

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: February 26, 1981

Forwarded to:
Honorable Howard Dugoff
Administrator
Research and Special Programs
Administration
U. S. Department of Transportation
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

P-80-89 and -90

At 9:50 a.m., on January 30, 1980, an 8-inch-diameter, refined petroleum products pipeline owned by The Pipelines of Puerto Rico, Inc., and operated by the Shell Oil Company (Puerto Rico) Ltd. (Shell) was struck and ruptured by a bulldozer during maintenance work on a nearby waterline in the Sector Cana of Bayamon, Puerto Rico, about 10 miles southwest of San Juan. Gasoline from the rupture sprayed downhill and ran off into a small creek. About 1 1/2 hours later, the gasoline vapors were ignited by an undetermined source and exploded; the subsequent fire killed one person and extensively damaged 25 houses and other property. 1/

Earlier that morning, an employee of the Aqueduct and Sewer Authority of Puerto Rico had been using a pavement breaker 2/ during repair work on a 6-inch-diameter waterline. Unable to remove a cement anchor that supported the waterline with the pavement breaker, an Aqueduct and Sewer Authority employee at the site requested help from Highway Authority of Puerto Rico personnel who were working nearby. The Highway Authority contractor moved a bulldozer-ripper 3/ to the site. About 9:50 a.m., the ripper struck and punctured the pipeline which was located approximately 3 inches below the waterline.

The pipeline, constructed from 1965 through 1967, is owned by Shell, Texaco, Inc., and the Commonwealth Oil Refinery of Puerto Rico (CORCO). The longest pipeline system on the island of Puerto Rico, it extends 78.2 miles from the Guayanilla Pump Station in the CORCO Refinery to the Catano dock and terminal in San Juan. An additional 9.3 miles of 6-inch-diameter pipeline extends from the Catano terminal to the fuel storage area at the San Juan International Airport. Approximately 99 percent of the pipeline lies within the rights-of-way of main public roads and main city and town streets. Most of the pipeline is buried with about 3 feet of cover. It is exposed at 79 locations along its route where it crosses bridges and culverts and where it could not be buried due to rocky terrain or the depth and narrowness of creekbeds. The pipeline crosses and recrosses these roads and highways many times in its 78-mile length.

1/ For more detailed information, read "Pipeline Accident Report--The Pipelines of Puerto Rico, Inc., Petroleum Products Pipeline Rupture and Fire, Bayamon, Puerto Rico, January 30, 1980" (NTSB-PAR-80-6).

2/ A pavement breaker is a hydraulic or air-operated piece of equipment used to break or fracture pavement.

3/ A ripper is the name given to a bulldozer which has as a part of its excavation equipment a heavy, metal, extendable tooth resembling a plow.

It appears that the pipeline company's parent companies furnish satisfactory pipeline safety training, especially for pipeline corrosion control, and have acceptable training programs for their professional staff in Puerto Rico. However, the Public Service Commission (PSC) of Puerto Rico lacks an effective training program for its employees. The PSC staff has limited or no experience in the operations of a petroleum products pipeline. On October 16, 1973, and again on January 14, 1980, the Office of Pipeline Safety Operations of the U.S. Department of Transportation (DOT) suggested that the PSC send its pipeline personnel to training courses on the safety evaluation of pipeline facilities at the DOT's Transportation Safety Institute in Oklahoma City, Oklahoma. Half of the total costs for such training courses are paid by the Federal government. As yet, no personnel from the PSC have been assigned to these pipeline safety courses. Participation in these courses or other courses could provide PSC personnel with valuable training in pipeline safety and would assist them in properly evaluating the pipeline facilities of Puerto Rico.

For many years, the owners of underground facilities throughout the United States have been troubled with damage to their facilities as a result of third-party activity and other outside forces. The underground utility industry, recognizing the seriousness of the excavation damage problem, has developed, implemented, and publicized many programs and procedures to reduce the number of these underground contacts and the subsequent public safety hazard. However, The Pipelines of Puerto Rico, Inc., does not have a written damage prevention program and the PSC has not encouraged the development of such a program. There is no "one-call" system operating in the accident area or in any other area on the island of Puerto Rico, and there are no local or Commonwealth laws requiring excavators to notify utilities of planned excavations.

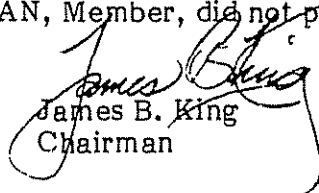
On November 15, 1979, the DOT's Materials Transportation Bureau (MTB) published in the Federal Register a Notice of Proposed Rule Making (NPRM) to amend 49 CFR 192 to require each gas pipeline operator to implement a damage prevention program. However, the MTB has not proposed making similar changes in 49 CFR 195 for liquid pipelines. This NPRM shows that the MTB recognizes excavation damage as a major problem and encourages preconstruction meetings, "one-call" systems, and local ordinances to control the problem. The Safety Board, in its February 11, 1980, letter commenting on the NPRM, supported the intent of the rulemaking and offered suggestions to improve the proposed rule. The Safety Board also urged the MTB to promptly develop similar requirements for all liquid pipelines.

Therefore, the National Transportation Safety Board recommends that the Research and Special Programs Administration of the U.S. Department of Transportation:

Amend 49 CFR 195 to include a section similar to proposed 49 CFR 192.614, Damage Prevention Program, to require that all liquid pipeline operators develop, implement, and monitor the effectiveness of an excavation damage prevention program. (Class II, Priority Action) (P-80-89)

Amend 49 CFR 195 to include a section similar to 49 CFR 192.615, Emergency Plans, that will require operators to establish written procedures to minimize the hazards resulting from a liquid pipeline emergency. (Class II, Priority Action) (P-80-90)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and BURSLEY, Members, concurred in these recommendations. GOLDMAN, Member, did not participate.

By: 
James B. King
Chairman