



February 28, 2007

Mr. Brendan McCahill  
Environmental Engineer  
U.S. Environmental Protection Agency – New England  
1 Congress Street  
Suite 1100, Attn. CAP  
Boston, MA 02114-2023

*Re: Northeast Gateway Energy Bridge, LLC Comments on Draft Air Permit  
RG1-DPA-CAA-01*

Dear Mr. McCahill:

The purpose of this letter is to provide comments by Northeast Gateway Energy Bridge, L.L.C. (Northeast Gateway) on the draft Clean Air Act permit that EPA is proposing to issue for our LNG Deepwater Port off the coast of Massachusetts, the Northeast Gateway (NEG) Project. We appreciate the opportunity to comment on the draft air permit. Northeast Gateway believes that our comments can help EPA improve the permit since we are in a unique position with regard to experience with on-vessel regasification and related deepwater ports. Our affiliated companies' actual operating experience over the past several years with the only three commissioned LNG regasification vessels in the world as well as the only permitted and operating deepwater port for regasification vessels (Gulf Gateway) provides us with a valuable perspective with regard to the practicality of the permit conditions proposed by EPA.

We have divided our comments into two sections. The first section contains four major comments which could affect a number of draft permit conditions. The second section contains comments which are more straightforward, require little explanation, and likely affect a more limited number of permit conditions.

### **Major Comments**

- 1. EPA should revise Conditions II and VIII.D of the permit to make it clear that the permit applies only to LNG vessel emissions occurring during regasification (e.g. “any vessel while regasifying at the DWP must comply with this permit and this permit applies only while the vessel is regasifying at the DWP”), and remove sources unrelated to regasification (In1, EmGen1, Life1, Res1) from the permit.** The final permit should only apply to the emissions related to LNG regasification, and not those associated with other activities (“hotelling”) while moored at the port (e.g., testing of lifeboat engines,



etc.). Conditions II and VIII.D of the draft permit currently state that it applies to all emissions while a vessel is moored, and the permit also includes sources completely unrelated to regasification (i.e., In1, EmGen1, Life1, and Res1 shown on the equipment list in Section II). This is inconsistent with EPA's previous positions on permitted emissions sources for similar Deepwater Ports in both Region 6 (which excluded hotelling emissions when it issued the permit for the similar Gulf Gateway Energy Bridge™ port) and Region 2. EPA Region 2 has specifically stated:

*“Consistent with the guidance provided in the October 28, 2003 EPA letter from Charles J. Sheehan, Regional Counsel, EPA Region 6 to Mr. Michael Cathey and Ms. Diana Dutton, from El Paso Energy Bridge Gulf of Mexico, L.L.C. and Akin, Gump, Strauss, Hauer & Feld, L.L.P., respectively, EPA Region 2, in coordination with our OAQPS office, has determined that certain emissions from the vessels should be counted toward the PTE (potential to emit) of the FSRU. More specifically, for PSD applicability purposes, the vessel emissions related to off-loading and on-board processing of the LNG count towards the PTE of the FSRU and that emissions related to hotelling and propulsion of the vessel do not count towards the PTE of the FSRU.”<sup>1</sup>*

EPA Region 1 has previously noted language in the Massachusetts State Implementation Plan (SIP) (Regulations 310 CMR 7.00, App. A) which indicates that hotelling emissions may be included with stationary sources. In practice, however, DEP does not include hoteling emissions in its stationary source permits. We have reviewed numerous major source permits in Massachusetts that should have included hoteling emissions under a literal reading of 310 CMR 7.00 App. A. Not a single permit listed or considered hoteling emissions.<sup>2</sup> DEP's practice of excluding vessel emissions from stationary source permits is consistent with DEP's SIP inventory, which for the last ten years has counted hoteling emissions as mobile, not stationary, source emissions.<sup>3</sup>

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<sup>1</sup> March 9, 2006 letter from EPA Region 2 to Broadwater Energy.

<sup>2</sup> We have reviewed a number of draft and final Title V Operating Permits from major sources in Massachusetts that accept deliveries or offload product via marine vessels. The Title V facility permits reviewed include those for Distrigas LNG Terminal in Everett, Exxon Terminal in Everett, Deer Island Treatment Plant in Winthrop, U.S. Gypsum in Charlestown, Mystic Station in Charlestown/Everett, Mobil Oil Terminal in East Boston, Canal Station in Sandwich, Salem Harbor in Salem, Citgo Petroleum in Braintree, and Brayton Point Station and Somerset Station in Somerset, among others. The U.S. Gypsum permit lists “Ship Unloading” as an emissions unit but only fugitive particulate emissions from the unloading process are considered. Additionally, the Citgo permit lists an insignificant activity of “Marine Loading” but there is no indication that this refers to vessel hotelling emissions and not attempt to systematically regulate all vessel emissions from moored vessels

<sup>3</sup> Categorizing hoteling emissions as mobile source emissions is also consistent with EPA's prior decisions, as noted above, and consistent with the Clean Air Act's distinct treatment of stationary and mobile sources. As EPA is aware, the Deepwater Port Act only allows the use of state regulations to the extent they are



Finally, we believe that allowing the permit to apply to all emissions while moored at the NEG may have serious safety and unintended adverse environmental consequences. Due to scheduling reasons an EBRV may reach the vicinity of the port in advance of its scheduled delivery window. The safest place for the vessel to stand by will be moored to one of the buoys at the NEG. If the hoteling emissions were to be counted the vessel may be forced to anchor at an alternate location or loiter in the area but not at the NEG deepwater port. Obviously the safest anchorage is moored to the buoy within the safety zone of the deepwater port.

- 2. EPA should clearly state that the permit covers LNG regasification vessels (LNGRVs) other than Excelerate Energy’s own Energy Bridge Regasification Vessels™ (EBRVs). The permit should include a statement that vessels similar to the EBRVs could be used at the Port if regasification emissions (expressed in lbs/hr) are less than or equal to the limits specified in the permit. In addition, EPA should specifically allow the use of the LNGRVs described in EPA’s draft permit for the Neptune LNG LLC facility, which EPA has already reviewed.** This issue was identified in the permit application—i.e., “Although these first two generations of [EBRVs] are the only [LNGRVs] known to be able to regasify at the Port (and the only vessels doing so for the first few years of Port operation), the mooring system is designed to handle other and potentially larger [LNGRVs] that may come into service in the future”—and this language needs to be reflected in Section I of the permit. Although Section IV of the draft permit defines “EBRV” as “*Energy Bridge Regasification Vessel or any similar vessel that vaporizes LNG while moored at the DWP*”, the term EBRV is a trademark, and should be replaced with the more generic term “LNGRV” except where the term is specifically referring to Excelerate Energy’s vessels. More importantly, Section I uses the term “EBRV” to refer to only Excelerate Energy’s vessels, the equipment list in Section II identifies only the equipment that is on Excelerate Energy’s vessels, and some of the subsequent draft permit conditions are so specific that only Excelerate Energy’s vessels could possibly comply with them. Northeast Gateway acknowledges that EPA cannot issue the permit to apply to any LNGRV regardless of design, but we are requesting a general statement that other similar vessels could be used if (a) regasification emissions (expressed in lb/hr) were less than or equal to those of Excelerate Energy’s EBRVs, or (b) EPA approves their use. We recognize that the specific equipment listing in Section II many of the

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consistent with federal law. *See* 33 U.S.C. § 1518(b). Accordingly, even if Massachusetts regulated hoteling emissions as stationary sources, EPA should deem this practice inconsistent with federal law on marine vessels, mobile sources and stationary sources.



- requirements in Sections V-VII are geared towards the equipment on Excelerate's EBRVs; however, we are requesting that EPA acknowledge that permit conditions "similar to" these would apply to other LNGRVs using the Port.
- 3. EPA should remove monitoring and testing requirements related to analysis of sulfur content of boil-off gas for each shipment, emissions performance testing for PM for gas firing, and emissions performance testing for SO<sub>2</sub>.** These draft permit conditions related to monitoring (Section VI.B) and performance testing (Section VI.C) are unduly onerous and not technically justifiable for vessels burning natural gas. As we have discussed with EPA previously, traditional stationary source emissions testing on international vessels with severe space constraints that arrive with relatively short lead times, leave within a matter of several days, and may be in a pitching sea, present unique challenges. The requirements to analyze the sulfur content of boil-off gas (BOG) from each LNG shipment (VI.B.5), test PM from gas-fired sources (VI.C.1.a.i), and use stack testing methods for SO<sub>2</sub> (as opposed to analyzing a fuel sample for sulfur) (VI.C.1.a.ii.F) are above and beyond what is even normally required for land-based stationary sources firing natural gas. Northeast Gateway requests that these analysis and testing requirements be removed, particularly since sulfur content of the BOG is expected to be non-detectable and the very low expected PM emissions from gas-fired sources can require very long test runs (multiple hours each) in order to obtain reliable results.
  - 4. EPA should redefine "initial startup" in Section IV of the draft permit as follows (or similar language):** *"The moment at which the first piece of permitted equipment on the LNGRV is set in operation at NEG after the first full regasification event for that particular LNGRV at NEG."* As has been found with the Gulf Gateway Energy Bridge™ port in Region 6, the terms "startup" or "initial startup" can have multiple interpretations for ports where multiple vessels each with multiple emissions sources are operated. For example, one interpretation could be the time that the port first accepts any delivery; another could be the first time that a given LNGRV delivers to the port; a third could be (as defined currently in Section IV of this permit) the first time that any permitted equipment on a given LNGRV is set in operation regardless of location. We would like to request that the definition of "initial startup" in Section IV of the permit be clarified so that startup of the port is not confused with startup of each vessel that may eventually moor at Northeast Gateway. This issue has been discussed at length with EPA Region 6 with regard to the Gulf Gateway project, and for both clarity and consistency we request that this definition be changed to "The moment at which the first piece of permitted equipment on the LNGRV is set in operation at NEG after the first full regasification event for that particular LNGRV at NEG." Therefore, initial startup will be defined as the commencement of the second regasification event for each LNGRV at the Port.



This will allow shakedown of all processes to occur during the initial regasification of each LNGRV at NEG.

### Specific Comments

5. Section IV. Definitions – We request that a *routine shutdown event* be defined similarly to *routine startup event* with regard to fuel firing in the equipment (i.e., from continuous operating levels to flame off).
6. V.A. Emissions Limits – Please remove all emissions limits expressed as lb/MMBtu or g/kWh; although we agree that the lb/hr limits are appropriate, lb/MMBtu rates are not necessarily guaranteed at all loads, as was shown in the permit application. Further, we feel that these mass per energy input or output limits are unnecessary since dispersion modeling compliance demonstrations were made using the short term emission limits (lbs/hr). CEMS data acquisition systems for NO<sub>x</sub> and CO will convert ppmv measurements to lbs/hr readings for compliance determinations.
7. V.A.7 and V.A.8 - Emissions Limits. For operational flexibility during the first 11 months of operation, please increase the monthly limits on NO<sub>x</sub> and CO by a factor of three. Specifically, please change the monthly NO<sub>x</sub> limit in V.A.7 to 12.3 tons and change the monthly CO limit in V.A.8 to 24.75 tons.
8. VI.B.1.d and VI.B.1.f - Monitoring Requirements. Since fuel flow to the boilers is measured and recorded in kg, we request that the boiler formulas be based on kg of fuel rather than on volume (mmscf). Also, actual emissions of NO<sub>x</sub> and CO are best tracked using data from the continuous monitors (which can be expressed in lb/mmBtu) rather than assuming that the maximum allowable emissions rates. Please change boiler emissions reporting formulas to read as follows: (fuel usage (kg) x (0.052682 mmBtu/kg) x (monitored pollutant emissions factor in lb/mmBtu) x (Tons/2000 lbs). (This will eliminate the need for the notes below the formulas.)
9. VI.B.2 – Monitoring Requirements. We request that this provision be reworded as follows: *“In addition to the gas analyzer, no less than 60 days before initial startup, the permittee shall submit a plan for monitoring of operational parameters for units B1, B2, and Aux1. The plan will identify ranges of parameters within which operation will serve as an indication of compliance with emissions limits for VOC, SO<sub>2</sub>, and PM<sub>10</sub> (as well as NO<sub>x</sub> and CO, in the event that the gas analyzers are malfunctioning). The plan may include the following operational parameters: flue gas oxygen concentration, flue gas temperature, pressure differential at the SCR catalyst interface, or other factors as approved by EPA.”*



10. VI.B.3 – Monitoring Requirements. Please replace the Part 75 accuracy requirement with a Part 60 accuracy requirement. Flow meters have already been installed and integrated into the electronic recordkeeping system, but they do not necessarily meet Part 75 requirements.
11. VI.C.1.a.i. – Performance Tests. Please define the term “commissioning stage” in Section IV (Definitions).
12. VIII.D.1. – Semi-annual Reporting – Please clarify when the semi-annual reports should start (i.e., upon issuance of air permit, upon completion of construction, after first regasification, etc.).

We realize that the comments in the first section of this letter may take some additional consideration and discussion. However, it is extremely important to Northeast Gateway that they be addressed. It is for this reason that we have provided this letter well before the end of the comment period and make ourselves available at any time to discuss our comments. Thank you again for the opportunity to comment on the draft permit.

Please feel free to contact either Keith Kennedy of Tetra Tech EC, Inc. at (617) 457-8407 or me at (832) 813-7100 if you have any questions with regard to our comments.

Sincerely,

Mike Trammel  
Director – Environmental  
Excelerate Energy, L.L.C