

utc-9183

... | ROA | Op... | Co... | Mil... | Sta... | Forms | Mi... | Co... | Pip... | Op... | Fie... | Ins... | N...

Home | FORM H: Incident Inve... | FORM A: Annual Review | FORM C: GD Records ... | FORM D: GT Records ... | FORM V: Gas OM/Pro... | FORM G1: HLOM/Pro...

FORM H: Inci... Ed...

Save & keep working | Cancel

Reports & Charts

Prev | Return | Next

UTC R H
Incident / Failure / Investigation Report

Incident Title

Northwest Pipeline LLC, Williams Zillah SRC, 10-20-2020 12:00 AM

PRINT Form (select "save and keep working" first)

Incident No.

3763

Investigation ID:

8246

Inspection Link 3 Word Summary

8246

Williams Zillah SRC

Lead Inspector Name:

Scott Rukke

Assistant Inspector Name:

Additional Inspector:

Incident Information	Executive Summary	Location Information	Incident Description	System Details	Investigation Details	Appendices
----------------------	-------------------	----------------------	----------------------	----------------	-----------------------	------------

Describe details of the investigation

On 10/21/2020 Williams determined that the filter installation and operation met the criteria of a Safety Related Condition as detailed in 49 CFR 191.23(a)(10) and the S WA UTC on the same day. Since this is an interstate pipeline facility PHMSA has primary authority to investigate. On 10/22/2020 PHMSA assigned investigative authority to Williams staff. Williams staff contacted Williams personnel to request information and documents related to the installation of the fuel gas filter in 2015. These documents and a summary report detailed Williams investigation and the root cause analysis of this incident. UTC staff reviewed the documents provided and made an additional data request on 1/15/2021 on 3/1/2021 and have been reviewed by staff. Final report submitted for peer review on 3/2/2021.

Findings and Contributing Factors

Investigation Findings and Contributing Factors, including Root Cause

Williams initiated an internal investigation to determine the cause of the installation of the under rated component. Williams worked with UTC Staff and provided communication. On January 7, 2021 Williams issued an Incident Investigation Summary Report dated December 1, 2020 (Appendix 1). Staff have reviewed this report.

Williams investigation determined that during the Zillah compressor station upgrade conducted in July 2015, one set of construction prints were used for two separate occasions occurring simultaneously, Oregon City and Zillah. The prints used at Zillah were based on the Oregon City compressor and the project piping and instrument drawings and equipment. As a result, the equipment specifications for the filter were incorrect and the ANSI Class 300 fuel filter assembly was bolted to ANSI class 600 flanges. The personnel, both engineering and field, failed to identify the under rated component.

Solar is the manufacturer of the Zillah compressor station mobile unit. Williams hired Solar to design their Oregon City and Zillah compressor station upgrades that were into account a different fuel skid supply configuration between the two stations and this resulted in a 300 Class ANSI flanged component being installed in a system that components. The 2-inch ANSI Class 300 and 600 flanges have the same bolt pattern. Williams personnel did not catch the under rated component due to insufficient piping. 300 Class flanges have been in operation seasonally since 2015. As a result of the installation of the under rated fuel filter, the Zillah CS discharge piping which provides pressure exceeded its MAOP of 667 PSIG numerous times between 2015 and 2020. (See Appendix #14)

Williams determined that the installation error was the result of several factors including but not limited to the following:

1. The project team did not complete project-specific drawings as is now required per WIMS Project Requirements. (WIMS - Williams Integrated Management System)
2. The design reviews failed to identify that the project drawing package did not match the site-specific project.
3. 3rd party inspector did not verify that equipment installed met specifications.
4. WISOP/WIMS did not have a formalized PSSR process associated with MOC's at the time of the project. (WISOP: Williams Standard Operating Procedures (Precursor to WIMS))
5. WISOP/WIMS did not have a formalized PHA process associated with MOC's for major changes.
6. Field personnel failed to notice that the flanges had a lower rating than the flanges they were being connected to.

Changes made since 2015:

In May 2015, Williams implemented a new PHA that would have required a more formalized review of the compressor fuel skid components and installation requirements.

In November 2017, Williams modified their PSSR and made it a more formalized process within their MOC. This would have required a completed PSSR to review and verify equipment on site.

Williams now requires 3rd Party designers to design for site specific jobs. The design utilized by Williams at the Zillah compressor was completed by Solar and the components were provided by Solar.

Williams 3rd Party inspectors will now verify that components being installed meet the design requirements.

Williams will only use site specific drawings.

Acronyms used:

- WIMS - Williams Integrated Management System
- WISOP: Williams Standard Operating Procedures (Precursor to WIMS)
- MOC: Management of Change
- PSSR: Pre-Startup Safety Review
- PHA: Process Hazard Analysis

Regulatory Analysis / Violations

Regulatory Analysis/Violations:

Staff concurs with the Root Cause analysis performed by Williams as noted above. (Appendix #11)

Williams has made several procedural and process changes that Staff believe will prevent this type of event from occurring in the future.

Williams found this component on their own and it was not operational at the time. It was immediately removed from potential service and the information reported to PHMSA and the WA UTC as a SRC.

NOTE:

This was reported under Title 49, CFR, § 191.23(a)(10) - Reporting safety-related conditions.

10) For transmission pipelines only, each exceedance of the maximum allowable operating pressure that exceeds the margin (build-up) allowed for operation of pressure-limiting or control devices as specified in the applicable requirements of § 192.201, 192.620(e), and 192.739.

Title 49, CFR, § 191.23(a)(10) references 3 codes, one of which must apply for the issue to be reportable as an SRC. Staff does not believe that the installation would be reportable under any of the 3 referen

§192.201 - Required capacity of pressure relieving and limiting stations.

This was not an issue related to relief or limiting stations.

§192.620(e) - Alternative maximum allowable operating pressure for certain steel pipelines.

This is not an issue related to an alternative MAOP.

§192.739 - Pressure limiting and regulating stations: Inspection and testing.

This is not an issue related to regulator stations.

Recommendations / Follow Up

Follow up/Recommendations:

As noted above Williams has already made significant progress in modifying processes and procedures to ensure this type of installation will not happen in the future.

It is also noted above the reasoning that Staff do not believe this incident met the criteria of an SRC under Title 49, CFR, § 191.23(a)(10).

Staff recommends that during future inspections emphasis be placed on identifying component ratings and verifying they are rated for the MAOP of the system where they are installed.

Cause

Construction Error

- Inadequate Communication
- Inadequate Inspection/assessment of conditions
- Inadequate Oversight

Select up to 20 choices

Corrosion

Select up to 20 choices

Equipment Failure/Damage

Select up to 20 choices

Excavation Damage

Select up to 20 choices

Human Error

- Inadequate Communication
- Inadequate purchasing

Select up to 20 choices

Improper Operations

- Inadequate contractor management
- Inadequate inspection
- Inadequate purchasing
- Inadequate QA/QC

Select up to 20 choices

Inadequate Design

- Inadequate component
- Inadequate engineering

Select up to 20 choices

Material Failure

Select up to 20 choices

Natural Forces

Select up to 20 choices

Organizational Failure

- Inadequate Communication
- Inadequate policies, standard, procedures

Select up to 20 choices

Outside Force

Select up to 20 choices

Causes

Inadequate Communication ; Inadequate Inspecti Oversight, , , Inadequate Communication ; Inad management ; Inadequate inspection ; Inadequat component ; Inadequate engineering Inadequate procedures