

Alert Notice

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Date: 11/13/89

CFR Reference(s):

Keyword(s): Check, Valve

Subject:

Results of OPS-conducted investigation of San Bernardino, CA, 05/12/89 train derailment; each gas/liquid operator should test check valves.



US Department of Transportation
Research and Special Programs Administration

400 Seventh Street, SW.
Washington, DC 20590

PIPELINE SAFETY ALERT NOTICE

Alert Notice: ALN-89-02

Date: 11/13/89

To: All Gas Transmission and Hazardous Liquid Pipeline Operators

Subject:

Purpose:

The purpose of this Alert Notice is to advise you of the results of an investigation conducted by OPS of a recent pipeline accident and the relevance of that investigation to the safe operation of check valves. With this notice, OPS is alerting each gas transmission operator and hazardous liquid pipeline operator of the need to test check valves located in critical areas to assure that they close properly.

Richard L. Beam, Director, Office of Pipeline Safety

Notice:

Background:

OPS is alerting all operators of gas transmission and hazardous liquid pipelines to test check valves located in critical areas to assure the proper closure during a pipeline failure. The failure of such valves to close during an incident could increase the risk to the public safety or damage to the environment. A recent pipeline accident has caused OPS to reevaluate the safety of pipeline check valves.

On May 12, 1989, a Southern Pacific Transportation Company freight train derailed in San Bernardino, CA, with some of the engines and rail cars coming to rest over a buried 14-inch products pipeline being operated by Calnev Pipe Line Company. After learning of the derailment, Calnev personnel stopped pumping product through the pipeline to reduce the pipeline pressure in the area of the derailment.

On May 16, 1989, the pipeline was returned to normal operation. However, on May 25, 1989, Calnev's 14-inch products pipeline ruptured in the area of the train derailment releasing gasoline

which sprayed over houses in the adjacent neighborhood and ignited. Two persons were killed, 31 injured, 10 house destroyed, 5 houses were extensively damaged, and 18 automobiles were destroyed. Additionally, about 1,000 people were evacuated during the emergency. Later, Calnev personnel inspected one of the check valves in the 14-inch pipeline and found it in the fully open position. Also, it became apparent during the refill of the pipeline, prior to its return to operation, that at least one and possible two additional check valves did not close, otherwise less volume of product would have been required to refill the pipeline.

While Calnev has many check valves installed in its pipelines, each of the check valves in question were 14-inch "All-Clear Check Valves," model ACB-976, manufactured by Frank Wheatley Industries of Tulsa, OK. The clapper in these valves is hinged on the side rather than at the top. Calnev had not previously experienced a release of product or other circumstance sufficient to demonstrate that these valves functioned properly to prevent backflow of product in the pipeline. Reportedly, maintenance or operational tests of these valves had never been performed since the pipeline began operations in 1970.

In view of the above, operators should take the following actions:

1. Each hazardous liquid pipeline operator that has "All-Clear Check Valves" manufactured by Frank Wheatley Industries or its successor, FWI, Inc., Tulsa, OK, installed in critical locations* in its pipeline systems should test these valves for proper closure and replace any of these valves that fail to close.
2. Each gas transmission and hazardous liquid pipeline operator should test to assure the proper closure of each type of check valve that is necessary for the safe operation of its pipeline system.

In addition, valves in noncritical locations should also be inspected for proper operation at the first opportunity the valves can be by-passed, or otherwise taken out of operational service.

OPS is reviewing its pipeline safety regulations regarding valve maintenance and will conduct a study to determine the feasibility of establishing inspection, maintenance, and test requirements to assure the proper functioning of check valves installed in pipeline systems.

*Although areas that would be designated "critical" will vary between operators, the following are examples of critical locations where check valves installed to prevent backflow should be tested in accordance with this notice:

1. Valves installed to protect an urban populated area.
2. Valves installed to protect an environmentally sensitive area.