

**NOTICE OF PROBABLE VIOLATION  
and  
PROPOSED COMPLIANCE ORDER**

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

August 24, 2017

Ms. Marie Ffolkes  
President – Industrial Gas America  
Air Products & Chemicals Inc.  
7201 Hamilton Blvd  
Allentown, PA 18195

**CPF 4-2017-1011**

Dear Ms. Marie Ffolkes:

On multiple dates between the months of January and June of 2017, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code (U.S.C.) inspected Air Products & Chemicals Inc (Air Products) - Gulf Coast Pipeline facilities in Texas and Louisiana.

As a result of the inspection, it is alleged that you have committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations (CFR). The items inspected and the probable violation(s) are:

**1. §192.805 Qualification program.**

**(b) Ensure through evaluation that individuals performing covered tasks are qualified;**

Air Products failed to ensure through evaluation that an employee was qualified to perform a covered task. Specifically, task 213OP: Joining of Metal Pipe and Components by means other than Welding – Threaded and Flanged Connection.

While reviewing Air Products Valves and Controls records, the PHMSA inspector learned that the operator used PENTAIR, a certified testing facility to test a Pressure Safety Valve (PSV), tag number LD08-PSV-8023. The PHMSA inspector reviewed the qualification records for the individual that performed the covered task 709OP: Inspection and Testing of Relief Devices (Compressor Stations, Meter Stations, Regulating Stations) and it appears satisfactory. However, the inspection by PENTAIR requires removal of PSV and re-installation of it after the test is completed. According to Air Products covered task list, employees are required to be qualified on covered task 213OP for removal and re-installation of PSV.

Air Products could not provide the name of employees who removed and re-installed this PSV during 1/22/2014, 1/29/2015, and 2/12/2016 inspection. As a result, the qualifications cannot be confirmed.

2. **§192.935 What additional preventive and mitigative measures must an operator take?**

**(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.**

Air Products did not perform an adequate risk analysis to identify and take additional preventative and mitigative (P&M) measures to mitigate the consequences of a pipeline failure in a High Consequence Area (HCA) and enhance public safety. During the inspection, the PHMSA inspector found that Air Products does not have a detailed process that includes requirements to determine if automatic shut-off valves or remote control valves represent an efficient means of adding protection to potentially affected high consequence areas.

During the inspection, Air Products advised the PHMSA inspectors that Air Products considered ASV or RCV installation during the new construction. Air Products did not delineate a process that evaluates the impact of risk on newly identified covered segments for consideration of installing ASV's and RCV's. Subsequently, on May 12, 2017, Air Products informed the PHMSA inspector via email that Air Products engineering has

decided that ASVs and RCVs do not add protection, but rather reduce the duration of a release. Further, Air Products stated the use of ASVs/RCVs will not significantly reduce the damage impact of a pipeline rupture or provide an efficient means of additional safety in HCA. Air Products provided a draft IMP procedure 34-0763: Pipeline Integrity Management Program Preventative and Mitigative Measures Plan Protocol H. Section 5.2.6.3 of this procedure supports Air Products' engineering decision for hydrogen and Syngas products based on AGA White Paper (3/25/2011).

The PHMSA inspector reviewed the email response including revised draft procedure and supporting documents. The documents submitted show that Air Products did not 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. Air Products' did not conduct analysis that consider 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. In addition, Air Products did not consider the factors beyond immediate injury such as: prolonged flame exposure to emergency responders and public, danger to people caught in difficult to evacuate areas, impact on key transportation corridors, and the risk of wildfires.

**3. §192.917 How does an operator identify potential threats to pipeline integrity and use the threat identification in its integrity program?**

**(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.**

Air Products failed to follow § 192.917 and their pipeline IMP Threat Identification Data Integration and Risk Assessment Plan – Protocol C, 34-0758, Rev 0.

Air Products used The DRAS (Dynamic Risk Assessment Systems, Inc.) common risk model in its IMP to perform a minimal risk analysis. Air Products, however, did not use adequate and appropriate process to input data and information into the risk analysis process.

PHMSA inspectors reviewed Air Product's External Corrosion (EC), Weather and Outside Forces (WOF) failure likelihood score on pipeline 949. Air Products could not explain risk calculations in their risk model, for example:

- Air Products used  $F_{SCI}$  (Stray Current / Interference Factor) = 1 to calculate the risk score. However, Procedure 34-0758 (Revision 2), Table 13 does not provide characterization for factor 1.
- The risk score calculation spreadsheet provided for Weather & Outside Force (WOF) threat is missing flood threat input data for large sections of the pipeline. The final score for WOF is incomplete as the spreadsheet provided is missing data for a large section of the pipeline starting in Column AF at line 214 – 289.
- The geotechnical threat score is not consistent with Procedure 34-0758 Rev2017, Table 56.
- The lightning strike score is not consistent with location of pipeline map provided in Procedure 34-0758 Rev2017, Figure 18 and Table 70.
- Air Products also stated that several factors in the risk model are inactive which brings into question the accuracy of their input data and risk factor calculation.

The above discrepancies show Air Products failed to correct errors in the input data of the Risk Model. Air Products did not ensure output data was accurate to determine whether their risk rankings are logical and consistent with §192.917, or with Air Products' own or industry practice.

#### Proposed Compliance Order

As of April 27, 2017, under 49 U.S.C. § 60122 and 49 CFR § 190.223, you are subject to a civil penalty not to exceed \$209,002 per violation per day the violation persists up to a maximum of \$2,090,022 for a related series of violations.

We have reviewed the circumstances and supporting documents involved in this case, and have decided not to propose a civil penalty assessment at this time.

With respect to items 2 and 3 pursuant to 49 U.S.C. § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Air Products & Chemicals Inc. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

#### Warning Items

With respect to item 1 we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. We advise you to promptly correct these item(s). Failure to do so may result in additional enforcement action.

Response to this Notice

Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Compliance Proceedings*. Please refer to this document and note the response options. Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b).

Following the receipt of this Notice, you have 30 days to submit written comments, or request a hearing under 49 CFR § 190.211. If you do not respond within 30 days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Final Order. If you are responding to this Notice, we propose that you submit your correspondence to my office within 30 days from receipt of this Notice. This period may be extended by written request for good cause.

In your correspondence on this matter, please refer to **CPF 4-2017-1011** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

Frank Causey  
Acting Director, Southwest Region  
Pipeline and Hazardous Materials Safety Administration

Enclosures: *Proposed Compliance Order*  
*Response Options for Pipeline Operators in Compliance Proceedings*

## PROPOSED COMPLIANCE ORDER

Pursuant to 49 U.S.C. § 60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue to Air Products & Chemicals Inc. a Compliance Order incorporating the following remedial requirements to ensure the compliance of Air Products & Chemicals Inc. with the pipeline safety regulations:

1. In regard to Item Number 2 of the Notice pertaining to automatic shut-off valves (ASV) or remote control valves (RCV), Air Products must 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. This 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, impact on key transportation corridors, and the risk of wildfires.
2. In regard to Item Number 3 of the Notice pertaining to data gathering, integration and risk assessment, Air Products must ensure input/output data of the Risk Model is accurate for all pipelines that impact a high consequence area. Air Products must ensure their risk rankings are logical and consistent with industrys practice.
3. Within 6 months following the Final Order, Air Products must complete item 1 and within 2 months following the Final Order, Air Products must complete item 2.
4. It is requested (not mandated) that Air Products & Chemicals Inc. maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Terri Binns, Acting Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.