NOTICE OF AMENDMENT

ELECTRONIC MAIL - RETURN RECEIPT REQUESTED

January 26, 2022

Michele Harradence
Senior Vice President and Chief Operating Officer
East Tennessee Natural Gas, LLC
5400 Westheimer Court
Houston, Texas 77056

CPF 4-2022-027-NOA

Dear Ms. Harradence:

From July 12, 2021 through August 17, 2021, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code, inspected East Tennessee Natural Gas, LLC’s (ETNG) plans and procedures for its Peak Shaving Liquified Natural Gas (LNG) facility located in Sullivan County, Tennessee.

On the basis of the inspection, PHMSA has identified the apparent inadequacies found within ETNG’s plans or procedures, as described below:

1. § 193.2503 Operating procedures.

   Each operator shall follow one or more manuals of written procedures to provide safety in normal operation and in responding to an abnormal operation that would affect safety. The procedures must include provisions for:
   (a) . . .
   (b) Startup and shutdown, including for initial startup, performance testing to demonstrate that components will operate satisfactory in service.

   ETNG’s written LNG Operations Manual, Liquefaction System (Date: 06/27/2018), is inadequate because it does not include instructions for documenting startup and shutdown sequences in accordance with § 193.2503(b).
Specifically, ETNG’s procedures regarding liquefaction system startup and shutdown instruct ETNG personnel to follow an ordered sequence to perform startup and shutdown processes; however, the procedure does not include provisions for recording the startup or shutdown to demonstrate that the procedure is followed.

ETNG must amend its written procedures to include provisions to demonstrate that startup and shutdown sequences are followed as per the written procedure in accordance with § 193.2503.

2. § 193.2503 Operating procedures.

   Each operator shall follow one or more manuals of written procedures to provide safety in normal operation and in responding to an abnormal operation that would affect safety. The procedures must include provisions for:
   (a) . . .
   (c) Recognizing abnormal operating conditions.

ETNG’s written LNG Operations Manual, Miscellaneous Procedures, Tab P (Date: 10/23/2017), is inadequate because it does not include details for recognizing and responding to abnormal operating conditions (AOCs).

ETNG’s procedures regarding AOCs do not include guidance related to recognizing and responding to AOCs. Moreover, the same procedure references ETNG’s procedure “5-2050 Response to Abnormal Operating Operations,” which is applicable to gas transmission pipelines subject to 49 CFR part 192 only.

ETNG must amend its written procedures to include provisions for recognizing and responding to AOCs for its LNG operations.

3. § 193.2503 Operating procedures.

   Each operator shall follow one or more manuals of written procedures to provide safety in normal operation and in responding to an abnormal operation that would affect safety. The procedures must include provisions for:
   (a) . . .
   (g) Cooldown of components according to the requirements of § 193.2505.

§ 193.2505 Cooldown.

   (a) The cooldown of each system of components that is subjected to cryogenic temperatures must be limited to a rate and distribution pattern that keeps thermal stresses within design limits during the cooldown period, paying particular attention to the performance of expansion and contraction devices.

ETNG’s written LNG Operations Manual Send-Out (Date: 06/27/2018), is inadequate because it does not include requirements for components subjected to cryogenic temperatures to be limited to a rate and distribution pattern that keeps thermal stresses within design limits during the cooldown period. ETNG’s procedure states:
Initial cooldown of the pump skid is accomplished by opening the Internal Tank Valve, latching check valve T1R open and opening valve V-T1P. This allows flow to by-pass valve V-T1Q thru by-pass line 3/4A11-P-4. This is done to slowly lower the temperature of the process piping and equipment to reduce thermal shock. After 72 hours, valve V-T1P can be closed and cooldown continued thru V-T1Q.

ETNG’s procedure does not include temperature measurements to determine the cooldown rate of components subject to cryogenic temperatures. ETNG’s procedure only requires that the initial cooldown is performed over 72 hours without temperature measurements.

ETNG must amend its written procedures to include temperature rate and distribution measurement during the cooldown period of components subjected to cryogenic temperatures to keep thermal stresses within the design limit.

4. § 193.2513 Transfer procedures.

(a) Each transfer of LNG or other hazardous fluid must be conducted in accordance with one or more manuals of written procedures to provide for safe transfers.

(b) The transfer procedures must include provisions for personnel to:

(1) Before transfer, verify that the transfer system is ready for use, with connections and controls in proper positions, including if the system could contain a combustible mixture, verifying that it has been adequately purged in accordance with a procedure which meets the requirements of “Purging Principles and Practices (incorporated by reference, see § 193.2013)”;

(2) Before transfer, verify that each receiving container or tank vehicle does not contain any substance that would be incompatible with the incoming fluid and that there is sufficient capacity available to receive the amount of fluid to be transferred;

(3) Before transfer, verify the maximum filling volume of each receiving container or tank vehicle to ensure that expansion of the incoming fluid due to warming will not result in overfilling or overpressure;

(4) When making bulk transfer of LNG into a partially filled (excluding cooldown heel) container, determine any differences in temperature or specific gravity between the LNG being transferred and the LNG already in the container and, if necessary, provide a means to prevent rollover due to stratification.

(5) Verify that the transfer operations are proceeding within design conditions and that overpressure or overfilling does not occur by monitoring applicable flow rates, liquid levels, and vapor returns.

(6) Manually terminate the flow before overfilling or overpressure occurs; and

(7) Deactivate cargo transfer systems in a safe manner by depressurizing, venting, and disconnecting lines and conducting any other appropriate operations.

(c) In addition to the requirements of paragraph (b) of this section, the procedures for cargo transfer must be located at the transfer area and include provisions for personnel to:

(1) Be in constant attendance during all cargo transfer operations;
(2) Prohibit the backing of tank trucks in the transfer area, except when a person is positioned at the rear of the truck giving instructions to the driver;

(3) Before transfer, verify that:
   (i) Each tank car or tank truck complies with applicable regulations governing its use;
   (ii) All transfer hoses have been visually inspected for damage and defects;
   (iii) Each tank truck is properly immobilized with chock wheels, and electrically grounded; and
   (iv) Each tank truck engine is shut off unless it is required for transfer operations;

(4) Prevent a tank truck engine that is off during transfer operations from being restarted until the transfer lines have been disconnected and any released vapors have dissipated;

(5) Prevent loading LNG into a tank car or tank truck that is not in exclusive LNG service or that does not contain a positive pressure if it is in exclusive LNG service, until after the oxygen content in the tank is tested and if it exceeds 2 percent by volume, purged in accordance with a procedure that meets the requirements of “Purging Principles and Practices (incorporated by reference, see § 193.2013)”.

(6) Verify that all transfer lines have been disconnected and equipment cleared before the tank car or tank truck is moved from the transfer position; and

(7) Verify that transfers into a pipeline system will not exceed the pressure or temperature limits of the system.

ETNG’s written LNG Operations Manual, Miscellaneous Procedures, Tab S (Date: 06/27/2018), is inadequate because it does not include instructions to perform hazardous fluid transfers. ETNG’s procedure does not provide any instructions regarding the transfer process other than for operating personnel to escort the delivery vehicle in and out of the facility.

ETNG must amend its written procedures to include detailed procedures for hazardous fluid transfer process in accordance with § 193.2513. ETNG’s procedures should be expanded to include all aspects related to the transfer process, including ensuring the tank truck or car complies with applicable regulations governing its use; a visual inspection of hoses for damage and defects; ensuring each tank truck is properly immobilized with chock wheels, and electrically grounded; and ensuring that each tank truck is turned off unless it is required for transfer operations.

5. § 193.2605 Maintenance procedures.

(a) ... 

(b) Each operator shall follow one or more manuals of written procedures for the maintenance of each component, including any required corrosion control. The procedures must include:
   (1) The details of the inspections or tests determined under paragraph (a) of this section and their frequency of performance;

§ 193.2613 Auxiliary power sources.

Each auxiliary power source must be tested monthly to check its operational capability and tested annually for capacity. The capacity test must take into account the power
needed to start up and simultaneously operate equipment that would have to be served by that power source in an emergency.

ETNG’s written *LNG Operations Manual* (Date: 06/27/2018), did not include a provision to test auxiliary power sources monthly in order to check operational capability, or a provision to test auxiliary power sources annually for capacity, in accordance with § 193.2613.

PHMSA requested ETNG’s test procedure regarding the Uninterruptible Power Supply (UPS) system used as an auxiliary power source. ETNG responded that while it performed inspections, it had not formalized the procedure and planned to make the appropriate revisions in the next review cycle of its facilities procedures.

ETNG must amend its written procedures to include performing a monthly operational capability test and an annual capacity test on its UPS system in accordance with § 193.2613.

6. § 193.2605 Maintenance procedures.

   (a) . . .
   (b) Each operator shall follow one or more manuals of written procedures for the maintenance of each component, including any required corrosion control. The procedures must include:
       (1) The details of the inspections or tests determined under paragraph (a) of this section and their frequency of performance;

§ 193.2621 Testing transfer hoses.

Hoses used in LNG or flammable refrigerant transfer systems must be:

   (a) Tested once each calendar year, but with intervals not exceeding 15 months, to the maximum pump pressure or relief valve setting;

ETNG’s written *LNG Maintenance Manual, M-4 Sendout System, Tab C* (Date: 8/6/2018), is inadequate as it does not include instructions for transfer hoses used in LNG or flammable refrigerants transfer systems to be pressure tested to maximum pump pressure or relief valve setting. ETNG’s procedure only states the interval and duration of the pressure test and the documentation of the test results.

ETNG must amend its written procedure to include instructions for transfer hoses used in LNG or flammable refrigerants transfer systems to be pressure tested to maximum pump pressure or relief valve setting in accordance with § 193.2621(a).

7. § 193.2717 Training: fire protection.

   (a) All personnel involved in maintenance and operations of an LNG plant, including their immediate supervisors, must be trained according to a written plan of initial instruction, including plant fire drills, to:
       (1) Know the potential causes and areas of fire;
(2) Know the types, sizes, and predictable consequences of fire; and
(3) Know and be able to perform their assigned fire control duties according to the procedures established under § 193.2509 and by proper use of equipment provided under § 193.2801.

(b) A written plan of continuing instruction, including plant fire drills, must be conducted at intervals of not more than two years to keep personnel current on the knowledge and skills they gained in the instruction under paragraph (a) of the section.

(c) Plant fire drills must provide personnel hands-on experience in carrying out their duties under the fire emergency procedures required by § 193.2509.

ETNG’s written procedures for training related to fire protection contained within its LNG Operations Manual, Personnel, Tab A (Date: 10/23/2017), is inadequate because it does not include details of initial and continuing fire protection training, including plant fire drills for operation, maintenance, and supervisory personnel.

During the inspection, ETNG representatives stated that all personnel attend a two-day training at LNG Fire School for initial fire protection training. Additionally, ETNG stated that the local fire department is not trained to conduct LNG fire protection activities, and during an actual emergency the local fire department will rely on the expertise of ETNG personnel for LNG fire protection skills. PHMSA’s inspector requested procedures for initial fire training, and ETNG provided its LNG Operations Manual, Personnel, Tab A (Date: 10/23/2017), which includes fire protection training. However, the procedures do not include details regarding the two-day training at LNG Fire School. Furthermore, ETNG’s procedures require personnel to review various fire protection training activities and conduct hands-on plant fire drills.

PHMSA requested ETNG’s Plant Fire Drill Plan, and ETNG provided an informal fire drill procedure without any document control. ETNG’s plant fire drill is divided into two types of training, Code 1 and Code 2. ETNG’s plant fire drill procedures describe scenarios for Code 2 training, but there are no instructions regarding Code 1 training in the submitted procedures.

ETNG must amend its procedures to include details on initial and refresher fire protection training for operation, maintenance, and supervisory personnel in accordance with § 193.2717. ETNG must revise its Plant Fire Drills Plan to include potential causes, sizes, areas, and consequences of a fire, and instructions for personnel to perform their duties according to emergency procedures as required by § 193.2509.

Response to this Notice
This Notice is provided pursuant to 49 U.S.C. § 60108(a) and 49 C.F.R. § 190.206. Enclosed as part of this Notice is a document entitled Response Options for Pipeline Operators in Compliance 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, revised procedures, or a request for a hearing under § 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 an Order Directing Amendment. If your plans or procedures are found inadequate as alleged in this Notice, you may be ordered to amend your plans or procedures to correct the inadequacies (49 C.F.R. § 190.206). If you are not contesting this Notice, we propose that you submit your amended procedures to my office within **30 days** of receipt of this Notice. This period may be extended by written request for good cause. Once the inadequacies identified herein have been addressed in your amended procedures, this enforcement action will be closed.

It is requested (not mandated) that East Tennessee Natural Gas, LLC maintain documentation of the safety improvement costs associated with fulfilling this Notice of Amendment (preparation/revision of plans, procedures) and submit the total to Mary McDaniel, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. In correspondence concerning this matter, please refer to **CPF 4-2022-027-NOA** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

**MARY LOUISE MCDANIEL**

Mary L. McDaniel, P.E.
Director, Southwest Region
Pipeline and Hazardous Materials Safety Administration

Enclosure: *Response Options for Pipeline Operators in Enforcement Proceedings*

cc: Harold North, Senior Engineer of Operational Compliance, Enbridge, harold.north@enbridge.com; Leo Rosas Jr., Supervisor of Operational Compliance, Enbridge, leo.rosasjr@enbridge.com; Andrew Kohout, P.E., Director, Division of LNG Facility Reviews and Inspections Office of Energy Projects, Federal Energy Regulatory Commission, andrew.kohout@ferc.gov