



NW Natural®

Mist Underground Natural Gas Storage

CPF 1-2024-041-NOA

5/31/2024

Northwest Natural
250 SW Taylor St
Portland, OR 97204

VIA ELECTRONIC MAIL [Robert.burrough@dot.gov]

Robert Burrough
Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration
840 Bear Tavern Road, Suite 300
West Trenton, NJ 08628

RE: CPF 1-2024-041-NOA

Dear Mr. Burrough,

Northwest Natural ("NW Natural") operates the Mist Underground Natural Gas Storage Facility ("Mist"). Northwest Natural is committed to a culture and operations that value public and worker safety as a first priority. Northwest Natural appreciated the opportunity to demonstrate its commitment to actively and aggressively pursue safe and reliable operations during the 2023 inspection by PHMSA of the NW Natural's UNGS programs, plans, and procedures.

Northwest Natural has carefully reviewed PHMSA's NOA and has addressed it below.

Safety is of the most paramount importance to NW Natural and NW Natural continuously seeks to improve its practices. NW Natural appreciates PHMSA's input on our UNGS programs, plans, and procedures, and we look forward to working with PHMSA over the years to come. Please contact me if you have any questions about this response or require additional information.

Signed,

A handwritten signature in blue ink, appearing to read 'J. Karney'.

Joseph Karney, Vice President, Engineering & Utility Operations, NW Natural

PHMSA Findings:**1. §192.12 Underground natural gas storage facilities.**

(a) ...

(b) *Depleted hydrocarbon and aquifer reservoir UNGSFs.*

- 1) Each UNGSF that uses a depleted hydrocarbon reservoir or an aquifer reservoir for natural gas storage and was constructed after July 18, 2017, must meet all provisions of API RP 1171 (incorporated by reference, see §192.7), and paragraph (c) and (d) of this section, prior to commencing operations.

Northwest's written construction procedures for underground natural gas storage were inadequate to assure safe operation of a pipeline facility. Specifically, Northwest failed to develop and follow a construction procedure for the reuse of tubing during reworking of tubing and packer wells pursuant to American Petroleum Institute Recommended Practice 1171 (2015) (API RP 1171), Sections 6.3.6 and 11.2.1.

API RP 1171, Section 6.3.6 - Handling requires that "[c]asing shall be stored, transported, lifted and installed as specified by the manufacturer and in accordance with API 5C 1." Section 7 of API RP 5C 1 includes guidance related to the inspection of used tubing.

API RP 1171, Section 11.2.1 - Construction, Operation, and Maintenance Procedures requires in part that operators "... develop and follow procedures for the construction, operation, and maintenance of natural gas storage wells and reservoirs to establish and maintain functional integrity."

During the inspection, PHMSAs determined that well 13b-23-65 had been reworked. PHMSA reviewed records and procedures regarding the removal and reinstallation of tubing on the well and found that the procedures did not require the inspection or replacement of the original tubing during reworking tubing and packer wells.

Therefore, Northwest's written procedures required by § 192.12(b)(1) pursuant to meeting the provisions of API RP Sections 6.3.6 and 11.2.1 were inadequate. Northwest must revise its procedures to address the deficiency outlined above.



NW Natural Response:

NW Natural endeavored to conduct a re-review of the records associated with the rework of Mist UGS well 13b-23-65. Based on this review, NW Natural would like to provide the following clarification:

- Prior to the rework, well 13b-23-65 had 7", 23#, J-55 LTC tubing.
- As part of the rework, well 13b-23-65 was recompleted with new 7", 23.0#, K-55 SMAX-TSR tubing.
- None of the original 7", 23#, J-55 LTC tubing was reused.

Notwithstanding, NW Natural shall continue to reinforce the requirement to inspect used tubing when reinstalled as part of a well rework program.