



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety Administration**

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

JAN 26 2007

Mr. David F. Jones
Vice President
Eastern Pipeline Operations
Southern Natural Gas Company
750 Old Hickory Blvd. Suite 190
Brentwood, TN 37027

Re: CPF No. **2-2007-1004H**

Dear Mr. Jones:

Enclosed is a Corrective Action Order issued by the Acting Associate Administrator for Pipeline Safety in the above-referenced case. It requires you to take certain corrective actions with respect to the operation of your 16-inch South Mainline Pipeline System, which extends from York, Alabama, to Smiths, Alabama. Service is being made by certified mail and facsimile. Your receipt of the enclosed document constitutes service of that document. The terms and conditions of this Final Order are effective upon receipt.

Sincerely,

James Reynolds
Pipeline Compliance Registry
Office of Pipeline Safety

Enclosure

VIA CERTIFIED MAIL (RETURN RECEIPT REQUESTED) AND TELECOPY

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

In the Matter of)	
)	
SOUTHERN NATURAL GAS,)	CPF No. 2-2007-1004H
)	
Respondent)	
)	

CORRECTIVE ACTION ORDER

Purpose and Background

This Corrective Action Order is being issued, under authority of 49 U.S.C. § 60112, to require Southern Natural Gas (Respondent), to take the necessary corrective action to protect the public and environment from potential hazards associated with its 16-inch natural gas South Main Line Pipeline system that extends from York, Alabama, to Smiths, AL (hereinafter referred to as 16-inch South Main Line).

On January 23, 2007, a failure occurred on Respondent's 16-inch South Main Line approximately 2.8 miles southeast of Elmore, AL, resulting in the release and ignition of natural gas. The cause of the failure is unknown. Pursuant to 49 U.S.C. § 60117, the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety, Southern Region initiated an investigation of this failure.

Preliminary Findings

- At approximately 7:58 a.m. CST, on January 23, 2007, a 1.4 mile segment of Respondent's 16-inch South Main Line ruptured, resulting in an estimated release of 100,000 MCF of natural gas near Elmore, AL, in Elmore County, Mile Post 223.972 (M.P. 223.972). A fire ensued and was extinguished upon depressurization at approximately 9:15 a.m. CST.
- The rupture and fire occurred in the middle of a cotton field approximately 2.8 miles southeast of Elmore, AL and approximately 4 miles southwest of Wetumpka, AL.
- No injuries, fatalities, evacuations or interruption in service occurred.

- The preliminary investigation indicates pipe failed 100% circumferentially at a girth weld due to a defective girth weld.
- Following the January 23, 2007 failure, Respondent's personnel isolated the segment of pipeline involved in the failure by closing the nearest upstream mainline block valve (MLV) at approximately 8:30 a.m. CST and at the nearest downstream block valve at 9:15 a.m. CST.
- The failure occurred in a 1.4-mile pipeline segment in a rural area cotton field at M.P. 223.972, approximately 2.4 miles downstream (east) of the Elmore Compressor Station.
- The investigation is ongoing. The failed pipe segments and two undisturbed girth welds are being sent to a third party metallurgical laboratory for nondestructive and destructive testing, under controlled custody protocol, for a detailed analysis.
- At the time of the incident, the estimated failure site pressure was 1129 psig. The maximum allowable operating pressure (MAOP) of this line segment is 1200 psig.
- The 1.4 mile affected segment of the 16-inch South Main Line is currently depressurized and out of service.
- Much of the original 16-inch South Main Line pipeline in Alabama was installed in 1951 and is constructed of 16-inch x 0.312-inch w.t., x-52 flash welded pipe manufactured by A.O. Smith. The protective coating is coal tar.
- The pipeline is operated by Southern Natural Gas. Southern Natural Gas operates 8,000 miles of natural gas pipeline with 1960 miles in Alabama. The South Main Line system consists of approximately 504 right of way miles of 18" and 16" natural gas pipe and multiple large diameter loop lines traversing from Gwinville, MS to Aiken, SC. Approximately 379 miles of the 16" and 18" South Main Line were placed in-service in 1951, including the failed pipe. Much of this 1951 pipe remains in service today. The South Main Line system traverses Mississippi, Alabama, Georgia, and South Carolina.
- The 16-inch South Main Line passes through mostly rural areas in Alabama, with some Class 2 and Class 3 location areas, in addition to other populated areas designated as High Consequence Areas (HCAs). The pipeline also passes through large and small communities along the route as well as crossing state and interstate highways, rivers, and streams. The failure occurred in a Class 1 location area, a cotton field.
- In 2006, Respondent internally inspected the failed line section using Geometry and Magnetic Flux Leakage (MFL) in-line inspection (ILI) tools with no reported indications at the failure location.
- The 16-inch South Main Line, at the failure site, was gas pressure tested in 1951 at a minimum pressure of 1240 psig for at least eight hours with no leaks.

- The 1.4 mile affected segment of South Main Line is out of service from MP 223.9 to 225.3. The pipeline had not been returned to service as of January 25, 2007.

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 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 this pipeline without corrective measures would be hazardous to life, property and the environment. Additionally, after considering the age of the pipe, circumstances surrounding this failure, the proximity of the pipeline to high consequence areas, the nature of the product the pipeline transports, the pressure required for transporting the material, the uncertainties as to the cause of the failure, and the ongoing investigation to determine the cause of the failure, I find that a failure to issue expeditiously this Order, requiring immediate corrective action, would result in likely serious harm to life, property, and the environment.

Accordingly, this Corrective Action Order mandating needed 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 Atlanta, Georgia 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 longer term measures that need to be taken. Southern Natural Gas 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 Southern Natural Gas Pipeline to immediately take the following corrective actions with respect to the affected segment of its 16-inch South Main Line system pipeline from isolation valve(s) at east side of canal crossing (MP 223.9+) to isolation valve(s) at east side of Coosa River crossing (MP 225.3+):

1. Maintain out of service status of the 16-inch South Main Line between isolation valve(s) at east side of canal crossing (MP 223.9+) to isolation valve(s) at east side of Coosa River crossing (MP 225.3+). Maintain the out of service status of the 16-inch South Main Line until such time as the hydrostatic testing is complete in accordance with the requirements below.
2. Within 30 days of receipt of this Order, confirm the integrity and strength of the girth welds in the affected segment, hydrostatically test the affected segment to a minimum of 90% SMYS of the pipe ($0.9 \times 2028 = 1825$ psig) for a period of no less than 8 hours.
3. After completion of the hydrostatic test, the operating pressure on the affected segment of the 16-inch South Main Line, including any gas pressure required to run ILI tools prior to resuming operation, is not to exceed 80 percent of the operating pressure in effect immediately prior to the January 23, 2007 failure. Specifically, the operating pressure from isolation valve(s) at east side of canal crossing (MP 223.9+) to isolation valve(s) at east side of Coosa River crossing (MP 225.3+) is not to exceed 903 psig. This pressure restriction 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, Southern 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.
4. Within 30 days of receipt of this order, commission a third party laboratory to conduct a detailed mechanical and metallurgical analysis of the pipe that failed on January 23, 2007 to determine the cause and contributing factors. The testing and analysis shall be completed as follows:
 - A. When handling and transporting the failed pipe section and any other evidence from the failure site, document the chain-of-custody;
 - B. Submit protocols for third party mechanical and metallurgical testing of the failed pipe at the failed weld. Obtain the Director's prior approval of the mechanical, nondestructive, and metallurgical testing protocol, including approval of the testing laboratory;
 - C. Remove one unaffected (by fire) girth weld from each side of the failure, and submit a protocol for nondestructive and destructive testing of these two girth welds to ascertain weld strength and integrity.

- D. Prior to commencing the metallurgical testing, provide the Director with the scheduled date, time, and location of the testing to allow a PHMSA representative to witness it.
 - E. Perform metallurgical analysis per protocols.
 - F. Ensure that the laboratory distributes all resulting metallurgical reports, whether draft or final, to the Director at the same time as they are made available to Respondent.
5. Within 30 days of receipt of this Order, review the 2006 Geometry and MFL in-line inspection (ILI) data for indication of an anomaly at the failure location. Provide specific ILI data and the results of the ILI data review to PHMSA.
 6. Within 30 days of receipt of this Order, use information gained from the metallurgical analyses and girth weld testing, ILI data review, results of the affected segment hydrostatic test, company knowledge, and construction, operation and leak records, perform a study to determine if conditions similar to those contributing to the January 23, 2007 failure are likely to exist elsewhere on pipelines placed in service in 1951 on the 16" and 18" South Main System. Submit a report to PHMSA that summarizes the methodology used in performing the study and provides the conclusions of the study.
 7. Submit the results of the requirements in Items 2, 3, 4, and 5 and the study required in Item 6 to: Director, Southern Region, OPS, 233 Peachtree Street, Suite 600, Atlanta, GA 30303.
 8. Maintain documentation of the costs associated with fulfilling this Corrective Action Order. Include costs associated with: (1) preparation and revision of procedures, studies and analyses; (2) physical changes to the pipe infrastructure, including repairs, replacements and other modifications; and (3) spill remediation costs and submit the total to the Director.
 9. The 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 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.

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

submission, Respondent shall correct all deficiencies within the time specified by the Director, and resubmit it for approval.

The Director, Southern 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.

The actions required by this Corrective Action Order are in addition to and do not waive any requirements that apply to the pipeline under 49 C.F.R. Part 193, under any other order issued to Respondent under authority of 49 U.S.C. chapter 60101 *et seq.*, or under any other provision of Federal or state law.

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 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.



Jeffrey D. Wiese
Acting Associate Administrator
for Pipeline Safety

JAN 26 2007

Date Issued