident revealed that only the division superintendent was knowledgeable about the provisions of the emergency procedures applicable to this emergency. All other employees interviewed indicated that they were not aware of these requirements.

Therefore, the National Transportation Safety Board recommends that the Interstate Power Company:

Immediately instruct its employees, including supervisory personnel, in the gas company's procedures for responding to emergencies, emphasizing the requirement for rapid evacuation of the public from areas exposed to potential danger from leaking gas, for prompt shutoff of gas to failed facilities, and for prompt analysis of leak severity.
(Class I, Urgent Action) (P-83-21)

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 recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and McADAMS, BURSLEY, and ENGEN, Members, concurred in this recommendation.

By: 
Jim Burnett
Chairman