



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: June 7, 2007

In reply refer to: P-07-3

The Honorable Richard J. Bohan, Sr.
Mayor of the Borough of Bergenfield
198 North Washington Avenue
Bergenfield, New Jersey 07621

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The Safety Board is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation addresses written procedures and additional training of emergency responders to address natural gas incidents. This recommendation is derived from the Safety Board's investigation of the pipeline break, explosion, and fire in an apartment building at 30 Elm Street in Bergenfield, New Jersey, on December 13, 2005, and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the Safety Board has issued six safety recommendations, one of which is addressed to the Borough of Bergenfield. Information supporting this recommendation is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

On December 13, 2005, at 9:26 a.m., an apartment building exploded in Bergenfield, New Jersey, after natural gas migrated into the building from a damaged pipeline. Safety Board investigators found a break in a 1 1/4-inch steel natural gas distribution service line that was operating at 11 1/2 pounds per square inch, gauge. The break occurred at an underground threaded tee connection downstream from where excavators were removing an oil tank that was buried under the asphalt parking lot adjacent to the building. The break occurred, under the parking lot, about 7 feet 4 inches from the building's wall. Three residents of the apartment building were killed. Four residents and a tank removal worker were injured and transported to hospitals.¹

The National Transportation Safety Board determined that the probable cause of the December 13, 2005, natural gas explosion and fire in Bergenfield, New Jersey, was the failure of

¹ For additional information, see *Natural Gas Service Line Break and Subsequent Explosion and Fire, Bergenfield, New Jersey, December 13, 2005*, Pipeline Accident Brief NTSB/PAB-07/01 (Washington, DC: NTSB, 2007).

the American Tank Service Company to adequately protect the natural gas service line from shifting soil during excavation, which resulted in damage to the service line and the release and migration of natural gas into the apartment building. Contributing to the accident was the failure of the Public Service Electric and Gas Company to conduct effective oversight of the excavation activities adjacent to the gas service line and to be prepared to promptly shut off the flow of natural gas after the service line was damaged. Contributing to the casualties in the accident was the failure of the Bergenfield Fire Department to evacuate the apartment building despite the strong evidence of a natural gas leak and the potential for gas to migrate into the building.

The Bergenfield Police and Fire Departments arrived about 8:54 a.m. Within a few minutes, they controlled the site by limiting access. The call to which they responded reported a gas line leak. The fire chief directed that the Public Service Electric and Gas Company (PSE&G) be notified of the incident after he arrived on scene. About 9:22 a.m., a PSE&G service technician arrived on scene. The technician attempted to close the curb valve to shut off the gas, but he was unable to apply enough force to close it. In a postaccident interview, the service technician said that as he approached the building to investigate the gas leak, an American Tank Service Company (American Tank) crewmember told him to not get too close to the trench because it had already collapsed. The service technician said that he had seen a piece of asphalt that had fallen into the trench. The service technician, using a portable gas detector, detected a positive gas reading just inside the boiler room doorway of the apartment building. He started moving away from the building as it exploded at 9:26 a.m.

The fire chief and a fire official said that they did not hear a leak or smell gas at the excavation; however, the fire chief knew a gas leak had been reported. The Safety Board believes that the circumstances of this accident should have prompted actions to determine whether natural gas could be accumulating in the building and to evacuate people from the building. Had the evacuation promptly commenced at this time, there would have been significant time to evacuate the residents and crewmembers. Therefore, it is possible that all of the residents could have been safely evacuated, and the American Tank crew could have moved away from the area before the explosion.

Effective July 5, 2005, the State of New Jersey improved its written course material regarding natural gas hazards for Firefighter I training. The new material is in the *Firefighter's Handbook: Essentials of Firefighting and Emergency Response—New Jersey Edition, and Addendum*. In this handbook, Section D, Chapter II, "Recognizing and Avoiding the Hazards of Natural Gas and Carbon Monoxide," describes the properties of natural gas, the natural gas delivery system, natural gas detection, and the response to natural gas emergencies.

The video *Natural Gas: Recognizing and Avoiding the Hazards*, which was produced with the cooperation of several companies and government agencies in New Jersey, including the PSE&G, is also included as part of the Firefighter I course. All newly hired career and volunteer firefighters in the State of New Jersey must take this course; however, there is no requirement for recurrent training in natural gas safety and emergency response.

According to the fire chief, the Bergenfield Fire Department does not have written procedures for natural gas incidents, and it relies heavily on the assistance of the PSE&G in determining whether to evacuate a structure. However, as seen in this accident, a PSE&G crew

will likely not arrive at the scene of a gas leak as quickly as emergency responders. The Safety Board concludes that Bergenfield emergency responders need to be prepared to assess situations involving gas leaks and to have written operating procedures for responding to natural gas incidents and emergencies.

Therefore, the National Transportation Safety Board makes the following safety recommendation to the Borough of Bergenfield:

Establish and implement written operating procedures for responding to natural gas incidents and emergencies. (P-07-3)

The Safety Board also issued safety recommendations to the Pipeline and Hazardous Materials Safety Administration, the New Jersey Department of Community Affairs, the Public Service Electric and Gas Company, the American Tank Service Company, and the International Association of Fire Chiefs. In your response to the recommendation in this letter, please refer to Safety Recommendation P-07-3. If you need additional information, you may call (202) 314-6177.

Chairman ROSENKER, Vice Chairman SUMWALT, and Members HERSMAN, HIGGINS, and CHEALANDER concurred in this recommendation.

[Original Signed]

By: Mark V. Rosenker
Chairman