

US EPA ARCHIVE DOCUMENT



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

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

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 (MassDEP) and approved by the U.S. Environmental Protection Agency (EPA). This amended permit authorizes Northeast Gateway Energy Bridge, L.L.C. (Permittee or NEG LLC) to operate the Northeast Gateway Deepwater Port (NEG Port) 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 the NEG Port and the vessels that use the NEG Port 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comes last, and shall remain in effect only as long as NEG LLC continues to hold an incidental take statement or until rescinded by or surrendered to EPA.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 does not relieve the Permittee from the obligation to comply with applicable state and federal air pollution control rules and regulations.

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Curtis H. Spalding  
Regional Administrator  
EPA Region 1-New England

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Date

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### 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
DPA	Deepwater Port Act
DWP	Deepwater Port
EPA	Environmental Protection Agency
EBRV	Energy Bridge <sup>TM</sup> Regasification Vessel
g	gram
hr	hour
kg	kilogram
kW	kilowatt
lbs	pounds
LLC	Limited Liability Company
LNG	liquid natural gas
LNGRV	Any vessel that regasifies LNG
MassDEP	Massachusetts Department of Environmental Protection
MMBtu	million British thermal units
MMPA	Marine Mammal Protection Act
NEG Port	the DWP operated by Northeast Gateway Energy Bridge, L.L.C.
NEG LLC	Northeast Gateway Energy Bridge, L.L.C.
NOx	nitrogen oxides
Permittee	Northeast Gateway Energy Bridge, L.L.C.
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in diameter
ppmv	parts per million by volume
ppmvd	parts per million by volume on a dry basis
ppmw	parts per million by weight
OIP	Operator Inspection Plan
SO <sub>2</sub>	sulfur dioxide
Scfm	standard cubic feet per minute
SCR	Selective Catalytic Reduction
SSMP	startup, shutdown, and malfunction plan
STL <sup>TM</sup>	Subsea Submerged Turret Loading <sup>TM</sup>
tpy	tons per year
VOC	volatile organic compounds

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## **I. DESCRIPTION OF THE NEG PORT**

The NEG Port consists 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 will use a fleet of specially designed Energy Bridge™ Regasification Vessels (EBRV) to deliver liquid natural gas (LNG) to the NEG Port. 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 (1<sup>st</sup>) 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 an emergency nonroad engine rated 3650 kilowatt (kW) at its electric generator. During transport, the boilers produce steam for steam turbines to generate electricity needed to power the ship's electric propellers. While moored at the NEG Port, the boilers produce steam used to generate electricity and vaporize the LNG. The emergency nonroad engine is used for power in the event of an emergency situation, as defined in section IV. of this permit.

The second (2<sup>nd</sup>) generation vessels have a fourth fossil fuel fired combustion unit (a 100 MMBtu/hr auxiliary boiler) allowing an increased regasification rate. Second generation vessels also have an emergency nonroad engine rated 3860 kilowatt (kW) at its electric generator.

The third (3<sup>rd</sup>) generation vessels have a similar configuration to 2<sup>nd</sup> generation vessels with one exception; the auxiliary boiler has a heat input rating of 157 MMBtu/hr.

## **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 the NEG Port, NEG LLC must first apply for and receive approval from EPA Region 1 before the LNGRV moors and regasifies at the NEG Port.

Unit ID Number	Description
B1 and B2	Two 224 MMBtu/hr natural gas-fired boilers with 0.1% sulfur fuel oil used for lighting of burners until the flame is stabilized: 1 <sup>st</sup> , 2 <sup>nd</sup> , and 3 <sup>rd</sup> Generation Vessels
Aux1	One 100 MMBtu/hr natural gas-fired boiler: 2 <sup>nd</sup> Generation Vessel
Aux2	One 157 MMBtu/hr natural gas-fired boiler: 3 <sup>rd</sup> Generation Vessel
GE1	3650 kW Diesel engine: 1 <sup>st</sup> Generation Vessel
GE2	3860 kW Dual-fired engine: 2 <sup>nd</sup> and 3 <sup>rd</sup> 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 the NEG Port.

### III. FACILITY LOCATION

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

Latitude: N 42<sup>0</sup> 23' 38.46" - 42<sup>0</sup> 23' 56.40"

Longitude: W 70<sup>0</sup> 35' 31.02" - 70<sup>0</sup> 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 MassDEP 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.

*Emergency Nonroad Engine* Nonroad engine used only in an emergency situation

*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; or
3. the need for operation of unit GE1 or GE2, which may include, but not limited to events such as the loss of flame in B1 or B2, the malfunction of a steam turbine generator, or the detection of unstable electrical load by the ship's computer.

*Energy Bridge<sup>TM</sup>*  
*Regasification Vessel*  
*(EBRV)*

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

*First (1<sup>st</sup>) Generation*  
*Vessel*

First (1<sup>st</sup>) Generation Vessel includes EBRV *H.2218 Excellence* and *H.2237 Excelerate* or LNGRVs with identical emission units as EBRV *H.2218 Excellence* and *H.2237 Excelerate*.

*Initial startup*

The moment at which the first piece of permitted equipment on a particular EBRV or LNGRV is set in operation at the NEG Port after that particular EBRV or LNGRV's second connection to the buoy regardless of how much cargo was previously gasified.

*Liquid Natural Gas*  
*Regasification Vessel*  
*(LNGRV)*

Any vessel that regasifies LNG.

*Nonroad Engine*

Compression- or spark-ignition engine used on a piece of equipment that is self-propelled (see paragraph (1)(i) in the nonroad engine definition at 40 CFR § 1068.30)



*Particulate matter* Any material, except uncombined water, that exists in a finely divided form as a liquid or solid at standard conditions.

*Routine shutdown event* 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.

*Routine startup event* 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.

*Second (2<sup>nd</sup>) Generation Vessel* Second (2<sup>nd</sup>) Generation Vessel includes EBRV *H.2254 Explorer and H.2263 Express* or LNGRVs with identical emission units as EBRV *H.2254 Explorer and H.2263 Express*.

*Third (3<sup>rd</sup>) Generation Vessel* Third (3<sup>rd</sup>) Generation Vessel includes EBRV *H.2270 Exquisite, H.2271 Expedient, and H.2272 Exemplar* or LNGRVs with identical emission units as EBRV *H.2270 Exquisite, H.2271 Expedient, and H.2272 Exemplar*.

## V. EMISSION AND OPERATIONAL LIMITS

**V.A Emission Limits:** Nitrogen Oxide and Carbon Monoxide emission limits are based on a three-hour block average. All other emissions in all other circumstances 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<sub>x</sub>):  
0.018 Pounds per million British Thermal Units (lbs/MMBtu) or a maximum of 4.0 pounds per hour (lbs/hr) whichever is more stringent.
  - b. Carbon Monoxide (CO):  
0.044 lbs/MMBtu or a maximum of 9.8 lbs/hr whichever is more stringent.
  - c. Sulfur Dioxide (SO<sub>2</sub>):  
0.0006 lbs/MMBtu or a maximum of 0.13 lbs/hr whichever is more stringent.
  - d. Volatile Organic Compounds (VOC):  
0.005 lbs/MMBtu a maximum of 1.2 lbs/hr whichever is more stringent.
  - e. Particulate Matter less than 10 microns (PM<sub>10</sub>):  
0.0019 lbs/MMBtu or a maximum of 0.42 lbs/hr whichever is more stringent.
  - f. Particulate Matter less than 2.5 microns (PM<sub>2.5</sub>)  
0.0019 lbs/MMBtu or a maximum of 0.42 lbs/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<sub>x</sub>:  
0.018 lbs/MMBtu or a maximum of 1.8 lbs/hr whichever is more stringent.
    - b. CO:  
0.044 lbs/MMBtu or a maximum of 4.4 lbs/hr whichever is more stringent.

- c. SO<sub>2</sub>:  
0.0006 lbs/MMBtu or a maximum of 0.06 lbs/hr whichever is more stringent.
  - d. VOC:  
0.005 lbs/MMBtu or a maximum of 0.5 lbs/hr whichever is more stringent.
  - e. PM<sub>10</sub>:  
0.0019 lbs/MMBtu or a maximum of 0.19 lbs/hr whichever is more stringent.
  - f. PM<sub>2.5</sub>:  
0.0019 lbs/MMBtu or a maximum of 0.19 lbs/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 auxiliary boiler Aux2 at any time.
- a. NO<sub>x</sub>:  
0.018 lbs/MMBtu and a maximum of 2.8 lbs/hr.
  - b. CO:  
0.044 lbs/MMBtu and a maximum of 6.9 lbs/hr.
  - c. SO<sub>2</sub>:  
0.0006 lbs/MMBtu and a maximum of 0.092 lbs/hr.
  - d. VOC:  
0.005 lbs/MMBtu and a maximum of 0.85 lbs/hr.
  - e. PM<sub>10</sub>:  
0.0019 lbs/MMBtu and a maximum of 0.29 lbs/hr.

f.  $PM_{2.5}$ :

0.0019 lbs/MMBtu and a maximum of 0.29 lbs/hr.

4. GE1 and GE2 shall have a valid Engine International Air Pollution Prevention (EIAPP) certificate, certifying the engine meets the applicable emission standards of Annex VI (NO<sub>x</sub> emission standard of 12.1 g/kWh (based on 720 RPM)) of the International Convention for the Prevention of Pollution from Ships, Marine Pollution (MARPOL) Protocol.
5. The total CO emissions from units B1, B2, Aux1, Aux2, GE1, and GE2 shall not exceed 99 tpy on a 12-month rolling basis.
6. For the first 11 months of operation, the monthly CO emission from units B1, B2, Aux1, Aux2, GE1 and GE2 shall not exceed 24.75 tons.
7. The Permittee shall not allow the discharge of ammonia (NH<sub>3</sub>) into the atmosphere in excess of 10 parts per million by volume on a dry basis (ppmvd) @ 3% O<sub>2</sub> (1-hour average) from the Selective Catalytic Reduction (SCR) systems controlling B1, B2, Aux1, and Aux2.
8. The Permittee shall not discharge into the atmosphere from any single source of emissions whatsoever any emissions of smoke with a shade, density or appearance equal to or greater than 20% 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 40%.

#### **V.B Operational Limits**

1. On or before the date of initial startup and continuously thereafter, the Permittee shall install, operate, and maintain an SCR for the control of NO<sub>x</sub> emissions from units B1, B2, Aux1, and Aux2.
2. B1 and B2 shall fire fuel oil only when lighting burners and shall discontinue the firing of fuel oil when the burner flame has been stabilized at which point

the burner will switch to firing solely natural gas.

3. The maximum sulfur content in fuel oil for B1 and B2 shall not exceed 0.1% by weight.

The limit for maximum sulfur content in fuel oil may decrease in the future as required by state and/or federal regulations. The Permittee must comply with any future, applicable and more stringent state and/or federal regulations.

4. Fuel oil for B1 and B2 shall be limited to:
  - i. 800 kg per vessel per one-hour period;
  - ii. 9,600 kg per vessel per 24-hour period; and
  - iii. 640,000 kg per 12-month rolling period for the entire port.
5. 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.
6. The maximum total heat input to either unit B1 or B2 shall not exceed 224 MMBtu/hr.
7. The maximum total heat input to Aux1 shall not exceed 100 MMBtu.
8. The maximum total heat input to Aux2 shall not exceed 157 MMBtu
9. GE1 and GE2 shall operate only under an emergency situation, as defined in section IV. of this permit.
10. The maximum hourly operations for GE1 and GE2 combined shall not exceed 100 hrs on a 12-month rolling average basis Port-wide.
11. GE2 shall be restricted to operate only in natural gas mode, with diesel fuel oil only used as a pilot fuel.
12. The sulfur content of diesel fuel oil used in GE1 shall not exceed 0.5% by

weight through calendar year 2015 and 0.1% by weight from 2016 onward.

13. The sulfur content of diesel fuel oil used in GE2 shall not exceed 0.5% by weight through calendar year 2015 and 0.1% by weight from 2016 onward.

14. 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 to EPA for review and approval by EPA in writing. The plan shall pertain to units B1, B2, Aux1, Aux2, 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<sub>x</sub> 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)

- a. 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:
  - i. procedures for operating and maintaining the emission units during routine startup and shutdown periods and breakdown conditions; and
  - ii. 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 NO<sub>x</sub> 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 NO<sub>x</sub> and CO emissions from units B1, B2, Aux1, and Aux2.
  - 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. Within fifteen days following the end of each calendar month, the Permittee shall determine monthly emissions of CO from units B1, B2, Aux1, Aux2, 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.
- c. The Permittee shall determine total monthly and annual CO emissions using the following equation:

For B1 and B2:

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

For Aux1:

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

For Aux2:

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

For GE1:

$(\text{hours of operation (hrs)}) \times (26.9 \text{ lbs/hr}) \times (\text{Tons}/2000 \text{ lbs})$

For GE2:

$(\text{hours of operation (hrs)}) \times (26.6 \text{ lbs/hr}) \times (\text{Tons}/2000 \text{ lbs})$



$$\text{Total CO emissions} = B1 + B2 + \text{Aux1} + \text{Aux2} + \text{GE1} + \text{GE2}$$

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<sub>x</sub>, CO, VOC, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>

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, Aux1, and Aux2. The plan will identify the operational ranges that indicate compliance within the emission limits for NO<sub>x</sub>, VOC, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. 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, Aux2, and GE2.
- b. The Permittee shall install and operate a non-resettable totalizing flow meters to measure the volume of fuel oil used by units B1, B2, GE1, and GE2.

4. Engine Use

The Permittee shall install and maintain non-resettable elapsed operating hour meters to accurately indicate the elapsed operating time of 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, Aux1, and Aux2.

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, Aux1, and Aux2.

**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, and Aux2.

Emission Units	Pollutants	Fuel
B1, B2, Aux1, and Aux2.	NOx, VOC, CO, ammonia	BOG or regasified LNG

- ii. The following test methods shall be used:
- A. Performance tests for emissions of NO<sub>x</sub> 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 PM<sub>10</sub> and PM<sub>2.5</sub> shall be conducted by using EPA Methods 201A and 202.
  - 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 SO<sub>2</sub> 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<sub>x</sub>, VOC, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and CO in lbs/MMBtu and lbs/hr;
    - B. the emissions of ammonia in ppmvd corrected to 3% oxygen;
    - C. the fuel flow rate for B1, B2, Aux1, and Aux2, under which the tests were conducted. The values shall be expressed in gallons for fuel oil and standard cubic feet for gas;
    - D. the exhaust flow rate in scfm under which the tests were conducted; and
    - E. 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. of this permit.
- b. Subsequent Performance Tests
- i. The Permittee shall conduct performance tests on the exhaust stack gases from units B1, B2, Aux1, and Aux2 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,

Aux1, and Aux2 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 quantity, in kg, and maximum sulfur content of fuel oil used by units B1 and B2.
  - c. The results of the calculations required by section VI.B.1.b and c.

- d. Results of all performance tests.
  - e. The EIAPP valid certificate for GE1 and GE2
  - f. The hours of individual operation for units GE1 and GE2.
  - g. The volume of gas consumed on an hourly basis by units B1, B2, Aux 1 and Aux2.
  - h. The results of the tests performed to determine the sulfur content of the BOG.
  - i. The documents from the fuel supplier certifying compliance with the fuel sulfur content limit.
  - j. The operating hours of units B1, B2, Aux1, and Aux2 during each calendar month.
  - k. The temperature of the exhaust at the inlet to the catalysts in the SCR systems serving units B1, B2, Aux1, and Aux2.
  - l. The pressure at the inlet and outlet ports of the SCR systems serving units B1, B2, Aux1, and Aux2.
  - m. The occurrence and duration of any routine startup event, routine shutdown event, breakdown condition, or emergency situation.
  - n. Any information required by the SSMP.
  - o. The time and date of arrival and departure for each EBRV or LNGRV.
  - p. The time and date that regasification begins and ends for each EBVR 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 Initial Startup**

1. The Permittee shall notify EPA in writing of the:
  - a. 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;
  - b. actual date of initial startup and steady state operation of the NEG Port

(i.e., the end of the initial startup period) within fifteen (15) days after the 1<sup>st</sup> day of steady state operations;

- c. date of receipt of the first shipment to the NEG Port;
- d. location where records required by this permit will be maintained.

#### **VII.B Exceedances**

The Permittee shall notify EPA by facsimile, electronic mail, or telephone no later than three days after the occurrence of an emissions exceedance. The Permittee shall submit a written report no later than seven days after the occurrence of an emissions exceedance..

#### **VII.C Breakdown Conditions**

1. The Permittee shall notify EPA by facsimile, electronic mail, or telephone no later than three days after the occurrence which constitutes a breakdown condition. Such notification shall identify:
  - a. the time at which the breakdown condition was discovered,
  - b. the specific location, and
  - c. the equipment involved.
2. Within seven days 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 the NEG Port 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 CO limit calculation for each 12 month period completed in the report; and
  - f. 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, Aux2, GE1 and GE2;
  - b. the total fuel consumption of units B1, B2, Aux1, and Aux2;
  - c. the total hours of operation of units B1, B2, Aux1, Aux2, GE1 and GE2
  - d. a written statement showing the actual emissions of CO from units B1, B2, Aux1, and Aux2.

## **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 the NEG Port and the original permit shall be maintained by EPA Region 1.
- D. Any EBRV or LNGRV while moored and regasifying at the NEG Port must comply with this permit, and this permit applies while the EBRV or LNGRV is moored and regasifying at the NEG Port. 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.7.
  - v. V.B.1. & 2.
  - vi. VI.B.6. & 7.
  - vii. VI.D.1.k. & l.

## **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 the NEG Port, 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 the NEG Port 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.

### **XIII. AGENCY ADDRESSES**

All correspondence required by this permit shall be forwarded to:  
Air Compliance Clerk  
Mail Code: OES04-2  
U.S. EPA New England  
5 Post Office Square, Suite 100  
Boston, MA 02109 - 3912