

Zog P-316B



## National Transportation Safety Board

Washington, D.C. 20594

### Safety Recommendation

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**Date:** January 6, 1998

**In reply refer to:** P-97-9 and -10

Ms. Nydia E. Rodríguez Martínez, President  
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About 8:30 a.m. on November 21, 1996, because of a propane gas leak, a commercial building in San Juan, Puerto Rico, exploded. Thirty-three people were killed, and more than 80 were injured.

The building was in Río Piedras, a shopping district in San Juan. The structure was a six-story mixture of offices and stores owned by Humberto Vidal, Inc. The company's administrative offices occupied the third, fourth, fifth, and sixth floors, and the first and second floors housed a jewelry store, a record store, and a shoe store.<sup>1</sup>

The National Transportation Safety Board determines that the probable cause of the propane gas explosion, which was fueled by an excavation-caused gas leak, in the basement of the Humberto Vidal, Inc., office building was the failure of San Juan Gas Company, Inc., (SJGC) to oversee its employees' actions to ensure timely identification and correction of unsafe conditions and strict adherence to operating practices and the failure of the SJGC to provide its employees with adequate training.

Also contributing to the explosion was the failure of the Research and Special Programs Administration/Office of Pipeline Safety (OPS) to oversee effectively the pipeline safety program in Puerto Rico, the failure of the Puerto Rico Public Service Commission (PSC) to require the SJGC to correct identified safety deficiencies, and the failure of Enron Corp. to oversee adequately the operation of the SJGC.

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<sup>1</sup> For more information, read Pipeline Accident Report—*San Juan Gas Company, Inc./Enron Corp. Propane Gas Explosion in San Juan, Puerto Rico, on November 21, 1996 (NTSB/PAR-97/01)*.

Contributing to the loss of life was the failure of the SJGC to adequately inform citizens and businesses of the dangers of propane gas and the safety steps to take when a gas leak is suspected or detected.

The PSC did not have written procedures to guide its inspectors on documenting probable safety violations, notifying SJGC management of violations, following up violations, and telling the PSC commissioners when formal action was needed to enforce compliance. Even so, the PSC inspectors did identify, document, and formally notify the SJGC of probable violations. While the SJGC did not totally ignore the notices, its responses indicate that it saw little urgency about making corrections. The PSC's 1992 and 1993 inspections documented 16 and 20 probable violations, respectively; five violations were the same for both years.

At the urging of the OPS in 1993, the PSC levied a small monetary penalty against the SJGC in 1994. In 1995, PSC inspectors documented more than 80 probable violations. In June 1977, the Safety Board held a public hearing about the Río Piedras accident, and at the hearing a PSC inspector testified that he had discussed the 1995 inspection results with SJGC management; however, the PSC could produce no documents proving that it had either notified the SJGC or told the PSC commissioners of any need to take formal action against the SJGC. The PSC did not take any formal action against the SJGC for failing to correct the probable violations; and in 1996, PSC inspectors documented more than 50 probable violations. More than 30 were the same as those documented in 1995. Again, the PSC was unable to produce written documentation showing that the SJGC had been notified; however, a PSC inspector testified that a SJGC representative accompanied the PSC inspectors on all inspections and was informed about all probable violations. Therefore, it would appear that in both 1995 and 1996, SJGC management had the opportunity to learn about the PSC's findings.

On March 13, 1997, the PSC issued an administrative order to the SJGC about the 1996 inspection. The order noted that the SJGC had been told about the areas of non-compliance on the day of the inspection and that the problems included corrosion control, operation and maintenance plans, public education, investigation of failures, maximum operating pressure, patrolling, required tests before restoring gas service, abandoning facilities, deactivating facilities, protecting metal pipe, remedial steps, required notifications, and revision of records. The order stated that the SJGC was required to eliminate the deficiencies. Within 30 days of the order, the SJGC was to send the PSC a copy of its plans for complying; thus the PSC could evaluate the SJGC's progress. On April 3, 1997, an attorney for the SJGC asked the PSC to reconsider its administrative order. On April 30, 1997, after reconsidering, the PSC ordered the SJGC to comply with the administrative order.

The PSC's most recent inspections demonstrate that it has recognized the need to inspect SJGC operations more thoroughly; however, until the explosion, the PSC did not begin to enforce its safety requirements aggressively. After the explosion, the PSC ordered the SJGC to comply with its administrative order, but it did nothing to make the SJGC resolve the probable violations the PSC had identified in 1995.

The Safety Board concludes that the lack of written guidance for PSC inspectors on documenting probable violations, on formally notifying the SJGC, on doing timely followups to

determine whether violations have been corrected, and on telling the PSC commissioners when there is a need for formal action to enforce compliance contributed to poor communications among PSC staff, its commissioners, and SJGC management. The lack of effective program management likely contributed to the ineffective use of PSC enforcement capabilities and may have contributed to the failure of Enron and the SJGC to correct deficiencies. The Safety Board believes that the PSC must develop written procedures to guide its staff's actions if it is to ensure that monitoring will be effective, that the SJGC will be notified of its probable violations, and that the commissioners will take prompt, aggressive enforcement steps if the SJGC fails to make timely corrections in its operations.

Another factor in this accident was the SJGC's method of handling abandoned gas lines. The Humberto Vidal building was on the corner of José de Diego and Camelia Soto. Before the accident, more than 20 pipes and conduits were beneath Camelia Soto, some meant for future use, some being used, and others that had been abandoned. The investigators found that many of the abandoned pipes and conduits had not been plugged or otherwise sealed, and combustible-gas indicator tests showed that escaping propane gas had probably flowed along one or more of the active and abandoned pipes and conduits under Camelia Soto until it reached the HV building.

During the investigation, investigators found several buried facilities for which the maps and related records were nonexistent, out of date, or incomplete. For 2 days, the SJGC was unable to find its drawings of the plastic gas line under Camelia Soto, and some records it produced of gas service lines in the area were not fully descriptive. Additionally, no one was able to locate any records that showed the purpose or ownership of the 2-inch-diameter plastic conduit found in contact with the gas service line under the street that was parallel to José de Diego.

Therefore, the National Transportation Safety Board issues the following recommendations to the Puerto Rico Public Service Commission:

Develop written procedures to guide pipeline inspectors in assessing the compliance of gas pipeline operators with pipeline safety requirements, in documenting probable violations, in notifying gas pipeline operators of probable violations, and in recommending to the commissioners any formal action that may be required to obtain prompt compliance. (P-97-9)

Require that San Juan Gas Company, Inc., take action necessary to ensure that abandoned pipelines are properly disconnected, purged of propane, and adequately secured to prevent the transmission of flammable vapors and gases, and to ensure that abandoned pipelines are properly identified on maps. (P-97-10)

Also, the Safety Board issued Safety Recommendations P-97-5 to the U.S. Secretary of Transportation, P-97-6 through -8 to the Research and Special Programs Administration, P-97-11 and -12 to Enron Corp., and P-97-13 to Heath Consultants, Inc.

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" (Public Law 93-633). The Safety Board is vitally interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendations P-97-9 and -10 in your reply. If you need additional information, you may call (202) 314-6468.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.

  
By: Jim Hall  
Chairman