

**October 8, 2015**

Mr. Tom Barrett, President  
Alyeska Pipeline Service Company  
3700 Centerpoint Drive  
P.O. Box 196660  
Anchorage, AK 99503

**Re: CPF No. 5-2013-5008**

Dear Mr. Barrett:

Enclosed please find the Final Order issued in the above-referenced case. It makes one finding of violation, assesses a civil penalty of \$145,000, and specifies actions that need to be taken by Alyeska Pipeline Service Company 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, Western 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. Chris Hoidal, Director, Western Region, OPS  
Mr. Michael W. Joynor, Senior Vice President, Operations, Alyeska Pipeline Service Company

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

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

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<b>In the Matter of</b>	)	
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<b>Alyeska Pipeline Service Company,</b>	)	<b>CPF No. 5-2013-5008</b>
	)	
<b>Respondent.</b>	)	
	)	

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**FINAL ORDER**

On January 8, 2011, pursuant to 49 U.S.C. § 60117, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), responded to and began an investigation of a crude-oil release at Pump Station 1 (PS-01) of the Trans-Alaska Pipeline System (TAPS) operated by Alyeska Pipeline Service Company (Alyeska). TAPS transports crude oil from Alaska’s North Slope across 800 miles of varied Alaskan terrain to Valdez, Alaska, North America’s northernmost ice-free port.<sup>1</sup>

On that same date, Alyeska had discovered crude oil flowing into the PS-01 booster pump basement under insulation at the 4<sup>th</sup> Unit Booster Pump discharge line basement wall penetration (2011 Failure). As a result of PHMSA’s subsequent investigation, the Director, Western Region, OPS (Director), issued to Respondent, by letter dated August 1, 2013, a Notice of Probable Violation, Proposed Compliance Order, and Proposed Civil Penalty (Notice or NOPV). In accordance with 49 C.F.R. § 190.207, the Notice proposed finding that Alyeska had violated 49 C.F.R. § 195.579 and proposed assessing a civil penalty of \$145,000 for the alleged violation. The Notice also proposed ordering Respondent to take certain measures to correct the alleged violation.

Alyeska responded to the Notice by letter dated November 4, 2013 (Response). The company contested the allegation for Item 1, offered additional information in response to the Notice, and requested that the proposed civil penalty be reduced and the Proposed Compliance Order be withdrawn. It also submitted supplemental information in a subsequent letter dated August 26, 2014 (Supplemental Response). Respondent did not request a hearing and therefore has waived its right to one.

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<sup>1</sup> <http://www.alyeska-pipe.com/TAPS/PipelineOperations> (last accessed on June 4, 2015).

## FINDING OF VIOLATION

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

**Item 1:** The Notice alleged that Respondent violated 49 C.F.R. § 195.579(a), which states:

**§ 195.579 What must I do to mitigate internal corrosion?**

(a) *General.* If you transport any hazardous liquid or carbon dioxide that would corrode the pipeline, you must investigate the corrosive effect of the hazardous liquid or carbon dioxide on the pipeline and take adequate steps to mitigate internal corrosion.

The Notice alleged that Respondent violated 49 C.F.R. § 195.579(a) by failing to take adequate steps to mitigate internal corrosion in “deadlegs” (i.e., process piping sections that have been isolated and no longer maintain a flow of liquid or gas) and areas of low flow on TAPS, which transports a hazardous liquid that would corrode the pipeline. Specifically, the Notice alleged that Alyeska had been aware since at least 2008 that TAPS faced the risk of internal corrosion but failed to take adequate steps to control it. It alleged that the 2011 Failure was directly caused by internal corrosion.

According to PHMSA, Alyeska hired a contractor, Det Norske Veritas (DNV), in 2011 to conduct a root cause analysis of the 2011 Failure. DNV’s final report determined that the direct cause of the leak was microbiologically influenced corrosion (MIC) and noted five causal factors, all related to inhibit internal corrosion.<sup>2</sup> Finally, PHMSA alleged that Alyeska had installed a sleeve on piping at Pump Station 9 in 2013 to remediate internal corrosion that had been causing significant (approximately 40%) pipe wall loss and that such repair showed that the company’s internal corrosion program continued to be inadequate.

Alyeska responded to the Notice in writing on November 4, 2013 (Response). Alyeska disputed PHMSA’s allegation that the company had been aware of internal corrosion problems on TAPS as early as 2008 but failed to take adequate steps to mitigate it.<sup>3</sup> The company stated that “the [Notice] does not fully acknowledge the work that Alyeska has performed to improve its Integrity Management program beginning in 2008 until the present”<sup>4</sup> and outlined five principal measures it had taken to address the problem.

First, Alyeska contended that since 2008, it had optimized its procedures for microbiological monitoring, that it had used and assessed the effectiveness of appropriate biocide and corrosion

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<sup>2</sup> The Notice alleged that DNV specifically found five causal factors for the 2011 Failure: “a. [Pump Station 1] Booster #4 not added, b. No bio testing/ biocide injection, c. Non-biocide inhibitor began in mid-90s, d. Risk mitigation less than adequate on urgency to replace piping, and e. Lack of accessibility to inspect below ground deadleg/low flow pipe segments.”

<sup>3</sup> Alyeska also challenged the Proposed Compliance Order and proposed civil penalty amount. I will address those arguments in the appropriate sections below.

<sup>4</sup> Response, Attachment, at 2.

inhibitors, and that it had assessed chloride sources. The company further asserted that in 2008, it had contracted with Baker Petrolite, a nationally-recognized expert in the field, to perform a corrosivity study for the crude oil flowing into TAPS. Alyeska claimed that it had used the results of that study “to optimize the corrosion inhibition and biocide treatment programs and tested recommended inhibitors and biocides using actual TAPS crude-oil and water samples.”<sup>5</sup>

Alyeska further stated that it had subsequently hired Baker Hughes to assess the company’s internal corrosion inhibitor program and to assist Alyeska in improving its effectiveness. Alyeska received an independent evaluation of the crude oil and water for corrosive elements from Baker Hughes, which provided recommendations for a more effective internal corrosion inhibitor program. Alyeska claimed that it had re-evaluated and revised its inhibitor-injection program based on this report, had revised its procedures for biocide and inhibitor treatments in Fall 2010, and had begun biocide treatments at Pump Station Three and Pump Station Four in November 2010 and in pump station facility piping in February 2011. It also claimed that it had treated PS-01 crude tanks with biocide in May 2011 and begun system biocide-treatment monitoring of bacteria levels in April 2011, which showed locations where bacteria counts were decreasing, an indicator of biocide effectiveness.<sup>6</sup>

Alyeska also engaged DNV to perform a root cause analysis of the booster pump leak at PS-01, which was completed on December 7, 2011. Alyeska created a Management Action Plan to address the identified causes of the leak. This included a 2012 Baker Hughes “assessment of chlorides and their potential impact on corrosion acceleration.”<sup>7</sup>

Second, Alyeska argued that it had taken steps to replace or modify certain pipeline infrastructure that the company believed to be susceptible to internal corrosion. This included the removal of deadlegs and bringing certain facility piping above ground as part of the crude-oil piping assessment and replacement required under a 2011 Consent Agreement with PHMSA.<sup>8</sup>

Third, the company argued that it had been expanding its Pipeline Integrity Testing (PIT) program for internal inspections and assessments and researching new technologies that potentially allowed the inspection of previously-inaccessible piping. These included guided wave, electro-magnetic acoustic transducers, and robotic crawler “pigs.”<sup>9</sup>

Fourth, contrary to PHMSA’s allegation that the installation of a sleeve over corroded pipe at Pump Station 9 in April 2013 demonstrated the inadequacy of the company’s internal corrosion program, Alyeska asserted that this repair “does not demonstrate that the internal corrosion

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<sup>5</sup> *Id.*, at 3.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.* at 4.

<sup>8</sup> *In the Matter of Alyeska Pipeline Service Company, CPF 5-2011-5001S* (August 17, 2011). Available at: [http://primis.phmsa.dot.gov/comm/reports/enforce/CONOEvent\\_opid\\_0.html?nocache=3154# TP\\_1\\_tab\\_5](http://primis.phmsa.dot.gov/comm/reports/enforce/CONOEvent_opid_0.html?nocache=3154# TP_1_tab_5).

<sup>9</sup> Response, at 4-5.

inhibitor program is inadequate. The purpose of the program is to provide monitoring, prevention, and repair to maintain pipeline integrity...Installing any sleeve enhances the effectiveness of the overall, system integrity management program and is not a measure of the effectiveness of the corrosion inhibitor.”<sup>10</sup>

Fifth, in its Supplemental Response, Alyeska provided further information regarding the adequacy of its internal-corrosion mitigation efforts. Alyeska stated that it was currently performing flow studies, which indicated that “[l]aminar flow conditions are not reached until TAPS flow rates are in the 200,000 barrels per day (BPD) range.” This rate is not expected to be reached for several more years.<sup>11</sup> Alyeska stated that although bacteria levels and corrosion rates were shown to be increasing at some corrosion-coupon locations in its previously-submitted Bacteria Testing Analysis PowerPoint presentation, TAPS was primarily experiencing corrosion rates under 0.1 mils per year or less, which are considered low by NACE criteria. Additionally, Alyeska described its process for ensuring the integrity of TAPS valve bypasses, including visual inspections for evidence of external corrosion as well as non-destructive testing for evidence of internal corrosion.<sup>12</sup>

After careful consideration of all these arguments and all of the evidence in the record, I am unpersuaded that Alyeska took adequate steps from 2008 to 2011 to mitigate internal corrosion on TAPS deadlegs and in low-flow areas. While it is clear that the company did take a number of steps, particularly after the 2011 Failure, to deal with the company’s complex and longstanding problems with MIC, the fact remains that the 2011 Failure itself constitutes strong evidence that the efforts Alyeska had been making prior to that time were inadequate to mitigate internal corrosion in low-flow piping. As stated in the Notice, DNV’s root cause analysis of the 2011 Failure concluded that the direct cause of the oil leak was MIC and five other generic causes, including “[l]ess than adequate process for corrosion inhibitor selection.”

Alyeska was aware of these inadequacies several years before the 2011 release. In 2008, Alyeska released a risk assessment report, titled “Removing Concrete from PS-01 Buried Piping for Internal Corrosion Investigation.” Alyeska’s evaluation concluded that in order to deal with the active corrosion problems affecting the PS01 below-ground piping, it was necessary to obtain corrosion data for the welds on this buried piping. The report stated that if no data were available,

[A]lyeska assumes a high probability of significant, active corrosion associated with the belowground welds. . . Due to the high risks of interrupting crude oil supply, every scenario the team evaluated recommends replacing the buried pipe (i.e., the booster pump suction line, over and short line, suction and discharge relief lines) and

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<sup>10</sup> *Id.* at 5.

<sup>11</sup> Laminar, as opposed to turbulent, flow could allow a corrosive environment to accumulate near the walls of the pipeline and possibly contribute to internal corrosion or enhance existing internal corrosion.

<sup>12</sup> Supplemental Response, at 3.

possible replacement or modification of the related facilities.<sup>13</sup>

Despite such warnings from its own study, the company chose to continue using the existing piping without taking appropriate steps to mitigate the internal corrosion that eventually resulted in a release. In essence, Alyeska addressed the corrosion problem on the below-ground piping symptomatically, contracting a corrosivity study with Baker Petrolite and an evaluation of the internal corrosion inhibitor program with Baker Hughes but not taking action that would properly correct the corrosion that led to the 2011 Failure.

Accordingly, after considering all of the evidence, I find that Respondent violated 49 C.F.R. § 195.579(a) by failing to take adequate steps to mitigate internal corrosion in deadlegs and areas of low flow in TAPS.

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. The Notice proposed a total civil penalty of \$145,000 for the violation cited above.

**Item 1:** The Notice proposed a civil penalty of \$145,000 for Respondent's violation of 49 C.F.R. § 195.579(a), for failing to take adequate steps to mitigate internal corrosion in deadlegs and areas of low flow in TAPS.

Alyeska objected to the proposed civil penalty on several grounds. First, it argued that a comparison with other NOPVs issued by PHMSA to other operators in 2013 "demonstrates that similar violations related to corrosion control, integrity assessment programs, cathodic protection programs, and inline inspection requirements, all regulatory requirements under Pipeline Integrity Management or Subpart H, Corrosion Control resulted in lower penalty amounts."<sup>14</sup>

Specifically, it argued that Buckeye Partners received three NOPVs in 2013 alleging violations of corrosion-related regulations. Each had proposed penalties of less than \$100,000; two of the

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<sup>13</sup> Pipeline Safety Violation Report (August 1, 2013) (on file with PHMSA), at Exhibit 7, at 4.

<sup>14</sup> Response, at 5-6.

three were multiple-violation notices. Similarly, Texas Eastern Transmission was issued an NOPV with three probable violations, only one of which was corrosion-related, with a proposed penalty of \$33,700. Centerpoint Energy Gas Transmission had an NOPV with 10 alleged violations, five of which were integrity- or corrosion-related. Although the total proposed penalty in that case was \$137,200, the proposed penalties for the integrity-related alleged violations totaled only \$87,900. PHMSA issued an NOPV to Jayhawk Pipeline for four alleged violations of regulations involving high consequence areas (HCAs), yet the proposed penalty was only \$82,400. BP Pipeline (North America) received an NOPV in 2013 with alleged violations of integrity management programs, including HCA regulations. Although there were six probable violations, the proposed penalty was \$100,000. According to Alyeska, each of these cases had similar probable violations, yet all had proposed penalties that were less, some significantly less, than the \$145,000 proposed in this case.<sup>15</sup>

Alyeska further argued that because 49 C.F.R. § 190.225 is “silent on the consideration of potential harm,....PHMSA should be considering only actual harm, such as personal injury or adverse impact on the environment when assessing the gravity of an alleged violation.” The company cited another 2013 case in which Kinder Morgan Liquids Terminals, LLC, received an NOPV in 2013 for an accident in which an employee had been injured and yet the proposed penalty was only \$100,000. In contrast, Alyeska argued that in the current case, no harm occurred. Therefore, Alyeska argued, the proposed penalty is unsupported by the nature, circumstances and gravity of the violation when compared to other cases involving personal injury or damage to the environment.<sup>16</sup>

Second, the company argued, with regard to culpability, that it had acted diligently, not recklessly or negligently, in taking remedial action to mitigate internal corrosion. Alyeska contended that its internal corrosion inhibitor program was designed to create an awareness of, and to address, the consequences of moving hazardous liquid in TAPS.

Third, Alyeska argued, with regard to its history of prior offenses, that it had four prior enforcement actions alleging violations of § 195.579, but three did not have any proposed penalties. The remaining NOPV had a proposed penalty of only \$11,000 for each of the applicable probable violations.

Fourth, Alyeska argued, with respect to the lack of a penalty reduction for good faith, that it had indeed demonstrated good-faith efforts to achieve compliance with § 195.579, through the various measures discussed above. According to the company, these various efforts should serve as “a mitigating factor” that would support a reduction of the proposed civil penalty.<sup>17</sup>

Fifth, Alyeska argued that while the proposed penalty would not affect the company’s ability to continue in business, the proposed penalty could be more effectively spent on the company’s continuing program to mitigate internal corrosion.

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<sup>15</sup> *Id.*, at 5.

<sup>16</sup> *Id.*, at 6.

<sup>17</sup> *Id.*, at 7.

I have carefully reviewed the record, considered Alyeska's five arguments for a penalty reduction, and evaluated the proposed penalty in this case relative to other recent enforcement cases cited by Respondent. I find the company's arguments unpersuasive. Specifically, I find the proposed penalty to be reasonable and consistent with PHMSA's civil penalty assessment criteria.

Alyeska has put great store in comparing the proposed penalty in the present case with those proposed against other operators in 2013. While PHMSA strives for consistency in its analysis and calculation of proposed civil penalties, the wide range in penalty amounts among the cases cited by Respondent is directly attributable to material differences in the facts that serve as the underlying basis for considering each penalty factor.

The greatest shortcoming in Respondent's analysis is that none of the other 2013 NOPVs cited by Alyeska involved an accident.<sup>18</sup> In the present case, there was an actual release of crude oil from TAPS that was a reportable incident causally related to the alleged violation. Additionally, Alyeska cited one of its own cases where it was cited \$11,000 for the same violation. Again, that particular case did not involve an accident.

Further, it is misleading to compare a penalty assessed against one operator with one assessed against another operator for the same regulatory violation, since PHMSA's assessment criteria do not depend upon the substantive content or subject matter of a regulation (e.g., internal corrosion, welding, or valve inspections) to determine a proposed penalty, but, rather, rely upon the nature, circumstances, gravity of the violation and other factors. These penalty factors and the factual basis for each one are set forth in detail in PHMSA's standardized Violation Report and serve as the actual framework for proposing penalties. These factors are applied consistently to all operators across all regions of the country. In summary, I find nothing in the assessment of the proposed penalty in this case that is inconsistent or out of line with those assessed in the other recent cases cited by Respondent.

Accordingly, having reviewed the record and considered the assessment criteria, I assess the Respondent a total civil penalty of **\$145,000** for violation of 49 C.F.R. § 195.579(a).

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.

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<sup>18</sup> As noted earlier, Alyeska cited a case involving Kinder Morgan Liquids Terminals, LLC [CPF 1-2013-5004], "in which an employee was injured and yet the proposed penalty was only \$100,000." This is incorrect. The Kinder Morgan case actually involved five probable violations arising out of an accident, but the total proposed (and uncontested) penalty in the case was \$500,000, not \$100,000, as stated by Alyeska. The Kinder Morgan case actually reinforces the large difference that exists between penalties for violations that constitute causal factors in accidents and those that do not.

Failure to pay the \$145,000 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.

### **COMPLIANCE ORDER**

The Notice proposed a compliance order with respect to Item 1 in the Notice, for a violation of 49 C.F.R. § 195.579(a). 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. Alyeska stated that the Proposed Compliance Order should be withdrawn because the work that was proposed has already been completed.

The Director has reviewed the Response and acknowledges that Respondent has completed most of the Proposed Compliance Order items. However, Alyeska has not demonstrated that it has completed Item (1)(a) of the Proposed Compliance Order by optimizing its procedures for microbiological monitoring or biocide-dosing protocols for current and anticipated future flow rates.

Therefore, 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 action to ensure compliance with the pipeline safety regulations applicable to its operations:

1. With respect to the violation of § 195.579(a) (**Item 1**), Respondent must optimize procedures for microbiological monitoring, especially effectiveness in deadlegs and low-flow areas, as well as biocide-dosing protocols to mitigate MIC for current and anticipated future flow rates. Such work must be completed no later than 180 days following receipt of this Order.

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 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.

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, 2<sup>nd</sup> 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.

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Jeffrey D. Wiese  
Associate Administrator  
for Pipeline Safety

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Date Issued