

WARNING LETTER

OVERNIGHT EXPRESS DELIVERY

February 8, 2022

Mr. Mark Mallet
Vice President Operations and Engineering
Freeport LNG Development, L.P.
1500 Lamar Street
Quintana, Texas 77541

CPF 1-2022-022-WL

Dear Mr. Mallet:

From May 25 through May 27, 2021, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code (U.S.C.) inspected Freeport LNG Development, L.P.'s (Freeport) Underground Natural Gas Storage Facility in Quintana, Texas.

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. **§ 192.12 Underground natural gas storage facilities.**
 - (a) *Salt cavern UNGSFs.*
 - (1) ...
 - (3) **Each UNGSF that uses a solution-mined salt cavern for natural gas storage and was constructed on or before July 18, 2017, must meet the provisions of API RP 1170 (incorporated by reference, see § 192.7), sections 9, 10, and 11, and paragraph (c) of this section, by January 18, 2018, and must meet all provisions of section 8 of API RP 1171 (incorporated by reference, see § 192.7) that are applicable to the physical characteristics and operations of a solution-mined salt cavern UNGSF, and paragraph (d) of this section, by March 13, 2021.**

Freeport failed to meet the provisions of API RP 1171, Section 8. Specifically, Freeport's risk identification and risk analysis failed to evaluate all potential threats and hazards impacting its storage wells in accordance with API RP 1171, Section 8.4.2 (Section 8.4.2)¹.

Section 8.4.2 states, in part, "[t]he operator shall evaluate potential threats and hazards impacting storage wells and reservoirs".

During the inspection, PHMSA reviewed Freeport's *UNGS Risk Management Plan (RMP)*, Rev 2 dated 05/21/2021. Freeport's RMP did not address a key threat/hazard related to salt creep impacting well casing and cement bond integrity. This threat was referenced in Section 6, Summary and Conclusion, of its *Geo-Mechanical Design Study of Freeport, Natural Gas Storage Caverns at the Stratton Ridge Dome, Texas, Topical Report RSI-2191*, March 2011 Rev1.

Therefore, by failing to evaluate all potential threats and hazards, Freeport failed to comply with the provisions of Section 8.4.2.

2. § 192.12 Underground natural gas storage facilities.

(a) *Salt cavern UNGSFs.*

(1) ...

(3) Each UNGSF that uses a solution-mined salt cavern for natural gas storage and was constructed on or before July 18, 2017, must meet the provisions of API RP 1170 (incorporated by reference, see § 192.7), sections 9, 10, and 11, and paragraph (c) of this section, by January 18, 2018, and must meet all provisions of section 8 of API RP 1171 (incorporated by reference, see § 192.7) that are applicable to the physical characteristics and operations of a solution-mined salt cavern UNGSF, and paragraph (d) of this section, by March 13, 2021.

Freeport failed to meet the provisions of API RP 1170, Section 10. Specifically, Freeport failed to perform integrity monitoring program effectiveness review session(s) in accordance with API RP 1170, Section 10.3.

According to API RP 1170 Section 10.3, periodic reviews for the effectiveness shall be included in an operator's integrity monitoring program. Freeport's *Freeport LNG Underground Natural Gas Storage Program*, Doc # UGS-OPS-MAN-9001-001.0001 Rev 5, dated 05/21/2021, Section 12.3 stated in part, "...FLNG: [SHALL] perform a periodic review of the integrity monitoring program for effectiveness".

¹ API RP 1171 - 8.4.2 Methodology

The operator shall evaluate the potential threats and hazards impacting storage wells and reservoirs. The operator should refer to the list of common threats and hazards in Table 1 and may supplement the list in Table 1 with other hazards or threats identified by site-specific assessments.

The operator should estimate risk from potential events that could occur related to potential threats and hazards to individual facilities, such as wells, and by region when considering the reservoir.

The operator should assess potential threat and/or hazard interaction, such as the relationship of the threat of casing damage during well drilling or service work that could exacerbate corrosion processes.

The operator should perform periodic evaluations of hazards, threats, and risks related to potential events in order to account for changes in perception of likelihood or consequence in event potential.

During PHMSA program inspection, PHMSA requested records of Freeport's periodic effectiveness reviews discussed above for 2019 -2020. Freeport did not provide any record(s) of integrity monitoring program effectiveness review session(s).

Therefore, Freeport failed to comply with API RP 1170, Section 10.3 regarding performing periodic effectiveness reviews of its integrity monitoring program.

Under 49 U.S.C. § 60122 and 49 CFR § 190.223, you are subject to a civil penalty not to 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. For violation occurring on or after November 2, 2015 and before November 27, 2018, the maximum penalty may not exceed \$209,002 per violation per day, with a maximum penalty not to exceed \$2,090,022.

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 Freeport LNG Development, L.P. 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 1-2022-022-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