



Northern Natural Gas Company
P.O. Box 3330
Omaha, NE 68103-0330
402 398-7200

May 21, 2021

Via eFiling

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
8888 First Street, N.E.
Washington, D. C. 20426

RE: OEP/DLNG/LNG 2
Northern Natural Gas Company
Docket No. CP73-287-000
§375.308(x)

Dear Ms. Bose:

Pursuant to the data request dated April 22, 2021, from Hugh Thomas, Chief, LNG Branch 2 (Staff), Northern Natural Gas Company (Northern) hereby submits for filing with the Federal Energy Regulatory Commission (FERC) in the above-referenced docket Northern's responses to the requests. The responses provided to Requests The attachments supporting the responses have been segregated as Critical Energy Infrastructure Information (CEII).

Due to the sensitive nature of the CEII data depicting specific operational and engineering information for the Garner LNG plant, the information has been segregated and labeled "**CUI//CEII – DO NOT RELEASE.**" Pursuant to 18 CFR Section 388.112, Northern requests the information be treated as CEII. The person to be contacted regarding the request for the release of this information is:

Mike Loeffler
Senior Director of Certificates and External Affairs
Northern Natural Gas
1111 South 103 Street
Omaha, NE 68124
Telephone: 402-398-7103
Email: mike.loeffler@nngco.com

Staff's requests and Northern's responses are as follows:

FERC Request 1: Describe any abnormal operating conditions at the facility since the last FERC inspection/review (June 25, 2019). Abnormalities shall include but not be limited to: rollover; geysering; cold spots on the storage tank; storage tank vibrations and/or vibrations in associated cryogenic piping; leaking or inoperative isolation valves; significant equipment or instrumentation malfunctions or failures; non-scheduled maintenance or repair (and reasons therefore); relative movement of the inner vessel; vapor or liquid releases; negative pressures (vacuum) within the storage tank; and higher than predicted boil-off rates. (Note: Events previously reported in the Semi-Annual Operational Reports need not be re-described.)

Northern's response:

Any abnormal operating conditions that occurred from June 2019 through December 2020 were reported in previously submitted Semi-Annual Operational Reports. Since December 31, 2020, the facility experienced the following abnormal operating condition:

April 10, 2021 – The liquefaction process was taken offline to remove a carbon dioxide blockage from the cold box.

May 19, 2021 – The liquefaction process shut down due to a failed instrument air dryer and loss of instrument air supply pressure.

FERC Request 2: Identify all design and operating conditions which have been imposed by Federal (other than FERC), state, and local agencies and insurance companies or specific recommendations by these agencies to improve or enhance the operational safety of the LNG facilities since the last FERC inspection/review. Indicate which items were requirements with force of law and which were recommendations. Identify how the company has complied with each.

Northern's response:

AEGIS Insurance Services, Inc. provided a recommendation to install a secondary, independent liquid level gauging device and high-level alarm. Northern is scheduled to complete the recommendation review August 31, 2021.

FERC Request 3: Identify changes in the facility design, process equipment, process piping, control/instrumentation systems, hazard detection and control systems, operations, or operating philosophy which have been made since the last FERC inspection/review. For each such change, describe in detail the original design, the current design, and the rationale for the change. (Note: Events previously reported in the Semi-Annual Operational Reports need not be re-described).

Northern's response:

Any changes in the facility design, process equipment, process piping, control/instrumentation systems, hazard detection and control systems, operations, or operating philosophy that occurred

from June 2019 through December 2020 were reported in previously submitted Semi-Annual Operational Reports. There have no such changes since December 31, 2020.

FERC Request 4: Provide a list of management of change (MOC) reviews, process hazard analyses (PHAs), and root cause analyses (RCAs) conducted since the last FERC inspection/review.

Northern's response:

Northern completed four root cause analyses, which are listed below. Northern did not complete any management of change reviews nor any process hazard analyses.

Root cause analyses

December 1, 2019 – The liquefaction process shutdown unexpectedly due to a loss of utility power.

January 14, 2020 – A failed lube oil seal on one of the liquefaction compressors fouled the cold box resulting in a liquefaction shutdown and derime of the cold box.

October 2, 2020 – A faulty emergency shutdown push button resulted in an unplanned emergency shutdown. Liquefaction and vaporization were not in operation during this event.

November 15, 2020 – The liquefaction process shutdown unexpectedly due to a loss of utility power.

May 19, 2021 – The liquefaction process shutdown unexpectedly due to a failed instrument air dryer and loss of instrument air supply pressure.

FERC Request 5: Provide copies of any reports, investigations, and studies on the facility (related to safety, reliability, or integrity) since the last FERC inspection/review. Identify how the company has or will address any resulting recommendations.

Northern's response:

Following the replacement of the two fire water pumps at Wrenshall LNG, Lake Superior Consulting (LSC) completed an NFPA 20 analysis on the firewater system to ensure that the firewater system aligned with code requirements. Items identified in the analysis included increasing the size of the pump discharge relief valve outlet piping from a 4-inch-diameter pipe to a 10-inch-diameter pipe and adding an automatic air release valve to both the diesel and electric fire water pumps. These modifications are scheduled to be completed by July 2021 during the replacement of the below-grade fire water piping. Additionally, LSC recommended that the pump submerged depth be confirmed at a minimum of 11 feet and that both the diesel and electric pump buildings have adequate fire protection in place; both items have been confirmed to be adequate. Copy of the analysis is attached and marked "CUI//CEII – DO NOT RELEASE."

FERC Request 6: Provide up-to-date detailed plot plan(s); hazard detection and hazard control drawings; and piping and instrumentation diagrams for the facility reflecting all modifications and changes that have been made since the last FERC inspection/review.

Northern's response:

There have been no significant changes to the facility hazard detection and hazard control drawings nor the piping and instrumentation diagrams. Copies of the facility's hazard detection and hazard control drawings and the piping and instrumentation diagrams are attached and marked "CUI//CEII – DO NOT RELEASE."

FERC Request 7: Indicate if the operating and maintenance manual and safety manuals have been updated since the last FERC inspection/review. If so, provide updated copies.

Northern's response:

Copies of the facility's updated safety manual and maintenance manual are attached and marked "CUI//CEII – DO NOT RELEASE."

FERC Request 8: Provide a list of corrective maintenance work orders initiated since the last FERC inspection/review.

Northern's Response:

A list of corrective maintenance work orders completed at the facility are attached and marked "CUI//CEII – DO NOT RELEASE."

FERC Request 9: Provide the date and results of the most recent LNG storage tank elevation surveys. The results should specify the criteria used to determine if the settlement range is considered acceptable.

Northern's Response:

Copies of the facility's recent tank elevation studies are attached and marked "CUI//CEII – DO NOT RELEASE."

FERC Request 10: Provide the date and results of the most recent gas compositions analyzed. The results should specify the acceptable range for each constituent and/or characteristic (e.g., mole percent, ppm, heating value, etc.), and indicate if the range is based on a process basis of design, alarm set point, pipeline/customer specification, and/or other criteria.

Northern's Response:

Copies of the facility's recent gas compositions are attached and marked "CUI//CEII – DO NOT RELEASE."

FERC Request 11: Provide the date and results of the most recent annual firewater pump test(s). The resulting pump test curve(s) should be compared to the original field acceptance test curve as well as the previous annual test curve(s).

Northern's Response:

A copy of the facility's most recent firewater pump test is attached and marked "CUI//CEII – DO NOT RELEASE."

FERC Request 12: Provide the date and results of latest emergency shutdown (ESD) test. Describe how the facility's emergency shutdown test is conducted. Also, provide a list, description, cause, and corrective actions resulting from all ESD's that have occurred at the facility since the last FERC inspection/review.

Northern's Response:

A copy of the facility's most recent ESD test, a list of ESDs at the facility, and a description of how the emergency shutdown tests are conducted are attached and marked "CUI//CEII – DO NOT RELEASE."

FERC Request 13: Provide a list of all venting and/or flaring events that have occurred at the facility since the last FERC inspection/review. Indicate which vent/flare was utilized, as well as the cause, process conditions, duration, and amount vented/flared for each event. Also, indicate if the venting/flaring was related to planned start-up or shut-down activities, maintenance activities, process upset during normal operations, or other.

Northern's Response:

Vapor Release:

October 7, 2019 (0.0027 MMcf) – The storage tank was venting due to low barometric pressure during an operational test of the LNG pumps. (unplanned during normal operations)

July 7, 2020 (0.0471 MMcf) – The storage tank was vented due to annual electrical testing activities (planned maintenance).

Flaring Events:

December 1, 2019 – The liquefaction process shut down due to a loss of utility power; approximately 2,300 gallons of mixed refrigerants were flared from the NAO flare (unplanned during normal operations).

January 14, 2020 – The liquefaction process shut down due to a failed oil seal on refrigerant compressor C-301A; approximately 2,300 gallons of mixed refrigerants were flared from the NAO flare (unplanned during normal operations).

March 3, 2020 – The liquefaction process was shut down after the storage tank reached the target capacity, approximately 2,300 gallons of mixed refrigerants were flared from the NAO flare (planned during normal operations).

November 14, 2020 – The liquefaction process shut down due to a loss of utility power; approximately 2,300 gallons of mixed refrigerants were flared from the NAO flare (unplanned during normal operations).

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November 19, 2020 – This liquefaction process shut down after the storage tank reached the target capacity; approximately 2,300 gallons of mixed refrigerants were flared from the NAO flare (planned during normal operations).

May 19, 2021 – The liquefaction process shut down after due to a failed instrument air dryer and loss of instrument air supply pressure; approximately 2,300 gallons of mixed refrigerants were flared from the NAO flare (unplanned during normal operations).

FERC Request 14: Indicate if the emergency response plan or plant emergency procedures have/has been updated since the last FERC inspection/review. If so, provide an updated copy. Note that the FERC notification contacts are: lng.staff@ferc.gov, Ghanshyam Patel: 202-502-6431, and Hugh Thomas: 202-502-8980.

Northern's Response:

The Wrenshall LNG team is in the process of updating the emergency response manual formatting with an expected completion date of June 1, 2021. The updated copy will be sent to FERC once it is completed.

FERC Request 15: Please ensure that a preliminary draft of a Semi-Annual Operational Report for the period of January 1 through June 30, 2021, is available to the staff at or before the planned site visit.

Northern's Response:

Northern will ensure that a preliminary draft of the Semi-Annual Operational Report for the period of January 1 through June 30, 2021, is available prior to the planned visit

Any questions regarding this filing should be directed to the undersigned at (402) 398-7103.

Respectfully submitted,

/signed/ Michael T. Loeffler

Michael T. Loeffler
Senior Director, Certificates and External Affairs