



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Ave., S.E.
Washington, DC 20590

SEP 13 2007

VIA CERTIFIED MAIL AND FACSIMILE TO: (403) 514-6441

Mr. Hugh Harden
Vice President, Operations
Terasen Pipelines (USA), Inc., c/o Kinder Morgan, Canada, Inc.
300-5th Avenue, SW, Suite 2700
Calgary, AB
Canada
T2P 5J2

Re: CPF No. 3-2007-5027H

Dear Mr. Harden:

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 on the Platte Pipeline System. Service is being made by certified mail and facsimile. Your receipt of this Corrective Action 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,

James Reynolds
Pipeline Compliance Registry
Office of Pipeline Safety

Enclosures

cc: Ivan Huntoon, Director, Central Region, PHMSA

**DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, D.C. 20590**

_____)
In the Matter of)

Terasen Pipelines (USA), Inc.,)

Respondent)
_____)

CPF No. 3-2007-5027H

CORRECTIVE ACTION ORDER

Purpose and Background

This Corrective Action Order is being issued, under authority of 49 U.S.C. § 60112, to require Terasen Pipelines (USA), Inc. (“Respondent”) to take necessary corrective action to protect the public, property, and the environment from potential hazards associated with a failure involving the Platte Pipeline System.

On September 6, 2007, a failure occurred on the Platte Pipeline System near Bellflower, Missouri resulting in the release of crude oil. The cause of the failure has not yet been determined. Pursuant to 49 U.S.C. § 60117, the Pipeline and Hazardous Materials Safety Administration (“PHMSA”) has initiated an investigation of the accident.

Preliminary Findings

- At approximately 4:15 p.m. CDT on September 6, 2007, Respondent’s Platte Pipeline System, as hereinafter defined, failed near the town of Bellflower, Missouri (Montgomery County), resulting in the release of crude oil. The failure site is Mile Post (“MP”) 858.23.
- Respondent estimates that approximately 3,843 barrels (“bbls”) of crude oil were released as a result of the failure. The oil sprayed nearby trees and flowed to an adjacent pond. No injuries, fatalities, explosions, or fires were reported as a result of the failure. Three homes within ½ mile of the failure site were evacuated.
- Following the failure, Respondent initiated an emergency shutdown of the entire Platte Pipeline System running from Casper, Wyoming to Wood River, Illinois. Respondent’s personnel then closed the upstream block valve at Monte Station (MP 851.95) and the downstream block valve at Hock Point (MP 874.25).

- On September 10, 2007, Respondent excavated and removed a 39.1 foot section of pipe containing the failure origin. Respondent transported this pipe joint to a metallurgist for failure analysis.
- The cause of the failure has not yet been determined. A preliminary visual examination indicates an approximately 36-inch long failure along the longitudinal seam of the pipe.
- Respondent's Platte Pipeline System is approximately 932 miles in total length from Casper, Wyoming to Wood River, Illinois and traverses the states of Wyoming, Nebraska, Kansas, Missouri, and Illinois. The Platte Pipeline System traverses populated areas, High Consequence Areas ("HCAs"), public highways, and waterways including the Missouri and Mississippi Rivers.
- The pipeline section on which the failure occurred is composed of 20-inch nominal diameter, 0.344-inch wall thickness ("WT"), Grade X52, single-submerged arc welded ("SSAW") pipe manufactured by Kaiser. It has a coal tar coating and is cathodically protected with impressed current. The pipeline was constructed in 1952. Five sections of the Platte Pipeline System totaling approximately 126.8 miles is composed of Kaiser SSAW pipe.
- The established maximum operating pressure of the pipeline section on which the failure occurred is 1098 pounds per square inch gauge ("psig"), as established by hydrostatic testing in 1992. The actual operating pressure at the time of the accident was 1053 psig as measured at the Monte Pump Station. Respondent estimates that operating pressure at the failure site at the time of the accident was 1051 psig.
- Respondent performed inline inspections of the pipe segments containing Kaiser pipe between 2003 and 2006 using metal loss, geometry, and in some cases crack detection tools. Respondent reports that the 2006 crack detection tool vendor did not report any anomalies at the failure location that met action criteria.
- Since 2003, Respondent's Platte Pipeline System has experienced eight reportable incidents, some of which were spills at tanks or station piping. On February 1, 2006, the pipeline experienced a failure near Casper, Wyoming that was caused by a seam failure. Portions of the Platte Pipeline System were subject to a Hazardous Facility Order following a significant failure near Salisbury, Missouri in 1992 involving Kaiser pipe (CPF 35202H). The cause of that failure involved a lack of fusion in the seam welds and the order noted that the SSAW manufacturing process has never been accepted under API specification 5L.

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 of Title 49, and the regulations promulgated thereunder, provide 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 likely result in 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 Respondent's Platte Pipeline System from Casper, Wyoming to Wood River, Illinois without corrective measures would be hazardous to life, property, and the environment. Additionally, after considering the age of the pipe, prior operational failures, the proximity of the pipeline to HCAs, public roadways, and other waterways, the nature of the product transported, the pressure required for transporting such product, and the ongoing investigation to determine 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 facsimile at (202) 366-4566. Any requested hearing will be held in Kansas City, Missouri or Washington, D.C. on a date that is mutually convenient to PHMSA and Respondent.

After receiving and analyzing additional data in the course of this investigation, PHMSA 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 Terasen Pipelines (USA), Inc. to immediately take the following corrective actions with respect to its Platte Pipeline System:

1. *Operating pressure restriction.* The operating pressure on the segment of the Platte Pipeline System containing Kaiser pipe downstream of Monte Station is not to exceed 80 percent of the actual operating pressure in effect immediately prior to the September 6, 2007 failure. Specifically, the discharge pressure is not to exceed 840 psig at the Monte Station discharge. The operating pressure on the remaining segments of the Platte Pipeline containing Kaiser pipe shall not exceed 80% of the highest pressure experienced during the 60-day period prior to the September 6, 2007 failure. Specifically, the discharge pressure is

not to exceed the following; 947 psig at Casper Station; 954 psig at Douglas Station; 929 psig at Yoder Station; and 932 psig at Salisbury Station.

2. The pressure restriction set forth in Item 1 will remain in effect until written approval to increase the pressure or return the pipeline to its pre-failure operating pressure is obtained from the Director, Central Region.
3. *Testing and failure analysis.* Within 30 days of receipt of this Order, complete mechanical and metallurgical testing and failure analysis of the failed pipe, including analysis of soil samples and foreign materials. The testing and analysis shall be completed as follows:
 - (A) Document the chain-of-custody when handling and transporting the failed pipe section and other evidence from the failure site;
 - (B) Utilize the mechanical and metallurgical testing protocols, including the testing laboratory approved by the Director, Central Region;
 - (C) Prior to commencing the mechanical and metallurgical testing, provide the Regional Director with the scheduled date, time, and location of the testing to allow an PHMSA representative to witness the testing; and
 - (D) Ensure that the testing laboratory distributes all resulting reports, whether draft or final, to the Director at the same time as they are made available to Respondent.
4. Within 45 days of receipt of this order, perform an evaluation to confirm that current operating pressures (including the pressure restrictions above) provide an adequate margin of safety from undetected, resident flaws in the pipeline similar to the one involved in the failure. Make the results of this evaluation available to PHMSA. If the results of any action undertaken pursuant to this Order dictate a reduction in the allowable operating pressure below that imposed by this Order, Respondent must further reduce the operating pressure accordingly.
5. Within 45 days of receipt of this order, conduct an analysis of all pressure transients in the Platte Pipeline System that could have contributed to an accelerated growth of the flaw that failed. This analysis shall include a review of all Supervisory Control and Data Acquisition information and hydraulic information and the development of solutions to enhance the flow profile to prevent damaging transient conditions from recurring in the Platte Pipeline System. Make the results of this analysis available to PHMSA.
6. *Return-to-service plan.* Within 45 days of receipt of this Order, develop and submit to the Director, Central Region for prior approval a written return-to-service plan to rehabilitate or replace the Kaiser sections in the Platte Pipeline System. The return-to-service plan must fully address all known or suspected factors that caused or contributed to the failure and must include, as applicable:

- (A) The integration of the information developed from the actions required by Items 3, 4 and 5 with relevant pipeline system information, including: previous failure investigations, leak history, repair records, corrosion control/cathodic protection records, in-line inspections, hydrostatic testing, changes in pressure cycling, and other relevant operating data for the purpose of performing a comprehensive analysis of the available information associated with the factors that caused or contributed to the failure. The in-line inspection data must be reviewed by an independent in-line inspection log analyst in concert with the vendor. A thorough review will include overlaying the results from the metallurgical examination with data culled from the in-line inspection data;
 - (B) The performance of field testing, inspections, and evaluations to determine whether and to what extent the conditions associated with the failure, or any other integrity threatening conditions, are present elsewhere on the Platte Pipeline System. If seam failure is determined to have caused or contributed to the pipeline failure, field testing must include: (1) hydrostatic testing, including a “spike test” and detailed metallurgical testing of any hydrostatic test failures that occur; or (2) testing by an alternative technology approved by the Regional Director. Any hydrostatic test failures must be metallurgically analyzed. Include a detailed description of the criteria to be used for the evaluation and prioritization of any integrity threats/anomalies that are identified. This description should also include a data subset that identifies latent flaws for long-term observation similar to the one that failed. Make the results of the inspections, field excavations, evaluations, and monitoring available to PHMSA or its representative;
 - (C) The performance of repairs or other corrective measures that fully remediate the condition(s) associated with the failure everywhere along the Platte Pipeline System where such conditions, or any other integrity-threatening conditions, are identified through the evaluation process. Include a detailed description of the repair criteria and method(s) to be used in undertaking any repairs or other remedial actions; and
 - (D) A proposed schedule for completion of the actions required by paragraphs (A) through (C) of this Item.
6. The return-to-service plan shall be submitted to the Director, Central Region, Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration, 901 Locust Street, Suite 462, Kansas City, Missouri 64106-2641. The plan shall be revised as necessary to incorporate new information obtained during the failure investigation and remedial activities undertaken pursuant to this Order. Submit any such plan revisions to the Regional Director for prior approval. The Regional Director may approve plan elements incrementally.
 7. Implement the return-to-service plan as it is approved, including any revisions to the plan.
 8. *Quarterly reports.* Submit quarterly reports to the Regional Director that: (1) include available data and results of the testing and evaluations required by this Order; and (2)

describe the progress of the repairs or other remedial actions being undertaken. The first quarterly report shall be due January 1, 2007.

9. *Documentation of costs.* Maintain documentation of the costs associated with implementation of this Corrective Action Order. Include in each quarterly report submitted pursuant to Item 9, the to-date total costs associated with: (1) preparation and revision of procedures, studies and analyses; (2) physical changes to pipeline infrastructure, including repairs, replacements and other modifications; and (3) spill remediation costs.
10. *Alleviation of pressure restriction.* The Regional Director 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 Platte Pipeline System, or portion thereof, 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.

With respect to each submission that under this Order requires the approval of the Regional Director, the Regional Director may: (a) approve, in whole or part, the submission; (b) approve the submission on specified conditions; (c) modify the submission to cure any deficiencies; (d) disapprove in whole or in part, the submission, directing that Respondent modify the submission, or (e) any combination of the above. In the event of approval, approval upon conditions, or modification by the Regional Director, Respondent shall proceed to take all action required by the submission as approved or modified by the Regional Director. In the event that the Regional Director disapproves all or any portion of the submission, Respondent shall correct all deficiencies within the time specified by the Regional Director, and resubmit it for approval.

The Regional Director may grant an extension of time for compliance with any of the terms of this Order upon a written request timely submitted demonstrating good cause for an extension.

The actions required by this Corrective Action Order are in addition to and do not waive any requirements that apply to Respondent's pipeline system under 49 C.F.R. Part 195, under any other order issued to Respondent under authority of 49 U.S.C. § 60101 *et seq.*, or under any other provision of Federal or State law.

Respondent may appeal any decision of the Regional 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 administrative civil penalties of up to \$100,000 per violation per day pursuant to 49 U.S.C. § 60122, and in referral to the Attorney General for imposition of civil judicial penalties or other appropriate relief in United States District Court pursuant to 49 U.S.C. § 60120.

The terms and conditions of this Corrective Action Order are effective upon receipt.

William Abate
for

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

9/13/07

Date Issued