

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

SP-20  
Log P.222

ISSUED: March 24, 1983

Forwarded to:

Mr. Donald J. Heim  
President  
Washington Gas Light Company  
1100 H Street, N.W.  
Washington, D.C. 20005

SAFETY RECOMMENDATION(S)

P-83-8 and -9

On October 29, 1982, Washington Gas Light Company dispatched a three-person crew, consisting of a crew leader, a crew mechanic, and a helper mechanic, to make three service line extensions in a new housing development at Burke, Virginia. The extensions were to be made without shutting off the flow of gas in the main.

About 10:30 a.m., the crew arrived at the work site and connected the service line for residence No. 10027 (see figure 1) to an existing service line stub. After making this connection, the crew was to install a branch service line to residence No. 10023 from the service line connected to the house next door, No. 10025. Using hand tools, a hole 30 inches deep was excavated to expose the plastic service line. The service line was cut, and the end of the service line segment which contained gas under pressure was sealed with a cap. The installation required that a branch tee connection be installed in the service line to No. 10025 to allow No. 10023 to be served from the same service line. A check of the service truck disclosed that the appropriate compression tee was not available at the job site; by radio, the crew leader called the foreman and advised him that a branch tee was needed. While waiting for the requested fitting, the crew began work at residence No. 10002.

When the foreman arrived with the branch tee, the crew mechanic volunteered to install the tee on the service line to No. 10025. Neither the foreman nor the crew leader advised against this action, and the crew leader and helper mechanic continued working at residence No. 10002. After a few minutes, the crew leader looked up and did not see the crew mechanic. He walked to No. 10025 and found the crew mechanic face down inside the excavation with gas escaping at 18 psig from the service line. He pulled the crew mechanic from the excavation and tried to revive him by calling his name and slapping his face. When this action did not revive the crew mechanic, the crew leader ran to his truck and called the gas company dispatcher. Meanwhile, the helper mechanic arrived at the excavation site. Both the crew leader and the helper mechanic had attended company cardiopulmonary resuscitation (CPR) training, but neither attempted to use this means to revive the crew mechanic. About 4 to 5 minutes later, a rescue squad arrived and, after attempting to revive the crew mechanic, transported him to the hospital, where he was declared dead.

After removing the crew mechanic from the excavation, the crew leader and helper mechanic noticed that the compression tee was partially installed. One downstream connection was completed; the other downstream connection had been made, but the retaining nut was only hand-tight. The upstream connection had not been made, and the cap had been removed from the portion of the service line under pressure. Company

procedures allow work to be performed on lines containing gas under pressure and, for the installation being undertaken, a pressure up to 55 psig was permissible. Company procedures also require that (1) as a means to reduce the time an employee works in a hazardous environment, the nonpressurized connections be completed before the cap on the line under pressure is removed for making the final connection, and (2) when performing work on lines containing gas under pressure, at least two employees be present, with one observing the work and available to rescue the employee performing the work if necessary.

Company records reflect that each crewmember had received a combination of on-the-job and classroom training sufficient to qualify him to perform his assigned duties in accordance with company procedures. The company evaluates the effectiveness of the classroom training through an employee testing program.

Employee actions in this accident demonstrate that these crewmembers did not follow company procedures and did not apply training received -- (1) the crew leader and the crew mechanic both failed to comply with the requirement that two employees be present when working on lines containing gas under pressure; (2) the crew mechanic did not follow explicitly the installation procedures for installing the compression tee; and (3) neither the crew leader nor the helper mechanic attempted to revive the crew mechanic by employing CPR techniques. This death could have been prevented had a second employee been present while the compression tee was being installed, and the accident may have been prevented had the compression tee installation procedures been followed explicitly.

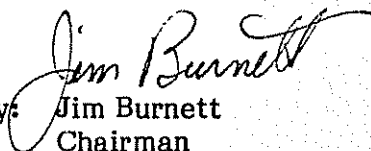
Accordingly, the National Transportation Safety Board recommends that the Washington Gas Light Company:

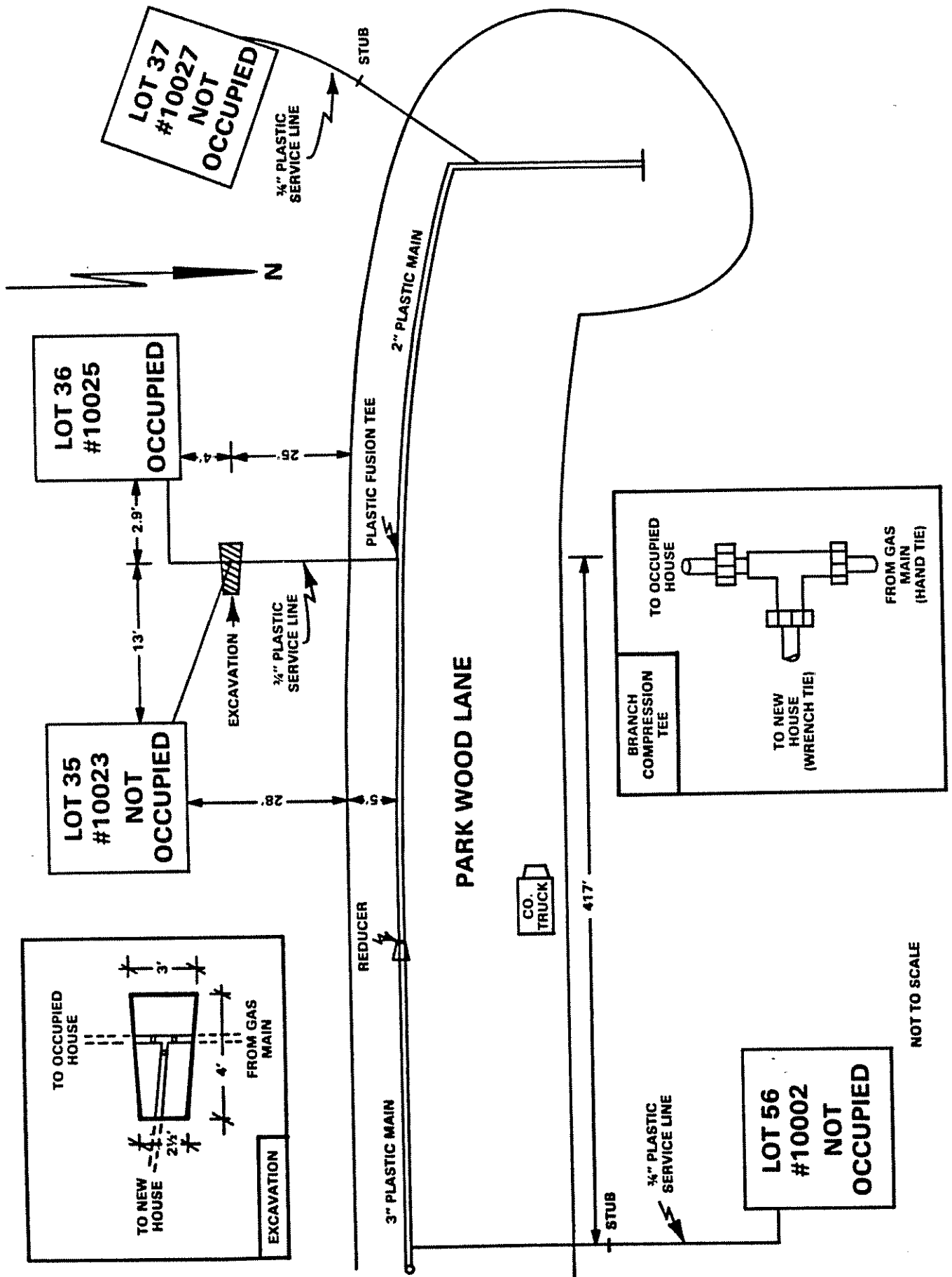
Evaluate its employee training and qualification programs for work on pipelines containing gas under pressure for sufficient emphasis on employees' strictly adhering to company procedures in the interest of employee and public safety, and modify them as necessary. (Class II, Priority Action) (P-83-8)

Emphasize to its supervisory personnel their responsibility to assure that employees under their direction adhere to established gas company safety procedures. (Class II, Priority Action) (P-83-9)

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 our safety recommendations. Therefore, we would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and McADAMS, BURSLEY, and ENGEN, Members, concurred in these recommendations.

  
By: Jim Burnett  
Chairman



NOT TO SCALE

FIGURE 1. PLAN VIEW OF ACCIDENT SITE