



National Transportation Safety Board

Washington, D.C. 20594

Office of Railroad, Pipeline and Hazardous Materials Investigations

Pipeline Operations

Group Chairman's Factual Addendum

Atmos Energy Corporation

Natural Gas-Fueled Explosion During Routine Maintenance

Farmersville, Texas

June 28, 2021

NTSB Investigation No.:

PLD21FR002

Report Date: May 31, 2022

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B. Accident Summary

For a summary of the accident, refer to the *Accident Summary* report within this docket.

This report documents information gathered in addition to what is contained in the *Pipeline Operations Group Chairman's Factual Report*, dated February 3, 2022.

C. Operator Qualification

Minimum federal safety standards for the transportation of natural gas by pipeline are codified by the Pipeline and Hazardous Materials Safety Administration (PHMSA) in 49 CFR Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*. 49 CFR Part 192 Subpart N, *Qualification of Pipeline Personnel*, identifies requirements for qualification of pipeline personnel.¹ These requirements are applicable to individuals performing covered tasks on a pipeline facility. A *covered task* is an activity, identified by the operator, that:

- Is performed on a pipeline facility
- Is an operations or maintenance task
- Is performed as a requirement of this part, and
- Affects the operation or integrity of the pipeline.

A *qualification program*, requires, in part, that operators have and follow a written qualification program that identifies covered tasks, ensures through evaluation that individuals performing covered tasks are qualified, and communicates changes that affect covered tasks to individuals performing those covered tasks (49 CFR 192.805). *Qualified* means that an individual has been evaluated and can perform assigned covered tasks and recognize and react to abnormal operating conditions (49 CFR 192.803). *Abnormal operating condition* means a condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may (a) indicate a condition exceeding design limits or (b) result in a hazard(s) to persons, property, or the environment (49 CFR 192.803).

C.1 PHMSA

On April 7, 2022, NTSB investigators met with PHMSA subject matter experts (SMEs) to discuss Operator Qualification (OQ) requirements pertaining to launching and receiving pigs.² During this meeting, PHMSA's OQ SMEs indicated that launching and receiving pigs meets the definition of a covered task. They provided several documents supporting their view, including:

¹ 49 CFR Part 192, Subpart N was originally published on August 27, 1999, effective October 26, 1999 (64 FR 46865).

² PHMSA's OQ SMEs were identified at the request of the NTSB IIC to PHMSA's Deputy Associate Administrator for Policy and Programs.

- PHMSA’s OQ Frequently Asked Questions (FAQs) which were in effect at the time of the accident and indicated that:
 - Pipeline safety regulations require operators to identify covered tasks for all operations and maintenance (O&M) activities that are performed as a requirement of Parts 192 and 195, without regard to whether such activities are specifically defined in the operator’s O&M manual or arise from performance-based or prescriptive requirements.
 - For performance-based regulations, tasks are “performed as a requirement of this part” if they are integral to meeting the requirements of the regulations. If such tasks also meet the other parts of the definition of covered tasks, they must be treated as covered tasks under the four-part test.
 - While an industry standard, such as American Society of Mechanical Engineers (ASME) B31Q, *Pipeline Personnel Qualification*, or American Petroleum Institute (API) RP 1161, *Pipeline Operator Qualification*, may provide a useful starting point for identifying industry-accepted covered tasks, the absence of a task within an industry standard does not mean that the task is not a covered task. Operators must evaluate each task they perform and determine whether it is a covered task using the four-part test.
- PHMSA’s OQ Enforcement Guidance, dated August 25, 2016, provides guidance to PHMSA pipeline safety investigators in undertaking their compliance, inspection, and enforcement activities. One example of a probable violation or inadequate procedures reported in this guidance document is, “The written operator qualification program does not identify all applicable covered tasks as required by the operator qualification rule. Some examples include...integrity management tasks (e.g., launching and receiving pigs)...”
- Final Order to Enterprise Products Operating, LLC [3-2009-5022], dated August 14, 2012, further indicates that tasks are required whether they arise from performance-based regulations or more prescriptive requirements.

PHMSA’s OQ SMEs acknowledged that some covered tasks, including launching and receiving pigs, are not included in the current version of API 1161. However, they also observed that a related task was in the first edition of API 1161, dated August 2000 (see Section C.4). PHMSA’s OQ SMEs indicated that they have informally advised API that some covered tasks, including launching and receiving pigs, are missing from the list provided in API 1161.

On May 12, 2022, the NTSB IIC requested a formal interpretation of PHMSA’s OQ Rule. PHMSA’s interpretation will be made publicly available when it is finalized.³

C.2 RRC

The Railroad Commission of Texas (RRC) provided a copy of the OQ Evaluation Form used by their inspectors for OQ audits. According to the OQ Evaluation Form, RRC inspectors must verify that the operator has procedures for identifying covered tasks and identifies all

³ See: <https://www7.phmsa.dot.gov/regulations/title49/b/2/1>

applicable covered tasks. Since the accident, the RRC has alleged violations against operators that did not identify covered tasks related to launching and receiving pigs.

C.3 Atmos

When asked to describe the process used to identify covered tasks prior to the accident, Atmos indicated that:

“Atmos Energy’s Operator Qualification Program is designed to achieve compliance with both federal regulations and any applicable state-specific requirements as they pertain to operator qualifications. As Subpart N of 49 CFR Part 192 was being implemented in 2001/2002, an internal group of subject matter experts evaluated the operations and maintenance activities performed as a requirement of Part 192 using the four-part test to determine which of those activities were covered tasks. Atmos did not use an “Off-the-Shelf” program. On an annual basis, Atmos formally reviews its Operator Qualification Plan and continues to refine the Plan, including the list of covered tasks, based on feedback from employees, input from regulators, and evolving industry practices and standards. Other lists of covered tasks including API 1161 and ASME B31Q (which was introduced in 2006) have been used periodically for reference purposes. Launching and receiving in-line inspection tools was not previously included as a covered task because those activities are not an identified requirement in 49 CFR 192. The API 1161 standard likewise does not include launching and receiving in its list of covered tasks. As part of our continuous safety improvement process, a new OQ task (M23 – Launching and Receiving Pipeline Pigs) is being developed and will be required for all Atmos employees and contractor personnel carrying out launching and receiving activities on in-service pipelines.”

C.4 API 1161

The current version of API 1161, *Recommended Practice for Pipeline Operator Qualification (OQ)*, dated November 2021, provides guidance for developing and maintaining an OQ program. The recommended practice (RP) indicates that it is applicable to all pipelines, both onshore and offshore, subject to 49 CFR Parts 192 and/or 195.

API 1161 defines a “covered task” as follows:

- is a discrete activity performed by an individual or group of individuals,
- has a beginning and an ending point,
- has two or more steps,
- can be observed and measured,
- is identified by the company,
- meets all four of the conditions of the “four-part test”⁴

⁴ The *four-part* test refers to criteria defined in 49 CFR 195.501 and 49 CFR 192.801, as indicated.

- is performed on a pipeline facility, and
- is an operations or maintenance task, and
- is performed as a requirement of 49 CFR Part 192 and/or Part 195, and
- affects the operations or integrity of the pipeline.

API 1161 indicates that industry and technical associations, qualification product providers, and others have developed covered task lists through subject matter expert consensus. The Covered Task List developed by API is included in API 1161 Annex A. The RP indicates that operators adopting such lists should take additional steps to ensure completeness.

The Covered Task List in the November 2021 version of API 1161 includes about 100 covered tasks. It does not include launching or receiving pigs.

A prior version of API 1161, *Guidance Document for the Qualification of Liquid Pipeline Personnel*, dated August 2000, was developed to help operators comply with regulations found in 49 CFR Part 195, *Transportation of Hazardous Liquids by Pipeline*. This version indicated that it was a guidance document, not a standard or recommended practice. This version provided an example of the types of premises and definitions that operators may want to include in their written program. To address the third part of the four-part test, the example indicated that “Required by Part 195 means only those tasks specifically required to be addressed in Part 195.” This version also provided an example covered task list which included 45 covered tasks. Task 45 was titled, “Operate Pressure Relieving Devices for Launching and Receiving Facilities” which was noted to be required by 195.426, *Scraper and sphere facilities*.

API reported that Task 45 was evaluated in the 2010-2012 timeframe and was removed from RP 1161 because the working group believed it did not meet the third part of the four-part test (Is performed as a requirement of this part).

C.5 ASME B31Q

ASME B31Q-2021, *Pipeline Personnel Qualification*, indicates that it establishes requirements for developing and implementing an effective Pipeline Personnel Qualification Program utilizing a combination of technically based data, accepted industry practices, and consensus-based decisions. The objective of ASME B31Q is to minimize the impact on safety and integrity of the pipeline due to human error that may result from an individual’s lack of knowledge, skills, or abilities during the performance of certain activities.

ASME B31Q defines a “covered task” as a task that can affect the safety or integrity of the pipeline. It does not use the regulatory definition of “covered task” contained in 49 CFR Parts 192 and 195. ASME B31Q defines an “abnormal operating condition” as a condition that may indicate a malfunction of a component or deviation from normal operations that may (a) indicate a condition exceeding design limits or (b) result in a hazard(s) to persons, property, or the environment. It removes the phrase “identified by the operator” from the regulatory definition contained in 49 CFR Parts 192 and 195.

ASME B31Q includes a covered task list with about 160 covered tasks in Nonmandatory Appendix A. Task 1641, *Launch or Receive Internal Devices (Pigs) Using Traps*, includes isolating pipeline barrels, relieving pressure, inserting or removing pigs, pressurizing the

barrel, and launching/receiving pigs. This task includes monitoring pressure while depressurizing the launcher and monitoring for hazardous vapors before and during loading. Task 1641 has potential applicability to hazardous liquid, gas transmission, and local distribution operations, a moderate difficulty level (3 out of 5), and the highest importance (5 out of 5). Importance was judged in terms of the consequences of inadequate performance. An importance rating of 5 meant the improper performance of the task may result in an abnormal operating condition while the task is being performed that is a hazard to persons, property, or the environment or a reportable condition.

ASME B31Q does not specify abnormal operating conditions for each task. Instead, it provides a list of abnormal operating conditions that may be used in a qualification program in Nonmandatory Appendix E. The list includes, in part, unplanned escape of product from a pipeline, fire or explosion, unplanned pressure deviation, unplanned flow-rate deviation, and pipeline damage. ASME B31Q requires qualified individuals performing a covered task be able to recognize and properly react to abnormal operating conditions they might encounter during the performance of the task.

C.6 ANSI/GPTC Z380.1

ANSI/GPTC Z380.1, *Guide for Gas Transmission, Distribution, and Gathering Piping Systems*, 2018 Edition, indicates that the operator is responsible for identifying which operations and maintenance tasks performed on its facilities are covered tasks based on the four-part test (49 CFR 192.801(b)). GPTC guidance for evaluating the third part of the four-part test indicates that Part 192 specifies that the task must be performed. The guidance indicates that an “operator may choose not to consider tasks that are addressed in its procedural manual that are not specifically required in the regulations when identifying covered tasks. An operator may also choose not to consider implied tasks (e.g., those that are addressed solely as a result of a requirement for written procedures) and subtasks to those required by Part 192 when identifying covered tasks for its Operator Qualification program.”

GPTC provides the examples of abnormal operating conditions, including: escaping gas, fire or explosion, and component failure.

The GPTC guidance also references ASME B31Q.