



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

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

MAY 26 2005

Dwayne Burton
Vice President of Operations and Engineering
Natural Gas Pipeline Company of America
Kinder Morgan, Inc.
500 Dallas Street, Suite 1000
Houston, TX 77002

Re: CPF No. 4-2005-1011H

Dear Mr. Burton:

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 with respect to your Gulf Coast Mainline natural gas 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,

for
James Reynolds
Pipeline Compliance Registry
Office of Pipeline Safety

Enclosure

cc: R. M. Seeley, Director, Southwest Region, OPS

VIA CERTIFIED MAIL-RETURN RECEIPT REQUESTED AND FACSIMILE

DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, DC 20590

In the Matter of

Natural Gas Pipeline Company
of America,

Respondent

CPF No. 4-2005-1011H

CORRECTIVE ACTION ORDER

Purpose and Background

This Corrective Action Order is being issued, under authority of 49 U.S.C. § 60112, to require Natural Gas Pipeline Company of America (Respondent), a wholly owned subsidiary of Kinder Morgan, Inc., to take necessary corrective action to protect the public, property, and the environment from potential hazards associated with a failure involving Respondent's Gulf Coast Mainline natural gas transmission pipeline.

On May 13, 2005, a failure occurred on Respondent's Gulf Coast Mainline pipeline in Harrison County, Texas. The failure resulted in an explosion, fire, and the release of natural gas into the surrounding environment. Respondent has stated that the cause of the failure, based on preliminary visual examination, appears to be stress corrosion cracking (SCC). Pursuant to 49 U.S.C. § 60117, the Southwest Region, Office of Pipeline Safety (OPS) initiated an investigation of the incident.

Preliminary Findings

- On May 13, 2005, at approximately 2:02 AM CDT, Respondent's Gulf Coast Mainline Texas pipeline, part of the Gulf Coast Mainline natural gas pipeline system, experienced a failure in Harrison County, Texas. The failure occurred near Mile Post (MP) 438, 23069+59.8. The failure location is approximately 6 miles northeast of Tatum, Texas and 8 miles southwest of Marshall, Texas.
- The failure resulted in an explosion, fire, and release of approximately 280 MMCF of natural gas. The explosion and fire damaged a nearby electric power generating plant operated by Entergy Corporation. Two employees of the plant were injured. The plant was shut down and an evacuation zone with a one-mile radius surrounding the plant was established out of concern that the explosion might have damaged hydrogen storage facilities located within the plant. Approximately 40 persons were evacuated.

- Respondent's Gulf Coast Mainline pipeline system originates in Jim Hogg County, Texas and traverses through Arkansas, Missouri, and Illinois, terminating near Chicago, Illinois. Portions of the Gulf Coast Mainline pipeline system consist of two and three parallel pipelines. The Gulf Coast Mainline Texas portion of the pipeline system originates in Jim Hogg County, Texas, and proceeds northeasterly through several Texas counties to Cass County, Texas. A portion of the Gulf Coast Mainline Texas pipeline is bidirectional, allowing natural gas to flow southwest back to the Louisiana Mainline System. Segments of the Gulf Coast Mainline pipeline system are routed near populated areas, traverse drinking water resources, and cross numerous interstate, state, and local highways.
- In the area of the incident, the Gulf Coast Mainline Texas system consists of three parallel pipelines. Two pipelines are 30-inch (Pipelines #1 and #2) nominal diameter and one pipeline is 36-inch (Pipeline #3). The failure occurred on Pipeline #3.
- Following the failure, Respondent isolated the segment of pipeline containing the failure site by closing mainline valves on Pipeline #3 upstream and downstream of the failure site and allowing the gas remaining in the pipeline to burn out. The isolated segment of Pipeline #3 remains out of service. Respondent also reduced operating pressure on Pipelines #1 and #2 to eighty percent (80%) of the operating pressure at the time of the incident. Respondent continues to operate Pipelines #1 and #2 at 80% of the operating pressure prior to the incident.
- Respondent's personnel conducted a visual examination of the pipeline failure site and reported a section of Pipeline #3 approximately 160 feet in length had blown out and landed on the grounds of the Entergy plant. Based on the visual examination of the failed pipe, Respondent concluded the likely cause of the failure was stress corrosion cracking (SCC).
- Respondent sent the failed section of the Gulf Coast Mainline Texas pipeline to An-Tech Laboratories, Inc. in Houston, Texas for metallurgical examination. Respondent utilized a chain-of-custody procedure provided by OPS to ensure proper collection, cataloging, sealing, and transfer of the failed pipe section. OPS witnessed a portion of the metallurgical examination after approving Respondent's proposed independent metallurgical laboratory and testing protocol. The final metallurgical report has not been issued.
- Respondent provided OPS with maps indicating numerous documented instances of SCC on Respondent's Gulf Coast Mainline pipeline system and interconnected systems in Texas, Arkansas, Oklahoma, and Iowa.
- After replacing the failed section, Respondent plans to hydrotest a portion of Pipeline #3 containing the failure site, between station 21868+88 and mainline valve 2450 located at station 23112+58 (the affected segment), and has provided hydrotest procedures to OPS.
- The affected segment of Pipeline #3 is constructed of 36-inch nominal diameter, API 5L, Grade X-65, 0.330-inch wall thickness, electric flash welded pipe externally coated with Gulf States 434 asphalt enamel coating and internally coated with 1.5 mils of epoxy. The pipe was installed in 1967 and manufactured by A.O. Smith Corporation in Houston, Texas.

There is an impressed current system to mitigate damage from external corrosion. The maximum allowable operating pressure (MAOP) is 858 pounds per square inch gauge (psig). The actual operating pressure at the failure site at the time of the failure was 824 psig.

- The MAOP of Pipeline #3 was established by hydrostatic test at a designed test pressure of 1192 psig. An internal inspection of the pipeline was performed in 2001 using a high-resolution digital Magnetic Flux Leakage (MFL) tool. OPS has received a summary of the results of the internal inspection.

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, provide for the issuance of a Corrective Action Order without prior opportunity for notice and hearing upon a finding that a 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 Gulf Coast Mainline natural gas pipeline system without corrective measures will be hazardous to life, property, and the environment. Additionally, after considering the age of the pipe, the hazardousness of the product the pipeline transports, the pressure required for transporting the material, the proximity of the pipeline to populated areas, drinking water resources, and highways, and the ongoing investigation to determine the cause of the pipeline failure, I find that 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 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. The hearing will be held in Houston, Texas or Washington, DC on a date that is mutually convenient to OPS and the Respondent.

After receiving and analyzing additional data in the course of this investigation, OPS may identify other corrective action 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 it is consistent with safety considerations, Respondent will be afforded notice and an opportunity for a hearing prior to the imposition of additional corrective measures.

Required Corrective Action

Pursuant to 49 U.S.C. § 60112, I hereby order Natural Gas Pipeline Company of America to immediately take the following corrective actions with respect to its Gulf Coast Mainline natural gas pipeline system:

1. Prior to resuming operation of the affected segment on Pipeline #3 of the Gulf Coast Mainline Texas pipeline, submit start-up procedures to the Director, Southwest Region, OPS for prior approval. This approval process may be done verbally, in which case Respondent shall provide subsequent written documentation that it initiated start-up of the line in accordance with its established procedures. The procedures must provide for sufficient pressure monitoring and surveillance to ensure that no leaks are present when operation of the line is resumed. Upon resuming operation of the Affected Segment, restrict operating pressure on the affected segment to 80% of the actual operating pressure at the failure site at the time of the failure.
2. Restrict operating pressure on Pipelines #1, #2, and #3 of the Gulf Coast Mainline pipeline to 80% of their respective actual operating pressures at the time of failure. These pressure restrictions will remain in effect until written approval to increase the pressure is obtained from the Director, Southwest Region, OPS. 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.
3. Ensure that the metallurgical testing laboratory distributes all resulting metallurgical reports, whether draft or final, to the Director, Southwest Region, OPS at the same time as they are made available to Respondent.
4. Within 30 days of receipt of this Order, develop and submit a written plan with corrective measures for approval by the Director, Southwest Region, OPS. The plan must provide for the verification of the safety and integrity of Respondent's Gulf Coast Mainline natural gas pipeline system from Jim Hogg County, Texas to Chicago, Illinois, must address all known and suspected factors in the May 13, 2005 failure, and must include the following:
 - (a) The integration of available operational data from metallurgical testing, hydrostatic testing, internal inspections, leak history, repair records, corrosion control records, changes in pressure cycling, previous failure analyses, previous instances of SCC, and other historical data on the Gulf Coast Mainline pipeline system for the purpose of performing a comprehensive failure analysis of the condition(s) causing or contributing to the May 13, 2005 failure and identifying any trends that could threaten system integrity;
 - (b) The performance of appropriate testing, surveys, and evaluations to determine the extent to which the condition(s) associated with the failure or other integrity threats, are present in the remainder of the pipeline system. Include a description of the tools and methods that will be used in the evaluation and the risk assessment criteria that will be used for the prioritization of any integrity threatening conditions identified;
 - (c) The performance of appropriate repairs or other corrective measures that fully remediate the integrity threatening condition(s) associated with the failure at every location on the

pipeline system where such conditions are identified by the evaluation process. Include a description of the repair criteria and methods that will be used in undertaking any corrective measures; and

(d) A proposed schedule for completing the testing and repairs.

5. Submit the plan to the Director, Southwest Region, Office of Pipeline Safety, 8701 South Gessner, Suite 1110, Houston, Texas 77074. The plan must be revised as necessary to incorporate new information obtained during the investigation, assessment, and failure analysis actions required by this Order. Submit such plan revisions to the Director for prior approval. The Director may approve plan elements incrementally.
6. Implement the plan as it is approved, including any revisions to the plan.
7. The Director, Southwest Region, OPS may allow the removal or modification of the pressure restrictions set forth in Items 1 and 2 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 the pressure increase is safe considering all known defects, anomalies and operating parameters of the pipeline.

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.

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

The corrective actions required by this Corrective Action Order are in addition to and do not waive any requirements that apply to Respondent's pipeline systems under 49 C.F.R. Part 192.

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 a United States District Court.



Stacey Gerard
Associate Administrator
for Pipeline Safety

MAY 26 2005

Date Issued

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