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5. Compressor station 180 personnel ordered the wrong valve to be closed because they erroneously analyzed the pressure drop indications and because the line failure alarm did not operate.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of the accident was the failure of the 30-inch pipe because of a hydrogen stress crack propagation at a hardspot in the pipe wall. The hardspot probably had been created during the pipe manufacture.

RECOMMENDATIONS

The National Transportation Safety Board recommends that the Office of Pipeline Safety of the Department of Transportation:

1. Initiate a study, in cooperation with the American Gas Association (AGA) and other interested groups, of the effects on automatic line valve operation of open versus closed crossover valves on looped natural gas transmission systems, and amend 49 CFR 192.179, Transmission line valves, to incorporate the findings. (Recommendation P-75-7) (Class II)
2. Review the use, maintenance, and testing of failure alarms on gas transmission systems and amend 49 CFR 192 to provide for improved warning of pipeline failures. (Recommendations P-75-8) (Class I)
3. Require TRANSCO to:
 - (a) Review its emergency procedures for the entire pipeline system, using system safety analysis techniques, and correct any unreliable or inadequate shutdown processes. (Recommendation P-75-9) (Class II)
 - (b) If necessary, reevaluate, and redesign their compressor station failure alarms on the entire transmission system to prevent a recurrence of the equipment failure. (Recommendation P-75-10) (Class I)
 - (c) Examine the necessity of installing additional pipeline failure alarms on the station recording

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suction and discharge pressure gage, the station recording fuel pressure gage, the station fuel flow gage, or the other pressure-sensitive points. (Recommendation P-75-11) (Class I)

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JOHN H. REED
Chairman

/s/ FRANCIS H. McADAMS
Member

/s/ LOUIS M. THAYER
Member

/s/ ISABEL A. BURGESS
Member

/s/ WILLIAM R. HALEY
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May 28, 1975

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