

US EPA ARCHIVE DOCUMENT



final

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

May 16, 2007

Michael Trammel
Director - Environmental
Excelerate Energy L.L.C.
1330 Lake Robbins Drive, Suite 270
The Woodlands, TX 77380

Dear Mr. Trammel:

The Environmental Protection Agency-New England office has reviewed and approved your application for a Clean Air Act (CAA) permit to construct and operate the Northeast Gateway Energy Bridge deepwater port off the coast of Massachusetts.

Enclosed is the final CAA permit and the response to comments (RTC) document that addresses the comments raised during the 30-day public comment period for this permit.

If you have any questions concerning the final CAA permit or the RTC, please contact Brendan McCahill at (617) 918-1652.

Sincerely;

A handwritten signature in black ink, appearing to read "Daniel J. Brown".

Daniel J. Brown, Manager
Air Permits, Toxics and Indoor Programs Unit

Attachment

cc: Barbara Kwetz, Massachusetts DEP
Donald Squires, Massachusetts DEP
Keith Kennedy, Tetra Tech EC



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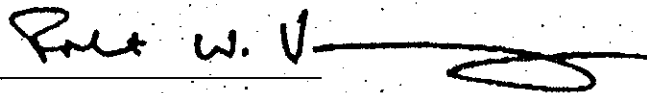


**The United States
Environmental Protection Agency
Region 1**

**AUTHORITY TO CONSTRUCT
NORTHEAST GATEWAY ENERGY BRIDGE, L.L.C.
DEEPWATER PORT
Permit Number RG1-DPA-CAA- 01**

EPA Region 1 is issuing this permit pursuant to the Deepwater Port Act (DPA) of 1974, as amended, 33 U.S.C. § 1501 et seq., and in accordance with the provisions of Title I of the Federal Clean Air Act (CAA), 42 U.S.C. §§ 7401 et seq., and applicable rules and regulations approved or promulgated under the CAA, including air permitting rules promulgated by the Massachusetts Department of Environmental Protection (DEP) and approved by the U.S. Environmental Protection Agency (EPA). This permit authorizes Northeast Gateway Energy Bridge, L.L.C. (Permittee or NEG LLC) to construct and operate the Northeast Gateway Deepwater Port (NEG) in accordance with the permit application, all supplemental information associated with the permit application, federal regulations, DEP regulations, and the terms and conditions set forth in this permit.

The design, construction and operation of NEG and the vessels that use NEG shall be subject to the attached permit conditions and permit limitations. This permit becomes effective on the date of issuance or the date the Permittee obtains an incidental take statement from the National Marine Fisheries Service, whichever comes last, and shall remain in effect only as long as NEG LLC continues to hold an incidental take statement or until rescinded by or surrendered to EPA. This permit becomes invalid if the Permittee does not commence construction within 18 months after receipt of permit issuance. EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This permit does not relieve the Permittee from the obligation to comply with applicable state and federal air pollution control rules and regulations.



Robert Varney
Regional Administrator
EPA Region 1-New England

5-14-07

Date

Acronyms and Abbreviations

ASTM	American Society for Testing and Materials
BOG	boil off gas
BTU	British thermal unit
CFR	Code of Federal Regulations
CMR	Code of Massachusetts Regulations
CO	carbon monoxide
DEP	Massachusetts Department of Environmental Protection
DPA	Deepwater Port Act
DWP	Deepwater Port
EPA	Environmental Protection Agency
EBRV	Energy Bridge TM Regasification Vessel
ft ³	cubic feet
g	Gram
hr	hour
kg	Kilogram
kW	kilowatt
lb	pound
LLC	Limited Liability Company
LNG	liquid natural gas
LNGRV	Any vessel that regasifies LNG
LOA	Letter of Authorization
mcf/hr	thousand cubic feet per hour
MMBtu	million British thermal units
MMPA	Marine Mammal Protection Act
NEG	the DWP operated by Northeast Gateway Energy Bridge, L.L.C.
NEG LLC	Northeast Gateway Energy Bridge, L.L.C.
NOx	nitrogen oxides
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
ppmv	parts per million by volume
ppmw	parts per million by weight
psia	pounds per square inch absolute
OIP	Operator Inspection Plan
ROC	reactive organic compounds
SCV	submerged combustion vaporizer
SIP	State Implementation Plan
SO ₂	sulfur dioxide
Scfm	standard cubic feet per minute

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Acronyms and Abbreviations

Continue

SCR	Selective Catalytic Reduction
SSMP	startup, shutdown, and malfunction plan
STL™	Subsea Submerged Turret Loading™
tpy	tons per year
VOC	volatile organic compounds

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I. PROJECT DESCRIPTION

NEG LLC's proposed NEG will consist of two subsea Submerged Turret Loading™ (STL™) buoys, each with a flexible riser assembly and a manifold connecting the riser assembly, via a flow line, to the subsea Pipeline Lateral. NEG LLC proposes to use a fleet of specially designed Energy Bridge™ Regasification Vessels (EBRV) to deliver liquid natural gas (LNG) to NEG. EBRVs are purpose-built LNG tankers that incorporate onboard equipment for the regasification of LNG and delivery of high-pressure natural gas. The first generation EBRVs include three fossil fuel fired combustion units (two main boilers, each with a heat input capacity of 224 million British Thermal Units per hour (MMBtu/hr) and a 3650 kilowatt (kW) auxiliary generator)) to provide energy for the regasification process. During transport, the boilers produce steam for steam turbines that propel the vessels through the water. While moored at NEG, the boilers provide steam used to vaporize the LNG. The generators are auxiliary equipment for power when one or more of the steam turbines are out of service

NEG LLC has ordered the first of a second generation of vessels, the Explorer, scheduled for commissioning in March 2008, shortly after the Port is expected to become operational. The second generation vessels will also have a fourth fossil fuel fired combustion unit (a 100 MMBtu/hr auxiliary boiler) allowing an increased regasification rate.

II. EQUIPMENT LIST

This permit applies to the following list of equipment aboard any EBRV or any Liquid Natural Gas Regasification Vessel (LNGRV) with similar equipment. For all other LNGRVs with different equipment configurations that intend to use NEG, NEG LLC must first apply for and receive approval from EPA Region 1 before the LNGRV moors and regasifies at NEG.

Unit ID Number	Description
B1 and B2	Two 224 MMBtu/hr natural gas-fired boilers: 1 st and 2 nd generation vessels
Aux1	One 100 MMBtu/hr natural gas-fired boiler: 2 nd Generation Vessel
GE1	3840 kW Diesel engine: 1 st generation Vessel
GE2	3860 kW Dual-fired engine: 2 nd Generation Vessel

Except as specifically provided otherwise, the requirements of this permit apply to each of these emission units on any EBRV or LNGRV while moored and regasifying at NEG.

III. FACILITY LOCATION

NEG will be located off the shore of Massachusetts approximately 22 miles Northeast of Boston. The exact latitude and longitude of this location are:

Latitude: N 42° 23' 38.46" - 42° 23' 56.40"

Longitude: W 70° 35' 31.02" - 70° 37' 0.36"

IV. DEFINITIONS

The following definitions shall be used for the purposes of this permit. Terms not otherwise defined in this permit have the meaning assigned to them in the referenced CAA provisions, EPA regulations, and the DEP regulations.

Breakdown condition An unforeseeable failure or malfunction of a) any air pollution control equipment which causes a violation of any emission limitation or restriction in the permit, or b) any in-stack continuous monitoring equipment, provided such failure or malfunction:

1. is not the result of neglect or disregard of any air pollution control law, rule or regulation;

2. is not the result of an intentional or negligent act or omission on the part of the Permittee; and
3. is not the result of improper maintenance.

Commence construction To either:

1. begin, or cause to begin, a continuous program of physical on-site construction of the port; or
2. enter into binding agreements or contractual obligations which cannot be canceled or modified without substantial loss to the owner or operator to undertake a program of construction of the facility to be completed within a reasonable time.

Company official The highest ranking employee of the company:

1. having knowledge of and responsibility for equipment on the DWP and
2. duly authorized by the company to prepare and maintain records of emissions from such equipment.

Energy Bridge™ Regasification Vessel (EBRV)

NEG LLC's trademark fleet of specially designed liquid natural gas regasification vessels.

Emergency situation An event resulting in:

1. the failure of normal natural gas/boil off gas (BOG) service to B1, B2, and GE2 and not due to an intentional or negligent act, or omission on the part of the Permittee; or
2. the need for emergency pumping of water for either

fire protection or flood relief.

<i>Initial startup</i>	The moment at which the first piece of permitted equipment on the EBRV or LNGRV is set in operation at NEG after the first full regasification event for that particular EBRV or LNGRV at NEG.
<i>Particulate matter</i>	Any material, except uncombined water, that exists in a finely divided form as a liquid or solid at standard conditions.
<i>Liquid Natural Gas Regasification Vessel</i>	Any vessel that regasifies LNG.
<i>Routine shutdown event</i>	The ceasing of operation of permitted equipment on the EBRV or LNGRV. The duration of each routine shutdown event shall not exceed one hour prior to flame off.
<i>Routine startup event</i>	The setting in operation of permitted equipment on the EBRV or LNGRV for any purpose any time after initial startup. Routine startup events are marked at the beginning by ignition of the equipment and last until the equipment has reached continuous operating levels. The duration of each routine startup event shall not exceed one hour.

V. EMISSION AND OPERATIONAL LIMITS

V.A Emission Limits: Nitrogen Oxide and Carbon Monoxide emission limits are based on a three-hour average. All other emissions are based on a one-hour average.

1. The Permittee shall not discharge or cause the discharge into the atmosphere in excess of the following emission limits for each Boiler B1 and B2 at any time:

- a. Nitrogen Oxides (NO_x):
0.018 Pounds per million British Thermal Units (lb/MMBtu) or a maximum of 4.0 pounds per hour (lb/hr) whichever is more stringent.
 - b. Carbon Monoxide (CO):
0.044 lb/MMBtu or a maximum of 9.8 lb/hr whichever is more stringent.
 - c. Sulfur Dioxide (SO₂):
0.0006 lb/MMBtu or a maximum of 0.13 lb/hr whichever is more stringent.
 - d. Volatile Organic Compounds (VOC):
0.005 lb/MMBtu or a maximum of 1.2 lb/hr whichever is more stringent.
 - e. Particulate Matter less than 10 microns (PM₁₀):
0.0019 lb/MMBtu or a maximum of 1.7 lb/hr whichever is more stringent.
2. The Permittee shall not discharge or cause the discharge into the atmosphere in excess of the following emission limits for the auxiliary boiler Aux1 at any time.
- a. NO_x:
0.018 lb/MMBtu or a maximum of 1.8 lb/hr whichever is more stringent.
 - b. CO:
0.044 lb/MMBtu or a maximum of 4.4 lb/hr whichever is more stringent.
 - c. SO₂:
0.0006 lb/MMBtu or a maximum of 0.06 lb/hr whichever is more stringent.

- d. VOC:
0.005 lb/MMBtu or a maximum of 0.5 lb/hr whichever is more stringent.
 - e. PM₁₀:
0.0019 lb/MMBtu or a maximum of 0.7 lb/hr whichever is more stringent.
3. The Permittee shall not discharge or cause the discharge into the atmosphere in excess of the following emission limits for the engine GE1 at any time.
- a. NO_x
12.1 Grams/Kilowatt-Hour (g/kWh) or a maximum of 97.4 lb/hr whichever is more stringent.
 - b. CO
3.34 g/kWh or a maximum of 26.9 lb/hr whichever is greater
 - c. SO₂
0.69 lb/MMBtu or a maximum of 19.8 lb/hr whichever is greater.
 - d. VOC
0.36 lb/MMBtu or a maximum of 10.2 lb/hr whichever is greater.
 - e. PM₁₀
0.12 lb/MMBtu or a maximum of 3.4 lb/hr whichever is greater.
4. The Permittee shall not discharge or cause the discharge into the atmosphere in excess of the following emission limits for the engine GE2 at any time.
- a. NO_x
1.6 g/kWh or a maximum of 10.5 lb/hr whichever is more stringent.
 - b. CO
2.1 g/kWh or a maximum of 15.3 lb/hr whichever is greater.

- c. SO₂
0.04 lb/MMBtu or a maximum of 1.0 lb/hr whichever is greater.
 - d. VOC
0.24 lb/MMBtu or a maximum of 6.5 lb/hr whichever is greater.
 - e. PM₁₀
0.12 lb/MMBtu or a maximum of 3.4 lb/hr whichever is greater.
5. The total NOx emissions from units B1, B2, Aux1, GE1, and GE2 shall not exceed 49 TPY on a 12-month rolling average basis.
6. The total CO emissions from units B1, B2, Aux1, GE1, and GE2 shall not exceed 99 tpy on a 12-month rolling basis.
7. For the first 11 months of operation, the monthly NOx emission from units B1, B2, Aux1, GE1, and GE2 shall not exceed 12.3 tons.
8. For the first 11 months of operation, the monthly CO emission from units B1, B2, Aux1, GE1 and GE2 shall not exceed 24.75 tons.
9. The Permittee shall not allow the discharge of ammonia (NH₃) into the atmosphere in excess of 10 parts per million by volume on a wet basis (ppmvw) @ 3% O₂ (1-hour average) from the SCR systems controlling B1, B2 and Aux1.
10. The Permittee shall not discharge into the atmosphere from any single source of emission whatsoever any emissions of smoke with a shade, density or appearance equal to or greater than No. 1 of the Ringelmann Chart for a period in excess of (6) minutes during any one (1) hour, provided that at no time would visible emissions be equal or greater than No. 2 on the chart.

V.B Operational Limits

1. On or before the date of initial startup and continuously thereafter, the Permittee shall install, operate, and maintain an Selective Catalytic Reduction (SCR) for the control of NO_x emissions from units B1, B2, and Aux1.
2. All air pollution control equipment and emissions monitoring systems must be connected to their respective emission units and properly functioning at all times whenever the emission units are in operation.
3. The maximum total heat input to either unit B1 or B2 shall not exceed 224 MMBtu/hr.
4. The maximum total heat input to Aux1 shall not exceed 100 MMBtu.
5. The maximum power output from GE1 or GE2 shall not exceed 3650 kw.
6. The maximum hourly operations for GE1 and GE2 together shall not exceed 370 hrs on a 12-month rolling average basis.
7. GE2 shall be restricted to burning boil off natural gas and diesel fuel oil.
8. Diesel fuel oil shall not exceed 1% of the heat input into GE2.
9. The sulfur content of diesel fuel oil used in GE1 shall not exceed 0.5% by weight.
10. The sulfur content of diesel fuel oil used in GE2 shall not exceed 0.5% by weight.
11. The Permittee shall maintain all permitted units in accordance with the manufacturers' recommendations.

VI. MONITORING, PERFORMANCE TESTING, AND RECORDKEEPING REQUIREMENTS

VI.A Operational Plans

No less than 60 days before initial startup, the Permittee shall prepare the following plans and submit them to EPA for approval. The Permittee shall operate at all times in accordance with the approved plans and shall modify the plans after any change in operation and upon EPA request.

1. Operator Inspection Plan (OIP)

- a. The Permittee shall submit an OIP plan to EPA for review and approval by EPA in writing. The plan shall pertain to units B1, B2, Aux1, GE1 and GE2 and include the following information:
 - i. the manufacturer, model number, rated horsepower, and combustion method (i.e., rich-burn, lean-burn, or diesel) of the boilers and engines;
 - ii. a description of the NO_x control system installed on the boilers and engines, including type and manufacturer, as well as a description of any ancillary equipment related to the control of emissions (e.g., automatic air/fuel ratio controller, fuel valves);
 - iii. the company identification number and location of the boilers and engines by a schematic of the affected facilities;
 - iv. a specific emission inspection procedure to assure that the boilers and engines are operated in continual compliance with the emission limits set forth above. The procedure shall include an inspection schedule; and

- v. each preventative or corrective maintenance procedure or practice that will be used to maintain the boilers and engines and control systems in continual compliance with the limits set forth in this permit.

2. Startup, Shutdown and Malfunction Plan (SSMP)

No less than 60 days before initial startup, the Permittee shall submit to EPA a SSMP for review and approval by EPA in writing. The plan shall include:

- a. procedures for operating and maintaining the emission units during routine startup and shutdown periods and breakdown conditions; and
- b. a program to minimize air pollution, and to implement necessary corrective actions to remedy *breakdown conditions* for equipment, including air pollution control and monitoring equipment used to comply with these permit conditions.

VI.B Monitoring Requirements

1. Emissions Monitoring for NOx and CO

- a. The Permittee shall properly install, maintain in good working order, and operate a gas analyzer with a performance specification equivalent to the Siemens Ultramat 23 analyzer to monitor NOx and CO emissions from units B1, B2, and Aux1.
 - i. No less than 60 days before initial startup, the Permittee shall submit to EPA a quality assurance plan for the certification and operation of the gas analyzer for approval.
 - ii. The Permittee shall install, calibrate and maintain the gas analyzer in accordance with the approved quality assurance plan.

- b. The gas analyzer will be used to show compliance with the NO_x and CO lb/MMBtu emission factors for B1, B2 and Aux1.
- c. Within fifteen days following the end of each calendar month, the Permittee shall determine monthly emissions of NO_x from units B1, B2, Aux1, GE1, and GE2 during the first 11 months of operation. Thereafter, the Permittee shall calculate annual NO_x emissions for the previous 12-month period on a 12-month rolling basis within 15 days following the end of each calendar month. In no case shall NO_x emissions exceed 49 tons for any 12-month period.
- d. The Permittee shall determine total monthly and annual NO_x emissions using the following equation:

For B1 and B2:

$$\begin{aligned} &(\text{fuel usage (kg)}) \times (0.052682 \text{ MMBtu/kg}) \times \\ &(0.018 \text{ lb/MMBtu}) \times (\text{Tons}/2000 \text{ lbs}) \end{aligned}$$

For Aux1 :

$$\begin{aligned} &(\text{fuel usage (kg)}) \times (0.052682 \text{ MMBtu/kg}) \times \\ &(0.018 \text{ lb/MMBtu}) \times (\text{Tons}/2000 \text{ lbs}) \end{aligned}$$

For GE1 :

$$\begin{aligned} &(\text{power output(kw-hr)}) \times (12.1 \text{ g/kw-hr}) \\ &(0.002205 \text{ lbs/gram}) \times (\text{tons}/2000 \text{ lbs}) \end{aligned}$$

For GE2:

$$\begin{aligned} &(\text{power output(kw-hr)}) \times (1.6 \text{ g/kw-hr}) \\ &(0.002205 \text{ lbs/gram}) \times (\text{tons}/2000 \text{ lbs}) \end{aligned}$$

$$\text{Total NO}_x \text{ emissions} = \text{B1} + \text{B2} + \text{Aux1} + \text{GE1} + \text{GE2}$$

Note: If the gas analyzer instruments or any other creditable evidence indicates that any emissions unit is not meeting its emissions limit, the Permittee shall calculate the NOx emissions during any such period based on the actual emission rate

- e. Within fifteen days following the end of each calendar month, the Permittee shall determine monthly emissions of CO from units B1, B2, Aux1, GE1 and GE2 during the first 11 months of operation. Thereafter, the Permittee shall calculate annual CO emissions for the previous 12-month period on a 12-month rolling basis within 15 days following the end of each calendar month. In no case shall CO emissions exceed 99 tons for any 12-month period.
- f. The Permittee shall determine total monthly and annual CO emissions using the following equation:

For B1 and B2:

$$(\text{fuel usage (kg)}) \times (0.052682 \text{ MMBtu/kg}) \times (0.044 \text{ lb/MMBtu}) \times (\text{Tons/2000 lbs})$$

For Aux1:

$$(\text{fuel usage (kg)}) \times (0.052682 \text{ MMBtu/kg}) \times (0.044 \text{ lb/MMBtu}) \times (\text{Tons/2000 lbs})$$

For GE1:

$$(\text{power output(kw-hr)}) \times (12.1 \text{ g/kw-hr}) \times (0.002205 \text{ lbs/gram}) \times (\text{tons/2000 lbs})$$

For GE2:

$$(\text{power output(kw-hr)}) \times (2.1 \text{ g/kw-hr}) \times (0.002205 \text{ lbs/gram}) \times (\text{tons/2000 lbs})$$

$$\text{Total CO emissions} = \text{B1} + \text{B2} + \text{Aux1} + \text{GE1} + \text{GE2}$$

Note: If the gas analyzer instruments or any other creditable evidence indicates that any emissions unit is not meeting its emissions limit, the Permittee shall calculate the CO emissions during any such period based on the actual emission rate.

2. Emissions Monitoring for NO_x, CO, VOC, SO₂, PM₁₀

In addition to the gas analyzer, no less than 60 days before initial startup, the permittee shall submit a plan for monitoring the operational parameters for units B1, B2 and Aux1. The plan will identify the operational ranges that indicate compliance within the emission limits for NO_x, VOC, SO₂ and PM₁₀. The plan may include the following operational parameter factors: flue gas oxygen concentration, flue gas temperature, pressure differential at the SCR catalyst interface, or other factors as approved by EPA

3. Fuel Consumption

- a. The Permittee shall install and operate non-resettable totalizing flow meters to measure the volume of natural gas used by units B1, B2, Aux 1 and GE2. The flow meters must meet one of the procedures specified in 40 CFR Part 60, Appendix A, as appropriate for the type of meter installed.
- b. The Permittee shall install and operate a non-resettable fuel meter to measure the amount of diesel used in GE1 and GE2.

4. Engine Use

- a. The Permittee shall install and maintain non-resettable elapsed operating hour meters to accurately indicate the elapsed operating time of GE1 and GE2
- b. The Permittee shall install and maintain meters to measure and record the kW-hr produced by GE1 and GE2

5. BOG Sulfur Content

- a. The Permittee shall have the sulfur content of the BOG analyzed upon written request from EPA.
- b. The sulfur content shall be determined by ASTM D1072, Standard Test Method for total sulfur in fuel gases.
- c. The Permittee may use the colorimetric method ASTM D4810 for the measurement of the sulfur content only if prior written approval has been granted by EPA.

6. SCR Catalyst Temperature and Pressure

The Permittee shall install and maintain a device to accurately measure and record the temperature of the exhaust at the inlet to the catalysts in the SCR systems serving units B1, B2 and Aux1.

7. The Permittee shall install and maintain a device to accurately measure and record the pressure at of the inlet and outlet of the SCR systems serving units B1, B2 and, Aux1.

VI.C Performance Tests

1. The Permittee shall conduct the following initial and subsequent performance tests:
 - a. Initial Performance Tests:
 - i. On or before initial startup for each EBRV or LNGRV, the Permittee shall conduct the following performance tests on the exhaust stack gases from units B1, B2, Aux1, GE1 and GE2.

Emission Units	Pollutants	Fuel
B1, B2 and Aux1	NOx,, VOC, CO, ammonia	BOG or regasified LNG
GE1	NOx, CO	4.5% sulfur by weight diesel fuel .
GE2	NOx, CO	BOG or regasified LNG and 0.5% sulfur by weight fuel oil at 1% heat input

ii. The following test methods shall be used:

- A. Performance tests for emissions of NOx shall be conducted using EPA Methods 1-4 and 7E.
- B. Performance tests for emissions of VOC shall be conducted using EPA Method 25A. Method 18 may be used to subtract out methane and other non-reactive VOCs.
- C. Performance tests for emissions of CO shall be conducted using EPA Method 10, 10A, or 10B or ASTM D6522-00.
- D. Performance tests for emissions of PM₁₀ shall be conducted by using EPA Method 5.
- E. Performance tests for emissions of ammonia shall be conducted in

accordance with the EPA conditional test method 27.

F. Performance tests for emissions of SO₂ shall be conducted in accordance with the EPA Method 20.

G. Measurement of volumetric flow rate and velocity shall be conducted by Method 2, 2F, or 2G.

- iii. Performance tests using EPA methods shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60.8 and 40 CFR 60, Appendix A.
- iv. The Permittee shall notify EPA of the tests in writing and provide EPA with a test plan at least 45 days prior to such tests. The Permittee shall revise the plan upon EPA request.
- v. Within 45 days after the completion of the tests required above, a report of the test results shall be submitted to EPA. The test report shall indicate:
 - A.* the emissions of NO_x, VOC, PM₁₀, SO₂, and CO in lb/MMBtu and lbs/hr;
 - B.* the emissions of ammonia in ppmvw corrected to 3% oxygen;
 - C.* the fuel flow rate for B1, B2 Aux1, GE1 and GE2 under which the tests were conducted. The values shall be expressed in gallons for diesel and standard cubic feet for BOG;
 - D.* the power output of GE1 and GE2 under which the tests were conducted. The values shall be expressed in kW-hr.
 - E.* the exhaust flow rate in scfm under which the tests were conducted; and

F. the sulfur content of each fuel in ppmw.

- vi. The report will also include the operational parameters recorded during stack testing and explanation of how those parameters will be used in the parametric plan in section IV.B.2.a.

b. Subsequent Performance Tests

- i. The Permittee shall conduct performance tests on the exhaust stack gases from units B1, B2, Aux1, GE1 and, GE2 for all pollutants upon written request from EPA
- ii. For performance test purposes, the Permittee shall provide sampling ports, platforms, and access to the exhaust systems for units B1, B2, GE1, GE2 and Aux1 in accordance with 40 CFR 60.8(e).
- iii. The Permittee will allow access to all emission control equipment and monitoring instrumentation.

VI.D Recordkeeping Requirements

- 1. The Permittee shall keep records of the following parameters or items. Unless otherwise specified, the records shall be maintained for a period of five years following the date of such measurements, purchases, maintenance activities, or reports. The original records shall be kept in an on-shore location within the Commonwealth of Massachusetts as the Permittee shall arrange to provide reasonable access to the records. At a minimum, the records maintained onshore shall be updated on a monthly basis. The original records and the copies must be in a permanent form suitable for review and inspection.
 - a. The gas analyzer records containing the following:
 - i. all emissions measurements taken by any gas analyzer instrument,

- ii. the date and results of all calibration checks, tests, adjustments, and maintenance,
 - iii. the date, time, and duration of any routine startup or shutdown events and breakdown conditions, and
 - iv. the date, time, and duration of any periods during which the gas analyzer instrument is inoperative and the identity of such device.
- b. The results of the calculations required by VI.B.1.d and f.
- c. Results of all performance tests.
- d. The kW-hr produced individually by units GE1 and GE2.
- e. The volume of BOG consumed on an hourly basis by units B1, B2, Aux 1 and GE2.
- f. The volume of diesel fuel used each month by units GE1 and GE2.
- g. The results of the tests performed to determine the sulfur content of the BOG.
- h. The documents from the fuel supplier certifying compliance with the fuel sulfur content limit.
- i. The operating hours of units B1, B2, and Aux1 during each calendar month.
- j. The temperature of the exhaust at the inlet to the catalysts in the SCR systems serving units B1, B2, and Aux1.
- k. The pressure at the inlet and outlet ports of the SCR systems serving units B1, B2, and Aux1.
- l. The occurrence and duration of any routine startup event, routine shutdown event, breakdown condition, or emergency situation.

- m. Any information required by the SSMP.
 - n. The time and date of arrival and departure for each EBRV or LNGRV.
 - o. The time and date that regasification begins and ends for each EBRV or LNGRV.
2. In addition to any recordkeeping requirement specified elsewhere in this permit, the Permittee shall keep records of all required monitoring and testing information, where applicable, that include:
- a. the date, place, and time of sampling or measurements,
 - b. the date(s) analyses were performed,
 - c. the company or entity that performed the analyses,
 - d. the analytical techniques or methods used,
 - e. the results of such analyses, and
 - f. the operating conditions existing at the time of sampling or measurement.

VII. REQUIRED NOTIFICATIONS AND REPORTING

The Permittee shall notify EPA of each event listed in this section. Each notification shall be signed by a company official of NEG LLC. Compliance with these notification provisions shall not excuse or otherwise constitute a defense to any violation of this permit or of any law or regulation. All reports must be submitted electronically to Region 1 in PDF format or other formats acceptable to EPA.

VII.A Commencement of Construction and Initial Startup

1. The Permittee shall notify EPA in writing of the:
 - a. actual date it commenced construction. The notification shall be made within thirty (30) days after such date;
 - b. anticipated date of initial startup. This notification shall not be made more than sixty (60) days or less than thirty (30) days prior to such date. The notification shall identify all emission units, air pollution control devices and Ultramat or equivalent monitors, and shall include a plan depicting the location and ID numbers of such units, devices, and monitors for each EBRV or LNGRV;
 - c. actual date of initial startup and steady state operation of NEG (i.e., the end of the initial startup period) within fifteen (15) days after the 1st day of steady state operations;
 - d. date of receipt of the first shipment to NEG;
 - e. location where records required by this permit will be maintained.

VII.B Exceedances

The Permittee shall report any violation of any emission limit as indicated by the gas analyzer or the parametric monitoring plan in writing to EPA within 96 hours of each occurrence.

VII.C Breakdown Conditions

1. The Permittee shall notify EPA by facsimile or electronic mail of any occurrence which constitutes a breakdown condition. Such notification shall be made no later than four hours after its detection and shall identify:
 - a. the time at which the breakdown condition was discovered,

- b. the specific location, and
 - c. the equipment involved.
- 2. Within one week after a breakdown condition has been corrected, the Permittee shall submit a written report to EPA which includes:
 - a. a statement that the occurrence has been corrected, together with the date of correction and proof of compliance,
 - b. a specific statement of the reasons or causes of the occurrence sufficient to enable EPA to determine whether the occurrence was a breakdown condition,
 - c. a description of the corrective measures undertaken to mitigate the emissions and restore normal operations,
 - d. a description of the measures to be undertaken to avoid such an occurrence in the future; EPA may, at the request of the Permittee, for good cause, extend up to 30 days the deadline for submitting the description of the future measures,
 - e. the period of time over which emissions were increased due to the breakdown condition,
 - f. an estimate of the emissions released in excess of those allowed by this permit, and
 - g. pictures of the equipment or controls that failed, if available.

VII.D Semi-annual Reporting

1. Starting at the end of initial startup for the first vessel to use NEG and semi-annually thereafter, the Permittee shall submit a written report to EPA that

includes the following information:

- a. specific identification of each instance in which any emission or operational limit in this permit was exceeded, including during routine startup and shutdown events and breakdown conditions. The report shall include the date, time, duration, and magnitude of excess emissions, the nature and cause of the excess, the corrective actions taken, and the preventive measures adopted;
- b. the date, time, and duration of each period during which any gas analyzer was inoperative, except for zero and span checks;
- c. a description of monitoring system repairs or adjustments made during the reporting period;
- d. the averaging period used for data reporting;
- e. results of the NO_x limit calculation for each 12 month period completed in the report;
- f. results of the CO limit calculation for each 12 month period completed in the report; and
- g. A negative declaration when no emission or operational limits were exceeded during a reporting period.

2. The semi-annual reports shall be submitted according to the schedule below:

Required Submittal Date	Reporting Period
On or before July 31 of each year	The previous 6-month period from January through June
On or before January 31 of each year	The previous 6-month period from July through December

3. In addition to the information above, the semi-annual report submitted in January of each year shall also include the following information for the previous calendar year:
 - a. a summary of the corrective maintenance performed on units B1, B2, Aux1, GE1 and GE2;.
 - b. the total fuel consumption and hours of operation of units B1, B2, Aux1, GE1 and GE2;
 - c. the total Kw-Hr for units GE1 and GE2; and
 - d. a written statement showing the actual emissions of NOx and CO from units B1, B2, Aux1, GE1 and GE2.

VIII. GENERAL FACILITY REQUIREMENTS

- A. At all times, including during routine startup and shutdown events, breakdown conditions, and emergency situations, the Permittee shall, to the extent practicable, maintain and operate all equipment, including associated air pollution control and emissions monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions.
- B. All emissions, including those associated with emergency situations and breakdown conditions shall be included in all emissions calculations and demonstrations of compliance with the annual mass emission limits in this permit.
- C. A copy of this permit must be posted on all EBRVs or LNGRVs using NEG and the original permit shall be maintained by EPA Region 1.
- D. Any EBRV or LNGRV while moored and regasifying at NEG must comply with

this permit, and this permit applies while the EBRV or LNGRV is moored and regasifying at NEG. In addition, the requirements of the following sections apply when any EBRV or LNGRV is moored at the facility and not regasifying:

- i. V.A.1.a.
- ii. V.A.2.a.
- iii. V.A.3.a.
- iv. V.A.4.a.
- v. V.A.9.
- vi. V.B.1. & 2.
- vii. VI.B.6. & 7.
- viii. VI.D.1.j. & k.

IX. RIGHT OF ENTRY

The Permittee shall allow all authorized representatives of EPA, upon presentation of credentials, to enter upon or through any premises of the Permittee, including EBRVs, LNGRVs, and other facilities and areas where records required under this permit are kept. The Permittee shall allow such authorized representatives, at reasonable times,

- to access and copy any records that must be kept under this permit,
- to inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit, and
- to sample or monitor substances or parameters for the purpose of assuring compliance with this permit.

EPA will make reasonable efforts to coordinate any entry on an EBRV or LNGRV with the U.S. Coast Guard.

X. TRANSFER OF OWNERSHIP

In the event of any changes in control or ownership of NEG, this permit shall be binding on all subsequent owners and operators. The Permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions. Notification shall be by letter with a copy forwarded to the EPA.

XI. SEVERABILITY

The provisions of this permit are severable, and, if any provision of the permit is held invalid, the remainder of this permit will not be affected thereby.

XII. OTHER APPLICABLE REGULATIONS AND LAWS

A. The Permittee shall construct and operate NEG in compliance with all other applicable provisions of federal and state regulations including, but not limited to, the following:

Federal New Source Performance Standard 40 CFR 60, Subpart 60 Subpart Db;
310 CMR 7.02(8)(H) - Particulate Emission Limitation for New Fossil Fuel;
310 CMR 7.05 - Sulfur Content of Fuels;
310 CMR 7.06 - Visibility;
310 CMR 7.09 - Dust, Odor: Construction and Demolition;
310 CMR 7.10 - Noise;
310 CMR 7.22 - Sulfur Dioxide Emission Reduction for the Purpose of Reducing Acid Rain;
310 CMR 7.24 - Organic Material Storage and Distribution;
310 CMR 7.26 Industrial Performance Standards for Engines and Turbines; and
310 CMR 8.00 - Prevention and Abatement of Emergency episodes.

B. The Permittee shall provide EPA a copy of the incidental take statement from the National Marine Fisheries Service which the Permittee must obtain. The Permittee's receipt of the incidental take statement is sufficient to make this permit effective, and the Permittee must supply EPA a copy within 2 business days of receiving it.

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XIII. AGENCY ADDRESSES

All correspondence required by this permit shall be forwarded to:

Air Compliance Clerk (SEA)

U.S. EPA New England

One Congress St, Suite 1100

Boston, MA 02114-2023