



U.S. Department  
of Transportation

Pipeline and Hazardous Materials  
Safety Administration

1200 New Jersey Avenue SE  
Washington DC 20590

MAY 16 2019

Mr. Alan S. Armstrong  
President and Chief Executive Officer  
The Williams Companies, Inc.  
One Williams Center  
Tulsa, Oklahoma 74172

**Re: CPF No. 5-2018-3001**

Dear Mr. Armstrong:

Enclosed please find the Final Order issued in the above-referenced case against your subsidiary Williams Partners Operating, LLC. It withdraws two of the allegations of violation, makes one finding of violation, and assesses a reduced civil penalty of \$200,000. The penalty payment terms are set forth in the Final Order. This enforcement action closes automatically upon receipt of payment. 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: Mr. Dustin Hubbard, Director, Western Region, Office of Pipeline Safety, PHMSA  
Mr. Jason Lambert, Manager, Pipeline Safety, Williams Partners Operating, LLC, 295  
Chipeta Way, Salt Lake City, Utah, 84108

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**

**Williams Partners Operating, LLC,  
a subsidiary of The Williams Companies, Inc.,**

**Respondent.**

**CPF No. 5-2018-3001**

**FINAL ORDER**

On March 31, 2014, 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 incident investigation and pipeline safety inspection of the facilities and records of Williams Partners Operating, LLC's (Williams or Respondent), Plymouth Liquefied Natural Gas Peak Shaving Plant (Plymouth Plant) near the Columbia River in Plymouth, Washington. The Plymouth Plant is a liquefied natural gas (LNG) storage facility in the middle of William's Northwest Pipeline System that takes gas from the pipeline system in the spring and summer months, liquefies it, stores it, and then vaporizes it during periods of high demand in the fall and winter months. The Plymouth Plant consists of two separate LNG plants, known generally as "LNG-1" and "LNG-2."<sup>1</sup>

At approximately 8:19 a.m. PDT on March 31, 2014, the Plymouth Plant experienced a failure, resulting in an explosion and fire on a portion of its LNG-1 Purification and Regeneration System (Incident). The LNG-1 Purification and Regeneration System (P&R System) is a subsystem of the LNG process at the Plymouth Plant that removes water vapor and carbon dioxide prior to the gas being liquefied.

Following the Incident, PHMSA initiated a joint investigation of the Incident with the Washington Utilities and Transportation Commission. The investigation revealed that the Incident occurred during routine annual liquefaction start-up operations. In preparation for the start-up, a piece of equipment known as the Regeneration Salt Bath Heater D-40 (Salt Bath Heater) was started on March 30, 2014, and slowly brought to its process set point of 550° F. The following day, on March 31, Plymouth Plant personnel began taking steps to start up the P&R System. After reviewing the applicable procedure, Williams personnel took final steps for start-up, which included bringing the system up to full operating pressure and starting the

<sup>1</sup> Pipeline Safety Violation Report (Violation Report) (Feb. 12, 2018) (on file with PHMSA), at 1.

regeneration compressor D-70. Upon confirmation of these steps, the board operator gave a command via the distributed control system to align certain automated control valves and to permit normal gas flow through the system. As flow began, a flammable mixture of air and natural gas entered the Salt Bath Heater, where the mixture auto-ignited and resulted in a rolling detonation that went against the flow of gas in the direction of the Adsorber D-20A. The pressure wave generated by the detonation entered the Adsorber D-20A and caused the vessel to fail catastrophically by rapid over-pressurization, releasing natural gas into the atmosphere, producing additional deflagrations.

At 9:27 a.m. PDT, a Williams representative called the National Response Center (Report Number 1078325), and reported that an explosion had occurred at a natural gas compressor station. Seven employees were stationed within 150 feet of Adsorber D-20A when it exploded and caught fire. Five Williams employees were injured and treated on-site. One employee was flown to the hospital for additional treatment for burn injuries, admitted, and released several days later. The company conducted an emergency shutdown and evacuated all plant personnel. After emergency responders arrived on-site and talked with Williams's Plymouth Plant personnel, a decision was made to evacuate citizens from the village of Plymouth and the surrounding area within a two-mile radius, due to concerns about gas vapors.

The joint investigation resulted in the publication of a failure investigation report (FIR) issued by PHMSA on April 28, 2016. The FIR found that the primary cause of the Incident was a substandard purge performed after leaving the LNG-1 purification loop open to the atmosphere from November 1, 2013 to March 18, 2014. A flammable gas-air mixture remained in the system, which then entered the Salt Bath Heater and auto-ignited during start-up. Specifically, the FIR found that Williams failed to have detailed procedures to ensure that the plant's LNG-1 purification loop, which had been vented to the atmosphere during maintenance activities, was adequately and safely purged prior to start-up. The valve alignment prescribed by the existing procedure left large volumes of gas against the closed Hot Valve 0400, which created a "dead-leg." As a result, a flammable gas-air mixture remained in the system and then entered the Salt Bath Heater and auto-ignited during start-up.

As a result of the investigation, the Director, Western Region, OPS (Director), issued to Respondent, by letter dated February 12, 2018, a Notice of Probable Violation and Proposed Civil Penalty (Notice). In accordance with 49 C.F.R. § 190.207, the Notice proposed finding that Williams had violated 49 C.F.R. §§ 193.2517, 193.2017, and 193.2503 and proposed assessing a civil penalty of \$864,000 for the alleged violations.

After requesting and receiving an extension, on April 19, 2018, Williams responded to the Notice (Response). In its Response, Williams did not contest Item 1 and the associated penalty, but contested Items 2 and 3 and offered additional information in response to the Notice. Respondent did not request a hearing and therefore has waived its right to one.

### **FINDING OF VIOLATION**

The Notice alleged that Respondent violated 49 C.F.R. Part 193, as follows:

**Item 1:** The Notice alleged that Respondent violated 49 C.F.R. § 193.2517, which states:

**§ 193.2517 Purging.**

When necessary for safety, components that could accumulate significant amounts of combustible mixtures must be purged in accordance with a procedure which meets the provisions of the AGA “Purging Principles and Practices” after being taken out of service and before being returned to service.<sup>2</sup>

The Notice alleged that Respondent violated 49 C.F.R. § 193.2517 by failing to purge its P&R System in accordance with a procedure that met the provisions of American Gas Association’s (AGA) *Purging Principles and Practices* (incorporated by reference, *see* § 193.2013), after being taken out of service and before being returned to service. Specifically, the Notice alleged that Williams failed to prepare a detailed purge procedure for the purge it conducted on March 18, 2014. Instead, Williams used a general purge procedure that failed to take into account all of the various aspects of its P&R System, including vessel size, piping configuration, molecular sieve materials, valves, filters, and other obstructions that could cause an incomplete purge. Implementation of this general procedure, along with a lack of procedural specificity for a blow-down pressure, created a low flow or “dead-leg” segment of pipeline on either side of the valve that could not be properly purged of a combustible air/gas mixture. This incomplete purge created an explosive oxygen and natural gas mixture that was present immediately prior to the start-up and resulted in the auto-ignition.

In its Response, 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. § 193.2517 by failing to purge its P&R System in accordance with a procedure that met the provisions of AGA’s *Purging Principles and Practices*, after being taken out of service and before being returned to service.

This finding of violation will be considered a prior offense in any subsequent enforcement action taken against Respondent.

**WITHDRAWN ITEMS**

**Item 2:** The Notice alleged that Respondent violated 49 C.F.R. § 193.2017(c)(1), which states:

**§ 193.2017 Plans and procedures.**

(a) ...

(c) Each operator must review and update the plans and procedures required by this part -

(1) When a component is changed significantly or a new component is installed; ...

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<sup>2</sup> This version of § 193.2517 was in effect at the time the alleged violation occurred. The regulation was updated on Jan. 5, 2015.

The Notice alleged that Respondent violated 49 C.F.R. § 193.2017(c)(1) by failing to review and update its plans and procedures when new components were installed at the Plymouth Plant. Specifically, the Notice alleged that Williams installed three new manual valves in its P&R System on March 18, 2014. During the investigation, investigators reviewed numerous written procedures and records, and interviewed employees who were on-site the day of the Incident. In their review, the investigators found that the documentation provided by Williams did not demonstrate the company's compliance with § 193.2017(c)(1) when it installed the three new manual valves in the purification-loop piping system on March 18, 2014.

In its Response, Williams stated that, contrary to the claim in the Notice, the three at-issue manual valves were not new, but original equipment valves that had been repaired and then reinstalled.<sup>3</sup> Williams argued that because no new equipment was added or modified and the process was in no way changed, a review and update of the existing operating procedures was not required under § 193.2017(c)(1). Respondent also provided additional documentation indicating that the valves were refurbished and were not new valves.<sup>4</sup>

Accordingly, after considering all of the evidence, I find there is insufficient evidence to demonstrate that Williams violated § 193.2017(c)(1). Williams did not install new components or significantly change existing components, and therefore it was not required under § 193.2017(c)(1) to review and update its plans and procedures at the Plymouth Plant. Based upon the foregoing, I hereby order that Item 2 be withdrawn.

**Item 3:** The Notice alleged that Respondent violated 49 C.F.R. § 193.2503(f)(4), which states, in relevant part:

**§ 193.2503 Operating procedures.**

Each operator shall follow one or more manuals of written procedures to provide safety in normal operation and in responding to an abnormal operation that would affect safety. The procedures must include provisions for:

- (a)...
- (f) In the case of liquefaction, maintaining temperatures, pressures, pressure differentials and flow rates, as applicable, within their design limits for: ...
- (4) Purification and regeneration equipment; ...

The Notice alleged that Respondent violated 49 C.F.R. § 193.2503(f)(4) by failing to have procedures to provide safety during the normal operation start-up process. Specifically, the Notice alleged that Williams's operating procedures failed to identify that its P&R equipment would result in being operated beyond design limits. The Notice alleged the start-up sequence in Williams's *Regeneration Compressor and Purification Adsorber - LNG I: Remote Start-up and Shutdown* procedure failed to provide safety during normal operation by instructing Williams

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

<sup>4</sup> Invoice for D-45 Valves (See Appendix B to Region Recommendation).

personnel to start the Salt Bath Heater prior to pressurization. Section C.2 of its procedure indicated that the start-up of the heating process through completion of the Regeneration Salt Bath Heater procedures was required prior to starting the regeneration process.

In its Response, Williams argued that its start-up process and procedures were adequate to provide safety had the purge been completed correctly.<sup>5</sup> It contended that had oxygen not been present in the piping due to the incomplete purge, the existing start-up procedure would have provided for safety of personnel and equipment. Additionally, Williams asserted that the existing practice of starting and raising the Salt Bath Heater to temperature prior to introduction of gas is consistent with historical plant practice, manufacturer recommendations, and industry practice. Williams also provided additional information clarifying the design limits of the Salt Bath Heater, demonstrating that they were not exceeded despite the occurrence of the Incident.<sup>6</sup>

Accordingly, after considering all of the evidence, I find there is insufficient evidence to demonstrate that Williams violated § 193.2503(f)(4). Williams had operating procedures in place to provide safety during the start-up process. It was not Respondent's operating procedures, but Respondent's failure to properly purge its system in accordance with purging procedures (addressed in Item 1) that resulted in the Incident. Based upon the foregoing, I hereby order that Item 3 be withdrawn.

### **ASSESSMENT OF PENALTY**

Under 49 U.S.C. § 60122, Respondent is subject to an administrative civil penalty not to exceed \$200,000 per violation for each day of the violation, up to a maximum of \$2,000,000 for any related series of violations.<sup>7</sup>

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; 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 \$864,000 for the violations cited above.

**Item 1:** The Notice proposed a civil penalty of \$288,000 for Respondent's violation of 49 C.F.R. § 193.2517, for failing to purge its P&R System in accordance with a procedure that met the provisions of AGA's *Purging Principles and Practices*, after being taken out of service and before being returned to service. Williams did not contest the violation or the penalty. Although

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<sup>5</sup> Response at 3.

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

<sup>7</sup> These amounts are adjusted annually for inflation. See, e.g., Pipeline Safety: Inflation Adjustment of Maximum Civil Penalties, 82 Fed. Reg. 19325 (April 27, 2017).

the Violation Report stated that the violation began on October 31, 2013, the date Williams's purging procedures were implemented,<sup>8</sup> and continued until the date of the Incident, I find that Respondent's failure to purge its P&R System was a one-day activity occurring on March 18, 2014.<sup>9</sup> Reducing the duration of the violation from multiple days to one day serves to reduce the amount of the proposed penalty. Accordingly, having reviewed the record and considered the assessment criteria, I assess Respondent a reduced civil penalty of \$200,000 for violation of 49 C.F.R. § 193.2517.

**Item 2:** The Notice proposed a civil penalty of \$288,000 for Respondent's alleged violation of 49 C.F.R. § 193.2017(c)(1), for failing to review and update its plans and procedures when new components were installed at the Plymouth Plant. I have withdrawn Item 2, therefore there is no associated penalty for this item.

**Item 3:** The Notice proposed a civil penalty of \$288,000 for Respondent's alleged violation of 49 C.F.R. § 193.2503(f)(4), for failing to have procedures in place to provide safety during the start-up process. I have withdrawn Item 3, therefore there is no associated penalty for this item.

In summary, having reviewed the record and considered the assessment criteria for each of the Items cited above, I assess Respondent a total civil penalty of **\$200,000**.

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, 6500 S MacArthur Blvd, Oklahoma City, Oklahoma 79169. The Financial Operations Division telephone number is (405) 954-8845.

Failure to pay the \$200,000 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.

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, 2<sup>nd</sup> 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 the Final Order by Respondent. Any petition submitted must 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. The other terms of the order, including any corrective action, remain in effect unless the Associate Administrator, upon request, grants a

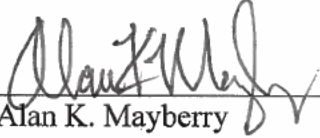
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<sup>8</sup> Violation Report at 9, Ex. A.

<sup>9</sup> Violation Report at 10.

stay. If Respondent submits payment of the civil penalty, the Final Order becomes the final administrative decision and the right to petition for reconsideration is waived.

The terms and conditions of this Final Order are effective upon service in accordance with 49 C.F.R. § 190.5.

  
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Alan K. Mayberry  
Associate Administrator  
for Pipeline Safety

MAY 16 2019

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Date Issued