



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

840 Bear Tavern Road, Suite 300
West Trenton, NJ 08628
609.771.7800

WARNING LETTER

VIA ELECTRONIC MAIL TO: scott.carter@spireenergy.com

June 14, 2024

Mr. Scott Carter
President and Chief Executive Officer
Spire Missouri Inc. East
700 Market Street
Saint Louis, Missouri 63101

CPF 1-2024-048-WL

Dear Mr. Carter:

From June 26 to 30, 2023 of the onsite inspection, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code (U.S.C.) inspected Spire Missouri Inc. East's (Spire) Florissant Dome Underground Natural Gas Storage Facility in the County of Saint Louis, Missouri.

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 violations are:

- 1. § 191.25 Filing safety-related condition reports.**
 - (a) Each report of a safety-related condition under § 191.23(a)(1) through (9) must be filed (received by the Associate Administrator) in writing within 5 working days (not including Saturday, Sunday, or Federal holidays) after the day a representative of an operator first determines that the condition exists, but not later than 10 working days after the day a representative of an operator discovers the condition. Separate conditions may be described in a single report if they are closely related. Reporting methods and report requirements are described in paragraph (c) of this section.**

Spire failed to file a safety related condition (SRC) report within the reporting timeframe requirements of § 191.25(a). Specifically, Spire failed to file a report within 5 working days after

the day a representative first determined that the conditions existed, but not later than 10 working days after the day a representative of Spire discovered the condition.

During the inspection, PHMSA reviewed records for downhole casing inspection logs. Based on integrity assessment data provided by Baker Hughes for Siemens #1 well, Spire discovered a condition on December 8, 2020 in which the magnetic flux leakage casing inspection log indicated wall loss exceeding 80% in the top joint of the casing, which resulted in reduction of the maximum allowable operating pressure (MAOP) to 0 psig. This meets the safety related condition requirement of § 191.23(a)(2). A bridge plug isolating the defect from casing perforation was installed on July 21, 2023, over 2 years later. Spire filed the Safety Related Condition Report on July 24, 2023. Spire did not isolate the well, nor did it report the safety related condition within 10 working days of discovery.

Therefore, Spire failed to report a safety related condition in accordance with the reporting requirements of § 191.25(a).

2. § 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 paragraphs (c) and (d) of this section, prior to commencing operations.

Spire failed to meet the provisions of API RP 1171, Section 6. Specifically, Spire failed to maintain records of its actions during plugging and abandonment of wells pursuant to API RP 1171 Sections 6.7.1, 6.7.2, and 6.8.1, as required by API RP 1171 Sections 6.11.1 and 6.11.2.

During the inspection, PHMSA reviewed records of Spire's plugging and abandonment of wells. Although Spire had procedures requiring the isolation of ground water and other zones pursuant to API RP 1171 Sections 6.7.1 and 6.7.2 requirements, Spire could not provide any records showing that this was achieved during the well workover.

In addition, PHMSA requested records showing that Spire conducted safety review meetings at all their well work activities pursuant to its procedures developed for compliance with API RP 1171, Section 6.8.1. Spire could not provide any records demonstrating that safety reviews were conducted at all well work operations.

Therefore, Spire failed to meet the provisions of API RP 1171, Section 6 by failing to maintain records of its actions for isolating groundwater and other zones during well plugging operations and conducting safety reviews pursuant to API RP 1171 Sections 6.7.1, 6.7.2, and 6.8.1, as required by API RP 1171, Sections 6.11.1 and 6.11.2.

3. § 192.12 Underground natural gas storage facilities.

(a) ...

(b) Depleted hydrocarbon and aquifer reservoir UNGSFs.

(2) Each UNGSF that uses a depleted hydrocarbon reservoir or an aquifer reservoir for natural gas storage and was constructed on or before July 18, 2017, must meet the provisions of API RP 1171 (incorporated by reference, see § 192.7), sections 8, 9, 10, and 11, and paragraph (c) of this section, by January 18, 2018, and must meet all provisions of paragraph (d) of this section by March 13, 2021.

Spire failed to meet the provisions of API RP 1171, Section 8. Specifically, Spire failed to use available information to assess threat and hazard interaction in accordance with API RP 1171, Section 8.3.2 (Section 8.3.2).

Section 8.3.2 states:

The operator shall use available information such as performance data collected through the field history, operations and maintenance (O&M) activities, geotechnical data such as well logs, engineering data, and completion reports to determine susceptibility to threat and hazard-related events and to assess threat and hazard interaction.

During the inspection, PHMSA reviewed Spire's risk assessment and found that Spire did not include threat and hazard interaction in their risk model.

Therefore, Spire failed to assess threat and hazards interaction in accordance with the requirements of Section 8.3.2.

4. § 192.12 Underground natural gas storage facilities.

(a) ...

(b) Depleted hydrocarbon and aquifer reservoir UNGSFs.

(2) Each UNGSF that uses a depleted hydrocarbon reservoir or an aquifer reservoir for natural gas storage and was constructed on or before July 18, 2017, must meet the provisions of API RP 1171 (incorporated by reference, see § 192.7), sections 8, 9, 10, and 11, and paragraph (c) of this section, by January 18, 2018, and must meet all provisions of paragraph (d) of this section by March 13, 2021.

Spire failed to meet the provisions of API RP 1171, Section 8. Specifically, Spire failed to include 29 wells from the Trenton Formation in their risk model and failed to evaluate their plugged and abandoned wells in its risk model, pursuant to API RP 1171, Section 8.4.2 (Section 8.4.2).

Section 8.4.2 requires operators to evaluate the potential threats and hazards impacting its storage wells and reservoirs.

During the inspection, PHMSA reviewed records of Spire's risk assessment and determined that 29 wells in the Trenton Formation and an unknown number of plugged and abandoned wells that penetrate the storage horizons were not included in their risk model. The Trenton Formation is a producing horizon above the storage formation, containing storage gas.

Therefore, Spire failed to evaluate the potential threats and hazards impacting all of its storage wells and reservoirs in accordance with the requirements of Section 8.4.2.

5. § 192.12 Underground Natural Gas Storage Facilities.

(a) ...

(d) *Integrity management program--*

(1) ...

(4) Integrity management procedures and recordkeeping. Each UNGSF operator must establish and follow written procedures to carry out its integrity management program under API RP 1171 (Incorporated by reference, see § 192.7), section 8 ("Risk Management for Gas Storage Operations"), and this paragraph (d). The operator must also maintain, for the useful life of the UNGSF, records that demonstrate compliance with the requirements of this paragraph (d). This includes records developed and used in support of any identification, calculation, amendment, modification, justification, deviation, and determination made, and any action taken to implement and evaluate any integrity management program element.

Spire failed to maintain records demonstrating compliance with § 192.12(d) as required by § 192.12(d)(4). Specifically, Spire failed to maintain records of its risk assessment review meetings in 2021 and 2022 that are required pursuant to API RP 1171, Section 8.5.2 (Section 8.5.2).

Section 8.5.2 states in part that “[t]he operator shall review the results of the risk assessment to determine whether the risk assessment, resulting prioritization, or ranking represents its facilities and characterizes the risks. Review may be performed by personnel familiar with storage operations, risk management, and methods of analyzing risk and results.”

During the inspection, PHMSA requested the records tracking the risk assessment reviews conducted pursuant to Section 8.5.2. Spire stated they conducted these reviews annually but failed to produce records for the 2021 and 2022 risk assessment review meetings.

Therefore, Spire failed to maintain records demonstrating compliance with § 192.12(d) as required by § 192.12(d)(4).

Under 49 U.S.C. § 60122 and 49 CFR § 190.223, you are subject to a civil penalty not to exceed \$266,015 per violation per day the violation persists, up to a maximum of \$2,660,135 for a related series of violations. For violation occurring on or after January 6, 2023 and before December 28, 2023, the maximum penalty may not exceed \$257,664 per violation per day the violation persists, up to a maximum of \$2,576,627 for a related series of violations. For violation occurring on or after March 21, 2022 and before January 6, 2023, the maximum penalty may not exceed \$239,142 per violation per day the violation persists, up to a maximum of \$2,391,142 for a related series of violations. For violation occurring on or after May 3, 2021 and before March 21, 2022, the maximum penalty may not exceed \$225,134 per violation per day the violation persists, up to a maximum of \$2,251,334 for a related series of violations. For violation occurring on or after

January 11, 2021 and before May 3, 2021, the maximum penalty may not exceed \$222,504 per violation per day the violation persists, up to a maximum of \$2,225,034 for a related series of violations. For violation occurring on or after July 31, 2019 and before January 11, 2021, the maximum penalty may not exceed \$218,647 per violation per day the violation persists, up to a maximum of \$2,186,465 for a related series of violations. For violation occurring on or after November 27, 2018 and before July 31, 2019, the maximum penalty may not exceed \$213,268 per violation per day, with a maximum penalty not to exceed \$2,132,679.

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 correct the items identified in this letter. Failure to do so will result in Spire Missouri Inc. East being subject to additional enforcement action.

No reply to this letter is required. If you choose to reply, in your correspondence please refer to **CPF 1-2024-048-WL**. 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).

Sincerely,

Robert Burrough
Director, Eastern Region, Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration