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

1200 New Jersey Ave, S.E.
Washington, D.C. 20590

JUL 9 2010

Mr. Bill Cope
Vice President Eastern Operations
Tennessee Gas Pipeline Company
2 Brentwood Commons, Suite 190
Brentwood, TN 37027

Re: CPF No. 2-2007-1011

Dear Mr. Cope:

Enclosed please find the Final Order issued in the above-referenced case. It makes findings of violation and assesses a civil penalty of $50,000. The penalty payment terms are set forth in the Final Order. This enforcement action closes automatically upon payment. Service of the Final Order by certified mail is deemed effective upon the date of mailing, or as otherwise provided under 49 C.F.R. § 190.5.

Thank you for your cooperation in this matter.

Sincerely,

for: Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

Enclosure

cc: Mr. Wayne Lemoi, Director, Southern Region, PHMSA
Mr. Patrick F. Carey, P.E., Director, D.O.T. Compliance Services

CERTIFIED MAIL RETURN RECEIPT REQUESTED [7005 1160 0001 0039 0553]

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

In the Matter of	)	
Tennessee Gas Pipeline Company,	)	**CPF No. 2-2007-1011**
Respondent.	)	

FINAL ORDER

On September 5-22, 2006, pursuant to 49 U.S.C. § 60117, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), conducted an on-site pipeline safety inspection of the facilities and records of Tennessee Gas Pipeline Company's (TGP or Respondent) facilities in Mississippi and Alabama and reviewed operations and maintenance records at its offices in Columbus, MS, and Heidelberg, MS. TGP, a subsidiary of El Paso Corporation, operates approximately 14,200 miles of natural gas pipelines running from the Mexican border to Canada.

As a result of the inspection, the Director, Southern Region, OPS (Director), issued to Respondent, by letter dated June 6, 2007, a Notice of Probable Violation and Proposed Civil Penalty (Notice). In accordance with 49 C.F.R. § 190.207, the Notice proposed finding that Respondent had committed two violations of 49 C.F.R. Part 192, proposed assessing a civil penalty of $50,000 for one of the alleged violations, and warned Respondent to take corrective action regarding the other alleged violation.

TGP responded to the Notice by letter dated July 10, 2007 (Response). TGP contested the allegations and requested a hearing. A hearing was subsequently held on October 4, 2007, in Atlanta, Georgia, with Larry White, an attorney from the Office of Chief Counsel, PHMSA, presiding. At the hearing, Respondent was represented by counsel. Respondent subsequently provided additional material for the record by letter dated October 23, 2007.

FINDING OF VIOLATION

The Notice alleged that Respondent violated 49 C.F.R. Part 192, as follows:

Item 1: The Notice alleged that Respondent violated 49 C.F.R. § 192.467(c), which states:

> **§ 192.467 External corrosion control: Electrical isolation.**
>
> (a) . . .
>
> (c) Except for unprotected copper inserted in ferrous pipe, each pipeline must be electrically isolated from metallic casings that are a part of the underground system. However, if isolation is not achieved because it is impractical, other measures must be taken to minimize corrosion of the pipeline inside the casing.

Specifically, the Notice alleged that TGP had made no attempt since 1974 to eliminate metallic contact and achieve electrical isolation of a casing at the Highway 49 crossing and had failed to take measures necessary to minimize corrosion of the pipe inside the shorted casing.

In its Response and at the hearing, TGP acknowledged that it had failed to achieve electrical isolation of the pipe but contended that it had taken alternative measures to minimize corrosion of the pipe inside the casing (i.e., the carrier pipe). TGP stated that these measures consisted of maintaining cathodic protection on the pipeline, periodically taking pipe-to-soil readings at the ends of the casing, and performing leak tests in 1980, 1989-1992, and 2007. TGP also questioned whether there was any correlation between shorted casings and corrosion.

The use of casings for pipe crossings under highways and railroads has been a common practice in the gas pipeline industry for decades. When metallic casings are used to protect carrier pipes, operators are required to electrically isolate the pipe from the casing. The reason why an electrical isolation requirement was made part of the federal pipeline safety regulations was that to cathodically protect a pipeline, it is necessary to protect it from corrosion in its entirety.[1] When a casing is not electrically isolated from the carrier pipe, it can adversely affect the integrity of the latter by shielding cathodic protection current from the carrier pipe and reducing the effectiveness of the cathodic protection in the vicinity of the casing. Casings can come into electrical contact with the carrier pipe or become "shorted" in several ways, including the movement of the carrier pipe inside the casing, the failure of spacing materials, inadequate support, and shorted test leads. Once a short has been identified, an operator can often "clear" the shorted casing and eliminate the metallic contact by realigning the carrier pipe and providing support such as sandbags to maintain the realignment, or, in some cases, by removing a portion of the casing.

Under circumstances where it is impractical to achieve isolation, operators are required to take other measures to minimize corrosion of the pipe inside the casing. These measures can range from removing electrolyte between the casing and the carrier pipe and replacing the end seals, to replacing or recoating the carrier pipe. However, the measure appropriate for correcting most

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[1] The term "cathodic protection" refers to a method of corrosion prevention in which a pipeline is allowed or made to act as the cathode in an electrochemical corrosion cell. A sacrificial anode having a lower electrolytic potential than the pipe is provided to complete the cell. Applying impressed current to the pipe is another method of cathodic protection. See generally, PHMSA Stakeholder Communications Glossary, http://primis.phmsa.dot.gov/comm/glossary/index.htm?nocache=3413#CathodicProtection.

shorted casings is to fill the casing annulus with dielectric material (i.e., material that will not conduct current) and to conduct ongoing monitoring.[2] A properly filled casing annulus prevents electrolyte from coming into contact with the carrier pipe by encapsulating any coating voids along the carrier pipe. This approach is a very cost-effective measure that gives a relatively high degree of confidence that the risk of corrosion inside the shorted casing has been minimized.

In circumstances where eliminating the metallic contact or filling the casing with dielectric material is impracticable, still other measures can potentially satisfy the requirement to minimize corrosion. For example, an operator may analyze a given shorted casing or casings and determine that a targeted program of regular internal inspections and frequent monitoring would be sufficient to protect against corrosion.[3]

In this case, TGP did not clear the short or eliminate the metallic contact. It did not fill the casing annulus with dielectric material, nor did the company provide any explanation for its failure to do so.[4] TGP noted that a hydrostatic test had been conducted in 1981 and leak tests had been conducted from 1980 to 1992. TGP, however, had no explanation for the 14-year gap in testing between 1993 and 2007.[5] Moreover, no internal inspections were conducted during this period. In short, TGP was unable to demonstrate that it had conducted a targeted program of regular inspections and monitoring to minimize corrosion inside this shorted casing during the relevant period.

Finally, TGP argued that its normal cathodic protection maintenance activities should satisfy the requirement that it take measures to minimize corrosion inside the shorted casing. TGP noted that its cathodic protection and close-interval survey readings taken at the ends of the casing showed that protective criteria had continuously been satisfied and cited a January 2005 report, prepared by Corrpro Companies, Inc., for the Gas Research Institute (GRI Report), in support of the proposition that maintaining cathodic protection levels on pipe immediately outside of casings minimizes corrosion inside them.

TGP's argument, however, is unpersuasive. Cathodic protection is a basic requirement of maintaining a pipeline and meeting these criteria only shows compliance with minimum cathodic protection requirements.[6] TGP did not present evidence that it had made a determination at the

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[2] National Association of Corrosion Engineers, Standard Recommended Practice RP0200-2000, Appendix A.

[3] Such an analysis would have to be conducted at the time the decision not to take other measures was made and would have to be well documented and technically sound.

[4] TGP argued that to the extent OPS expected it to fill the casing with dielectric material, OPS was enforcing unpublished guidance. However, OPS did not assert that filling the casing was required or that it was the only measure that could have satisfied the requirement to minimize corrosion. OPS merely stated that had the casing been filled, doing so would have satisfied the requirement.

[5] TGP also pointed out that the records associated with the 1974 attempt to clear the casing indicated that the coating on the carrier pipe appeared to be in good condition. Although coatings are an important part of protecting against corrosion, they are applied during initial construction of the pipeline and are not relevant to any efforts to negate the adverse effects of shorted casings and to minimize the resulting corrosion.

[6] 49 C.F.R. § 192.457.

time the short was identified that providing supplemental cathodic protection to this shorted casing would minimize corrosion inside the casing (nor did it actually provide such supplemental cathodic protection as a result of identifying the shorted casing).[7] In addition, the GRI report only states that maintaining cathodic protection above the minimum requirements on pipe outside of casings should increase the probability that the pipe inside the casings will be protected from corrosion. This is not the same as saying that maintaining cathodic protection is sufficient to minimize corrosion inside a shorted casing, as required by the cited regulation. Maintaining cathodic protection levels does not satisfy the purpose of the cited regulation, which is to ensure that the necessary measures are taken to minimize corrosion when a specific adverse condition, such as a shorted casing, has been identified.

Overall, the record reflects the absence of taking measures to minimize corrosion inside the shorted casing between 1993 and 2007, not the presence of such measures. Accordingly, after considering all of the evidence and the legal issues presented, I find that Respondent violated 49 C.F.R. § 192.467(c) by making no attempt since 1974 to eliminate metallic contact and achieve electrical isolation of a casing at the Highway 49 crossing and failing to take measures necessary to minimize corrosion of the pipe inside the shorted casing.

This finding of violation will be considered a prior offense in any subsequent enforcement action taken against Respondent.

ASSESSMENT OF PENALTY

Under 49 U.S.C. § 60122, Respondent is subject to an administrative civil penalty not to exceed $100,000 per violation for each day of the violation, up to a maximum of $1,000,000 for any related series of violations. In determining the amount of a civil penalty under 49 U.S.C. § 60122 and 49 C.F.R. § 190.225, I must consider the following criteria: the nature, circumstances, and gravity of the violation, including adverse impact on the environment; the degree of Respondent's culpability; the history of Respondent's prior offenses; the Respondent's ability to pay the penalty and any effect that the penalty may have on its ability to continue doing business; and the good faith of Respondent in attempting to comply with the pipeline safety regulations. In addition, I may consider the economic benefit gained from the violation without any reduction because of subsequent damages, and such other matters as justice may require.

Item 1: The Notice proposed a civil penalty of $50,000 for Respondent's violation of 49 C.F.R. § 192.467(c), for failing either to make any attempt since 1974 to eliminate metallic contact and achieve electrical isolation of a casing at the Highway 49 crossing or to take measures necessary to minimize corrosion of the pipe inside the shorted casing.

In its Response and at the hearing, TGP correctly pointed out that OPS had concluded in a 1995 rulemaking document that the need to clear shorted casings in order to maintain safety was not apparent. Of course, in this case, OPS did not attempt to require that the short be cleared (i.e., metallic contact eliminated), but, instead, accepted TGP's assertion that doing so was impractical

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[7] OPS noted that TGP did not perform any "on/off" surveys between 1991 and 2007.

and focused on the measures that needed to be taken in order to minimize corrosion given that it was shorted.

TGP also pointed out that in a 2002 rulemaking, OPS discussed measures for minimizing corrosion inside shorted casings, including filling the casing, conducting internal inspections, and monitoring, but that OPS did not actually amend the regulations to require these particular measures. We acknowledge that a more prescriptive regulation may have provided additional certainty to TGP with regard to the measures that were needed to minimize corrosion. On the other hand, a pipeline operator is expected to have the necessary expertise and knowledge about its own system to make technically sound decisions affecting safety. Moreover, OPS provided more clarity on the requirements of the regulation in its discussion in the 2002 proceeding, not less.

At the hearing, TGP officials stated that they took safety very seriously. We have no reason to doubt this, but it does not change the nature of the violation. TGP failed to clear the shorted casing, failed to fill the casing with dielectric material, failed to conduct a targeted program of inspections and monitoring or to take other measures that would have ensured corrosion was minimized inside the shorted casing. Railroad and highway crossings are a particular concern if a gas pipeline leak occurs because a passing train or vehicle can potentially ignite a gas cloud if one forms. Respondent has not presented any information that would warrant a reduction in the civil penalty amount proposed in the Notice for this violation. Accordingly, having reviewed the record and considered the assessment criteria, I assess Respondent a civil penalty of $50,000 for this violation of 49 C.F.R. § 192.467(c).

Payment of the civil penalty must be made within 20 days of service. Federal regulations (49 C.F.R. § 89.21(b)(3)) require this payment be made by wire transfer through the Federal Reserve Communications System (Fedwire), to the account of the U.S. Treasury. Detailed instructions are contained in the enclosure. Questions concerning wire transfers should be directed to: Financial Operations Division (AMZ-341), Federal Aviation Administration, Mike Monroney Aeronautical Center, P.O. Box 269039, Oklahoma City, OK 73125; The Financial Operations Division telephone number is (405) 954-8893.

Failure to pay the $50,000 civil penalty will result in accrual of interest at the current annual rate in accordance with 31 U.S.C. § 3717, 31 C.F.R. § 901.9 and 49 C.F.R. § 89.23. Pursuant to those same authorities, a late penalty charge of six percent (6%) per annum will be charged if payment is not made within 110 days of service. Furthermore, failure to pay the civil penalty may result in referral of the matter to the Attorney General for appropriate action in a district court of the United States.

WARNING ITEM

With respect to Item 2, the Notice alleged a probable violation of Part 192 but did not propose a civil penalty or compliance order for this item. Therefore, this is considered to be a warning item. The warning was for:

49 C.F.R. § 192.605(b)(3) **(Item 2)** — Respondent's alleged failure to ensure that current and accurate schematics of all lines in the Columbus Operating Area were made available to appropriate operating personnel.

Respondent presented information in its Response showing that it had taken action to address the cited item. Having considered such information, I find, pursuant to 49 C.F.R. § 190.205, that a probable violation of 49 C.F.R. § 192.605(b)(3) (Notice Item 2) has occurred and Respondent is hereby advised to correct such conditions. In the event that OPS finds a violation of this provision in a subsequent inspection, Respondent may be subject to future enforcement action.

Under 49 C.F.R. § 190.215, Respondent has the right to submit a petition for reconsideration of this Final Order. Should Respondent elect to do so, the petition must be sent to: Associate Administrator, Office of Pipeline Safety, PHMSA, 1200 New Jersey Avenue, SE, East Building, 2nd Floor, Washington, DC 20590, with a copy sent to the Office of Chief Counsel, PHMSA, at the same address. PHMSA will accept petitions received no later than 20 days after service of this Final Order upon the Respondent, provided they contain a brief statement of the issue(s) and meet all other requirements of 49 C.F.R. § 190.215. The filing of a petition automatically stays the payment of any civil penalty assessed but does not stay any other provisions of the Final Order, including any required corrective actions. If Respondent submits payment of the civil penalty, the Final Order becomes the final administrative decision and the right to petition for reconsideration is waived.

The terms and conditions of this Final Order are effective upon service in accordance with 49 C.F.R. § 190.5.

for Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

JUL 9 2010

Date Issued