

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 27, 2015

Mr. Richard Keyser
Vice President
Gulf South Pipeline Company, LP
9 Greenway Plaza, Suite 2800
Houston, TX 77046

CPF 2-2015-1001S

Dear Mr. Keyser:

Enclosed is a Notice of Proposed Safety Order (Notice) issued in the above-referenced case. The Notice proposes that you take certain measures with respect to your Gulf South Pipeline Company, LP (Gulf South) Index 130 pipeline in Mississippi and Louisiana and your Index 129 pipeline in Louisiana and Texas to ensure pipeline safety. Your options for responding are set forth in the Notice. Your receipt of the Notice constitutes service of that document under 49 C.F.R. §190.5.

We look forward to a successful resolution to ensure pipeline safety. Please direct any questions on this matter to me at (404) 832-1160.

Sincerely,

Wayne T. Lemoi
Director, Office of Pipeline Safety
PHMSA Southern Region

Enclosures: Notice of Proposed Safety Order and Copy of 49 CFR §190.239

**DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY**

Southern Region
Atlanta, GA 30303

)
In the Matter of)
)
Gulf South Pipeline Company, LP)
)
Respondent)
_____)

CPF 2-2015-1001S

NOTICE OF PROPOSED SAFETY ORDER

Background and Purpose

Pursuant to Chapter 601 of title 49, United States Code, the Pipeline and Hazardous Materials Safety Administration (PHMSA) has initiated an investigation of the safety of the Gulf South Pipeline Company, LP (Gulf South) Index 130 and Index 129 transmission pipelines in Mississippi, Louisiana, and Texas. Gulf South is a subsidiary of Boardwalk Pipeline Partners.

As a result of the investigation, it appears that certain conditions exist on Gulf South's pipeline facilities that pose a pipeline integrity risk to public safety, property, or the environment. Pursuant to 49 U.S.C. §60117(1), PHMSA issues this Notice of Proposed Safety Order (Notice), notifying you of the preliminary findings of the investigation, and proposing that you take measures to ensure that the public, property, and the environment are protected from the potential risk.

The pipeline facilities that pose a pipeline integrity risk are two natural gas transmission pipelines described as follows:

- **Index 130** - approximately 212.9 miles from Marchand Junction (mile post 83.5) in Ascension Parish, LA to Kosciusko (mile post 296.4) in Leake County, Mississippi.
- **Index 129** - approximately 385.6 miles from the Edna Compression Station (mile post 58.8) in Jackson County, Texas to the Sterlington Compression Station (mile post 444.4) in Ouachita Parish Louisiana.

Gulf South's records indicate the majority of the pipe in both the Index 130 and Index 129 pipelines was manufactured by A.O. Smith in 1952. The general pipe specifications for both indexes indicate the pipeline to be 30-inch diameter, 0.375-0.500-inch wall, grade 52,000 psi, with an electric fusion weld (EFW) seam and coal tar external coating. Both Indexes 129 and 130 have a maximum allowable operating pressure (MAOP) of 936 psig in Class 1 locations.

Preliminary Findings

On January 14, 2015, a rupture occurred on Gulf South's Index 130 natural gas transmission pipeline at mile post 253.3 between the Caney Creek block valve (mile post 255.8) and the Fannin block valve (mile post 248.9) in Rankin County, Mississippi. The rupture occurred in a valve section approximately 6.84 miles long in a Class 1 location area approximately 14.3 miles downstream of Gulf South's Jackson Compressor Station (mile post 239).

The escaping natural gas ignited and burned approximately six (6) acres of pine forest. There were no reported injuries or damage to structures. The origin of the pipe failure appeared to be at a "hard spot" under a Type "A" sleeve, which also failed and was ejected from the pipe.

After the rupture, Gulf South reduced the operating pressure of the Index 130 by 20% from the pressure at the time of the rupture, 767¹ psig (59% SMYS²), to 613 psig (47.2% SMYS). Because the Index 129 pipeline is of the same manufacturer and similar vintage with "hard spot" issues, Gulf South also reduced the operating pressure of the Index 129 to 613 psig. After an initial field evaluation of the rupture surface by a metallurgist from Stress Engineering Services, Inc. (SES), Gulf South further reduced the pressure on both the Index 130 and 129 to below 550 psig (42.4% SMYS) to provide an additional safety factor pending the completion of a metallurgical analysis and fracture mechanics modeling by SES and Process Performance Improvement Consultants, LLC. Gulf South is currently operating the Index 129 from the Edna Compression Station to the Sterlington Compression Station and the Index 130 from Marchand Junction to Kosciusko at or below 550 psig.

Hard Spot History

The Index 130 and Index 129 pipelines were constructed of 1952 vintage A.O. Smith pipe by United Gas Pipeline between 1952 and 1962. This pipe is known to have "hard spots" caused during manufacturing. From 1955 through 1986, there were 13 ruptures and 4 leaks on these pipelines attributed to Hydrogen Stress Cracking (HSC) in hard spots with Brinnell hardness of 350-510 at or near the crack origins. From 1986 until January 14, 2015, there were 17 leaks but no ruptures on these pipelines at locations with hard spots.

In 1968, the operator began using a Tuboscope in-line inspection (ILI) tool to identify, locate, and quantify the "hardness" of hard spots along both the Index 130 and Index 129 pipelines. From 1970-86, the operator installed Battelle-designed "hydrogen shields" over the hard spots on both pipelines in an attempt to stop the HSC. In 1986, the operator removed the hydrogen shields and began installing Type "A" (non-pressure containing) sleeves over the hard spots using the criteria of Brinnell hardness greater than 300 (Rockwell C hardness greater than 32) and a hard spot greater than 2-inches in both directions. In the past seven years, the operator has eliminated many of the Type "A" sleeves by either replacing the pipe or installing Type "B" (pressure containing) sleeves.

Currently, there are approximately 1,514 Type "A" sleeves on the Index 130 and Index 129 pipelines: 788 sleeves on the Index 129 from Edna, Texas, to Sterlington, Louisiana; 726 sleeves on the Index 130 from Marchand Junction, Louisiana to Kosciusko, Mississippi.

¹ The pressure is actually measured at the discharge of the Jackson Compressor Station.

² SMYS means the Specified Minimum Yield Strength of the pipe.

Proposed Issuance of Safety Order

Section 60117(l) of Title 49, United States Code, provides for the issuance of a safety order requiring corrective measures, which may include physical inspection, testing, repair, or other action, as appropriate, after reasonable notice and the opportunity for a hearing. The basis for making the determination that a pipeline facility has a condition or conditions that pose a pipeline integrity risk to public safety, property, or the environment is set forth both in the above-referenced statute and 49 CFR §190.239, a copy of which is enclosed.

After evaluating the foregoing preliminary findings of fact and considering the age of the pipe involved, the manufacturer, the hazardous nature of the product transported and the pressure required for transporting such product, the characteristics of the geographical areas where the pipeline facility is located, and the likelihood that the conditions could worsen or develop on other areas of the pipeline and potentially impact its serviceability, it appears that the continued operation of the affected pipeline without corrective measures would pose a pipeline integrity risk to public safety, property, or the environment.

Accordingly, PHMSA issues this Notice of Proposed Safety Order to notify Respondent of the proposed issuance of a safety order and to propose that Respondent take the measures specified herein to address the potential risk.

Response to this Notice

In accordance with §190.239, you have 30 days following receipt of this Notice to submit a written response to the official who issued the Notice. If you do not respond within 30 days, this constitutes a waiver of your right to contest this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Safety Order. In your response, you may notify that official that you intend to comply with the terms of the Notice as proposed, or you may request that an informal consultation be scheduled (you will also have the opportunity to request an administrative hearing before a safety order is issued). Informal consultation provides you with the opportunity to explain the circumstances associated with the risk condition(s) alleged in the notice and, as appropriate, to present a proposal for a work plan or other remedial measures, without prejudice to your position in any subsequent hearing. If you and PHMSA agree within 30 days of informal consultation on a plan and schedule for you to address each identified risk condition, we may enter into a written consent agreement (PHMSA would then issue an administrative consent order incorporating the terms of the agreement). If a consent agreement is not reached, or if you have elected not to request informal consultation, you may request an administrative hearing in writing within 30 days following receipt of this Notice or within 10 days following the conclusion of an informal consultation that did not result in a consent agreement, as applicable. Following a hearing, if the Associate Administrator finds the facility to have a condition that poses a pipeline integrity risk to the public, property, or the environment in accordance with §190.239, the Associate Administrator may issue a safety order.

Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe

qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b).

In your correspondence on this matter, please refer to **CPF 2-2015-1001S** for each document you submit, please provide a copy in electronic format whenever possible.

Proposed Corrective Measures

Pursuant to 49 U.S.C. §60117(l) and 49 C.F.R. §190.239, PHMSA proposes to issue to Gulf South Pipeline Company, LP (Gulf South) a safety order incorporating the following remedial requirements with respect to its Index 130 and Index 129 pipelines:

1. Gulf South is to maintain a pressure restriction on the Index 130 pipeline from Marchand Junction (mile post 83.5) in Ascension Parish, Louisiana to Kosciusko, Mississippi (mile post 296.4) and on the Index 129 pipeline from the Edna Compression Station (mile post 58.8) in Jackson County, Texas to the Sterlington Compression Station (mile post 444.4) in Ouachita Parish Louisiana of no greater than 550 psig.
 - a. These pressure restrictions require any relevant remote or local alarm limits, software programming set-points or control points, and mechanical over-pressure devices to be adjusted accordingly.
 - b. These pressure restrictions are to remain in effect until all Type “A” sleeves that were installed to manage “Indicated Hard Spots” have been removed or remediated in accordance with Remedial Work Plan described in Item 4 below, or otherwise properly addressed using a method selected by Gulf South in consultation with PHMSA, and until written approval to remove and/or modify the pressure restrictions is obtained from the Director, OPS Southern Region.
 - c. The Director OPS Southern Region may allow the temporary removal and/or modification of the pressure restriction on either the Index 130 pipeline or the Index 129 (or both) upon a written request from Gulf South demonstrating that preventive and mitigative measures have been implemented and will remain in place during the temporary removal and/or modification of the pressure restriction. The Director's determination will be based on the evidence that preventative and mitigative actions taken by the operator provide for the safe operation of the pipelines during the temporary removal and/or modification of the pressure restriction.
 - d. The Director OPS Southern Region may allow the removal and/or modification of the pressure restriction on either the Index 130 pipeline or the Index 129 (or both) upon a written request from Gulf South demonstrating that restoring the pipeline(s) to normal 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.
 - e. Appeals to determinations of the Director in this regard will be decided by the Associate Administrator for Pipeline Safety.

2. Gulf South is to complete mechanical and metallurgical testing and failure analysis to:
 - a. Determine the cause of the failure on the Index 130, including an analysis of the Type “A” sleeve which also failed on the Index 130.
 - b. Determine a safe operating pressure using fracture mechanics modeling for all Type “A” sleeves that will remain on the pipeline after remediation.
 - c. Analyze three (3) additional Type “A” sleeves which have been installed on hard spots on the Index 130 from the Caney Creek block valve (mile post 255.8) to the Fannin block valve (mile post 248.9).
 - d. Use the data to further validate the fracture mechanics modeling, and to analyze how the workmanship on the Type “A” sleeve may have contributed to the pipeline failure.
3. The mechanical and metallurgical testing and failure analysis must be completed and submitted to the Director, OPS Southern Region on or before September 30, 2015. Ensure that each testing laboratory distributes all reports whether draft or final in their entirety to the Director, OPS Southern Region at the same time they are made available to Gulf South.
4. Within 60 days following receipt of this Order, Gulf South must submit a Remedial Work Plan (RWP) to the Director, OPS Southern Region for review and approval. The RWP must include a proposed schedule for completion of the RWP and must require Gulf South to accomplish the following:
 - a. Remove or reinforce, with a pressure containing Type “B” sleeve, all “Indicated Hard Spots” on both the Index 129 and Index 130 pipelines that are currently reinforced with Type “A” sleeves, and which are located within High Consequence Areas (HCAs), Class 3 locations, and/or within 660 feet of a habitable structure by not later than December 31, 2015.
 - b. Identify all the remaining “Indicated Hard Spots” reinforced with Type “A” sleeves (i.e. those not removed or reinforced as explained above) on both the Index 129 and Index 130 pipelines by mile post or other stationing method.
 - c. Establish a written procedure to identify within 12 calendar months any remaining “Indicated Hard Spot” on both the Index 129 and Index 130 pipelines reinforced with a Type “A” sleeve (i.e. a hard spot not removed or reinforced as explained above) that becomes located within an HCA, Class 3 locations, or within 660 feet of a habitable structure in the future due to development, an increase in population density, or any other cause.
 - d. Remove or reinforce, with a pressure containing Type “B” sleeve, any remaining “Indicated Hard Spot” reinforced with a Type “A” sleeve (i.e. one not removed or reinforced as explained above) if the Indicated Hard Spot becomes located within an HCA, Class 3 location area, or within 660 feet of a habitable structure in the future as described in Item 4.c. above within 24 months.
 - e. Gulf South must revise the RWP as necessary to incorporate new information obtained during the failure investigation and remedial activities, to incorporate the results of actions undertaken pursuant to this Safety Order, and/or to incorporate

modifications required by the Director.

- f. Gulf South will implement the RWP as it is approved by the Director. Any revisions to the plan must be submitted in writing to the Director for approval.
 - g. The Director may approve the RWP incrementally without approving the entire RWP.
 - h. Once approved by the Director, the RWP will be incorporated by reference into this Order.
5. The Director may grant an extension of time for compliance with any of the terms of the safety order upon a written request timely submitted demonstrating good cause for an extension.
 6. Gulf South may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator shall be final.

After receiving and analyzing additional data in the course of this proceeding and implementation of the work plan, PHMSA may identify other safety measures that need to be taken. In that event, Respondent will be notified of any proposed additional measures and, if necessary, amendments to the work plan or safety order.

Wayne T. Lemoi
Director, Office of Pipeline Safety
PHMSA Southern Region

Date issued