

October 16, 2015

Mr. Mark Maki
President
Enbridge Pipelines (Ozark), LLC
1100 Louisiana Street
Suite 3300
Houston, TX 77002

Re: CPF No. 4-2013-5004

Dear Mr. Maki:

Enclosed please find the Final Order issued in the above-referenced case. It makes findings of violation, assesses a civil penalty of \$78,700, and specifies actions that need to be taken by Enbridge Pipelines (Ozark), LLC, to comply with the pipeline safety regulations. The penalty payment terms are set forth in the Final Order. When the civil penalty has been paid and the terms of the compliance order completed, as determined by the Director, Southwest Region, this enforcement action will be closed. 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,

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

Enclosure

cc: Mr. Rodrick Seeley, Regional Director, Southwest Region, OPS
Mr. Shaun Kavajecz, Senior Manager, US Pipeline Compliance, Enbridge Energy
Company, Inc. 26 E. Superior Street, Suite 309 Duluth, MN 55811

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

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

_____)	
In the Matter of)	
)	
Enbridge Pipelines (Ozark), LLC,)	
a subsidiary of Enbridge, Inc.,)	CPF No. 4-2013-5004
)	
Respondent.)	
_____)	

FINAL ORDER

During November 2011, 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 Enbridge Pipelines (Ozark), LLC (Enbridge or Respondent), at the company's Cushing Terminal in Cushing, Oklahoma. Enbridge is a subsidiary of Enbridge, Inc., an international energy company involved in the generation, transport, storage and distribution of oil, gas and electricity assets, with its corporate headquarters in Calgary, Canada, and a United States headquarters in Houston, Texas.¹

As a result of the inspection, the Director, Southwest Region, OPS (Director), issued to Respondent, by letter dated March 3, 2013, a Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order (Notice). In accordance with 49 C.F.R. § 190.207, the Notice proposed finding that Enbridge had committed various violations of 49 C.F.R. Part 195 and proposed assessing a civil penalty of \$78,700 for the alleged violations. The Notice also proposed ordering Respondent to take certain measures to correct the alleged violations. The warning items required no further action, but warned the operator to correct the probable violation or face future potential enforcement action.

Enbridge responded to the Notice by letter dated April 26, 2013 (Response). The company contested certain elements of the allegations of violation and provided information concerning the corrective actions it had taken. Respondent did not request a hearing and therefore has waived its right to one.

FINDINGS OF VIOLATION

The Notice alleged that Respondent violated 49 C.F.R. Part 195, as follows:

¹ See www.enbridge.com. Current as of January 3, 2015.

Item 1: The Notice alleged that Respondent violated 49 C.F.R. § 195.432(b), which states:

§ 195.432 Inspection of in-service breakout tanks.

(a) ...

(b) Each operator must inspect the physical integrity of in-service atmospheric and low-pressure steel aboveground breakout tanks according to API Standard 653 (incorporated by reference, *see* § 195.3). However, if structural conditions prevent access to the tank bottom, the bottom integrity may be assessed according to a plan included in the operations and maintenance manual under § 195.402(c)(3).

The Notice alleged that Respondent violated 49 C.F.R. § 195.432(b) by failing to properly inspect the physical integrity of several in-service breakout tanks at its Cushing, Oklahoma facility, in accordance with American Petroleum Institute (API) Standard 653.² Specifically, the Notice alleged that Enbridge failed to properly determine the shell corrosion rates used to establish proper external inspection intervals under subsection 6.3.2.1 of that standard.³

According to the Notice, a critical element in the formula set forth in subsection 6.3.2.1 and used to calculate a shell inspection interval less than the five-year maximum is N , the shell corrosion rate. PHMSA alleged that this variable in the formula should be calculated by dividing the measured metal loss by the time over which it occurred. Metal loss, in turn, is determined by subtracting a more recent shell thickness measurement from one made earlier in time at the same location on the breakout tank. The change in shell thickness would then be divided by the time interval between measurements to determine a corrosion rate. PHMSA asserted that since some of Enbridge's metal loss calculations were negative, such a result would mean that the shell plate had actually *increased* in thickness over time. PHMSA alleged that this result indicated the methodology used by Enbridge was flawed and inconsistent with API Standard 653.

In its Response, Enbridge argued that it had followed "industry-accepted" inspection practices and that the corrosion growth-rate calculation it had used was the same as that set out in API Standard 653 and was "used industry-wide." The company explained that when determining the proper inspection intervals, it had compared shell-plate thickness measurements taken at different locations, instead of multiple measurements taken at the same location. Enbridge

² API Standard 653, "Tank Inspection Repair, Alteration, and Reconstruction" (3rd edition, December 2001, which includes addendum 1 (September 2003), addendum 2 (November 2005), addendum 3 (February 2008) and errata (April 2008)), has been incorporated by reference into 49 C.F.R. Part 195 under 49 C.F.R. § 195.3.

³ API Standard 653, subsection 6.3.2.1, states:

"6.3.2.1 All tanks shall be given a visual external inspection by an authorized inspector. This inspection shall be called the external inspection and must be conducted at least every five years or $RCA/4N$ years (where RCA is the difference between the measured shell thickness and the minimum required thickness in mils, and N is the shell corrosion rate in mils per year) whichever is less. Tanks may be in operation during this inspection."

argued that there are many variables that can affect these calculations, such as steel tolerances, measurement differentials, and differing rates of corrosion across various portions of the tanks that might have resulted in what the company reported as “negative corrosion growth.” Enbridge argued that such a result merely indicated that the corrosion growth rate was “negligible.”⁴

I find Enbridge’s argument unpersuasive. Considering any possible tolerance variables, it is only feasible for Enbridge’s methodology to be effective in the unlikely event that corrosion rates were completely uniform across the tanks, but the actual measurements taken by Enbridge show that the corrosion rates were not, in fact, uniform. It is clear that the “negative growth rate” used by Enbridge is inconsistent with the company’s own measurements and is most likely the result of a flawed methodology in calculating corrosion growth rate under API Standard 653. While Enbridge may have intended to apply API 653 properly, the company failed to properly determine the corrosion growth rate in accordance with sound engineering principles.

Accordingly, based upon a review of all of the evidence, I find that Respondent violated 49 C.F.R. § 195.432(b) by failing to properly inspect the physical integrity of several of its in-service breakout tanks at the Cushing, Oklahoma facility in accordance with API Standard 653.

Item 4: The Notice alleged that Respondent violated 49 C.F.R. §§ 195.565 and 195.571, which state:

§ 195.565 How do I install cathodic protection in breakout tanks?

After October 2, 2000, when you install cathodic protection under § 195.563(a) to protect the bottom of an aboveground breakout tank of more than 500 barrels (79.5m³) capacity built to API Specification 12F, API Standard 620, or API Standard 650 (or its predecessor Standard 12C), you must install the system in accordance with API Recommended Practice 651. However, installation of the system need not comply with API Recommended Practice 651 on any tank for which you note in the corrosion control procedures established under § 195.402(c)(3) why compliance with all or certain provisions of API Recommended Practice 651 is not necessary for the safety of the tank.

§ 195.571 What criteria must I use to determine the adequacy of cathodic protection?

Cathodic protection required by this Subpart must comply with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2. and 6.3 of NACE SP 0169 (incorporated by reference, *see* § 195.3).

The Notice alleged that Respondent violated 49 C.F.R. §§ 195.565 and 195.571 by failing to meet at least one of the applicable criteria for cathodic protection on several Cushing Terminal breakout tanks, as required by API Recommended Practice 651 and NACE SP 0169.

⁴ Response, at 2.

Specifically, the Notice alleged that Enbridge used the 100 mV polarization criterion on a portion of the breakout tanks and the -850 mV with consideration of IR drop on others. According to PHMSA, its inspector had found several breakout tanks where Enbridge was not meeting the specified criteria or had not taken the appropriate measurements to determine if the specified criterion was being met. For example, the Notice alleged that Respondent operated multiple tanks (#1153, #1295, #2211, #1182, #2218, #1320, #2212, #2215 and #2223) that did not comply with one of the established cathodic protection compliance criteria.

In its Response, Enbridge did not contest the allegations and noted that it had begun a corrective action plan at the end of 2012 to enable it to successfully acquire 100 mV polarization criterion or -850 mV with consideration of IR drop. In addition, one of the non-compliant tanks was demolished during the first quarter of 2012 and a second was scheduled for demolition in the fourth quarter of 2013.⁵ PHMSA commends Respondent's efforts to ensure future compliance, but would note that past non-compliance is not excused as a result.

Accordingly, after considering all of the evidence, I find that Respondent violated 49 C.F.R. §§ 195.565 and 195.571 by failing to meet at least one of the applicable criteria for cathodic protection on several of its Cushing Terminal breakout tanks as required by API Recommended Practice 651 and NACE SP 0169.

These findings of violation will be considered prior offenses 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.⁶ 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. The Notice proposed a total civil penalty of \$78,700 for the violations cited above.

Item 1: The Notice proposed a civil penalty of \$33,700 for Respondent's violation of 49 C.F.R. § 195.432(b), for failing to properly determine shell corrosion rates necessary to establish external inspection intervals in accordance with API Standard 653. Respondent's method of

⁵ Response, at 6.

⁶ The Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Pub. L. No. 112-90, § 2(a)(1), 125 Stat. 1904, January 3, 2012, increased the civil penalty liability for violating a pipeline safety standard to \$200,000 per violation for each day of the violation, up to a maximum of \$2,000,000 for any related series of violations.

measuring thickness resulted in inconsistent and unhelpful results, and as a result, Enbridge lacked accurate data on the shell thickness of several breakout tanks at the company's Cushing Terminal for years. This resulted in reduced safety and an elevated risk of failure because of an ineffective safety-inspection protocol. Enbridge has not presented any evidence or argument that would justify a reduction in the proposed penalty. Accordingly, having reviewed the record and considered the seriousness of the offense and assessment criteria, I assess Respondent a civil penalty of \$33,700 for violation of 49 C.F.R. § 195.432(b).

Item 4: The Notice proposed a civil penalty of \$45,000 for Respondent's violation of 49 C.F.R. §§ 195.565 and 195.571, for failing to meet at least one of the applicable criteria for cathodic protection on some Cushing Terminal breakout tanks, in accordance with API Recommended Practice 651 and NACE SP 0169. Enbridge neither contested the allegation of violation nor offered any reason for its non-compliance. The failure to maintain proper cathodic protection for the company's breakout tanks could have led to a failure at a major terminal, where safety violations pose a higher level of risk. Accordingly, having reviewed the record and considered the assessment criteria, I assess Respondent a civil penalty of \$45,000 for violation of 49 C.F.R. §§ 195.565 and 195.571.

In summary, having reviewed the record and considered the assessment criteria for each of the Items cited above, I assess Respondent a total civil penalty of **\$78,700**.

Payment of the civil penalty must be made within 20 days of service. Federal regulations (49 C.F.R. § 89.21(b)(3)) require such payment to 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 (AMK-325), Federal Aviation Administration, Mike Monroney Aeronautical Center, P.O. Box 269039, Oklahoma City, Oklahoma 73125. The Financial Operations Division telephone number is (405) 954-8845.

Failure to pay the \$78,700 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.

COMPLIANCE ORDER

The Notice proposed a compliance order with respect to Items 1 and 4 in the Notice for violations of 49 C.F.R. §§ 195.432(b), and 195.565 and 195.571, respectively. Under 49 U.S.C. § 60118(a), each person who engages in the transportation of hazardous liquids or who owns or operates a pipeline facility is required to comply with the applicable safety standards established under chapter 601. Pursuant to the authority of 49 U.S.C. § 60118(b) and 49 C.F.R. § 190.217, Respondent is ordered to take the following actions to ensure compliance with the pipeline safety regulations applicable to its operations:

1. With respect to the violation of § 195.432(b) (**Item 1**), Respondent must modify its breakout tank inspection program to correctly determine the shell corrosion rates by correctly calculating the shell thickness and corrosion rates on all of the breakout tanks in the Cushing Terminal and re-determining the external inspection intervals for each breakout tank.
2. With respect to the violation of §§ 195.565 and 195.571 (**Item 4**), Respondent must take appropriate action to remedy all cathodic protection deficiencies and show, by structure-to-soil measurements, that one or more of the cathodic protection criteria listed in NACE SP 0169 or API RP651 have been achieved.
3. With respect to the violation of § 195.432(b) (**Item 1**), Respondent must submit, for PHMSA approval, a shell-thickness measurement procedure within 30 days of receipt of this Order. Enbridge must then complete shell thickness re-measurements according to the approved procedure for all Cushing Terminal breakout tanks within 180 days of receiving PHMSA approval for the procedure. Enbridge must also propose an initial shell re-measurement interval appropriate to determine a valid shell corrosion rate, and once the second measurement has been completed, recalculate the external inspection interval for all Cushing Terminal breakout tanks. Enbridge must complete the entire process to properly determine the external inspection intervals within 60 months from receipt of this Order.
4. With respect to the violation of § 195.565 (**Item 4**), Respondent must submit to PHMSA, a plan, with dates, to correct all cathodic protection deficiencies within 30 days of receipt of this Order. Enbridge must complete correction of all deficiencies within 12 months of receipt of this Order.
5. It is requested (not mandated) that Enbridge maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to R.M. Seeley, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses; and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.

The Director may grant an extension of time to comply with any of the required items upon a written request timely submitted by the Respondent and demonstrating good cause for an extension.

Failure to comply with this Order may result in the administrative assessment of civil penalties not to exceed \$200,000 for each violation for each day the violation continues or in referral to the Attorney General for appropriate relief in a district court of the United States.

WARNING ITEMS

With respect to Items 2, 3 and 5, the Notice alleged probable violations of Part 195 but did not propose a civil penalty or compliance order for these items. Therefore, these are considered to be warning items. The warnings were for:

49 C.F.R. § 195.432(b) and (d) (**Items 2 and 3**) — Respondent's alleged failure to complete certain breakout tank repairs and to conduct required inspections necessary for safe operation or, in the alternative, provide engineering justification for not making such repairs; and

49 C.F.R. § 195.581 (**Item 5**) — Respondent's alleged failure to consistently apply coating material to all of its breakout tanks suitable to prevent atmospheric corrosion.

Enbridge presented information in its Response showing it had taken certain actions to address the cited items. If OPS finds a violation of any of these items in a subsequent inspection, Respondent may be subject to future enforcement action.

Under 49 C.F.R. § 190.243, Respondent has a right to submit a Petition for Reconsideration of this Final Order. 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 receipt of service of this Final Order by the Respondent, provided they contain a brief statement of the issue(s) and meet all other requirements of 49 C.F.R. § 190.243. The filing of a petition automatically stays the payment of any civil penalty assessed. Unless the Associate Administrator, upon request, grants a stay, all other terms and conditions of this Final Order are effective upon service in accordance with 49 C.F.R. § 190.5.

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

Date Issued