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**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.**

ISSUED: February 26, 1980

Forwarded to:

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Manager
Orange County Drainage District
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SAFETY RECOMMENDATION(S)

P-80-5 through -7

On August 20, 1979, a bulldozer operated by the Orange County Drainage District, Orange, Texas, began to clean a farm drainage ditch with a generally north-south alignment. After making several passes across the ditch, the operator headed the bulldozer south along the length of the ditch. At 2:15 p.m. the corner of the blade cut into a propane line, owned by the Cities Service Pipe Line Company, which crossed beneath the ditch in an east-west direction. Propane at 350 psig escaped and was ignited within seconds. The resulting fire killed one person and injured another, and caused considerable property damage.

A low-pressure alarm was received in Sour Lake, Texas, and a manual valve was closed at this upstream station 10 minutes after the rupture. At the same time, a remotely operated valve, 64.9 miles downstream at Lake Charles, Louisiana, was closed to prevent backflow. The break was then located by aerial surveillance, and nearby workers were dispatched to close block valves which isolated a 16.5-mile section containing the break. The upstream valve was closed at 2:58 p.m., and the downstream valve was closed at 3:20 p.m. A contractor's crew was summoned from Houston to set stopples on either side of the rupture. An existing stopple installation was reused 4.6 miles upstream and this stopple plug was in place by 3 a.m. on August 21, 1979. A new stopple installation was made at a safe distance from the fire, 0.34 mile downstream of the rupture. This stopple was in place at 7:46 a.m.

The 12-inch O.D. 0.25 w.t. steel pipeline was installed in 1944. The pipeline transports hydrocarbon product between Mont Belvieu, Texas, and Lake Charles, Louisiana. About 6 inches of dirt covered the line where it passed beneath the drainage ditch, reportedly constructed during the 1930's. This pipeline was installed before Federal requirements for depth of burial were imposed and before industry depth codes were formulated.

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The 12-inch propane pipeline and a parallel, 20-inch, oil pipeline, which was 9 feet away, were both clearly marked by signs and a fence 70 feet from the rupture. The cleared right-of-way was visible both east and west of the accident site. Also, the operator's pipeline markers were clearly visible at nearby road crossings.

The propane pipeline and the parallel oil pipeline did not appear on the Orange County Drainage District's maps. The surviving drainage district employee maintained that he and the bulldozer operator were not aware of any pipeline in that immediate area and had not seen the markers. The county's policy was to notify the pipeline company when it found demarcation signs and to avoid the area until pipeline company representatives arrived.

A number of fire departments responded to the emergency but did not attempt to extinguish the propane fire because the flow of gas had not been checked and therefore the fire would have reignited. The fire burned out at 1:04 p.m., on August 21, 1979. More than 14,029 barrels (589,218 gallons) of propane escaped from the rupture.

The National Transportation Safety Board investigated a similar accident in Cartwright, Louisiana, on August 9, 1976, and issued Safety Recommendations to the United Gas Pipe Line Company, to the Jackson Parish Police Jury, to the State of Louisiana, to the Interstate Natural Gas Association of America, to the American Gas Association, and to the American Petroleum Institute. However, in the view of the Safety Board, the similarity between these two accidents warrants additional corrective actions.

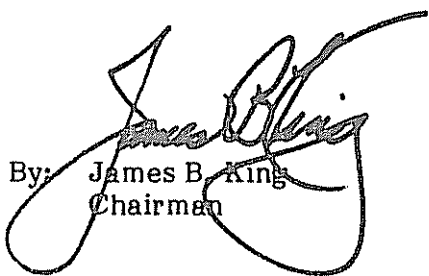
Therefore, the National Transportation Safety Board recommends that the Orange County Drainage District:

Update existing maps of underground facilities and make them available to supervisors of operators of excavation equipment. (Class II, Priority Action) (P-80-5)

Assign to supervisors of excavation equipment responsibility and accountability for assuring that equipment operators are apprised of the precise locations of all pipelines in the areas where the excavation equipment will operate. (Class II, Priority Action) (P-80-6)

Examine locations where ditch-cleaning and road-grading activities are planned for pipeline markers and notify operators at least 2 working days before excavation is begun to permit accurate marking of the facility's location and depth. (Class II, Priority Action) (P-80-7)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in these recommendations.

By: 
James B. King
Chairman