



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

1200 New Jersey Ave., S.E.  
Washington, DC 20590

SEP 24 2007

**BY CERTIFIED MAIL (RETURN RECEIPT REQUESTED) AND FACSIMILIE (907) 450-5415**

Mr. Rob Shoaf  
Vice President, Regulatory Affairs  
Alyeska Pipeline Service Company  
900 East Benson Blvd.  
Anchorage, AK 99507

**Re: CPF No. 5-2004-5015**

Dear Mr. Shoaf:

Enclosed is the Final Order issued by the Associate Administrator for Pipeline Safety in the above-referenced case. It makes findings of violation and specifies actions to be taken to comply with the pipeline safety regulations. When the terms of the compliance order are completed, as determined by the Western Region Director, this enforcement action will be closed. Your receipt of this Final Order constitutes service of that document under 49 C.F.R. § 190.5.

Sincerely,

James Reynolds  
Pipeline Compliance Registry  
Office of Pipeline Safety

cc: Chris Hoidal, Director Western Region, PHMSA  
Shelia Doody-Bishop, Esq., Alyeska Pipeline Service Company

Enclosure

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

\_\_\_\_\_)  
**In the Matter of** )  
 )  
**Alyeska Pipeline Service Company,** )  
 )  
**Respondent** )  
\_\_\_\_\_)

**CPF No. 5-2004-5015**

**FINAL ORDER**

From July 20 to 24, 2003, pursuant to 49 U.S.C. § 60117, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA)<sup>1</sup>, Office of Pipeline Safety, conducted an on-site pipeline safety inspection of Respondent's Trans Alaska Pipeline System (TAPS) facilities, manuals, and records for the portion of TAPS from Pump Station 12 to the Valdez Marine Terminal. As a result of the inspection, the Western Region Director issued to Respondent, by letter dated April 28, 2004, a Notice of Probable Violation, and Proposed Compliance Order (Notice). In accordance with 49 C.F.R. § 190.207, the Notice proposed finding that Respondent had violated 49 C.F.R. §§ 195.571 and 195.573 and ordering Respondent to take certain measures to correct one of the alleged violations. The Notice also warned Respondent to take appropriate corrective action to address the other probable violation in order to avoid future enforcement action.

Respondent responded to the Notice by letter dated August 2, 2004 (Response). Respondent contested the allegations, offered information in explanation of the allegations, and requested a hearing. A hearing was subsequently held on September 21, 2005, in Lakewood, Colorado. Respondent was afforded the opportunity to submit a post-hearing statement, and did so by letter dated November 18, 2005 (Closing).

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<sup>1</sup> Effective February 20, 2005, the Pipeline and Hazardous Materials Safety Administration (PHMSA) succeeded the Research and Special Programs Administration as the agency responsible for regulating safety in pipeline and hazardous materials transportation. *See*, section 108 of the Norman Y. Mineta Research and Special Programs Improvement Act (Public Law 108-426, 118 Stat. 2423-2429 (Nov. 30, 2004)). *See also*, 70 Fed. Reg. 8299 (Feb. 18, 2005) re delegating the pipeline safety authorities and functions to the PHMSA Administrator.

## FINDING OF VIOLATION

**Item 2:** Item 2 of the Notice alleged that Respondent violated 49 C.F.R. § 195.571, which states:

**49 C.F.R. § 195.571** – 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 Standard RP0169-96 (incorporated by reference, see § 195.3).

### Background

Item 2 alleged that Respondent violated 49 C.F.R. § 195.571, by failing to provide adequate cathodic protection to portions of TAPS in 2002 and 2003. The Notice alleged that certain portions of TAPS did not meet the minimum criteria set forth in paragraph 6.2 of NACE Standard RP0169-96 (NACE Standard), during tests of the pipeline's cathodic protection system.

Cathodic protection can limit corrosion on pipelines through the application of direct electric current to the metal of the pipeline. Protection is achieved when current flows to the metal in an amount sufficient to prevent the loss of metal from the pipeline to the surrounding environment. If insufficient current is provided, metal can flow from the external surface of the pipeline and corrosion can result. The NACE Standard provides a reference standard against which an operator can measure the flow of current to or from a pipeline (pipe-to-soil potential). Pipe-to-soil potentials that do not meet the NACE Standard indicate that a pipeline is not receiving the cathodic protection required by § 195.571.<sup>2</sup>

PHMSA has found that corrosion causes a significant proportion of hazardous liquid pipeline accidents.<sup>3</sup> As a result, in 2001, PHMSA incorporated the NACE Standard into the pipeline safety regulations to reduce the potential for corrosion-related pipeline leaks.<sup>4</sup> In order for Respondent to provide adequate cathodic protection for TAPS, it is essential that the company achieve and maintain full compliance with the NACE Standard.

During the inspection, a PHMSA inspector found that Respondent's 2002 Close Interval Survey (CIS), as well as CIS data from 1998, 1999, and 2000, indicated that corrected pipe-to-soil potentials, measured between TAPS survey markers 42120+88 and 42149+59 (Mile Points (MP) 797.74 and 798.28, respectively), did not meet the -850mV criteria in the NACE Standard. CIS is one of several methods used to measure pipe-to-soil potentials. A CIS is performed by measuring cathodic protection, on average, every foot along a section of pipeline. PHMSA inspectors also found that Respondent's 2002 and 2003 corrosion coupon test station readings

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<sup>2</sup> See also, "Controlling Corrosion on Hazardous Liquid and Carbon Dioxide Pipelines, Final Rule," 66 Fed. Reg. 66,994, 66,998 (Dec. 27, 2001) ("The theory behind final §195.571 is that if all external surfaces of a pipeline are cathodically protected according to the criteria and other considerations in paragraphs 6.2 and 6.3 of the NACE Standard, external corrosion will be controlled successfully").

<sup>3</sup> Final Rule, 66 FR 66,994.

<sup>4</sup> *Id.*

from the MP 798.57 coupon revealed pipeline pipe-to-soil potentials that did not comply with the NACE Standard. In each instance, the failure to meet pipe-to-soil potentials indicated that the pipeline was not receiving adequate cathodic protection as required by § 195.571.

In its Response, at the Hearing and in its Closing, Respondent presented arguments in defense of PHMSA's allegation of violation and requested that the Notice be withdrawn. Respondent's arguments and PHMSA's findings are discussed below.

### **Discussion and Findings**

#### **1. The Adequacy of Respondent's Cathodic Protection System.**

Respondent did not dispute PHMSA's allegation that Respondent's CIS and coupon tests revealed pipe-to-soil potentials below the minimum NACE criteria<sup>5</sup> and acknowledged that additional corrective action was needed.<sup>6</sup> Based on a review of the record in this case, and the undisputed fact that Respondent's 2002 CIS and 2002-2003 coupon data revealed pipe-to-soil potentials that did not meet minimum criteria, I find that Respondent's cathodic protection system did not provide the level of protection required by § 195.571.

#### **2. Corrosion Monitoring.**

Although Respondent admitted that its cathodic protection system did not provide an adequate level of protection, Respondent contended in its Response that its use of In-Line Inspection (ILI) tools to monitor external corrosion constituted compliance with § 195.571.<sup>7</sup> Specifically, Respondent contended that paragraph 6.3 of the NACE Standard permitted it to use ILI instead of meeting the criteria for cathodic protection in paragraph 6.2 of the NACE Standard § 195.571.<sup>8</sup>

I find Respondent's interpretation of § 195.571 incorrect for several reasons. Section 195.571 requires that cathodic protection "must comply with one or more of the applicable criteria *and* other considerations for cathodic protection found in the paragraphs 6.2 and 6.3 of NACE Standard RP0169-96"<sup>9</sup> (emphasis added). The use of the conjunctive "*and*" means that Respondent must provide adequate cathodic protection in accordance with paragraph 6.2 criteria while also taking into account other considerations in paragraph 6.3 of the NACE Standard. The "other considerations" indicate that respondent may use ILI as a supplemental diagnostic tool but they do not permit Respondent to substitute ILI for compliance with the criteria set forth in paragraph 6.2.<sup>10</sup>

<sup>5</sup> Response, *Probable Violation 2: Cathodic Protection* at 2 (Aug. 2, 2004), Hearing Presentation, *Issue #2 Cathodic Protection* at 2 (Sept. 21, 2005).

<sup>6</sup> Response at 3.

<sup>7</sup> Response at 2-3.

<sup>8</sup> Response at 2.

<sup>9</sup> 49 C.F.R. § 195.571.

<sup>10</sup> See NACE RP 0169-96, Paragraphs 6.3.2 and 6.3.3. See Also, Final Rule 66 FR at 66,998. Based on comments received, PHMSA specifically narrowed which NACE sections were to be incorporated into 195.571 in order to prevent operators from "deviat[ing] from the criteria and other considerations in section 6." *Id.*

Respondent's ILI program cannot replace the corrosion prevention function of an adequate cathodic protection system required by § 195.571. Cathodic protection, when adequate, serves as a continuous defense against external corrosion; whereas ILI serves only as a periodic assessment tool and indicator of external corrosion. Each method takes a different approach to pipeline corrosion and each is independently necessary. Without adequate cathodic protection, corrosion could occur undetected in the years between ILI tests and could cause a leak from Respondent's pipeline. I find that Respondent may not use ILI to see how long it can go before inadequate cathodic protection allows corrosion and damage the pipeline to occur and threaten public safety and the environment. This Final Order marks the second time that PHMSA has rejected Respondent's argument that it may conduct ILI instead of maintaining an adequate cathodic protection program.<sup>11</sup>

### 3. Corrosion Coupons.

At the hearing, PHMSA expressed concern about Respondent's level of reliance on corrosion coupons to monitor the effectiveness of its cathodic protection system. PHMSA noted the potential for corrosion occurring in sections of pipeline located between coupons in those years that Respondent does not perform CIS. In its Closing, Respondent maintained that its reliance on coupon data, supplemented by CIS to identify deteriorating trends in areas located between coupons, is an effective means of monitoring the adequacy of its cathodic protection system.<sup>12</sup> However, Respondent does not perform CIS every year and could fail to detect corrosion not indicated by coupon monitoring.

I find that coupon monitoring does not provide a comprehensive picture of corrosion trends along a pipeline, particularly between coupons locations and in years when no CIS tests are performed. In the rulemaking preamble to the final §195.571, PHMSA stated that the use of coupons alone to indicate the performance of a cathodic protection system "has not always been sufficient to assure protection of all pipeline surfaces."<sup>13</sup> A CIS gives a better indication of the cathodic protection levels on the pipe because it measures, on average, every foot along the pipeline, whereas coupon test stations are spaced, and only measure corrosion, about every half mile. Similarly, a coupon test measures corrosion of the coupon and not the pipe itself, whereas a CIS takes measurements directly from the pipe. This finding is consistent with PHMSA's findings in the previously cited Final Order issued against Respondent.<sup>14</sup>

In its Closing, Respondent also argued that PHMSA had approved Respondent's reliance on coupons as an effective means of corrosion control, as part of a broader approval of its Corrosion Control Monitoring Plan (CCMP), as set forth in a letter from the Joint Pipeline Office (JPO), dated February 23, 2000, and signed by PHMSA.<sup>15</sup> In fact, the letter did not approve the CCMP and expressly provided that only "after acceptance of the final CCMP procedures" would JPO,

<sup>11</sup> See *In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002 (May 19, 2005) (finding that Respondent's use of ILI to monitor corrosion is not a substitute for restoring protection to required levels) *aff'd in part*, Decision on Petition for Reconsideration (Mar. 3, 2006).

<sup>12</sup> Closing at 1-2.

<sup>13</sup> Final Rule, 66 Fed. Reg. at 66,999.

<sup>14</sup> *In the Matter of Alyeska Pipeline Service Company*, Final Order at 4, CPF No. 5-2003-5002.

<sup>15</sup> Closing at 2.

including PHMSA, accept the CCMP. PHMSA never accepted the final CCMP procedures and never accepted the CCMP.

#### 4. Respondent's cathodic protection improvements.

At the hearing and in its Closing, Respondent presented evidence of improvements that it had made to its cathodic protection system after the inspection date, in support of its request that the Notice be withdrawn. One improvement was the 2004 isolation of the Petro Star refinery, located at MP 796, and the addition of an adjustable resistance bond to control loss of current to the refinery.<sup>16</sup> Respondent attempted to show another improvement by listing the results of the 2005 coupon testing at MP 798.57, which showed that the coupon met NACE corrosion protection criteria.<sup>17</sup> However, in its Closing, Respondent acknowledged that its 2005 CIS data indicated that none of the pipe-to-soil potentials measured between MP 797.74 and 798.28 met the -850mV NACE criteria.<sup>18</sup> Respondent explained that repairs to the nearby Valdez Marine Terminal required it to de-energize the cathodic protection systems and led to the inadequate pipe-to-soil potentials measured by CIS in 2005 and its failure to meet the NACE criteria.

Although Respondent's 2005 coupon survey appeared to meet NACE criteria, it only serves as an indicator of corrosion at the location of the coupon and did not provide sufficient evidence of adequate cathodic protection. Information presented at the hearing and in the Closing show that Respondent's system continues to fail to provide adequate cathodic protection.<sup>19</sup> As Respondent is aware, attempts to achieve compliance *after* an inspection do not warrant PHMSA's withdrawal of violations.<sup>20</sup>

In its Response, Respondent also stated that it would take additional corrective actions to its cathodic protection system by the end of 2006. Respondent contended that this would constitute corrective action "within a reasonable time," in accordance with 49 C.F.R. § 195.401(b). I disagree. Respondent has been well aware of the inadequacy of its cathodic protection system for several years and its failure to correct such condition within that time period does not constitute correction "within a reasonable time" under § 195.401(b).

#### Summary of Findings

After considering all of the evidence and legal issues presented, I find that Respondent has violated § 195.571 as alleged in Item 2 of the Notice, for 2002 and 2003, because its cathodic protection system did not comply with the applicable criteria for cathodic protection contained in paragraph 6.2 of the NACE Standard. Because Respondent's system did not provide adequate cathodic protection, the risk of a corrosion-related pipeline accident and harm to the public, property and the environment was increased. Respondent's practice of ILI, while useful and

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<sup>16</sup> Hearing Presentation at 5.

<sup>17</sup> *Id.* at 6-7.

<sup>18</sup> Closing at 2.

<sup>19</sup> See Hearing Presentation at 6; Closing at 2.

<sup>20</sup> See *In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002 (finding that "mitigation [of a proposed civil penalty] is not warranted for taking corrective action to address...low cathodic protection readings..."). Just as subsequent corrective action did not warrant mitigation of civil penalties in that case, it does not warrant withdrawal of the violation here.

necessary to comply with other Part 195 pipeline inspection requirements, does not satisfy the requirements of § 195.571. Additionally, the remedial efforts Respondent has made since the inspection have not been sufficient to provide adequate cathodic protection nor do these measures warrant withdrawal of the Notice. This finding of violation will be considered a prior offense in any subsequent enforcement action taken against Respondent.<sup>21</sup>

### **COMPLIANCE ORDER**

The Notice proposed a compliance order with respect to Item 2 for violation of 49 C.F.R. § 195.571. 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.

Respondent shall:

1. Within 30 days of receipt of this Order, submit for approval by the Western Region Director a written plan (Plan) to bring cathodic protection levels between MP 797.74 and 798.28 and in the vicinity of MP 798.57 into compliance with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of NACE Standard RP0169-96, as required by 49 C.F.R. § 195.571. The Plan shall provide for the addition of cathodic protection where necessary to meet one or more of the criteria in paragraph 6.2 of the NACE Standard. The Plan shall also provide for continued Close Interval Surveys of the adequacy of cathodic protection on TAPS, at the locations described above, to ensure cathodic protection is in compliance with § 195.571. The Plan shall also provide a list and description of proposed remedial measures needed to bring the cathodic protection system into compliance with § 195.571 and a schedule for completion of the remedial measures.
2. Within 30 days of approval by the Western Region Director of the Plan described in Paragraph one (1) above, bring the level of cathodic protection into compliance with one of the criteria in paragraph 6.2 of the NACE Standard, as required by 49 C.F.R. § 195.571.
3. Within 30 days of the addition of cathodic protection as required by Paragraphs one (1) and two (2) above, submit a written report to the Western Region Director demonstrating that the cathodic protection deficiencies noted in this Final Order have been addressed in accordance with the approved Plan.

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 demonstrating good cause for an extension.

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<sup>21</sup> As mentioned supra, PHMSA issued an earlier Final Order that rejected Respondent's argument that ILI could satisfy the NACE Standard imposed by § 195.571. *See In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002. The earlier Final Order was not been issued as of the date the Notice was issued in this case and therefore the violation of § 195.571 cannot be deemed a prior offence.

**WARNING ITEM**

With respect to Item 1, the Notice alleged a probable violation of Part 195 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. § 195.573 — Respondent's failure to perform electrical checks for proper performance of the cathodic protection rectifier (20-EEA-116-1) located at Remote Gate Valve (RGV) 116 (MP 747.2) from October 2, 2002, to June 17, 2003. Electrical checks of this rectifier exceeded the 2½ month maximum check frequency required by 49 C.F.R. § 195.573(c).

Respondent presented information in its Response showing that it had taken certain actions to address this Item. Respondent contended that its failure to timely inspect the cathodic protection rectifier at RGV 116 was justified by safety concerns arising from unusually severe avalanche conditions during the winter of 2002-2003. As discussed during the hearing, Respondent could have applied for a waiver of the time limits during the winter months or it could have provided for the remote monitoring of rectifiers. In did neither. In its Closing, Respondent informed PHMSA that it was working to find effective alternatives for monitoring RGV rectifiers. In any case, Respondent should immediately notify the Western Region Director whenever it fears that it will not be able to perform maintenance within required intervals.

Having considered such information, I find, pursuant to 49 C.F.R. § 190.205, that a probable violation of 49 C.F.R. § 195.573(c) has occurred and Respondent is hereby advised to correct such condition. In the event that PHMSA finds a violation of this item in a subsequent inspection, Respondent may be subject to future enforcement action.

In accordance with 49 U.S.C. § 60122 and 49 C.F.R. § 190.223, failure to comply with this Final Order may result in the assessment of administrative civil penalties of not more than \$100,000 per violation per day pursuant to 49 U.S.C. § 60122, or in the imposition of civil judicial penalties and other appropriate relief pursuant to 49 U.S.C. § 60120.

Under 49 C.F.R. § 190.215, Respondent has a right to submit a Petition for Reconsideration of this Final Order. The petition must be received within 20 days of Respondent's receipt of this Final Order and must contain a brief statement of the issues. The terms of the order, including any required corrective action, remain in full effect unless the Associate Administrator, upon request, grants a stay. The terms and conditions of this Final Order are effective on receipt.

*William H. Guter*  
for

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Jeffrey D. Wiese  
Associate Administrator  
for Pipeline Safety

*9-24-07*  
Date Issued