

Via Hand Delivery

May 16, 2013

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Presiding Official
Office of Chief Counsel
Pipeline and Hazardous Materials Safety Administration
United States Department of Transportation
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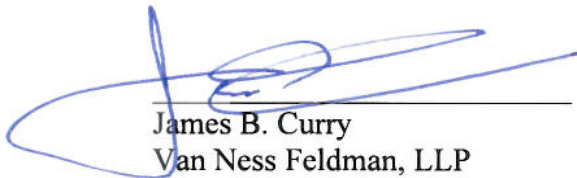
Re: Air Products and Chemicals, Inc. CPF No. 4-2013-1001

Dear Ms. Samaras:

Thank you for your April 17, 2013 e-mail acknowledging Air Products and Chemicals, Inc. (Air Products) withdrawal of its request for hearing in this matter, and providing Air Products until May 17, 2013, to submit its final response to the Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order (Notice) issued by the Pipeline and Hazardous Materials Safety Administration on January 2, 2013. Please find Air Products' final response attached.

Please contact me if you have any questions.

Respectfully submitted,



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Attachment: Final Response

May 16, 2013
Air Products and Chemicals, Inc.
Final Response
CPF No. 4-2013-1001

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

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In the Matter of)	
)	
Air Products and Chemicals, Inc.,)	CPF No. 4-2013-1001
)	
Respondent.)	
_____)	

**Final Response of Air Products and Chemicals, Inc. to Notice of Probable Violation,
Proposed Civil Penalty, and Proposed Compliance Order**

A. Introduction

Pursuant to 49 C.F.R. § 190.209(a)(2) and (b)(2) (2012), Air Products and Chemicals, Inc. (Air Products) respectfully submits this final response to the Notice of Probable Violation, Proposed Civil Penalties and Proposed Compliance Order (Notice) issued by the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), on January 2, 2013. The Notice arose from a June 2012 OPS construction inspection of Air Products' recently completed Gulf Coast Connection Project (GCCP).

The 184 mile GCCP pipeline connects Air Products' hydrogen pipeline systems in Louisiana and Texas. The Air Products Gulf Coast hydrogen pipeline system now extends approximately 500 miles from La Porte, Texas to New Orleans, Louisiana. The Air Products pipeline system supplies hydrogen to refineries and petrochemical facilities throughout the Gulf Coast. Hydrogen is used in the petroleum refining process to remove impurities found in crude oil such as sulfur, olefins and aromatics to meet fuel specifications. Removing these components allows

May 16, 2013
Air Products and Chemicals, Inc.
Final Response
CPF No. 4-2013-1001

gasoline and diesel to burn cleaner and makes hydrogen an important component in the production of transportation fuels.

Air Products is committed to the safety of its hydrogen pipeline system. Air Products has operated its hydrogen pipelines since 1970 without a single pipeline-related injury, property damage or environmental harm. Company personnel work hard each day to continue this legacy of safe operations. Air Products takes OPS's Notice seriously and, while it does not agree that any violations took place, appreciates the constructive feedback provided by OPS during and after the inspection. Air Products welcomes OPS oversight and believes that it contributes positively to the shared goal of safe operations.

Air Products offers this response to demonstrate that the GCCP pipeline was constructed safely and in compliance with the gas pipeline safety regulations, including those regulations cited in the Notice. On the basis of this response, Air Products respectfully requests that PHMSA withdraw the allegations of violation in the Notice and withdraw the associated proposed civil penalties and proposed compliance order.

B. Procedural History

PHMSA transmitted the January 2, 2013 Notice to Air Products by certified mail. By letter dated January 14, 2013, Air Products requested PHMSA's case file and additional time to respond to the Notice. PHMSA counsel provided Air Products with the case file by e-mail on January 16, 2013. By letter dated January 24, 2013, PHMSA provided Air Products until February 22, 2013, to respond to the Notice. By letter dated February 22, 2013, Air Products submitted a request for a hearing and a preliminary statement of issues. On February 26, 2013, PHMSA counsel informed Air Products of the presiding official assigned to the case. By letter dated March 15, 2013, after informal consultation concerning scheduling, the Presiding Official established a hearing date of May 16, 2013. By e-mail dated April 17, 2013, Air Products withdrew the company's hearing request and sought 30 days to submit a final written response. The Presiding Official responded by e-mail dated

April 17, 2013, acknowledging Air Products' withdrawal of its hearing request and setting May 17, 2013, as the deadline for Air Products' final written response.

C. Discussion of Alleged Violations

In the following sections Air Products provides its response to each allegation of violation in the Notice, the proposed civil penalties and proposed compliance order.

Item 1 – Pipe Coating at HDD Crossings

1. *Regulations at Issue*

49 C.F.R. § 192.461(e) requires pipeline owners and operators to take precautions to “minimize damage to the coating during installation” of coated pipe by “boring, driving, or other similar method.” 49 C.F.R. § 192.303 requires pipeline owners and operators to construct pipelines “in accordance with comprehensive written specifications or standards that are consistent with” Part 192.

2. *Background*

In Item 1 of the Notice, OPS alleges that Air Products violated 49 C.F.R. § 192.461(e) by failing “to take precautions to minimize damage to the coating during installation of” the GCCP pipeline at bored and horizontal directional drilled (HDD) crossings.¹ Specifically, OPS alleges that Air

¹ Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order at 2 (Jan. 2, 2013) (“Notice”). The Notice refers to pipeline horizontal directional drilling, bores and river crossings. Air Products used two methods of bored pipeline installation on the GCCP. First, Air Products used the slick bore method for shallow drilled crossings. In the slick bore method, a boring machine is lowered into a boring pit and a typically straight and level hole is drilled. The carrier pipe is then pulled through the hole created by the boring machine, with drilling mud used as a lubricant. Second, Air Products used the HDD method for deeper, longer crossings. HDD is similar to the slick bore method, but with HDD the boring machine is on the surface of the ground and drills down to create a bore that arcs below the surface. The HDD method also uses drilling mud when the carrier pipe is pulled back through the HDD bore.

May 16, 2013
Air Products and Chemicals, Inc.
Final Response
CPF No. 4-2013-1001

Products used 22 mil Fusion Bonded Epoxy (FBE) pipe coating (3M 6233 Scotchkote FBE) at HDD or bored crossings without demonstrating that the use of this specific coating would minimize damage to the coating during installation.

Item 1 of the Notice also cites, and seems to allege that Air Products violated § 192.303 by failing to follow its construction specifications by either not using ARO or failing to consider whether to use ARO. Air Products' 4APL-20001 engineering specification states that the company "should consider" the use of ARO in certain locations.² **Exhibit 1.**

PHMSA proposed a \$60,000 civil penalty and a compliance order for this item. Air Products contests these allegations and respectfully requests that PHMSA withdraw the allegations, proposed civil penalty and proposed compliance order.

3. OPS Has Not Met its Burden of Proof.

The evidence demonstrates that Air Products complied with § 192.461(e) by taking precautions to minimize damage to the coating, and complied with § 192.303 by following its engineering specification in its consideration of ARO and its ultimate selection of a safe and appropriate coating type for the HDD and bored crossings along the GCCP. "OPS bears the burden of proof in an enforcement action and must prove, by a preponderance of the evidence, that all of the elements necessary to sustain a violation are present in a particular case."³ A respondent will

² Air Products American Engineering Specification, Pipelines, External Coatings for Underground Service, 4APL-20001, section 4.1.1.4 "Directional Drills" (Mar. 4, 2010) (attached hereto as Exhibit 1).

³ *In re Citgo Pipeline Co.*, Decision on Reconsideration at 4, CPF No. 4-2007-5010, 2011 W.L. 7517716, *5 (D.O.T. Dec. 29, 2011) (allegation of violation withdrawn on the basis that OPS did not include sufficient evidence in the record to demonstrate the violation) (citing *In re Alyeska Pipeline Service Co.*, Decision on Reconsideration, CPF No. 5-2005-5023, pp. 4-5 (Dec. 16, 2009); *In the Matter of Butte Pipeline Co.*, Final Order, CPF No. 5-2007-5008, p.2, n.3 (Aug. 17, 2009); *Schaffer v. Weast*, 546 U.S. 49, 56-58 (2005)).

prevail under this standard not by conclusively proving compliance, but where its rebuttal evidence is more persuasive than the evidence provided by OPS.⁴

OPS failed to meet its burden of proof to demonstrate violations of §§ 192.303 and 192.461(e) because the evidence that OPS offers does not demonstrate a violation of these regulations. The evidence Air Products submitted after the June 2012 OPS inspection, and the additional evidence it submits as part of this response, demonstrates that the company complied with the regulations. More importantly, this evidence demonstrates that Air Products acted in a safe and responsible manner with respect to the coating of the pipe used at the HDDs.

4. *The Evidence OPS Offers Does Not Sustain its Allegation of Violation of 192.461(e).*

In the Notice, OPS asserts that a 3M marketing brochure for the 6233 FBE coating Air Products used shows that it is “not designed to protect from damage during pipeline directional drilling applications, bores, and river crossings.”⁵ The 3M brochure does not say this. The brochure simply states that FBE 6233 is a coating designed for corrosion protection of pipe. The 3M brochure is a marketing document that provides basic information about FBE 6233, and does not specify the environments in which it may or may not be used.

In its Violation Report, OPS includes another 3M brochure for a different type of FBE that can serve as a topcoat for other 3M FBE products, and is designed for HDDs and rough terrain.⁶ This second brochure does not demonstrate that 3M FBE 6233 is not appropriate for HDDs. It

⁴ See *In the Matter of ANR Pipeline Co.*, Final Order at 4, CPF No. 3-2011-1011, 2012 WL 7177134, *3 (D.O.T. Dec. 31, 2012). In the ANR case, PHMSA found that ANR’s “plausible” explanation regarding the discovery of a reportable condition on its pipeline was sufficient to warrant withdrawal of the allegation of violation because the “Violation Report contain[ed] no evidence which would rebut ANR’s argument.” *Id.* at 4, 2012 WL 7177134, *3.

⁵ Notice at 2; Brochure, 3M Scotchkote Fusion-Bonded Epoxy Coating 6233 (attached to PHMSA’s Pipeline Safety Violation Report (“Violation Report”) in Evidence Exhibit A).

⁶ Brochure, 3M Scotchkote Fusion-Bonded Epoxy Coating System 6352. This second 3M brochure is also attached to Violation Report in Evidence Exhibit A.

simply demonstrates that 3M sells other coating options for HDDs and rough terrain. OPS draws negative inferences from marketing materials without any analytical support. These materials, therefore, do not satisfy OPS's burden of proof.

In its Notice, OPS cites the absence of "supporting documentation and/or certification from 3M identifying whether the 6233 FBE 22 mils coating is adequate and resistant from damage during pipeline" drilled crossings as evidence of a violation of § 192.461(e).⁷ There is no requirement in the regulations or Air Products' procedures that a coating manufacturer certify to OPS or an operator the adequacy of a particular coating for a specific application. 3M is in the business of producing and selling a variety of coating products, and it is up to the purchasers of those products to determine whether they are appropriate for the specific factors and environment of the coating application. As more fully described below, the adequacy of 22 mil FBE for Air Products' HDD and bored crossings is supported by industry research and standards and the non-abrasive nature of the sub-surface soils along the GCCP.

5. *The Regulations Do Not Specify a Particular Coating Type, and Air Products Selected the Coating for Pipe Installed by HDD and Boring to Minimize Damage to the Coating.*

Section 192.461(e) requires that operators take precautions to minimize coating damage during HDD and bored crossings, but it does not specify a particular coating type. In the absence of specificity, operators have the flexibility to apply their engineering judgment to select appropriate pipeline coating. Here, Air Products followed the regulations and its 4APL-20001 engineering specification by selecting a thicker application of FBE coating for the HDD and bored installations. Air Products' engineering specification provides for 14-16 mils of FBE coating (section 4.1.1.2) in trenched underground piping installation, and provides for the use of thicker, 22 mil FBE applications (section 4.1.1.4) for directional drills. This thicker FBE coating provides additional protection to ensure the integrity of the coating is maintained during the HDD installation. When coating thickness is increased, as it was on the GCCP HDDs and

⁷ Notice at 2.

borings, any damage to the coating during an HDD will have less of an impact on coating integrity and performance. It is undisputed that Air Products used this thicker, 22 mil FBE in its HDDs and borings, thereby taking precautions to minimize coating damage, as required by § 192.461(e).

6. *Air Products' Use of Thicker FBE in HDD Crossings is Consistent with the NACE RP0394 Standard for FBE Coatings and a 3M-Authored NACE Research Paper Comparing Different Types of Coatings.*

FBE has been used as a pipeline coating for decades and it has proven to be popular and durable. In a 2011 National Association of Corrosion Engineers (NACE) paper, authored by employees of 3M (the manufacturer of the coating Air Products used on the GCCP), the authors review and compare the performance of three of the most common coating solutions used on the market today on their ability to provide resistance to damage during transportation and installation. Single layer FBE coatings, one of the more common coating solutions and the coating type used by Air Products, were discussed. Single layer FBE coatings were observed to have “[e]xcellent penetration resistance, good abrasion and gouge resistance[,] [g]ood impact resistance . . . [and] good flexibility.”⁸ **Exhibit 2.** The NACE paper states that FBE coating can be made more resistant to mechanical damage by increasing the thickness of the coating “to provide added absorption of impact and abrasion” *or* by adding an ARO coating.⁹

The NACE paper refutes PHMSA’s assertions that the 3M coating Air Products used was not appropriate. The NACE paper demonstrates that Air Products’ judgment to increase coating thickness is a legitimate means of minimizing coating damage as required under § 192.461(e). The NACE paper also provides the characteristics of other pipe coating types, including dual layer FBE, and three layer polyolefin and describes the benefits and drawbacks of each.¹⁰ The

⁸ Dr. Jennifer K. Pratt, Meghan Mallozzi, and Dr. Andrew D’Souza, *Advances in Damage Resistant Coating Technology 2* (NACE Corrosion 2011 Conference & Expo, Paper No. 11031). (“NACE Paper”) (attached hereto as Exhibit 2).

⁹ *Id.* at 1.

¹⁰ *Id.* at 2-3.

paper explains that there are many factors that go into coating selection and that there are multiple ways to protect pipe coating from damage, including the use of thicker FBE.

NACE has also published a standard recommended practice for FBE pipeline coating that explicitly supports the use of increased FBE thickness in drilled crossings.¹¹ **Exhibit 3.** Specifically, NACE RP0394, section 6.1.5.2, provides that higher FBE minimum thickness may be required for situations when pipe is installed in a drilled crossing, or with rocky or high-impact backfill. The NACE standard further supports Air Products' choice to use thicker, 22 mil FBE in its HDD and bored pipe installations, and refutes PHMSA's assertions regarding Air Products' choice of coatings.

The NACE paper and NACE RP0394 standard demonstrate that Air Products' decision to use 22 mil FBE was a safe and reasonable choice and is in compliance with § 192.461(e). In the following sections, Air Products offers further support for its choice of coating by providing information about the non-abrasive nature of the soils in the GCCP right-of-way.

7. *The Evidence OPS Offers Does not Support its Allegation of Violation of 192.303.*

49 C.F.R. § 192.303 requires pipeline owners and operators to construct pipelines “in accordance with comprehensive written specifications or standards that are consistent with” Part 192.

OPS seems to assert that Air Products violated § 192.303 because Air Products 4APL-20001 engineering specification either requires the use of ARO or that Air Products failed to consider the use of ARO on the GCCP project. OPS is incorrect. Air Products 4 APL-20001, section 4.1.1.4, provides that Air Products shall use 22 mil FBE in directional drills if only FBE is being applied, and that ARO “should be considered for directional drills in geographic locations where soil or rock formation may be abrasive to the external coating.” **Exhibit 1.**

¹¹ NACE International, Standard Recommended Practice, Application, Performance, and Quality Control of Plant-Applied, Fusion-Bonded Epoxy External Pipe Coating. NACE Standard RP0394-2002 (“NACE RP0394”) (attached hereto as Exhibit 3).

In its Violation Report, OPS makes several statements that are not supported by the regulations or the evidence.¹² First, OPS asserts:

“Since ARO was not utilized, Air Products did not provide what type of precaution was taken into consideration. Air Products stated that precaution is not required due to the operating experience, long history of native soil (primarily clay and sand) found in the Gulf Coast.”¹³

On the contrary, Air Products considered whether to use ARO or thicker, 22 mil FBE, and chose the thicker FBE as its coating damage precaution in HDDs and bored crossings. The evidence attached to PHMSA’s Violation Report does not support OPS’s assertion that “Air Products stated that precaution is not required.”¹⁴ In fact, it supports the opposite conclusion. An e-mail from the Air Products Pipeline Compliance Manager explains that the company elected to use thicker FBE in HDDs on the basis of its experience and judgment regarding Gulf Coast soil types.¹⁵

OPS also asserts that ARO “is a conservative, additional measure for HDD and bored pipe, particularly in areas where possible buried rock or gravel pockets could exist.”¹⁶ OPS’s argument disregards the fact that ARO is not required by the regulations and that there are numerous legitimate protective measures for HDDs and borings, including the use of thicker FBE.¹⁷ Section 192.303 requires that operators follow written construction specifications, and does not require any particular coating type in HDDs and borings. Air Products’ use of 22 mil

¹² Violation Report at 3.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ Violation Report, Evidence Exhibit A, email from Leticia N. Bailey, Global Operations Pipeline Compliance Manager, Air Products to Mohammed Mahmood, Staff Engineer, PHMSA (Aug. 31, 2012).

¹⁶ Violation Report at 3.

¹⁷ As discussed in Section C(6) above, the NACE Paper and NACE RP0394 support the use of thicker FBE as an appropriate means of protecting pipe in HDD and bored crossings.

FBE is consistent with its 4APL-20001 engineering specification and accepted industry standards, and demonstrates compliance with § 192.303.

8. *Air Products Followed its Engineering Specification for Coatings by Considering Whether to Use ARO.*

Air Products' 4APL-20001 construction specification provides that ARO "should be considered for directional drills in geographic locations where soil or rock formation may be abrasive to the external coating." **Exhibit 1.** First, this procedure does not require Air Products to use ARO, it only provides that ARO should be considered. Second, the procedure only recommends such consideration in areas where soil or rocks could harm the coating.

OPS has failed to satisfy its burden of proving either that Air Products failed to consider ARO or that its decision to use thicker, 22 mil FBE failed to minimize damage to the coating during installation. As detailed in the attached Affidavit of Sam Liberto, Air Products did, in fact, consider whether to use ARO during GCCP construction planning activities in 2009.¹⁸ **Exhibit 4.** Air Products relied on its subject matter experts, the experience of its HDD contractors, and its long history of Gulf Coast pipeline projects, to determine that the lack of rocks or abrasive soils in the GCCP right-of-way did not support a need for ARO. Air Products' determination was validated during construction by core borings that were obtained for certain deep HDDs along the GCCP, which confirmed non-abrasive sand, silt, clay at HDD depths, with a few HDD's having the potential of occasional fine or very fine, rounded, non-abrasive gravel.¹⁹ **Exhibit 5.**

¹⁸ Affidavit of Sam Liberto ¶ 11, Senior Project Manager, Air Products (May 9, 2013) (attached hereto as Exhibit 4).

¹⁹ Exhibit 5 contains core boring reports performed by Air Products geological engineering contractors for the Ramah Levee, Atchafalaya River and Levee, Henderson Levee and Orange, Texas HDDs. These data are examined in the geologist's report that Air Products recently commissioned (attached hereto as Exhibit 7).

9. *Independent Experts Have Confirmed the Non-Abrasive Nature of the Subsurface Soils Along the GCCP Right of Way.*

The 2009 assessment of Air Products' subject matter experts described in Sam Liberto's affidavit (**Exhibit 4**) is also supported by external experts and analysis. During the GCCP project, Air Products used Ranger Field Services (Ranger) for nearly all of its HDDs. Ranger has substantial experience with HDDs on the Gulf Coast. In response to questions posed by Air Products, a lead Ranger engineer with significant experience on the GCCP project reported that he did not recall encountering rock or gravel during the GCCP and observed no damage to the pipe coating after pipe was installed in HDDs.²⁰ **Exhibit 6.** The Ranger engineer also explained that the drillers would have been able to tell if they had run into rocks or gravel during a GCCP HDD.²¹

In addition, although not required by any regulation or its own procedures, Air Products recently retained a professional geologist to review the Air Products core borings and the extensive, available geological data for the areas of the Gulf Coast along the GCCP right-of-way. The geologist was asked to assess whether gravels or rock are present at the depths of the Air Products HDDs and borings. As demonstrated in the attached report, the geologist concluded that at the locations of the vast majority of the GCCP HDDs and all of the borings, geological data demonstrates that no gravel or rock is present.²² **Exhibit 7.** At three of the deepest HDDs, the geologist concluded that there was the potential for occasional fine or very fine, rounded gravel suspended in sand.²³ The geologist confirmed that these fine gravels occur "in sand and

²⁰ E-mail from Boyd C. Simon, P.E., Division Manager, Ranger Field Services to Sam Liberto, Senior Project Manager, Air Products (March 27, 2013) (attached hereto as Exhibit 6).

²¹ *Id.*

²² Report from Michael Simms, PhD, P.G., URS Corporation to Sam Liberto, Senior Project Manager, Air Products 2 (Apr. 24, 2013) (attached hereto as Exhibit 7).

²³ *Id.* at 2-5.

do not occur as a rigid framework gravel deposit.”²⁴ Even if the pipe at these three locations did encounter this isolated fine or very fine gravel during installation, it would not abrade the pipe because of the smooth, rounded nature of the gravel and because the gravel would be pushed into the surrounding sand formation. In addition the HDD installation method employed drilling mud as a lubricant during the pullback of the carrier pipe, further reducing the potential for coating damage.²⁵ **Exhibit 8.** The geologists report validates Air Products’ experience and earlier conclusions regarding the non-abrasive soil types along the GCCP at the depths of the HDD and bored crossings.

Air Products has demonstrated full compliance with §§ 192.303 and 192.461(e), and OPS has not proven a violation of either regulation. The evidence demonstrates that Air Products acted as a prudent and informed operator in its selection of thicker, 22 mil FBE coating for its pipelines in HDDs and bored crossings, and that Air Products followed its written coating procedure in designing and constructing the GCCP in a safe, responsible manner. The evidence Air Products offers also substantially outweighs the limited evidence and unsupported arguments that OPS offered in its Notice and Violation Report. As a result, OPS has not met its burden of proving violations of §§ 192.303 and 192.461(e).

On the basis of the foregoing, Air Products respectfully requests that PHMSA withdraw the allegations of violation in Item 1 and the associated \$60,000 proposed civil penalty and proposed compliance order. As no violations took place, a civil penalty and compliance order are neither appropriate nor necessary.

10. Reservation of Rights Regarding Item 1.

In order to preserve its rights in any future reconsideration or appeal of OPS’s prospective final order in this case, Air Products offers the following regarding the proposed civil penalty and

²⁴ *Id.* at 3.

²⁵ Exhibit 8 contains photographs that show the use of drilling mud during carrier pipe installation on the GCCP.

compliance order for Item 1. Air Products asserts that, if OPS makes a finding of violation, the amount of the proposed civil penalty is unsupported by the evidence or the penalty assessment considerations at 49 C.F.R. § 190.225.

Regarding the “nature, circumstances and gravity of the alleged violation,”²⁶ OPS asserts in its Violation Report that Air Products “failed to take precautions to minimize damage to the coating during the installation of the boring and/or Horizontal Directional Drill (HDD) applications at 82 highway, railroad, streams, river crossings and at other locations.”²⁷ OPS also asserts that Air Products committed 82 instances of violation (one for each HDD crossing) and that “[p]ipeline integrity or safe operation was potentially compromised in a populated area, an HCA, an HCA ‘could affect’ segment, a road or railroad crossing, a plant/station/storage field/tankage, or a similar area.”²⁸ OPS also states that “[w]ithout proper coating, the pipe is at risk for corrosion.”²⁹

As more fully described above, Air Products did, in fact, take precautions to minimize coating damage, by applying thicker, 22 mil FBE to its pipe at HDD crossings. Air Products’ decision to use 22 mil is supported by its engineering expertise and Gulf Coast experience, the geology along the GCCP right-of-way, which consists almost entirely of non-abrasive sand, silt and clay soils, a professional geologist’s report confirming this geology, a NACE technical paper on coating types, and the NACE RP0394 recommended practice for FBE coatings. Aside from presenting 3M marketing materials for FBE, which do not show that Air Products selected an inappropriate coating, OPS has not explained or provided any evidence that shows Air Products’ election of 22 mil FBE was improper. None of OPS’s statements regarding the number of instances of violation, the potential compromise of pipeline integrity or safe operation, or the risk of corrosion are supported by the evidence in this case.

²⁶ 49 C.F.R. § 190.225(a)(1).

²⁷ PHMSA Violation Report at 2.

²⁸ *Id.* at 5.

²⁹ *Id.* at 6.

Regarding the culpability of Air Products for the alleged violation,³⁰ OPS assigns maximum culpability to Air Products and asserts that the company “failed to take any action or made a minimal attempt to comply with a regulatory requirement that was clearly applicable.”³¹ Air Products did, in fact, comply with applicable regulatory requirements and protected its pipeline from damage by coating the pipe at HDD and bored crossings with thicker, 22 mil FBE. Air Products’ actions were fully compliant with 49 C.F.R. §§ 192.303 and 192.461.

Finally, OPS asserts that Air Products did not act in good faith³² because its “interpretation of the requirement was not reasonable, the operator failed to follow publicly available guidance, or the operator did not act in accordance with its duty to meet the regulatory obligation.”³³ Specifically, OPS asserts that Air Products failed to take precautions to minimize coating damage during installation.³⁴ Again, the evidence offered by Air Products demonstrates that the company selected an appropriate coating type given the geology of the GCCP right-of-way. Air Products acted in good faith because it followed its coating procedure, as required by § 192.303. Air Products also acted in good faith compliance with § 192.461 by making an informed, reasonable judgment about the type of coating to use at the HDD and bored crossings - a judgment that is supported by the geology along the GCCP and the NACE materials.

Air Products also contends that the proposed compliance order is inappropriate and overly broad. OPS proposed to require that Air Products assess all HDD crossings to verify coating integrity. No such action is required because, as demonstrated above, Air Products selected an appropriate coating type and thickness for its pipe installed by HDD. Air Products’ selection of thicker, 22 mil FBE was supported by its long experience with Gulf Coast pipeline projects and the

³⁰ 49 C.F.R. § 190.225(a)(2).

³¹ PHMSA Violation Report at 7.

³² 49 C.F.R. § 190.225(a)(5).

³³ PHMSA Violation Report at 8.

³⁴ *Id.*

experience of its HDD contractor, and was further validated by core borings prior to construction and the recent, comprehensive evaluation by a professional geologist of subsurface soil types along the GCCP right-of-way. Moreover, OPS has not offered any evidence or otherwise explained why or how the thicker, 22 mil FBE Air Products used would result in coating damage that could harm the integrity of the pipeline.

Item 2 – Pin Brazing

1. Background

49 C.F.R. § 192.303 requires pipeline owners and operators to construct pipelines “in accordance with comprehensive written specifications or standards that are consistent with” Part 192. In Item 2 of the Notice, OPS alleges that Air Products violated 49 C.F.R. § 192.303 by failing to follow its pipeline welding procedures when performing pin brazing on the pipeline. Specifically, OPS alleges that Air Products’ Pipelines Installation Specification 670.810, sections 4.1 and 4.1.1, which apply to welding, require that the company review, approve and/or accept a vendor procedure for pin brazing, and that Air Products failed to do so. OPS proposed a \$20,000 civil penalty for this item.

2. Air Products Specification 670.810 Does Not Apply to Pin Brazing.

Air Products contests this allegation and respectfully requests that PHMSA withdraw the allegation and proposed civil penalty. Sections 4.1 and 4.1.1 of Air Products 670.810 apply to welding, not to pin brazing, an entirely different process.³⁵ **Exhibit 9.**

Air Products 670.810 Specification provides:

- 4.1 All pipe welding shall be made according to qualified procedures as developed by the contractor according to the requirements of API 1104,

³⁵ Air Products American Fabrication and Erection Specification 670.810, Pipelines – Installation (Sept. 2001) (attached hereto as Exhibit 9).

Section 2, or the ASME BPVC, Section IX. Two copies of these qualified procedures shall be furnished to Air Products Project Engineering or representative for approval before the start of welding.

- 4.1.1 Only welders qualified to API 1104, Section 3 or ASME BPVC, Section IX shall be allowed to perform pipeline welds. Each welder's qualification certificate shall be on file at the contractor's job site office and a copy shall be provided to the Air Products representative before the start of any work.³⁶

Air Products 670.810 only applies to welding and, by definition, pin brazing is not a welding process. Air Products created the 670.810 specification to address safety-critical pipeline welding operations for pressure containing and structural joints. Welding is a high-temperature process in which materials are joined and a portion of the base material (e.g., pipe) is melted as part of the weld. Air Products used carbon steel pipe for the GCCP, which has a melting point in excess of 2,500⁰F. A successful weld of carbon steel will heat a portion of the steel in the weld zone to a temperature in excess of 2,500⁰F.

3. Pin Brazing is a Low Temperature Process, Unlike the Welding Processes Covered by Air Products Specification 670.810.

In contrast to welding, pin brazing is a process by which small metal pins or bolts are attached to the outside surface of pipe or other metal structures using silver solder.³⁷ **Exhibit 10.** Pin brazing is often used to attach electrical bonds between insulated pipe joints, connect test station and anode leads, and connect ground cables.³⁸ **Exhibit 11.** Pin brazing is not used, nor could it be used, to make pressure containing or structural joints. The pin brazing process uses an electric arc to melt silver solder inside the pin or bolt to be attached to the pipe. The solder then flows out, cools and joins the pin or bolt to the pipe. The process takes 1.5 to 2 seconds and is a

³⁶ *Id.* at 4.

³⁷ BAC Corrosion Control, Method Statement, Pinbrazing (attached hereto as Exhibit 10).

³⁸ BAC Corrosion Control, Pin Brazing 2 (BAC brochure and description of pinbrazing) (attached hereto as Exhibit 11).

low-temperature method that heats the base metal (pipe) to no more than 125⁰F.³⁹ Pin brazing, therefore, has little or no thermal effect on the base metal and is fundamentally unlike the safety-critical welding addressed in Air Products 670.810, which involves pressure containing joints or structural welds, heats the weld zone of the base metal to temperatures beyond 2,500⁰F, and often takes substantially longer than 1.5 to 2 seconds. Therefore, pin brazing is not a welding process and is not covered by Air Products 670.810.

Air Products 670.810, by its own terms, covers only welding. Air Products uses welding to join pressure containing pipeline components such as pipe, flanges and fittings, and its 670.810 specification does not cover other types of welding or non-welding processes. As such, Air Products 670.810 references API Standard 1104, Welding of Pipelines and Related Facilities, which “covers the gas and arc welding of butt, fillet, and socket welds in carbon and low-alloy steel piping.”⁴⁰ API 1104 does not cover pin brazing. Air Products 670.810 also references ASME BPVC Section IX. Although Section IX covers both welding and brazing, Air Products 670.810, by its own terms, only addresses welding. Moreover, Section IX is not applied in a vacuum but instead “is a document referenced for qualification by various construction codes...”⁴¹ Air Products constructed the GCCP in accordance with the ASME B31.8 code, which references the qualifying standards in ASME Section IX, but only makes the reference in the context of welding.⁴² The B31.8 code addresses “the welding of pipe joints... as applied in pipelines and connections to apparatus or equipment.”⁴³ Therefore, the brazing provisions of Section IX are not incorporated into Air Products 670.810, and no violation of § 192.303 occurred.

³⁹ *Id.* at 4. While the solder is heated to approximately 650⁰C, the short duration of the process results in modest heating of the base metal to 125⁰F. *Id.* at 3, 6. This low base metal heating makes the pin brazing process metallurgically safe.

⁴⁰ API 1104, section 1.1.

⁴¹ ASME BPVC Section IX, Introduction at xxii.

⁴² ASME Code for Pressure Piping, Gas Transmission and Distribution Piping Systems, B31.8-2010-2007, section 823.2.1.

⁴³ ASME B31.8-2007, section 821.1. There are limited references to brazing in B31.8, but only in the context of copper pipe, distribution piping, and instrument, control and sample piping, none of which are applicable here.

The substantial differences between welding and pin brazing processes are also apparent from the different training and safety precautions that apply to them. The complex training, qualification and testing requirements for welders and welding procedures in Part 192, subpart E, and the API and ASME standards incorporated by reference into these regulations, are simply not required for the low-heat, short-duration pin brazing process. In fact, a finding to the contrary could have significant, negative pipeline workforce and training implications.

Pin brazing is used by corrosion technicians to install cathodic protection (CP) test leads, bonds, and other CP-related devices. Pin brazing is similar to cadwelding or thermite welding, but it produces less heat and is a shorter-duration process than either. Corrosion technicians are often qualified to perform pin brazing, cadwelding or thermite welding, because these low-heat techniques are commonly used in routine, day-to-day corrosion control activities. Corrosion technicians are not required to be qualified as welders under API 1104 or ASME BPVC Section IX.

Air Products is aware of no other pipeline operator that requires individuals performing pin brazing, or the pin brazing procedures themselves, to be qualified under API or ASME welding standards. On the contrary, at least one other operator has filed O&M procedures with PHMSA that, appropriately, treat pin brazing as an O&M activity, rather than a welding process subject to the API 1104 or ASME BPVC section IX requirements.⁴⁴ **Exhibit 12.** Obtaining an API or ASME welder qualification is a specialized undertaking that involves lengthy courses and testing. Pin brazing does not implicate the same safety precautions and training needs associated with welding line-pipe components, and there is no reason to require individuals tasked with pin brazing to become qualified welders. Nor is there any reason to qualify pin-brazing procedures under the API or ASME code.

⁴⁴ See *In the Matter of the City of Victorville*, CPF No. 5-2007-0007M, Operator's Response to Notice of Amendment (Mar. 21, 2007) (attached hereto as Exhibit 12). In Exhibit 12, Air Products has provided an excerpt from the City of Victorville's response that sets out its operations and maintenance procedure for anode and test station installation, including pin brazing.

4. Air Products Reviewed the Pin Brazing Procedure Before Allowing Pin Brazing to Commence.

Although Air Products 670.810 does not cover pin brazing, Air Products nonetheless reviewed the vendor's pin brazing procedure in the normal course of reviewing pipeline design-phase documentation. However, because pin brazing is not covered by the Air Products 670.810 specification, the company did not document, nor was it required to document, the review process. Air Products also obtained records of the qualifications of the technician performing the pin brazing, which are attached to the Violation Report.⁴⁵ Finally, Air Products followed the manufacturer's procedures for conducting pin brazing.⁴⁶ **Exhibit 10.**

5. OPS Has Not Met its Burden of Proving a Violation of § 192.303.

Pin brazing is not a welding procedure, and OPS does not explain why the low-heat, short-duration process of pin brazing is subject to welding procedures set forth in Air Products' 670.810 procedure. OPS has, therefore, failed to meet its burden of proof.

This is not the first instance in which PHMSA has considered an allegation of violation regarding the meaning of a welding term. In *Golden Pass Pipeline, LLC*, PHMSA withdrew an OPS allegation regarding the meaning of a phrase in the API 1104 welding standard, where OPS did not provide sufficient evidence regarding its position on the meaning of the phrase.⁴⁷ Here, OPS has asserted that pin brazing is a welding process covered by Air Products 670.810. This assertion is factually mistaken and OPS has not provided any supporting evidence of its view. On the basis of the foregoing, Air Products respectfully requests that PHMSA withdraw the allegation of violation and proposed \$20,000 civil penalty for Item 2.

⁴⁵ Violation Report, Evidence Exhibit C.

⁴⁶ BAC Corrosion Control, Method Statement, Pinbrazing.

⁴⁷ *In the Matter of Golden Pass Pipeline, LLC*, Final Order, CPF No. 4-2008-1017, 2011 WL 1919517 (Mar. 22, 2011).

6. *Reservation of Rights Regarding Item 2.*

In order to preserve its rights in any future reconsideration or appeal of PHMSA's prospective final order in this case, Air Products offers the following regarding the proposed civil penalty for Item 2. Air Products asserts that, if PHMSA makes a finding of violation, the amount of the proposed civil penalty is unsupported by the evidence or the penalty assessment considerations at 49 C.F.R. § 190.225.

Regarding the nature of the alleged violation,⁴⁸ OPS asserts in its Violation Report that Air Products "failed to provide a qualified and/or approved brazing procedure as well as qualification of the individual performing brazing works."⁴⁹ As described more fully above, Air Products 670.810 procedure covers welding and does not cover pin brazing, so neither the brazing procedure nor the brazing operator need be qualified under this procedure. OPS next asserts that a "lack of a procedure can lead to poor workmanship."⁵⁰ The record does not reflect any lack of procedure for pin brazing. On the contrary, Air Products used the pin brazing equipment manufacturer's procedure for pin brazing.⁵¹ **Exhibit 10.**

Regarding the culpability of Air Products for the alleged violation,⁵² OPS assigns maximum culpability to Air Products and asserts that the company "failed to take any action or made a minimal attempt to comply with a regulatory requirement that was clearly applicable."⁵³ PHMSA also asserts that Air Products did not act in good faith⁵⁴ because its "interpretation of

⁴⁸ 49 C.F.R. § 190.225(a)(1).

⁴⁹ Violation Report at 11-12.

⁵⁰ Violation Report at 13.

⁵¹ BAC Corrosion Control, Method Statement, Pinbrazing. Also attached to Violation Report as Evidence Exhibit C.

⁵² 49 C.F.R. § 190.225(a)(2).

⁵³ Violation Report at 14.

⁵⁴ 49 C.F.R. § 190.225(a)(5).

May 16, 2013
Air Products and Chemicals, Inc.
Final Response
CPF No. 4-2013-1001

the requirement was not reasonable, the operator failed to follow publicly available guidance, or the operator did not act in accordance with its duty to meet the regulatory obligation.”⁵⁵ Specifically, OPS asserts that Air Products failed to provide a qualified brazing procedure and qualifications for the brazing operator.⁵⁶ As explained above, Air Products 670.810 specification does not apply to brazing, so Air Products was not required to qualify the brazing procedure or brazing operator under 670.810. Air Products is not culpable for a violation of § 192.303 and demonstrated only good faith by complying with its 670.810 specification.

D. Conclusion

Based on the foregoing, Air Products respectfully requests that PHMSA withdraw the allegations of violation, proposed civil penalties and proposed compliance order set forth in the Notice.

⁵⁵ Violation Report at 15.

⁵⁶ *Id.*