



U.S. Department
of Transportation

Pipeline and Hazardous Materials
Safety Administration

FEB 14 2020

1200 New Jersey Ave., SE
Washington, DC 20590

Mr. Michael S. Smith
Chairman and Chief Executive Officer
Freeport LNG Development, LP
333 Clay Street
Suite 5050
Houston, Texas 77002

Re: CPF No. 4-2019-3002S

Dear Mr. Smith:

Enclosed please find the Consent Order issued in the above-reference case, incorporating the terms of the fully executed Consent Agreement that resolves the issues underlying the Notice of Proposed Safety Order issued by PHMSA on August 27, 2019. Your receipt of this Consent Order constitutes service, as provided under 49 C.F.R. § 190.5.

Thank you for your cooperation in this matter.

Sincerely,

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

Enclosures (Consent Agreement and Order)

cc: Ms. Mary McDaniel, Director, Southwest Region, Office of Pipeline Safety, PHMSA
Mr. Shaw C. Ottis, Vice President and Deputy General Counsel, Freeport LNG
Development, LP, 333 Clay Street, Suite 5050, Houston, Texas 77002
Mr. Mark W. Mallett, Senior Vice President – Operations and Projects, Freeport LNG
Development, LP, 333 Clay Street, Suite 5050, Houston, Texas 77002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Date Issued

**DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY
ADMINISTRATION**

In the Matter of

Freeport LNG Development, L.P.,

Respondent

CPF No. 4-2019-3002S

CONSENT AGREEMENT

On August 29, 2019, the Pipeline and Hazardous Materials Safety Administration (PHMSA), Southwest Region, issued a Notice of Proposed Safety Order (Notice) to Freeport LNG Development, L.P. (Respondent), which operates a natural gas liquefaction and export facility on Quintana Island, Texas (the Export Facility). The Notice was issued after an August 1, 2019, incident at the Export Facility in which Respondent was performing a cool down operation as part of the steps to commission Train 1. Respondent experienced a failure when attempting to reduce the time required to properly cool down the facility. FLNG flowed high pressure chilled natural gas at approximately 917 pounds per square inch (psig) through bypass piping into 6" piping designed for a maximum operating pressure of 90 psig. The 6" line consequently failed near the branch weld that joined it with the bypass piping, which resulted in an unintended release of natural gas.

The Notice alleged that conditions exist at Respondent's Export Facility that might pose an integrity risk to public safety, property, or the environment. The Notice also proposed that Respondent take certain corrective measures to remedy the alleged conditions and ensure that the public, property, and the environment were protected from the potential risk.

Respondent responded to the Notice by timely submitting a written response and request for an informal consultation. An informal consultation was held on October 17, 2019.

As a result of the informal consultation, PHMSA and Respondent agreed that settlement of this proceeding will avoid further administrative proceedings or litigation of this Notice and that entry into a Consent Agreement is the most appropriate means of addressing the alleged conditions raised in the Notice and is in the public interest. Therefore, pursuant to 49 C.F.R. Part 190, without adjudication of any issue of fact or law, and upon consent and agreement of Respondent and the PHMSA (the Parties), the Parties agree as follows:

I. General Provisions

1. Respondent acknowledges that as the operator of the Export Facility, Respondent and the Export Facility are subject to the jurisdiction of the Federal pipeline safety laws, 49 U.S.C. § 60101 *et seq.* and the regulations and administrative orders issued thereunder. For purposes of this

Consent Agreement, Respondent acknowledges that it received proper notice of the PHMSA's action in this proceeding and that the Notice states claims upon which relief may be granted pursuant to 49 U.S.C. § 60101 *et seq.* and the regulations and orders issued thereunder.

2. Respondent does not admit or deny any of the alleged conditions or risks identified in the Notice but agrees, for purposes of this Consent Agreement, to address the alleged conditions and risks identified in the Notice by completing the actions specified in Part II of this agreement (Corrective Measures) and to abide by the terms of this Consent Agreement. This Consent Agreement does not constitute a finding of violation of any Federal law or regulation and may not be used in any civil or administrative proceeding of any kind as evidence or proof of any fact, fault or liability, or as evidence of the violation of any law, rule, regulation or requirement, except in a proceeding to enforce the provisions of this Consent Agreement.

3. After Respondent returns this signed agreement, the PHMSA's representative will present it to the Associate Administrator for Pipeline Safety recommending that the Associate Administrator adopt the terms of this agreement by issuing an administrative order (Consent Order) incorporating the terms of this Consent Agreement. The terms of this agreement constitute an offer of settlement until accepted by the Associate Administrator. Once accepted, the Associate Administrator will issue a Consent Order incorporating the terms of the agreement.

4. Respondent consents to the issuance of the Consent Order, and hereby waives any further procedural requirements with respect to its issuance. Respondent waives all the rights to contest the adequacy of notice, or the validity of the Consent Order of this Consent Agreement, including all rights to administrative or judicial hearings or appeals, except as may be set forth herein.

5. This Consent Agreement shall apply to and be binding upon the PHMSA, and upon Respondent, its officers, directors and employees, and its successors, assigns, or other entities or persons otherwise bound by law. Respondent agrees to provide a copy of this Consent Agreement and any incorporated work plans and schedules to all of Respondent's officers, employees, and agents whose duties might reasonably include compliance with this Consent Agreement.

6. For all transfers of ownership or operating responsibility of Respondent's Export Facility, Respondent shall provide a copy of this Consent Agreement to the prospective transferee at least 30 days prior to such transfer and simultaneously provide written notice of the prospective transfer to the PHMSA Southwest Region Director (Director) who issued the Notice.

7. This Consent Agreement constitutes the final, complete and exclusive agreement and understanding between the Parties with respect to the settlement embodied in this Consent Agreement, and resolves any claims that have been or could have been alleged regarding the events or circumstances described in the Notice. The Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Consent Agreement, except that the terms of this Consent Agreement may be construed by reference to the Notice.

8. Nothing in this Consent Agreement affects or relieves Respondent of its responsibility to comply with all applicable requirements of the Federal pipeline safety laws,

49 U.S.C. § 60101 *et seq.*, and the regulations and orders issued thereunder. Nothing in this Consent Agreement alters the PHMSA's right of access, entry, inspection, and information gathering or, except with respect to the matters expressly settled under this Consent Agreement, the PHMSA's authority to bring enforcement actions against Respondent pursuant to the Federal pipeline safety laws, the regulations and orders issued thereunder, or any other provision of Federal or State law.

9. This Consent Agreement does not waive or modify any Federal, State, or local laws or regulations that are applicable to Respondent's Export Facility. This Consent Agreement is not a permit, or a modification of any permit, under any Federal, State, local laws or regulations. Respondent remains responsible for achieving and maintaining compliance with all applicable Federal, State, and local laws, regulations and permits.

10. This Consent Agreement does not create rights in, or grant any cause of action to, any third party not party to this Agreement. The U.S. Department of Transportation is not liable for any injuries or damages to persons or property arising from acts or omissions of Respondent or its officers, employees, or agents carrying out the work required by this Consent Agreement. Respondent agrees to hold harmless the U.S. Department of Transportation, its officers, employees, agents and representatives from any and all causes of action arising from any acts or omissions of Respondent or its contractors in carrying out any work required by this Consent Agreement.

11. The terminology "after the Agreement" shall mean after the Consent Order is issued by PHMSA.

II. Corrective Measures

12. Upon issuance of the Consent Order, Respondent agrees to perform the Corrective Measures set forth below.

13. ***Procedures Evaluation.*** Within 30 days after the Agreement, Respondent shall submit, for approval by the Director, the name of the proposed third-party that FLNG intends to use for the procedures evaluation. Within 60 days after receiving approval, Respondent shall evaluate, using the third-party, the current operations and maintenance manual and training requirements associated with personnel responsible for operations within the newly constructed FLNG Export Terminal. The review must include whether the procedures have adequate details, safety provisions, and instructions to properly implement the procedures. The evaluation must also include a determination that the roles and responsibilities of all personnel are clearly defined for each task and the level(s) of required approvals are clearly stated. The evaluation must also prescribe mandatory training requirements for the procedures and any re-training requirements that are needed as a result of the August 1, 2019 incident or revisions to the procedures that result from the evaluation. After completion, the procedures evaluation must be submitted to the Director for review and acceptance.

14. ***Procedures Revisions.*** Within 90 days of completion of Item 13 and acceptance by the Director, Respondent shall complete the procedures revisions and training identified by the evaluation and submit to the Director for review and acceptance.

15. **Complete Inventory.** Within 30 days after the Agreement, Respondent shall submit to the Director (or designees of the PHMSA Southwest Region) a complete inventory of piping installed in the Export Facility using all Heat Numbers associated with failed 6-inch and 2-inch piping, including but not limited to Heat Number 301881, manufactured by Salzgitter Mannesmann Stainless Tubes France. The documentation shall include, for each piping segment, P&ID's showing the locations of all identified piping, manufacturing specifications, lengths, diameters, wall thicknesses, and specified minimum yield strength (SMYS), intended service (e.g., natural gas, LNG, refrigerant), maximum design pressures, and normal operating pressures.

16. **Records Evaluation.** Within 30 days after the Agreement, Respondent shall submit to the Director a tabulation showing results of an evaluation of materials properties of all Heat Numbers associated with the failed 6-inch and 2-inch piping, including but not limited to Heat Number 301881, manufactured by Salzgitter Mannesmann Stainless Tubes France SAS. This evaluation shall include a review and tabulation of the shop fabrication and site installation documentation, including materials specifications, MTR data, NDE reports, PMI reports and pressure test records.

17. **Remedial Work Plan.** Within 90 days after completing Items 13, 14, 15, 16, 18 and 19, FLNG must prepare and submit a Remedial Work Plan (RWP) to the Director for approval prior to commencing any work specified by the RWP. The remedial work plan must include actions to implement any actions and remedy any issues identified by Items 13, 14, 15, 16 and 19. The RWP must also include actions to remedy any other **Identified Risk Conditions** determined by the failure analysis and/or internal investigation of the incident. This may include, but is not limited to, removal of all substandard piping, fittings, and appurtenances. An **Identified Risk Condition** includes (1) performing any operation without an approved procedure; and (2) use of piping materials, fittings, and appurtenances that do not meet design specifications.

- a. The Director may incrementally approve parts of the RWP without approving the entire RWP.
- b. Once approved by the Director, the approved RWP increments or entire RWP is considered incorporated by reference into this Safety Order or Consent Agreement.
- c. The RWP must specify the tests, inspections, assessments, evaluations, and remedial measures FLNG will use to verify the integrity of the piping material, fittings and appurtenances. It must address all known or suspected factors and causes of the August 1, 2019 failure.
- d. The RWP must include provisions for the following:
 1. Integrate the results of the metallurgical testing, failure analysis, and other corrective actions required by this Agreement with all relevant pre-existing operational and assessment data for the **Identified Risk Condition**. Pre-existing operational data includes, but is not limited to, construction, operations, maintenance, testing, repairs, prior metallurgical analyses, and any third-party consultation information.
 2. Determine if conditions similar to those contributing to the failure on August 1, 2019, are likely to exist elsewhere within the Export Terminal.
 3. Conduct additional field tests, inspections, assessments, and/or evaluations to determine whether, and to what extent, the conditions associated with the

failure on August 1, 2019, are present elsewhere within the Export Terminal. At a minimum, this process must consider all failure causes and specify the use of mechanical and metallurgical testing, pressure testing, or other tests, inspections, assessments, and evaluations appropriate for the failure causes.

Note: FLNG may use the results of previous tests, inspections, assessments, and evaluations if approved by the Director, provided the results of the tests, inspections, assessments, and evaluations are analyzed with regard to the factors known or suspected to have caused the August 1, 2019, failure.

4. Describe the inspection and repair criteria Respondent will use to prioritize, evaluate, and repair anomalies, imperfections, and other identified integrity threats. Include a description of how any defects will be graded and a schedule for repairs or replacement.
 5. Based on the known history and condition of affected piping and components included in the *Identified Risk Condition*, describe the methods Respondent will use to repair, replace, or take other corrective measures to remediate the conditions associated with the pipeline failure on August 1, 2019, and to address other known integrity threats to the piping material, fittings and appurtenances. Any testing showing that any pipes do not have the strength and mechanical properties represented by the design specifications will require such piping be replaced, additional testing in additional locations to confirm the piping not identified for removal meets such design specifications, or other remediation of the noncompliance to the satisfaction of the Director. The repair, replacement, or other corrective measures must meet the criteria specified in Item 17(d)(4) above.
 6. Define and implement continuing long-term periodic testing and integrity verification measures to ensure the ongoing safe operation of the Export Terminal considering the results of the analyses, inspections, evaluations, and corrective measures undertaken pursuant to the Agreement.
- e. Include a proposed schedule for completion of the RWP.
 - f. Respondent must revise the RWP as necessary to incorporate new information obtained during the failure investigation and remedial activities, to incorporate the results of actions undertaken pursuant to this Agreement, and/or to incorporate modifications required by the Director.
 1. Submit any plan revisions to the Director for prior approval.
 2. The Director may approve plan revisions incrementally.
 - g. Implement the RWP as it is approved by the Director, including any revisions to the plan.

18. ***Mechanical and Metallurgical Testing Protocols.*** Within 30 days after completing Items 15 and 16 of this Agreement, FLNG must prepare and submit mechanical and metallurgical testing protocols to the Director for approval prior to any sample removal or testing. At a minimum, the protocols must include the following:

- a. Procedures for the chain-of-custody for all parties handling, transporting or otherwise taking possession of the piping sample to be tested, including Respondent, its contractors, transporters, consultants and the materials testing laboratory
- b. Provisions for testing to be performed with PHMSA representative(s) present. Respondent must provide to the Director, the date, time and location of the testing and confirm availability of PHMSA inspector to be present during removal of test samples and mechanical/metallurgical testing.
- c. Visual and optical stereomicroscope examination, scanning electron microscope (SEM) examination, energy dispersive X-ray spectroscopy (EDS) microanalysis, metallographic examination, chemical composition analysis using optical emission spectroscopy (OES), and mechanical testing via a longitudinal full wall thickness tensile test, longitudinal and transverse Charpy V-notch (CVN) impact test and microhardness test.
- d. Destructive and non-destructive testing of both the pipe body material and associated welds.

19. ***Mechanical and Metallurgical Testing of Pipe Samples and Welds.*** Within 60 days after completing Item 18, Respondent shall perform additional mechanical and metallurgical testing on a statistically significant number of specimens. The following will be performed as part of the additional testing:

- a. Documentation of the chain-of-custody for all parties handling, transporting or otherwise taking possession of the piping sample to be tested, including Respondent, its contractors, transporters, consultants and the materials testing laboratory.
- b. Prior to the testing, the mechanical and metallurgical testing protocol shall be approved by the Director.
- c. Prior to the mechanical and metallurgical testing, provide the Director with the scheduled date, time and location of the testing to allow an opportunity for a PHMSA representative to witness the testing.
- d. Performance of visual and optical stereomicroscope examination, non-destructive evaluation of welds, scanning electron microscope (SEM) examination, energy dispersive X-ray spectroscopy (EDS) microanalysis, metallographic examination, chemical composition analysis using optical emission spectroscopy (OES), and mechanical testing via a longitudinal full wall thickness tensile test, longitudinal and transverse Charpy V-notch (CVN) impact test and microhardness test.
- e. Distribution of all analysis and reports, whether draft or final and in their entirety, to the Director at the same time they are made available to Respondent.

20. ***Verification of Safeguards.*** Within 30 days after the completion of all requirements in the RWP, Respondent shall submit to the Director a written summary of the revisions to the applicable cooldown procedures, P&ID's, and evidence of implementation for the purpose of creating procedural safeguards to prevent similar situations from occurring in the future.

21. ***Consent Order Documentation Report (CODR).*** Respondent must create and submit on a monthly basis, a CODR. The intent is for the CODR to summarize all actions taken and documentation created in performing the requirements of the Consent Order. The CODR must also identify any activities or documentation for the period reflected in previous report activities so the status of each item in the Consent Order is reflected in each report. When the Respondent has concluded all the required items in the Consent Order, it will submit a final CODR to the Director. This will allow the Director to complete a thorough review of all actions taken by the Respondent with regards to the Consent Order prior to approving the closure of the Consent Order.

22. The Director may grant an extension of time for compliance with any of the terms of the Consent Agreement upon a written request timely submitted demonstrating good cause for an extension. The Director shall respond in writing to any such request.

23. Respondent may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator are final.

III. Review and Approval Process

24. With respect to any submission under Part II of this Consent Agreement that requires the approval of the Director, the Director may: (a) approve, in whole or in part, the submission, (b) approve the submission on specified conditions; (c) disapprove, in whole or in part, the submission, or (d) any combination of the foregoing. If the Director approves, approves in part, or approves with conditions, Respondent will take all actions as approved by the Director, subject to Respondent's right to invoke the dispute resolution procedures in Section IV with respect to any conditions the Director identifies. If the Director disapproves all or any portion of the submission, the Director will provide Respondent with a written notice of the deficiencies. Respondent will correct all deficiencies within the time specified by the Director and resubmit it for approval.

IV. Dispute Resolution

25. The Director and Respondent will informally attempt to resolve any disputes arising under this Consent Agreement. If Respondent and the Director are unable to informally resolve the dispute within 15 days, Respondent may request in writing, within 10 days, a written determination resolving the dispute from the Associate Administrator for Pipeline Safety providing all information that Respondent believes is relevant to the dispute. If the request is submitted as provided herein, the Associate Administrator will issue a final determination in writing. The existence of a dispute and the PHMSA's consideration of matters placed in dispute will not excuse, toll, or suspend any term or timeframe for completion of any work to be performed under this agreement during the pendency of the dispute resolution process except as agreed by the Director or the Associate Administrator in writing.

V. Enforcement

26. This Consent Agreement, as adopted by the Consent Order, is subject to all enforcement authorities available to the PHMSA under 49 U.S.C. § 60101 *et seq.* and 49 C.F.R. Part 190.

VI. Recordkeeping and Information Disclosure

22. Unless otherwise required by this Consent Agreement, Respondent agrees to maintain records demonstrating compliance with all requirements of this Consent Agreement for a period of at least 5 years following completion of all work to be performed. For any reports, plans or other deliverables required to be submitted to the PHMSA pursuant to this Consent Agreement, Respondent may assert a claim of business confidentiality or other protections applicable to the release of information by the PHMSA, covering part or all of the information required to be submitted to the PHMSA pursuant to this agreement in accordance with C.F.R. Part 7. Respondent must mark the claim of confidentiality in writing on each page, and include a statement specifying the grounds for each claim of confidentiality. The PHMSA determines release of any information submitted pursuant to this Consent Agreement in accordance with 49 C.F.R. Part 7, the Freedom of Information Act, 5 U.S.C. § 552, DOT and/or the PHMSA policies, and other applicable regulations and Executive Orders.

VII. Effective Date

23. The "Effective Date" as used herein is the date on which the Consent Order is issued by the Associate Administrator incorporating the terms of this Agreement. Unless specified to the contrary, all deadlines for actions required by this Consent Agreement run from the Effective Date of the Consent Order.

VIII. Modification

24. The terms of this Consent Agreement may be modified by mutual agreement of the Parties. Such modifications must be in writing and signed by both parties.

IX. Termination

25. This Consent Agreement terminates upon completion of all terms set forth in Part II (Corrective Measures) as determined by the Director. Respondent may request written confirmation from the PHMSA when this Consent Agreement is terminated and the Director will provide such confirmation. Nothing in this Consent Agreement prevents Respondent from completing any of the obligations earlier than the deadlines provided for in this Agreement.

X. Ratification

26. The Parties' undersigned representatives certify that they are fully authorized to enter into the terms and conditions of this Consent Agreement and to execute and legally bind such

party to this document.

27. The Parties hereby agree to all conditions and terms of this Consent Agreement.

For Respondent:

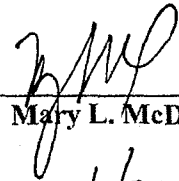


10. Mark Mallett, Senior Vice President, Operations & Projects

Date

1/17/2020

For the PHMSA:



Mary L. McDaniel, Director, Southwest Region

Date

1/21/2020