

P-182 AI-4

# NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: August 26, 1981

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Forwarded to:  
Mr. Robert O. Anderson  
Chairman and Chief Executive Officer  
Atlantic Richfield Company  
515 South Flower Street  
Los Angeles, California 90071  
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SAFETY RECOMMENDATION(S)  
P-81-33

About 6:25 p.m., on December 1, 1980, a pipeline transporting naphtha ruptured under the road at the intersection of 28th Street and Gale Avenue in Long Beach, California. Escaping product under high pressure blew a hole through the pavement and sprayed into the air up to 20 feet and then flowed into the gutters. Moments later, the product ignited by an undetermined source. The ensuing flames reached a height of approximately 70 feet. As a result of the fire, 5 persons were injured, 1 house was destroyed, 11 houses sustained moderate to severe damage, and 11 motor vehicles were destroyed. 1/

On November 27, 1980, the Four Corners Pipe Line Company transported naphtha through line No. 8 between the Marlex Refinery (Marlex) on Signal Hill and the Atlantic Richfield Watson Refinery (Watson). Upon completing the movement, line No. 8 was shut down with naphtha in the line between Marlex and Watson and crude oil in the line between Huntington Beach and Marlex.

On December 1, 1980, the naphtha in the line between Marlex and Watson was scheduled to be displaced into tank R-15 at Watson by crude oil pumped from the Aminoil and Union Oil facilities. The line was to be shut down after all the naphtha had been displaced from it.

At 4:30 p.m., the Four Corners dispatcher telephoned Watson to "line up" its piping system to be ready to receive the naphtha into tankage. Upon receiving the notice, the Watson shift foreman directed his head pumper and gauger that the movement be made in the following sequence: from line No. 8 through valves 2251, 1285, and 1284 to the 8-inch line No. 30; from line No. 30 across the No. 5 pump dummy manifold to the 4-inch stove oil/diesel line; from the stove oil/diesel line to the 6-inch gas oil line; and then from the gas oil line to tank R-15.

1/ For more detailed information, read Pipeline Accident Report—"Four Corners Pipe Line Company, Pipeline Rupture and Fire, Long Beach, California, December 1, 1980" (NTSB-PAR-81-4).

The Watson shift foreman testified that his gauger was responsible for determining that valves 1285 and 1284 were open and for opening the 6-inch gas oil line to tank R-15 and that the Watson head pumper was responsible for the remainder of the lineup.

The Four Corners dispatcher then radioed a Four Corners gauger at Marlex that as soon as the dispatcher received notification that Watson was ready to receive naphtha, he would instruct the gauger to open valve 2794 at Marlex and, when Watson advised him that Watson was receiving naphtha, the gauger was to close off valve 2793 at Marlex. At the time, the Four Corners control center logbook indicated that valve 2794 at Marlex was closed and that line No. 8 was open from that point through valve 1285 at Watson. Although valves 2251, 1285, and 1284 were within Watson refinery, they were owned by Four Corners and the opening and closing of those valves was to be done only under the direction of the Four Corners dispatchers.

At 5:40, the Four Corners control center received a telephone call from a person they believed to be the Watson shift foreman who advised that Watson was open to receive from line No. 8 through its internal refinery piping into tank R-15. The Four Corners dispatcher requested the Watson shift foreman to notify him when tank R-15 was receiving naphtha. However, when Safety Board investigators asked the Watson shift foreman if he had made that telephone call, he replied: "I did not make it, but I know who did. That was my pumper-gauger, . . . who authorized that."

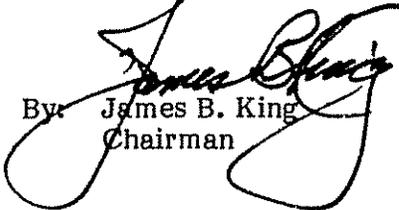
At 6:40, the Watson shift foreman radioed the Four Corners dispatcher and stated that he had just opened valve 1285. The Four Corners dispatcher stated, "I was alarmed because he confirmed that Watson was ready to receive when, in essence, they weren't." The Watson shift foreman disputed the 6:40 conversation, saying that he asked the Four Corners dispatcher at the control center if valve 1285 was supposed to be open, and when informed that it was, he said, "It's open. I just checked it. It's open." The Watson shift foreman said that he personally checked valve 1285 and the complete Watson lineup to tank R-15 at 6:00, some 40 minutes before the time fixed by the control center for that telephone conversation. However, the Watson shift foreman offered no explanation of why he had asked the Four Corners control center whether valve 1285 was supposed to have been opened.

Improvements in operating responsibility should be effected at both Four Corners and Watson. The Watson shift foreman was responsible for insuring that the refinery was properly lined up to receive naphtha from Marlex, and accordingly, gave instructions to the pipeline gauger and head pumper. A movement of naphtha had been made on only three prior occasions. The Watson pumper whom the shift foreman relied upon to perform the lineup of line No. 8 to tank R-15 was experienced; the gauger had only 6 months' experience in that job. However, the shift foreman made no effort to determine whether the lineup was correct until he reported that the refinery was not receiving. Since the naphtha movement was infrequently made at Watson, the shift foreman should have been more explicit in his instructions to his gauger and pumper and should have ascertained positively that the instructions had been followed.

As a result of its investigation, the National Transportation Safety Board recommends that the Atlantic Richfield Company Watson Refinery:

Establish a procedure to require its supervisory personnel to check closely valve lineups in its refinery piping so that similar accidents are prevented. (Class II, Priority Action) (P-81-33)

McADAMS, GOLDMAN, and BURSLEY, Members, concurred in this recommendation. KING, Chairman, and DRIVER, Vice Chairman, did not participate.

  
By: James B. King  
Chairman