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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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Forwarded to:

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SAFETY RECOMMENDATION(S)

P-80-19 through -22

At 0730 c.d.t., on July 15, 1979, 95 miles southeast of New Orleans, Louisiana, on the Outer Continental Shelf (OCS) in Shell Oil Company's (Shell) South Pass, Block 62, field, a 14-inch Southern Natural Gas Company transmission line operating at a pressure of 900 psig was snagged and ruptured by a grappling hook from the anchor-handling vessel PETE TIDE II, while the vessel was grappling for an anchor pendant from the semisubmersible drilling rig OCEAN QUEEN. The resulting explosion and fire caused the death of two persons and injuries to four others. Damage totaled over \$1,500,000. 1/

The 14-inch steel gas transmission pipeline lay at a depth of almost 300 feet. This upstream segment of the transmission line was 7.9 miles long, including risers, and extended in an easterly direction between Shell Oil Company production platforms SP65B in Main Pass Block 153 and SP62B in South Pass Block 62.

The OCEAN QUEEN was on location for Shell 5,000 feet east-southeast of SP65B and 2,550 feet south of the 14-inch pipeline. On July 1, 1979, Shell surveyors dropped marker buoys for: the drilling location, the eight anchors for the OCEAN QUEEN, and an 8-inch Shell oil pipeline. The 14-inch gas pipeline was not marked because it was not within a 500-foot radius of the anchor pattern as verified by a hazard survey conducted 4 weeks earlier. 2/

1/ For more detailed information, read "Pipeline Accident Report--Southern Natural Gas Company, Rupture and Fire of a 14-inch Gas Transmission Pipeline, Southeast of New Orleans, Louisiana (Offshore), July 15, 1979" (NTSB-PAR-80-1).

2/ Hazard surveys are conducted before establishing a drilling location to determine if pipelines or other hazards are present which could be affected by the intended drilling activities.

The OCEAN QUEEN was towed onto location before daylight on July 2 and anchored. Some of the anchors did not hold when tightened because of soft bottom conditions. This necessitated the use of secondary "tandem," or "piggyback," anchors set beyond each of several primary anchors.

Drilling operations progressed normally until the OCEAN QUEEN was shut down on July 11 because of bad weather. On July 12, as a result of the weather, the OCEAN QUEEN had moved off location, and anchors Nos. 5 and 6 were dragging. Two requests were made and then cancelled by the OCEAN QUEEN for the assistance of Shell surveyors to aid in repositioning the OCEAN QUEEN. Anchor No. 5 was run out an indeterminate distance toward production platform SP65B. Anchor No. 6 was extended what was thought to be 200 feet toward the 14-inch Southern Natural Gas Company pipeline, and then a piggyback anchor was set an additional 600 feet beyond the primary one. Shortly before midnight on July 14, in an attempt to piggyback anchor No. 5, its pennant wire was broken and the marker buoy became detached. Early on July 15, the PETE TIDE II was informed by the OCEAN QUEEN that all was clear between the buoys marking anchors Nos. 4 and 6.

Anchor-handling communications were normally conducted on Shell's radio between the captain on PETE TIDE II and the barge engineer on the OCEAN QUEEN, both of whom were under contract to and under the general supervision of Shell. Only one of the two captains aboard the PETE TIDE II acknowledged that he was aware of the 14-inch gas pipeline. This captain began grappling operations for anchor No. 5 using visual navigation; reference was made to the production platforms, the OCEAN QUEEN, and the marker buoys. All were lighted at night and the PETE TIDE II spotlighted the marker buoys.

Grappling resulted in three "catches," the first of which picked something up for 15 to 20 minutes before it slipped off. The second catch was made at 0300 when the PETE TIDE II lifted something 100 feet and it pulled free in 30 minutes. The captains changed watch, and at 0720 the grapple caught something believed to be the No. 5 anchor chain. It was pulled within 75 feet of the surface.

At 0730 there was a muffled noise, a swell, and the PETE TIDE II's stern went down and water erupted off its starboard quarter. All seven of the anchor-handling crew were on the work deck and either were washed or jumped overboard. Three were taken back aboard the PETE TIDE II and a work boat arrived within minutes and picked up two others. Two persons are missing and presumed dead after the U.S. Coast Guard discontinued the search which lasted until midafternoon.

On Shell's production platform, SP65B, a high/low pressure alarm sounded and flashed when line pressure dropped from 900 psig to 700 psig. This shut down the compressor automatically and vented the gas. A check valve on the downstream production platform, SP62B, closed automatically to prevent backflow of the gas into the failed pipeline segment.

A break was later located in the 14-inch pipeline 2,674 feet east of the production platform, where 80 feet of pipe had folded back; another break was later located at a depth of 216 feet on the platform's riser.

The 8-inch Shell oil pipeline, which was within the OCEAN QUEEN's anchor pattern and the PETE TIDE II's grappling pattern, was also damaged, resulting in a 50-barrel oil spill.

The National Transportation Safety Board concludes that the current practice for marking hazards was inadequate, and that snagging the pipeline could have been avoided and the accident could have been prevented with proper marking and communication.

Therefore, the National Transportation Safety Board recommends that the Shell Oil Company:

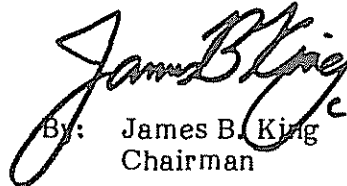
Revise its policy regarding pipeline marking in the vicinity of anchor patterns to provide a radius of protection which takes into account all potential anchoring configurations. (Class II, Priority Action) (P-80-19)

Revise the maps, sketches, or diagrams accompanying the prognosis provided to personnel operating contract mobile drilling rigs in the vicinity of submarine pipelines and other known hazards to show precisely their location and distance from the rig. (Class II, Priority Action) (P-80-20)

Require that a surveyor be on location to direct any changes in anchor position which may exceed the established margin of safety. (Class II, Priority Action) (P-80-21)

Require preconstruction meetings between all parties engaged in each offshore drilling, pipelaying, and associated activity, and advise all parties as to the location of submarine pipelines and other known hazards. (Class II, Priority Action) (P-80-22)

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


By: James B. King
Chairman