

April 5, 2018

Mr. Seifi Ghasemi
President and Chief Executive Officer
Air Products & Chemicals, Inc.
7201 Hamilton Blvd
Allentown, Pennsylvania 18195

Re: CPF No. 4-2017-1011

Dear Mr. Ghasemi:

Enclosed please find the Final Order issued in the above-referenced case. It makes findings of violation and specifies actions that need to be taken by Air Products & Chemicals, Inc., to comply with the pipeline safety regulations. When the terms of the compliance order have been completed, as determined by the Director, Southwest Region, this enforcement action will be closed. Service of the Final Order by certified mail is effective upon the date of mailing as provided under 49 C.F.R. § 190.5.

Thank you for your cooperation in this matter.

Sincerely,

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

Enclosure

cc: Director, Southwest Region, Office of Pipeline Safety, PHMSA
Ms. Marie Ffolkes, President – Industrial Gas America, Air Products & Chemicals, Inc.

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

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

In the Matter of)	
Air Products & Chemicals, Inc.,)	
Respondent.)	CPF No. 4-2017-1011

FINAL ORDER

From January through June, 2017, pursuant to 49 U.S.C. § 60117, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), conducted an on-site pipeline safety inspection of the facilities and records of Air Products & Chemicals, Inc. (Air Products or Respondent), in Texas and Louisiana. Air Products conducts operations in 50 countries worldwide, and serves customers across a wide range of industries from food and beverage to medical, energy, and transportation. Air Products' Gulf Coast Pipeline System consists of an approximately 535-mile onshore hydrogen gas transmission pipeline.¹

As a result of the inspection, the Acting Director, Southwest Region, OPS (Director), issued to Respondent, by letter dated August 24, 2017, a Notice of Probable Violation and Proposed Compliance Order (Notice), which also included a warning pursuant to 49 C.F.R. § 190.205. In accordance with 49 C.F.R. § 190.207, the Notice proposed finding that Air Products had violated 49 C.F.R. §§ 192.935 and 192.917 and proposed ordering Respondent to take certain measures to correct the alleged violations. The warning item required no further action but warned Air Products to correct the probable violation or face possible future enforcement action.

Air Products responded to the Notice by letter dated September 8, 2017, and requested the case file and a 180-day extension to respond the Notice. PHMSA sent the case file to Air Products via e-mail on September 8, 2017. On September 26, 2017, PHMSA approved Air Products' request to extend the deadline for a response to the Notice until October 30, 2017. On October 30, 2017, Air Products responded to the Notice by letter (Response), and elected not to contest the violations alleged in the Notice, but requested an additional six months following the issuance of a Final Order to complete Item 2 of the Proposed Compliance Order. On November 2, 2017, PHMSA issued a Region Recommendation requesting that a Final Order be issued with a Compliance Order, as written in the Notice, except that Air Products be granted 180 days from

¹ <http://www.airproducts.com/> (last visited January 24, 2018).

the date of issuance of the Final Order to complete Item 2 of the Proposed Compliance Order. Respondent did not request a hearing and therefore has waived its right to one.

FINDINGS OF VIOLATION

In its Response, Air Products did not contest the allegations in the Notice that it violated 49 C.F.R. Part 192, as follows:

Item 2: The Notice alleged that Respondent violated 49 C.F.R. § 192.935(c), which states:

§ 192.935 What additional preventive and mitigative measures must an operator take?

(a) ...

(c) *Automatic shut-off valves (ASV) or Remote control valves (RCV).* If an operator determines, based on a risk analysis, that an ASV or RCV would be an efficient means of adding protection to a high consequence area in the event of a gas release, an operator must install the ASV or RCV. In making that determination, an operator must, at least, consider the following factors--swiftness of leak detection and pipe shutdown capabilities, the type of gas being transported, operating pressure, the rate of potential release, pipeline profile, the potential for ignition, and location of nearest response personnel.

The Notice alleged that Respondent violated 49 C.F.R. § 192.935(c) by failing to perform an adequate risk analysis to determine whether an ASV or RCV would be an efficient means of adding protection to a high consequence area (HCA) in the event of a gas release. Specifically, the Notice alleged that Air Products failed to undertake a detailed risk analysis that took into account the impact of risk on newly identified covered segments to determine whether ASVs or RCAs would be appropriate. On the contrary, the Notice alleged that Air Products informed the PHMSA inspector that Air Products had determined that ASVs and RCVs would not add protection but would merely reduce the duration of a release. Further, Air Products stated that the use of ASVs/RCVs would not significantly reduce the damage impact of a pipeline rupture or provide an efficient means of additional safety in HCAs. According to the Notice, Air Products provided the inspector with a draft *Integrity Management Program (IMP) Procedure 34-0763: Pipeline Integrity Management Program Preventative and Mitigative Measures Plan Protocol H*. Section 5.2.6.3 of this procedure allegedly supported Air Products' engineering decision for hydrogen and Syngas products based on an American Gas Association White Paper (3/25/2011).

Upon review of this information, PHMSA concluded that Air Products had failed to adequately analyze and evaluate the need for RCV and ASV locations to determine if they would mitigate or enhance public safety in each HCA segment, as required by the 49 C.F.R. § 192.935. According to the Notice, Air Products did not conduct an analysis that considered the swiftness of leak detection and pipe shutdown capabilities, the type of gas being transported, the operating pressure, the rate of potential release, the pipeline profile, the potential for ignition, or the location of the nearest response personnel. In addition, the Notice alleged that Air Products failed to consider the factors beyond immediate injury, such as prolonged flame exposure to

emergency responders and the public, the danger to people caught in difficult-to-evacuate areas, the impact on key transportation corridors, or the risk of wildfires.

Respondent did not contest this allegation of violation. Accordingly, based upon a review of all of the evidence, I find that Respondent violated 49 C.F.R. § 192.935(c) by failing to perform an adequate risk analysis to determine whether an ASV or RCV would be an efficient means of adding protection to an HCA in the event of a gas release.

Item 3: The Notice alleged that Respondent violated 49 C.F.R. § 192.917, which states, in relevant part:

§ 192.917 How does an operator identify potential threats to pipeline integrity and use the threat identification in its integrity program?

(a) ...

(b) *Data gathering and integration.* To identify and evaluate the potential threats to a covered pipeline segment, an operator must gather and integrate existing data and information on the entire pipeline that could be relevant to the covered segment. In performing this data gathering and integration, an operator must follow the requirements in ASME/ANSI B31.8S, section 4. At a minimum, an operator must gather and evaluate the set of data specified in Appendix A to ASME/ANSI B31.8S, and consider both on the covered segment and similar non-covered segments, past incident history, corrosion control records, continuing surveillance records, patrolling records, maintenance history, internal inspection records and all other conditions specific to each pipeline.

(c) *Risk assessment.* An operator must conduct a risk assessment that follows ASME/ANSI B31.8S, section 5, and considers the identified threats for each covered segment. An operator must use the risk assessment to prioritize the covered segments for the baseline and continual reassessments (§§ 192.919, 192.921, 192.937), and to determine what additional preventive and mitigative measures are needed (§ 192.935) for the covered segment.

The Notice alleged that Respondent violated 49 C.F.R. § 192.917(b-c), by failing to identify and evaluate the potential threats to covered pipeline segments by gathering and integrating existing data and information on the entire pipeline that could be relevant to the covered segments. In addition, the Notice alleged that Air Products did not follow its own pipeline IMP, "*Threat Identification Data Integration and Risk Assessment Plan - Protocol C, 34-0758, Rev 0.*"

Specifically, it alleged that Air Products used the Dynamic Risk Assessment Systems, Inc. (DRAS) common risk model in its IMP to perform only a minimal risk analysis. Air Products, however, allegedly did not use an adequate or appropriate process to input data and information into its risk analysis process or to confirm that its output data was accurate. Upon questioning by PHMSA inspectors, Air Products could not explain certain risk calculations in its risk model. PHMSA inspectors also identified several instances of missing or incorrect input data in Air Products' risk models used to assess specific risks to the pipeline. Finally, Air Products also

stated to PHMSA inspectors that several factors in its risk model were inactive, which called into question the accuracy of the input data and risk-factor calculations.

Respondent did not contest this allegation of violation. Accordingly, based upon a review of all of the evidence, I find that Respondent violated 49 C.F.R. § 192.917 by failing to identify and evaluate the potential threats to covered pipeline segments by gathering and integrating existing data and information on the entire pipeline that could be relevant to the covered segments.

These findings of violation will be considered prior offenses in any subsequent enforcement action taken against Respondent.

COMPLIANCE ORDER

The Notice proposed a compliance order with respect to Items 2, and 3 in the Notice for violations of 49 C.F.R. §§ 192.935(c), and 192.917, respectively. Under 49 U.S.C. § 60118(a), each person who engages in the transportation of gas or who owns or operates a pipeline facility is required to comply with the applicable safety standards established under chapter 601. Pursuant to the authority of 49 U.S.C. § 60118(b) and 49 C.F.R. § 190.217, Respondent is ordered to take the following actions to ensure compliance with the pipeline safety regulations applicable to its operations:

1. With respect to the violation of § 192.935(c) (**Item 2**), Respondent must:
 - a. Perform a study to analyze and evaluate the need for RCV and ASV locations to determine if they would mitigate or enhance public safety in each HCA segment;
 - b. The study must consider factors beyond immediate injury, such as: prolonged flame exposure to emergency responders and public; danger to people caught in difficult-to-evacuate areas; impacts on key transportation corridors; and the risk of wildfires; and
 - c. Complete and submit the written study to the Director, for review and approval, within six months of the date of this Final Order.
2. With respect to the violation of § 192.917 (**Item 3**), Respondent must:
 - a. Ensure that all input and output data of the Risk Model used in its IMP is accurate for all pipelines that impact an HCA;
 - b. Ensure its risk rankings are logical and consistent with industry practice; and
 - c. Complete these requirements and submit the updated Risk Model to the Director, for review and approval, within 180 days of the date of this Final 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.

It is requested (not mandated) that Respondent maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to the Director. It is requested that these costs be reported in two categories: (1) total cost associated with preparation/revision of plans, procedures, studies and analyses; and (2) total cost associated with replacements, additions and other changes to pipeline infrastructure.

Failure to comply with this Order may result in the administrative assessment of civil penalties not to exceed \$200,000, as adjusted for inflation (49 C.F.R. § 190.223), for each violation for each day the violation continues or in referral to the Attorney General for appropriate relief in a district court of the United States.

WARNING ITEM

With respect to Item 1, the Notice alleged probable violations of 49 C.F.R. § 192.805(b), but did not propose a civil penalty or compliance order for this item. Therefore, this is considered to be a warning item. The warning was for:

49 C.F.R. § 192.805(b) (**Item 1**) — Respondent's alleged failure to ensure through evaluation that an employee was qualified to perform a covered task.

PHMSA representatives reviewed the circumstances and supporting documents involved in Item 1 and determined that additional enforcement action or penalty assessment proceedings was not warranted at this time. If OPS finds a violation of this provision in a subsequent inspection, Respondent may be subject to future enforcement action.

Under 49 C.F.R. § 190.243, Respondent may submit a Petition for Reconsideration of this Final Order to the Associate Administrator, Office of Pipeline Safety, PHMSA, 1200 New Jersey Avenue, SE, East Building, 2nd Floor, Washington, DC 20590, with a copy sent to the Office of Chief Counsel, PHMSA, at the same address, no later than 20 days after receipt of service of this Final Order by Respondent. Any petition submitted must contain a statement of the issue(s) and meet all other requirements of 49 C.F.R. § 190.243. The terms of the order, including corrective action, remain in effect unless the Associate Administrator, upon request, grants a stay. The terms and conditions of this Final Order are effective upon service in accordance with 49 C.F.R. § 190.5.

April 5, 2018

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

Date Issued