



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

November 1, 2021

VIA ELECTRONIC MAIL TO: richard_adkerson@fmi.com

Mr. Richard Adkerson
President and Chief Executive Officer
Freeport-McMoRan Oil & Gas
201 S. Broadway
Orcutt, California 93455

Re: CPF No. 5-2021-013-NOPV

Dear Mr. Adkerson:

Enclosed please find the Final Order issued in the above-referenced case. It makes findings of violation and specifies actions that need to be taken to comply with the pipeline safety regulations. When the terms of the compliance order are completed, as determined by the Director, Western Region, this enforcement action will be closed. Service of the Final Order by e-mail is effective upon the date of transmission as provided under 49 C.F.R. § 190.5.

Thank you for your cooperation in this matter.

Sincerely,

ALAN KRAMER MAYBERRY
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KRAMER MAYBERRY
Date: 2021.10.28
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Alan K. Mayberry
Associate Administrator
for Pipeline Safety

Enclosures (Final Order and NOPV)

cc: Mr. Dustin Hubbard, Director, Western Region, Office of Pipeline Safety, PHMSA
Mr. David Rose, Director, Environmental Health & Safety, Freeport-McMoRan Oil &
Gas, drose@fmi.com

CONFIRMATION OF RECEIPT REQUESTED

**U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, D.C. 20590**

In the Matter of

Freeport-McMoRan Oil & Gas,

Respondent.

CPF No. 5-2021-013-NOPV

FINAL ORDER

On August 2, 2021, pursuant to 49 C.F.R. § 190.207, the Director, Western Region, Office of Pipeline Safety (OPS), issued a Notice of Probable Violation (Notice) to Freeport-McMoRan Oil & Gas (Respondent). The Notice proposed finding that Respondent had violated the pipeline safety regulations in 49 C.F.R. Part 195. The Notice also proposed certain measures to correct the violations. Respondent did not contest the allegations of violation or corrective measures.

Based upon a review of all of the evidence, pursuant to § 190.213, I find Respondent violated the pipeline safety regulations listed below, as more fully described in the enclosed Notice, which is incorporated by reference:

49 C.F.R. § 195.446(h)(1) (**Item 1**) — Respondent failed to establish a controller training program that included training on responding to abnormal operating conditions likely to occur simultaneously or in sequence.

49 C.F.R. § 195.446(h)(2) (**Item 2**) — Respondent failed to establish a controller training program that included the use of a computerized simulator or non-computerized (tabletop) method for training controllers to recognize abnormal operating conditions.

49 C.F.R. § 195.446(h)(3) (**Item 3**) — Respondent failed to establish a controller training program that included training controllers on their responsibilities for communication under the operator's emergency response procedures.

49 C.F.R. § 195.446(h)(4) (**Item 4**) — Respondent failed to establish a controller training program that included training that provides controllers a working knowledge of the pipeline system, especially during the development of abnormal operating conditions.

49 C.F.R. § 195.446(h)(5) **(Item 5)** — Respondent failed to establish a controller training program that included an opportunity for controllers to review relevant procedures in advance of their application for pipeline operating setups that are periodically, but infrequently, used.

49 C.F.R. § 195.446(h)(6) **(Item 6)** — Respondent failed to establish a controller training program that included team training and exercises that includes both controllers and other individuals, defined by the operator, who would reasonably be expected to operationally collaborate with controllers (control room personnel) during normal, abnormal, and emergency situations.

49 C.F.R. § 195.134 **(Item 7)** — Respondent failed to comply with section 4.2 of API RP 1130 in its design and with any other design criteria addressed in API RP 1130 for components of the CPM leak detection system.

49 C.F.R. § 195.444 **(Item 8)** — Respondent failed to comply with API RP 1130 in operating, maintaining, testing, record keeping, and dispatcher training of the system.

These findings of violation will be considered prior offenses in any subsequent enforcement action taken against Respondent.

COMPLIANCE ACTIONS

Pursuant to 49 U.S.C. § 60118(b) and 49 C.F.R. § 190.217, Respondent is ordered to take the actions proposed in the enclosed Notice to correct the violations. The Director may grant an extension of time to comply with any of the required items upon a written request timely submitted by the Respondent and demonstrating good cause for an extension. Upon completion of ordered actions, Respondent may request that the Director close the case. Failure to comply with this Order may result in the assessment of civil penalties under 49 C.F.R. § 190.223 or in referral to the Attorney General for appropriate relief in a district court of the United States.

The terms and conditions of this order are effective upon service in accordance with 49 C.F.R. § 190.5.

ALAN KRAMER
MAYBERRY

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KRAMER MAYBERRY
Date: 2021.10.28 07:57:49
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Alan K. Mayberry
Associate Administrator
for Pipeline Safety

November 1, 2021

Date Issued



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

12300 W. Dakota Ave., Suite 110
Lakewood, CO 80228

**NOTICE OF PROBABLE VIOLATION
and
PROPOSED COMPLIANCE ORDER**

VIA E-MAIL TO MR. DAVID ROSE

August 2, 2021

Mr. David Rose
Director, Environmental Health & Safety
Freeport-McMoRan Oil & Gas
201 S. Broadway Street
Orcutt, CA 93455

CPF 5-2021-013-NOPV

Dear Mr. Rose:

During the week of October 26 through 30, 2020, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA), pursuant to Chapter 601 of 49 United States Code (U.S.C.), performed an inspection of the Freeport-McMoRan Oil & Gas (Freeport-McMoRan) Lompoc Oil & Gas Plant (LOGP) Control Room located in Lompoc, California. This inspection included a review of company procedures and records, and personnel observations associated with Freeport-McMoRan's Control Room Management Program.

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 violation(s) are:

1. § 195.446 - Control room management.

(a) ...

(h) *Training.* Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program

must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

(1) Responding to abnormal operating conditions likely to occur simultaneously or in sequence;

Freeport-McMoRan failed to establish a controller training program that included training on responding to abnormal operating conditions (AOCs) likely to occur simultaneously or in sequence. The company does not maintain a list of AOCs that are likely to occur simultaneously or in sequence, so it is unclear how it can effectively conduct training on same. During the inspection, Freeport-McMoRan did not produce any training records or other corroborating evidence to demonstrate that it was conducting controller training on responding to AOCs likely to occur simultaneously or in sequence at the requisite intervals.¹

2. § 195.446 - Control room management.

(a) ...

(h) *Training.* Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

(1) ...

(2) Use of a computerized simulator or non-computerized (tabletop) method for training controllers to recognize abnormal operating conditions;

Freeport-McMoRan failed to establish a controller training program that included the use of a computerized simulator or tabletop method for training controllers to recognize abnormal operating conditions. During the inspection, Freeport-McMoRan could not produce any training records or other corroborating evidence demonstrating that it trained its controllers to recognize abnormal operating conditions using a tabletop method.²

3. § 195.446 - Control room management.

(a) ...

(h) *Training.* Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities

¹ See 49 C.F.R. § 195.446(j)(1) requiring operators to maintain for review during inspection records that demonstrate compliance with the requirements of this section.

² See *id.* Although its CRM manual mentions the use of a computerized simulator, the operator does not actually have one.

defined by the operator. In addition, the training program must include the following elements:

(1) ...

(3) **Training controllers on their responsibilities for communication under the operator's emergency response procedures;**

Freeport-McMoRan failed to establish a controller training program that included training controllers on their responsibilities for communication under the operator's emergency response procedures. During the inspection, Freeport-McMoRan could not demonstrate through documentation or other corroborating evidence that it trained its controllers on their responsibilities for communication under its emergency response procedures.³

4. § 195.446 - Control room management.

(a) ...

(h) **Training.** Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

(1) ...

(4) **Training that will provide a controller a working knowledge of the pipeline system, especially during the development of abnormal operating conditions;**

Freeport-McMoRan failed to establish a controller training program that included training that provides controllers a working knowledge of the pipeline system, especially during the development of AOCs. Although the operator's training program indicates that this is a training element, the company could not produce training records or other corroborating evidence to demonstrate compliance.⁴

The training program does not provide a process by which it will conduct this training, including how it will ensure its controllers will have a working knowledge of the pipeline system, especially during the development of abnormal operating conditions. For example, the controller training program does not include information on how it will implement training on fundamentals of fluid dynamics, pipe flow and pressures, how valve closures can impact the pipeline, temperature change impacts, how pumping stations operate, etc.

5. § 195.446 - Control room management.

(a) ...

(h) **Training.** Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each

³ *Id.*

⁴ *Id.*

calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

(1) ...

(5) For pipeline operating setups that are periodically, but infrequently used, providing an opportunity for controllers to review relevant procedures in advance of their application;

Freeport-McMoRan failed to establish a controller training program that included an opportunity for controllers to review relevant procedures in advance of their application for pipeline operating setups that are periodically, but infrequently, used pursuant to the requirements set forth in 195.446(h)(5). During the inspection, control room staff told PHMSA that the operator's list of infrequently used setups is not an accurate list. Therefore, it is unclear how the company can conduct controller training on this subject without a complete and accurate list of infrequently used set-ups. The omission of this training requirement is further highlighted by the fact that Freeport-McMoRan control room staff confirmed to PHMSA that they are not afforded the opportunity to review relevant procedures in advance of their application. Finally, during the inspection, the company could not produce training records or other documentation to evidence compliance with this requirement.⁵

6. § 195.446 - Control room management.

(a) ...

(h) Training. Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:

(1) ...

(6) Control room team training and exercises that include both controllers and other individuals, defined by the operator, who would reasonably be expected to operationally collaborate with controllers (control room personnel) during normal, abnormal or emergency situations. Operators must comply with the team training requirements under this paragraph no later than January 23, 2018.

Freeport-McMoRan failed to establish a controller training program that included team training and exercises with controllers and other individuals who would reasonably be expected to operationally collaborate with controllers during normal, abnormal, and emergency situations. Freeport-McMoRan only identified team training as a training element and failed to provide any evidence demonstrating that it implemented a training program that included team training.⁶

⁵ *Id.*

⁶ *Id.*

7. § 195.134 - CPM leak detection.

This section applies to each hazardous liquid pipeline transporting liquid in single phase (without gas in the liquid). On such systems, each new computational pipeline monitoring (CPM) leak detection system and each replaced component of an existing CPM system must comply with section 4.2 of API RP 1130 (incorporated by reference, see § 195.3 in its design and with any other design criteria addressed in API RP 1130 for components of the CPM leak detection system.

Freeport-McMoRan failed to provide evidence of compliance with Section 4.2 of API RP 1130 for its CPM design and other associated components of its CPM leak detection system.⁷ Section 4.2.1 states that “[t]he selection of a CPM system for a given pipeline involves evaluation of the required and expected (or estimated) performance of the system.” It goes on to include a list of desirable CPM features and functionality that improve the performance of the CPM system or add to the utility of a CPM system. For example, these may include features to allow for timely detection of commodity release or to detect a leak rate.⁸ Section 4.2 also includes performance metrics that include reliability,⁹ sensitivity,¹⁰ accuracy,¹¹ and robustness.¹² Generally, a CPM system should achieve a satisfactory balance between all four of these performance metrics.

During the inspection, the operator could not produce documentation to demonstrate that it had evaluated its CPM system pursuant to the requirements set forth in Section 4.2. For example, Freeport-McMoRan could not produce documentation identifying which specific features and functionalities are included in its CPM system design. Instead, it produced a vendor document (Atmos Pipe Leak Detection System, O&M Manual, June 27, 2017, Rev. 3) that set forth general performance standards for all Atmos Pipe Leak Detection systems. These generic procedures, however, were not in all sections relevant to metrics and performance tailored to the features and functionalities of Freeport-McMoRan’s CPM system and unique operations. Further, they failed to identify reliability and robustness as performance metrics, and it was unclear how these performance metrics would be evaluated, if at all. Without identifying what specific features and functionalities were present in its CPM system, and failing to identify what Section 4.2 performance metrics would be used and how they would be measured (including if/when a component is replaced), Freeport-McMoRan failed to evaluate the performance of its CPM

⁷ *Id.*

⁸ API RP 1130, Section 4.2.

⁹ Reliability is a “measure of the CPM’s ability to render accurate decisions about the possible existence of a leak on the pipeline while operating within an envelope established by the CPM design.” API RP 1130, Section 4.2.1.

¹⁰ Sensitivity is “a composite measure of the size of a leak that a system is capable of detecting and the time required for the system to issue an alarm in the event that a leak of that size should occur.” *Id.*

¹¹ “The validity of leak parameters estimates such as leak flow rate, total volume lost, type of fluid lost and leak location are indications of CPM accuracy.” *Id.*

¹² Robustness is “defined as a measure of the CPM’s ability to continue to function and provide useful information even under changing conditions of the pipeline (i.e. transients) or in conditions where data are lost or suspect. A system is considered robust if it continues to function under less than ideal conditions.” *Id.*

system as set forth in Section 4.2.1 of API RP 1130. As a result, it violated §195.134 which requires operators to comply with API RP Section 4.2.

8. § 195.444 - CPM leak detection.

Each computational pipeline monitoring (CPM) leak detection system installed on a hazardous liquid pipeline transporting liquid in single phase (without gas in the liquid) must comply with API RP 1130 (incorporated by reference, *see* § 195.3) in operating, maintaining, testing, record keeping, and dispatcher training of the system.

Freeport-McMoRan failed to ensure its CPM leak detection system complied with API RP 1130 in operating, maintaining, testing, record keeping, and dispatcher training of the system. Specifically, the company failed to conduct proper testing or record-keeping. API RP 1130 Section 6.2 System Testing notes that "...[t]esting of CPM systems is performed to establish a baseline of achieved performance for new CPM systems, or when there are changes to the CPM or the pipeline system that warrant re-evaluation of system performance, or for periodic evaluation of actual system performance. The primary purpose of testing is to assure that the CPM system will alarm if a commodity release occurs. Another purpose of testing may be to assure that data failure alarms and irregular operating condition alarms function as expected...." Further, Section 6.2.3 Periodic Retesting states that "CPM retesting of applications will be necessary on a periodic basis to meet regulations or to confirm the continued effectiveness of the CPM. Retesting will be documented in test records." During the PHMSA inspection, Freeport-McMoRan could not provide any testing records or other evidence to demonstrate that it had complied with these API RP 1130 requirements.¹³

Proposed Compliance Order

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 propose a civil penalty assessment at this time.

¹³ See 49 C.F.R. § 195.446(j)(1) requiring operators to maintain for review during inspection records that demonstrate compliance with the requirements of this section.

With respect to Items 1-8, pursuant to 49 U.S.C. § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Freeport-McMoRan. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

Response to this Notice

Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Enforcement Proceedings*. Please refer to this document and note the response options. 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).

Following the receipt of this Notice, you have 30 days to submit written comments, or request a hearing under 49 CFR §190.211. If you do not respond within 30 days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Final Order. If you are responding to this Notice, we propose that you submit your correspondence to my office within 30 days from receipt of this Notice. This period may be extended by written request for good cause.

In your correspondence on this matter, please refer to **CPF 5-2021-013-NOPV** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

Dustin Hubbard
Director, Western Region, Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration

Enclosures: *Proposed Compliance Order*
Response Options for Pipeline Operators in Enforcement Proceedings

cc: PHP-60 Compliance Registry
PHP-500 D. Fehling (#20-173099)

PROPOSED COMPLIANCE ORDER

Pursuant to 49 U.S.C. §60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue to Freeport-McMoRan a Compliance Order incorporating the following remedial requirements to ensure the compliance of Freeport-McMoRan with the pipeline safety regulations:

- A. With regard to Item Number 1 of the Notice pertaining to the operator's failure to conduct controller training on responding to abnormal operating conditions (AOCs) likely to occur simultaneously or in sequence, the operator must conduct this training pursuant to § 195.446(h)(1), utilizing an accurate list for AOCs that are likely to occur simultaneously or in sequence, within 180 days of receipt of the Final Order.
- B. With regard to Item Number 2 of the Notice pertaining to the operator's failure to conduct controller training using a tabletop method for training controllers to recognize abnormal operating conditions, Freeport-McMoRan must conduct a tabletop training exercise pursuant to § 195.446(h)(2) within 180 days of receipt of the Final Order.
- C. With regard to Item Number 3 of the Notice pertaining to the operator's failure to train controllers on their responsibilities for communication under the operator's emergency response procedures, Freeport-McMoRan must conduct this training pursuant to § 195.446(h)(3) within 180 days of receipt of the Final Order.
- D. With regard to Item Number 4 of the Notice pertaining to the operator's failure to conduct controller training that provides controllers a working knowledge of the pipeline system, especially during the development of AOCs, Freeport-McMoRan must conduct this training pursuant to § 195.446(h)(4), and must demonstrate how it will test each controller to ensure competency for each training element, within 180 days of receipt of the Final Order.
- E. With regard to Item Number 5 of the Notice pertaining to the operator's failure to conduct controller training that included allowing an opportunity for controllers to review relevant procedures in advance of their application for pipeline operating setups that are periodically but infrequently used, Freeport-McMoRan must develop an accurate list of periodically but infrequently used setups specific to its operating conditions, and conduct controller training to ensure controllers understand where the list and respective procedures are located, pursuant to the requirements set forth in § 195.446(h)(5) within 180 days of receipt of the Final Order.
- F. With regard to Item Number 6 of the Notice pertaining to the operator's failure to conduct team training pursuant to the requirements set forth in § 195.446(h)(6), Freeport-McMoRan conduct this training within 180 days of receipt of the Final Order.
- G. With regard to Item Number 7 of the Notice pertaining to the operator's failure to evaluate the performance of its CPM system as set forth in Section 4.2.1 of API RP 1130, Freeport-McMoRan must draft and implement a written procedure for developing operation and maintenance testing procedures of their leak detection system to comply with Section 4.2 of API 1130 within 180 days of receipt of the Final Order.
- H. With regard to Item Number 8 of the Notice pertaining to the operator's failure to ensure its CPM leak detection system complied with API RP 1130 in operating, maintaining, testing, record keeping, and dispatcher training of the system, Freeport-

McMoRan must draft and implement a written procedure to ensure its CPM leak detection system is in compliance with Section 6.2 of API RP 1130 in operating, maintaining, testing, record keeping, and dispatcher training of the system within 180 days of receipt of the Final Order.

For Items (A)-(F) above, Freeport-McMoRan should conduct this training using revised, updated procedures that incorporates amendments made pursuant CPF No. 5-2021-043, Notice of Amendment.

- I. It is requested (not mandated) that Freeport-McMoRan maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Dustin Hubbard, Director, Western, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.