



US Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh St. S.W.
Washington, D.C. 20590

AUG - 6 2003

Mr. Jerry Wilhorn
Vice President of Operations
Kinder Morgan Energy Partners, L.P.
500 Dallas Street, Suite 1000
Houston, TX 77002

Re: CPF No. 4-2003-5010H

Dear Mr. Wilhorn:

Enclosed is a Corrective Action Order issued by the Associate Administrator for Pipeline Safety in the above-referenced case. It requires you to take certain corrective actions, including a pressure reduction, with respect to the portion of your hazardous liquid pipeline running from the Tucson Pump Station in Pima County, Arizona to the Phoenix Pump Station in Maricopa County, Arizona designated as "L.S. 6/7/117." Service is being made by certified mail and facsimile. Your receipt of this Order constitutes service of that document under 49 C.F.R. § 190.5. The terms and conditions of this Corrective Action Order are effective upon receipt.

Sincerely,

for

Gwendolyn M. Hill
Pipeline Compliance Registry
Office of Pipeline Safety

Enclosure

VIA CERTIFIED MAIL (RETURN RECEIPT REQUESTED) AND TELECOPY

**DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, DC 20590**

In the Matter of)
)
Kinder Morgan)
Energy Partners, L.P.)
)
Respondent.)

CPF No. 4-2003-5010H

CORRECTIVE ACTION ORDER

Purpose and Background

This Corrective Action Order is being issued, under authority of 49 U.S.C. § 60112, to require Kinder Morgan Energy Partners, L.P. (Respondent) to take the necessary corrective action to protect the public, property, and the environment from potential hazards associated with a failure involving Respondent's hazardous liquid pipeline designated as "L.S. 6/7/117," running from the Tucson Pump Station in Pima County, Arizona to the Phoenix Pump Station in Maricopa County, Arizona (hereinafter, the "affected segment").

On July 30, 2003, a failure occurred on the affected segment within the city of Tucson, AZ resulting in the release of unleaded gasoline in a residential area. The cause of the failure has not yet been determined. Pursuant to 49 U.S.C. § 60117, the Southwest Region, Office of Pipeline Safety (OPS) initiated an investigation of the incident

Preliminary Findings

- On July 30, 2003, at approximately 1:11 P.M. MST, Respondent's hazardous liquid pipeline designated as L.S. 6/7/117 experienced a failure in Pima County, AZ resulting in the release of an estimated 10,000 gallons of unleaded gasoline. The failure occurred at Mile Post (MP) 314.12 in a newly constructed residential area within the city limits of Tucson, AZ. The gasoline showered several single-family homes under construction with gasoline, the nearest of which is located approximately 40 feet away from the pipeline. The nearest inhabited homes are located approximately 210 feet away from the failure site.

- No fires, injuries, or fatalities were reported in connection with the incident. A number of construction workers working nearby were evacuated by the Tucson Fire Department due to the danger presented by the resulting vapor cloud.
- Respondent's L.S. 4/5/6/7/117 hazardous liquid pipeline transports refined petroleum products from its origin at El Paso, TX in a northwesterly direction across New Mexico and terminates at Phoenix, AZ. It's total length is approximately 427 miles.
- The affected segment on which the release occurred extends approximately 123 miles from the Tucson Pump Station located at MP 303.5 to the Phoenix Pump Station located at MP 426.9. Portions of the affected segment are routed through heavily populated areas and cross numerous state and local highways.
- Following the failure, Respondent mitigated the release by shutting down the Tucson Pump Station. In addition, the nearest upstream block valve at MP 313.999 and the nearest downstream block valve at MP 315.604 were closed within approximately 30 minutes of the failure.
- The visual inspection and preliminary investigation indicated the presence of a 18-inch long, 2 ½-inch wide rupture along the longitudinal weld seam at the 3 o'clock position on the pipe. No gouges to the pipe coating or dent-like pipe deformations were detected. The investigation is ongoing and the cause of the failure has not yet been determined.
- The portion of pipe containing the failed section was cut out and replaced with new pre-tested pipe. The pipeline was returned to service at a reduced pressure of 700 psig on August 1, 2003 at approximately 6:00 A.M. MST. Respondent has delivered the section of pipe containing the rupture
- The affected segment was installed in 1955 and was originally constructed of 8-inch nominal diameter, 0.219-inch wall thickness, Grade X-42 pipe electric resistance welded (ERW) pipe manufactured by Kaiser. It has a coal tar coating and is cathodically protected by impressed current. In 1991, three separate sections of the pipe totaling approximately 44 miles in length were replaced with 12-inch diameter pipe.
- The maximum allowable operating pressure of the affected segment is 1440 psig. At the time of the failure, the operating pressure at the Tucson Pump Station discharge point was 1420 psig and the operating pressure at the failure site was estimated by Respondent to be 1400 psig.
- The maximum operating pressure was established by hydrostatic testing in the mid-1950s when the pipeline was first put into service. An internal inspection was performed on the pipeline with a magnetic flux leakage in-line inspection tool in 1996. The results of this internal inspection are unknown.

- OPS issued Alert Notices on January 28, 1988 and March 8, 1989 informing pipeline operators that low-frequency ERW pipe, such as the pipe used to construct the 8-inch portions of the affected segment, was subject to longitudinal weld seam failures caused by the presence of manufacturing defects in the ERW seams that can grow over time. These Alert Notices further advised operators that seam corrosion and cyclic fatigue had been found to have contributed to the growth of these defects and in some cases, operational failures had occurred many months or years after successful hydrostatic testing was conducted.

Determination of Necessity for Corrective Action Order and Right to Hearing

Section 60112 of Title 49, United States Code, provides for the issuance of a Corrective Action Order, after reasonable notice and the opportunity for a hearing, requiring corrective action, which may include the suspended or restricted use of a pipeline facility, physical inspection, testing, repair, replacement, or other action as appropriate. The basis for making the determination that a pipeline facility is hazardous, requiring corrective action, is set forth both in the above referenced statute and 49 C.F.R. §190.233, a copy of which is enclosed.

Section 60112, and the regulations promulgated thereunder, provides for the issuance of a Corrective Action Order without prior opportunity for notice and hearing upon a finding that failure to issue the Order expeditiously will result in likely serious harm to life, property or the environment. In such cases, an opportunity for a hearing will be provided as soon as practicable after the issuance of the Order.

After evaluating the foregoing preliminary findings of fact, I find that the continued operation of the affected segment of Respondent's hazardous liquid pipeline without corrective measures would be hazardous to life, property and the environment. Additionally, after considering the age of the pipe, the proximity of the pipeline to populated areas, the highly combustible nature of the product the pipeline transports, the pressure required for transporting the material, and the lack of any clear indication as to the cause of the failure, I find that a failure to expeditiously issue this Order requiring immediate corrective action would likely result in serious harm to life, property, or the environment.

Accordingly, this Corrective Action Order mandating immediate corrective action is issued without prior notice and opportunity for a hearing. The terms and conditions of this Order are effective upon receipt.

Within 10 days of receipt of this Order, Respondent may request a hearing, to be held as soon as practicable, by notifying the Associate Administrator for Pipeline Safety in writing, delivered personally, by mail or by telecopy at (202) 366-4566. The hearing will be held in Houston, TX or Washington, DC on a date that is mutually convenient to OPS and Respondent.

After receiving and analyzing additional data in the course of this investigation, OPS may identify other corrective measures that need to be taken. In that event, Respondent will be notified of any additional measures required and amendment of this Order will be considered. To the extent consistent with safety, Respondent will be afforded notice and an opportunity for a hearing prior to the imposition of any additional corrective measures.

Required Corrective Action


Pursuant to 49 U.S.C. § 60112, I hereby order Kinder Morgan Energy Partners, L.P. to immediately take the following corrective actions with respect to its hazardous liquid pipeline designated as L.S. 6/7/117, running from the Tucson Pump Station in Pima County, Arizona to the Phoenix Pump Station in Maricopa County, Arizona:

1. Maintain an operating pressure on the affected segment not to exceed 80 percent of the actual operating pressure in effect just prior to the July 30, 2003 failure. Specifically, the pressure may not exceed 1136 psig at the Tucson Pump Station discharge point. Reset the maximum discharge pressure set points on all other pump stations in the affected segment to not exceed 1136 psig. This pressure restriction shall remain in effect until written approval to increase the pressure or return the pipeline to full service is obtained from the Director, Southwest Region, OPS.
2. Within 7 days of receipt of this Order, submit a protocol for mechanical and metallurgical testing of the failed pipe section to the Director, Southwest Region, OPS for prior approval. Provide the Director with the date scheduled for this testing, which OPS may elect to witness. Conduct all mechanical and metallurgical testing of the failed pipe section per the approved protocol. Submit the metallurgical report to the Director within 7 days of receiving it from the metallurgist.
3. Within 30 days of receipt of this Order, develop and submit a written plan with corrective measures for prior approval by the Director, Southwest Region, OPS. The plan must provide for the verification of the integrity of the affected segment, must address all known or suspected factors in the July 30, 2003 failure, and must include:
 - A. the integration of available operational data from metallurgical testing, hydrostatic testing, leak history, repair records, corrosion control records, in-line inspections, changes in pressure cycling, and other historical data for the purpose of performing a comprehensive analysis of all factors causing or contributing to the failure;
 - B. the performance of appropriate repairs or other remedial actions fully addressing all known or suspected factors that caused or contributed to the failure;
 - C. a description of the assessment criteria and methods that will be used in the evaluation and prioritization of any integrity threats that are identified;
 - D. a description of the repair criteria and methods that will be used in undertaking any corrective measures;
 - E. a proposed schedule for completion of the testing and repairs.

4. Submit the plan to: Director, Southwest Region, Office of Pipeline Safety, 2320 LaBranch Street, Suite 2100, Houston, TX 77004. The plan must be revised as necessary to incorporate new information obtained during the failure investigation and analysis actions required by this Order. Submit such plan revisions to the Director for prior approval. The Director may approve plan elements incrementally. Implement the plan as approved, including any revisions to the plan.
5. The Director, Southwest Region, OPS may allow the removal or modification of the pressure restriction set forth in Item 1 upon a written request from Respondent demonstrating that the hazard has been abated and that restoring the pipeline to its pre-failure operating pressure is justified based on a reliable engineering analysis showing that the pressure increase is safe considering all known defects, anomalies and operating parameters of the pipeline.
6. The Director, Southwest Region, OPS may grant an extension of time for compliance with any of the terms of this Order for good cause. A request for an extension must be in writing.
7. The corrective actions required by this Corrective Action Order are in addition to and do not waive any requirements that apply to the affected segment under 49 C.F.R. Part 195, including the integrity management program regulations.

Respondent may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator shall be final.

Failure to comply with this Order may result in the assessment of civil penalties of not more than \$100,000 per day and in referral to the Attorney General for appropriate relief in United States District Court.



Stacey Gerard

h Associate Administrator
for Pipeline Safety

AUG - 6 2003

Date Issued