

Ray P-265

SP-20

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: March 6, 1985

Forwarded to:

Mr. E. R. Hoffman
President
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SAFETY RECOMMENDATION(S)

P-85-1 through -3

On February 28, 1984, at 10:30 a.m., c.s.t., a frontend loader, operated by an employee of Pioneer Concrete of Texas, Inc. (Pioneer), struck and punctured an 8-inch-diameter natural gas liquids (NGL) pipeline in Hurst, Texas operated by Mobil Pipe Line Company (Mobil). NGL at 460 psig pressure escaped from the puncture and was ignited while the operator of the frontend loader was backing the loader away from the punctured pipeline. The operator received first- and second-degree burns over 30 percent of his body. Soon after the release of NGL, automatic valves in the pipeline closed to isolate the puncture within a 3-mile segment of the pipeline. The fire extinguished itself at 8:30 p.m. when the NGL within the isolated segment had been consumed. By midmorning of February 29, 1984, the damaged pipe had been removed and replaced, and the pipeline was returned to service.

A part of the 50-foot-wide pipeline right-of-way which Mobil owned paralleled the west boundary of Pioneer's property. Within the right-of-way, Mobil had installed a 16-inch-diameter crude oil pipeline in 1952 and 1953 and an NGL pipeline in 1967. A fence was installed near the west boundary of the right-of-way, but the east side of the right-of-way adjacent to Pioneer's property was not fenced. For three years, at points along its west property boundary, Pioneer had stored clean gravel and sand which were contained partially by retaining walls. Within Mobil's right-of-way, Pioneer had stored waste gravel and sand for a distance of more than 100 feet which was piled 8 to 10 feet high.

On the day of the accident, the frontend loader operator, who had worked for Pioneer about 6 months, was clearing gravel and sand from a ditch within Mobil's right-of-way which lay adjacent to the gravel storage area and Mobil's NGL pipeline. The operator stated that no one had advised him that pipelines crossed under the area in which he operated the loader and that he never had seen any pipeline markers. Markers for both the oil and NGL pipelines were located some 80 to 90 feet south of the location where the NGL pipeline was punctured; however, both were covered partly with debris, and both signs were faded to the extent that the "warning" (required by 49 CFR 195.410(a)(2)) could be read only upon close inspection. The locations of both pipelines also were marked at their intersection with Hurst Boulevard, over 200 feet to the north; however, these markers were not visible to the operator because of the distance, brushwood, and fences; moreover, their "warnings" also were faded. (See figure 1.)

Representatives of Pioneer stated that they have operated the concrete plant about 3 years and during that time they had not been aware of the existence of Mobil's pipelines and had not been contacted by a representative of Mobil. The Pioneer representatives stated that they believed their west property line extended to the fence located beyond the Mobil right-of-way; consequently, they had stored waste gravel and sand on the land.

Mobil performs biweekly aerial patrols to inspect its pipeline rights-of-way and performs walking patrols in congested areas when needed to supplement its aerial patrols. Mobil records indicated that the last aerial patrol before this accident was conducted about 8:30 a.m. on the morning of the accident, and no clearing excavation activities or marker deficiencies were reported within the area of Mobil's right-of-way. According to a Mobil spokesman, records of the walking patrols were made only when excavation or other unusual activity was noted; no record of such an inspection in the area of Pioneer's plant during the previous 3 years was found in Mobil's files. Neither the aerial patrol nor walking patrol forms list those items required to be inspected, nor do they require inspectors to note which items were checked.

A general type of training, including Mobil's Line Patrol Procedures, is conducted for pipeline inspectors; however, other topics besides inspection of pipelines are discussed. Mobil's Line Patrol Procedures states that "the air patrolman shall pay particular attention to construction activities; and when the line is walked, the line walker shall carefully observe spans, railway and highway crossing, etc., which cannot be adequately observed by aerial patrol", and that "conditions requiring immediate attention shall be reported to the supervisor in charge verbally by the quickest communication channel...".

The failure of aerial patrols to detect the storage of waste gravel and sand within Mobil's right-of-way may have been because such storage increased slowly over a period of years. However, Mobil's walking patrols certainly should have noted the 8- to 10-foot-high pile of debris within the right-of-way, the fact that the pipeline markers were being obstructed by debris, and the fact that the pipeline markers were faded to the extent that the "warning" was not legible.

Officials of Mobil stated that Mobil employees routinely contacted landowners adjacent to its pipelines to discuss the location, products transported, and potential hazards of the pipeline. Also, Mobil has a practice of distributing to adjacent landowners calling cards that provide Mobil's emergency telephone number. Mobil does not maintain a record of these contacts.

Mobil's program for notifying landowners adjacent to its rights-of-way concerning the location, product hazards, and emergency notification procedures is ineffective because it has no provision for verifying that all adjacent landowners, in fact, have been notified. The program incorporates no means for identifying each location along its pipeline where persons work or reside and for confirming that occupants or residents along the right-of-way periodically have been given information about its pipelines. Therefore, whether information is provided to all persons along the 1,500 miles of pipeline operated by Mobil in 15 States is dependent solely upon the conscientiousness of area employees. Because Mobil has no means for assessing the effectiveness of the program and the extent to which persons working or residing adjacent to Mobil's pipelines know of the existence and hazards of Mobil's pipelines Mobil's program is unacceptable. The safety problems posed to pipelines as well as to persons residing adjacent to pipelines when the existence of a pipeline is unknown or when the public safety hazards are not understood was discussed fully in the Safety Board's report on a March 15, 1983, pipeline accident at West Odessa, Texas. 1/

1/ Pipeline Accident Report—"Mid-America Pipeline System Liquefied Petroleum Gas Pipeline Rupture Near West Odessa, Texas, March 15, 1983" (NTSB/PAR-84/01).

Federal regulations, 49 CFR 195.401, require each operator to operate or maintain its pipeline systems at a level at least equal to the requirements of Subpart F (sections 195.400 through 195.440). Section 195.402 requires, among other things, that for each pipeline system each operator prepare and follow a manual of written procedures for conducting normal operations and maintenance activities, and that the manual include safety procedures for operating, maintaining, and repairing the pipeline system. Section 195.403 requires that each operator establish and conduct a continuing training program to instruct operating and maintenance personnel on carrying out the operating, maintenance, and emergency procedures established under Section 195.402. Section 195.410 requires that each operator place and maintain line markers over each buried pipeline and that markers must be placed at each public road and railroad crossing and in sufficient number along the remainder of each buried line so that its location is accurately shown. The markers must state in lettering at least 1 inch high, with an approximate stroke of one-quarter inch on a background of sharply contrasting color, the words "Warning" followed by "Petroleum Pipeline" or the type of product being transported, the name of the operator, and a telephone number where the operator can be reached at all times. Section 195.440 requires that each operator establish a continuing educational program to enable the public, appropriate governmental organizations, and persons engaged in excavation-related activities to recognize a hazardous liquid pipeline emergency and to report it to the pipeline operator.

Therefore, as a result of its investigation of this accident, the National Transportation Safety Board recommends that the Mobil Pipe Line Company:

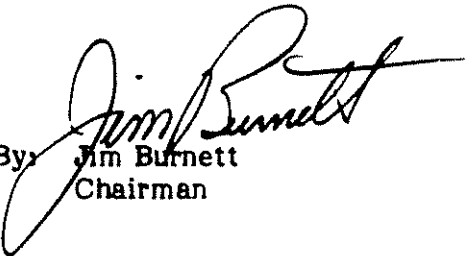
Provide formal instruction for employees who perform inspections of the pipeline rights-of-way covering, at a minimum, the following areas: items to be inspected, methods of identifying deficient conditions, and actions to be taken to correct the deficiencies. (Class II, Priority Action) (P-85-1)

Revise its pipeline patrol inspection program to include every item to be inspected on the inspection form, to require inspectors to note as to each item the conditions found and the date of the inspection, and to list remedial actions taken to correct deficient conditions. (Class II, Priority Action) (P-85-2)

Develop and implement a program to: systematically identify all locations adjacent to its pipeline rights-of-way at which persons work or reside; to inform all persons at these locations of the location of the pipeline, the nature of the materials transported in the pipeline and the associated hazards, and the action to be taken in the event of a pipeline failure or other emergency; and verify periodically the accuracy of the survey and followup. (Class II, Priority Action) (P-85-3)

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 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 recommendations in this letter.

Burnett, Chariman, Goldman, Vice Chairman, and Bursley, Member, concurred in these recommendations.


By: Jim Burnett
Chairman