RESPONSE TO COMMENTS

REGARDING THE REISSUANCE OF THE FOLLOWING NPDES PERMIT

NEPTUNE LIQUEFIED NATURAL GAS (LNG) DEEPWATER PORT
MA0040258

INTRODUCTION

On February 26, 2008, the New England office of the U.S. Environmental Protection Agency (EPA) submitted for public notice a draft National Pollution Discharge Elimination System (NPDES) permit (draft permit) to Neptune LNG LLC. EPA solicited public comments on the draft permit from February 26, 2008 through March 27, 2008. In addition, EPA heard comments on the permit at a public hearing held on March 27, 2008, at the Beverly Public Library, 32 Essex Street, Beverly, Massachusetts. At that public hearing, EPA extended the comment period until April 3, 2008 to allow interested citizens further opportunity to comment.

The draft NPDES permit would authorize and set limits for the discharge of hydrostatic test water, non-contact cooling water and seawater withdrawal from the Neptune LNG deepwater port. The facility proposes to discharge to the Massachusetts Bay.

During the public-notice (comment) period EPA received comments from the following individuals on behalf of various organizations or themselves. All comments were submitted in writing unless otherwise noted in the responses below.

Polly Bradley, Nahant Safer Waters in Massachusetts, Inc. (SWIM)

Priscilla M. Brooks, Ph.D., Director, Ocean Conservation Program, Conservation Law Foundation

Margaret Hinrichs, SWIM

Phil Guidice, Commissioner, Massachusetts Division of Energy Resources

Philip C. Joyce

Nancy Hodgson Smith, SWIM

Douglas S. Jones, Environmental Manager, Neptune LNG LLC

Renee M. Mary

Heidi Roberts, Sierra Club

Mary Rodrick, SWIM

Mason Weinrich, Executive Director and Chief Scientist, Whale Center of New England

Paul Doremus, Acting Administrator for Program Planning and Integration, NOAA

In accordance with the provisions of 40 C.F.R. § 124.17, this document presents EPA's responses to comments, including all significant comments, received on the draft permit and details any changes made to the permit as a result of the comments.

EPA received several comments regarding proposed LNG deepwater ports that were not specifically related to the NPDES permit in question. EPA has responded to those comments to the extent they relate to other EPA functions. However, EPA does not represent any other

federal, state or local agency in responding to these comments and does not provide responses to comments concerning the responsibilities of such other agencies.

EPA's decision-making for this permit has benefited from the comments submitted. The information and arguments submitted in the comments resulted in a number of improvements to the permit. In addition, EPA noted some errors in the permit which were corrected. Changes from the Draft Permit, summarized below, are reflected in the Final Permit. These changes do not represent significant changes from the Draft Permit.

Changes Made in the Final Permit

1. The monitoring plan in Attachment A to the permit has been modified to allow data sharing for crepuscular monitoring.
2. Corrections were made to Attachment A to the permit. The changes were to replace "Northeast Gateway" with "Neptune LNG Project" in the last paragraph of Section 1.1 and repagination.
3. Paragraph I.B.1.c of the permit was revised to clarify the screen opening dimensions.
4. Part I.A. of the permit has been revised to include a limit to the total annual volume of seawater withdrawal through the cooling water intake structures.
5. Part I.B.1.a of the permit was revised to correct the depth of the cooling water intake structures.

RESPONSE TO COMMENTS

Comments 1 through 4 from Douglas Jones, Environmental Manager, Neptune LNG LLC

COMMENT 1

<u>Permit Part 1</u> – Page 2 of 8, Outfall 003, Flow Rate – The Neptune construction plan provides for two full volume discharges of sea water even under anticipated contingency situations. Neither seawater volumes will be treated with corrosion inhibitors. There are, however, several extreme contingency situations that could arise and could require a third fill and discharge to preserve the integrity of the installed systems. None of these are likely or anticipated. Without elaborating on them, Neptune would like to reserve the ability to discharge the total volume required to fill the pipeline and flowline three times instead of two times.

RESPONSE 1

The permit requirements in Part I of the permit cover <u>normal</u> commissioning and operating conditions. "Extreme contingency" and emergency situations are covered in the Standard Conditions in Part II of the permit. The Standard Conditions provide instructions for reporting and mitigation in the unlikely event of an upset or anticipated noncompliance.

COMMENT 2

<u>Attachment A</u> On page 1 of 5, last paragraph of Section 1.1, replace "Northeast Gateway" with "Neptune LNG Project". Under "Field Methods", page 2 of 5, we would like a statement added that states the crepuscular period samples will be shared with Northeast Gateway and the collection point will be midpoint between both deepwater point locations. Attachment A did not contain a page 5 of 5.

RESPONSE 2

EPA has made the first correction (replacing "Northeast Gateway" with "Neptune LNG Project") to Attachment A.

The comment refers to an arrangement with Northeast Gateway Deepwater Port to share data collected at a monitoring location between the two deepwater ports rather than to duplicate efforts in the same area. EPA has no objection to such data sharing, when appropriate. However, to ensure that Neptune be held responsible for the sample collection, whether or not Northeast Gateway participates, two sentences have been added to the last paragraph of section 2.3 of Attachment A which reads, "The permittee may, at its option and with the agreement of Northeast Gateway, LLC, share crepuscular period samples with Northeast Gateway, LLC, at the midpoint between their respective deepwater port locations. However, the preceding sentence shall not be construed to impose any obligations on Northeast Gateway, LLC, nor to affect in any way Northeast Gateway's obligations under its own NPDES Permit No. MA0040266, nor to diminish or relieve in any way the permittee's obligation to satisfy all requirements of this permit." EPA wishes to make clear that this provision in no way makes Northeast Gateway responsible for performing any requirements in this permit.

EPA has corrected the pagination error.

COMMENT 3

<u>Fact Sheet</u> – Section 2.1, 3rd line of first paragraph, should read, 'Additional 11.4-MW and 5.7-MW engines will be……' Page 18, first bullet should read, 'CWISs are located at least 17 feet below…'

RESPONSE 3

EPA notes the comments. The fact sheet will not be reissued (this response to comments explains any changes to the draft permit and serves as an addendum to the fact sheet). No changes to final permit have been made as a result of this comment.

COMMENT 4

Enclosed is the CORMIX analysis for commissioning discharges that Neptune's environmental consultant, Ecology and Environment, performed to model the impact of the thermal discharge on the marine environment.

RESPONSE 4

EPA notes the submittal of the letter report attached to Neptune's comment letter entitled, "*Neptune* LNG Project – Thermal Modeling Results for Vessel Commissioning Discharge" dated March 27, 2008. See response 8 below for additional discussion.

Comment 5 received from Paul Doremus, Acting Administrator for Program Planning and Integration, NOAA

COMMENT 5

NOAA agrees with the EPA's restrictions on daily water use and flow rate as included in the draft NPDES permit for the first 5 years of the Neptune Port's operations, since, even with the inclusion of three ship commissioning events, daily flow rates and daily water use levels would remain restricted to the thresholds that were evaluated under NEPA and

during NOAA's ESA, EFH and NMSA consultations. However, the permit should also include language acknowledging that the company agreed to modify regasification activities at the Port's two buoys to ensure that additional water use for the three commissioning events will not exceed the total annual water use values previously evaluated. It is NOAA's understanding that the licensing agencies (U.S. Coast Guard and Maritime Administration), in approving a change in the project's description to include commissioning, secured a commitment from Neptune, LLC that total annual water usage would not exceed values included in the project's Final Environmental Impact Statement (FEIS) and in consultations with NOAA. Subsequent to clarifying that additional water usage for ship commissioning will not exceed all previously evaluated levels for the Neptune Port, comments on the draft NPDES permit specific to each of NOAA's consultations are as follows:

NOAA's National Marine Fisheries Service (NMFS) previously evaluated the effects of discharges associated with the Neptune Port on listed species in a January 12, 2007 Biological Opinion issued to the Maritime Administration (MARAD) for the construction and operation of the Neptune Port. Consequently, no further consultation pursuant to Section 7 of the ESA is required. Reinitiation of consultation under the ESA would be required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) a new species is listed or critical habitat designated that may be affected by the action; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not previously considered; or (4) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered.

NMFS has also received an application from Neptune, LLC for take of marine mammals by Level B harassment incidental to construction and operation of the Neptune Port. NMFS is reviewing this application and has proposed to issue an incidental harassment authorization under the authority of Section 101(a)(5)(D) of the MMPA (16 U.S.C. 1361 et seq.) to Neptune, LLC to incidentally take, by harassment, small numbers of marine mammals during construction of the Neptune Port (73 FR 9092, February 19, 2008).

In addition, NMFS, in a letter dated July 14, 2006, provided Magnuson-Stevens Fisheries Conservation and Management Act Essential Fish Habitat (EFH) conservation recommendations to the U.S. Coast Guard (USCG) and Army Corps of Engineers. EPA incorporated NMFS's conservation recommendations into the draft NPDES permit relative to water usage and therefore the EFH consultation is concluded.

Finally, water discharge as allowed by the EPA NPDES permit for operation of the Neptune Port is likely to affect resources of the Stellwagen Bank National Marine Sanctuary. These effects were considered during consultations between the NOAA National Marine Sanctuary Program (NMSP) and the USCG and MARAD (on behalf of the EPA) pursuant to section 304 of the National Marine Sanctuaries Act. Recommendations made by NMSP to date (submitted July 17, 2006 and further clarified in a letter from the NMSP to the USCG/MARAD on December 7, 2006) as a result of those consultations are based upon the water rates and levels as described in the FEIS. Further consultation under the NMSA relative to water usage may be required if rates or levels associated with the Neptune Port were to exceed those considered in the FEIS.

RESPONSE 5

The final permit has been revised to include a requirement in Part I.A that total withdrawals of seawater through the cooling water intake structures not exceed 873 million gallons in any calendar year, to be consistent with the total water withdrawal estimates evaluated in the FEIS.

EPA agrees with NOAA that no further consultations are required. No further change to the final permit has been made as a result of these comments.

Comment 6 from Phil Guidice, Commissioner, Massachusetts Division of Energy Resources

COMMENT 6

The Massachusetts Division of Energy Resources (DOER) appreciates this opportunity for the public to provide comments on the draft National Pollution Discharge Elimination System (NPDES) permit for the Neptune Deepwater LNG port. While DOER is not making specific recommendations concerning this draft permit, DOER wishes to express its continued support for the Neptune project.

DOER is the state agency responsible for implementing and advocating for energy policies that ensure an adequate supply of reliable, affordable and clean energy for the businesses and residents of Massachusetts. We view the Neptune LNG project as a new and important supply of natural gas for the citizens of the Commonwealth. In fact, the ability of Neptune to be in-service by year-end 2009 was a critical consideration in the Commonwealth's approval of this project in December 2006 pursuant to the Governor's responsibilities under the federal Deepwater Port Act.

DOER recognizes the importance of and growing demand for natural gas to meet New England's energy need, especially to fuel space heating and electrical generation in peak winter months. Gas use in the electric power sector has risen sharply due to the influx of gas-fired power plants in New England over the past decade. Almost every power plant built in the past 10 years has been gas-fired. Gas currently fuels about 40% of the region's electricity supply. The region's electric grid operator, ISO-New England, has called for aggressive energy efficiency and demand-reduction actions, but recognizes that New England will continue to depend on natural gas-fired generation for a large percentage of its electricity. In addition to meeting the increasing electricity demand for gas, we see a need for more and diverse supply sources of natural gas for the traditional gas use in homes and businesses.

Multiple, independent reports verify that both Massachusetts and New England need additional supplies of natural gas as early as winter 2007/08 and definitely before 2010. Neptune LNG will be able to provide a new supply of energy within that timeframe. The company's investment in the Neptune port is a long-term commitment to operate the facility and bring new supplies to the Commonwealth. Therefore, in order to achieve an in-service date of 2009, the Commonwealth made best efforts to expedite decision-making on all state permits, licenses and authorizations required for the project, consistent with the state's legal authorities.

DOER appreciates EPA's efforts to carefully review the record for this NPDES permit. Our hope is that any issues that arise concerning the permit can be resolved expeditiously to allow this project to be built and operational by 2009.

RESPONSE 6

EPA appreciates DOER's concern that the NPDES permit be issued in a timely fashion and shares the goal of issuing the final permit to be effective as soon as possible. No changes to the final permit have been made as a result of this comment.

Comments 7 through 10 from Priscilla Brooks, Ph.D., Director, Ocean Conservation Program, Conservation Law Foundation:

COMMENT 7

Regulation of LNG Regasification Facilities Under NPDES Program

CLF supports the determination that moored vessels undertaking regasification operations, such as the proposed Neptune LNG facility, are subject to regulation under the NPDES similarly to other vessel-based or land-based industrial operations. CLF concurs that the requirements of the Clean Water Act Section 316(b) are applicable to the facility's cooling water intake structures and that the permit's requirements apply to all discharges from and intakes into the Neptune regasification vessels when they are interconnected with the buoys and integrated into the port.

RESPONSE 7

EPA notes the comment. No changes to the final permit have been made as a result of this comment.

COMMENT 8

Potential Impacts on Species/Aquatic Life

CLF notes that the proposed intake and discharge of seawater contemplated for the deepwater port infrastructure and vessel commissioning processes, 8.2 million gallons per day (MGD), is significant, particularly given that this quantity could be discharged over a very short time frame at the rate of 13,900 gallons per minute with a temperature differential as much as 10 degrees centigrade between the discharged water and the receiving waters of Massachusetts Bay. Although the commissioning discharge will be non-routine and the shuttle and regasification vessels (SRVs) will be granted only three attempts to meet the SRV regas performance specifications and pass the acceptance test, this discharge has the potential to cause negative impacts to aquatic life. EPA has requested that the permittee conduct and submit a CORMIX analysis to model the impact of these thermal discharges on the marine environment prior to the issuance of a final permit. CLF also notes that cooling water intake and thermal discharges related to port commissioning were not included in the Essential Fish Habitat (EFH) or the Endangered Species Act (ESA) reviews conducted by NOAA during the Environmental Impact Statement (EIS) process and that prior to the issuance of the final permit, EPA will seek review and comment from NOAA on these issues. The final permit must therefore take into account the results of the CORMIX modeling and the EFH and ESA reviews by NOAA and set intake and discharge limits that do not risk significant harm to marine life.

RESPONSE 8

As reported in response 4, Neptune has submitted CORMIX thermal modeling results which are provided herein as Attachment A. The model conservatively assumes a sustained 5,700 gpm

flow at the maximum temperature differential of 10ºC. The 13,900 gpm referred to in the comment would occur only in the event that the steam dump condenser is in operation and would not be sustained. Although the steam dump condenser is not expected to operate often, it is required to reject heat when the marine boilers must remain operating and the regas skid is temporarily shut down (this can occur during short shutdowns of the regas skids during commissioning or during stack emission testing at low gas sendout flows). Seawater will be used to supply the central freshwater coolers and dump condenser and freshwater generators. Seawater will be withdrawn from both the upper and lower sea chests, and the intake velocities at both sea chests will remain below 0.5 feet per second.

The model results indicate that the effects of the commissioning thermal discharges will cause negligible impacts to fish or marine mammals due to the limited water volume affected by temperature increases and due to the temporary nature of the discharge. Impacts associated with the intake of seawater were examined in the EIS and were included as part of the EFH and ESA reviews conducted by NOAA. The commissioning activities will not result in an increase in the annual water usage rate evaluated in the FEIS. EPA has revised the final permit to include this as a requirement, as recommended by NOAA (see comment 5).

COMMENT 9

Monitoring

CLF believes strongly that the permit should require strict monitoring of water quality and the likely entrainment and impingement of marine organisms by the cooling water intake structures. While the permit properly requires monitoring for water quality and entrainment, no such requirement has been set for the equally problematic phenomenon of impingement. The cooling water intake will be located mid-water, at least 17 feet below the surface, and will be equipped with an intake screen with openings no greater than 1 inch (NPDES Draft Permit No MA 0040258) which is large enough to allow eggs, larvae and other marine life to be entrained and adult organism to be impinged and killed or injured on the intake screens. CLF notes that there is a discrepancy between the draft permit requirement of 1 inch (implying a 1 by 1 inch dimension) and the Fact Sheet that states the uptake screen opening dimensions to be 1 by 12 inches in size – a dimension that could result in far more entrainment of marine life (NPDES MA0040258 Fact Sheet, p. 6). CLF supports the 1 by 1 inch screen opening required in the draft permit. During operation, water will be withdrawn at velocities up to 0.5 feet per second and there is potential for fish and other marine life mortality due to impingement on the intake screen.

CLF feels strongly that monitoring of impingement at the cooling water intake screen is essential and would reflect the Best Technology Available and must therefore be a condition of the permit, particularly as the proposed facility will operate in a very biologically rich and sensitive body of water (that, as EPA notes, provides Essential Fish Habitat for at least 21 species (NPDES MA0040258 Fact Sheet, p. A1)) and because this particular facility is one of the first of its kind not only in Massachusetts Bay, but in the entire Gulf of Maine. CLF does not agree with the assumption relied on by EPA from the FEIS, which "predicts that impingement losses should be minimal. This is largely due to the fact that pelagic species tend to be less susceptible to impingement than demersal ones, because they are stronger swimmers, because intake volumes are low, and because intake velocities are not high." (NPDES MA 0040258 Fact Sheet, p. 19). Because of the biological sensitivity and diversity of species in this area, the potential for significant impingement impacts exists, even at a depth of 25 feet, with a controlled intake velocity of 0.5 feet per

second and other aspects of facility design described in the Fact Sheet. (NPDES MA 0040258 Fact Sheet, pp. 16-19).

At a minimum, a video monitoring system should be affixed at the intake so that visual quantification of impingement can be carried out. Underwater video is widely use by commercial fishermen, marine scientists, ocean engineers, and search and recovery teams, including in the Massachusetts Bay, and is clearly readily available and within reach for a large scale and technologically sophisticated project of this kind, operating in waters that support a large diversity of fishes as detailed in the NPDES Fact Sheet Attachment A on Essential Fish Habitat. Monitoring of impingement reflects the Best Technology Available, is a reasonable and prudent requirement for this permit and should not add substantial burden in the context of a robust monitoring program.

RESPONSE 9

The commenter misinterprets the draft permit requirement in the permit that cooling water intake structures "maintain screen openings no greater than 1 inch." EPA intended to require that the screen wires be spaced no more than one inch apart, but did not intend to require that the screen produce 1 inch square openings. The reference to the screen dimensions, in the intake description section on page 6 of the fact sheet, was for informational purposes. The description mistakenly implies that both the screen (slot) spacing and the cross bar spacing (12 inches) are intended to minimize entrainment. In fact, the cross bar spacing is designed to structurally support the screening. EPA has clarified the description to read "CWISs maintain screen slot openings no greater than 1 inch" to reflect the slot shape of the openings and to clarify that the slot opening cannot exceed 1 inch, without regard to the slot width.

While underwater video is widely used in some applications, EPA disagrees with the inference in the comment that video monitoring of cooling water intake structures on large vessels is common or has been established as BTA. EPA knows of no other such monitoring program. Video monitoring of the intake screen would present significant technological challenges. For example, at more than 20 feet below the water surface, in the North Atlantic and within the recesses of a hull, ambient light would not be sufficient to generate useful video. Therefore, substantial lighting would be required. Frequent maintenance would be required of the camera and lighting ports to remove biofouling and ensure that images are of useful quality. Additionally, the presence of the lights would serve as an attractant and may actually increase the risk of impingement.

For the above reasons, a video monitoring program is not a component of the Best Technology Available for minimizing adverse environmental impact at this facility.

COMMENT 10

Adaptive Management

Because the vessel design and technology proposed for the Neptune regasification facility is relatively new and one of the first of its kind in the waters off New England, there will be unknowns that emerge during construction and operation. Impacts on aquatic life cannot be fully quantified until after the facility begins operation. Therefore, the monitoring provisions proposed in this draft permit and the additional monitoring recommended by CLF are necessary to ensure the protection of aquatic life in Massachusetts Bay. The final permit should also include an adaptive management plan that will be in place before construction and operation commences and that will specify the steps that need to be taken

to address impacts as they are discovered, including additional monitoring and mitigation measures.

EPA has acknowledged that even though the design of this facility has taken measures to reduce cooling water intake volume, "the vessels will still require large volumes of seawater" that will represent a new source of mortality for fish eggs and larvae (NPDES Fact Sheet, p. 19). Additionally, the impacts of the thermal plume are still not fully understood and additional modeling by the permittee has been requested by EPA. In order to ensure the proper level of environmental consideration while allowing the relatively new technologies in this LNG regasification project to move forward, there must be a rigorous adaptive management protocol in the final permit that will address the inevitable unknown factors that will come with this new use of our offshore ocean waters. A discussion of and requirements for Adaptive Management should be added to this permit and any other permits for offshore LNG regasification in Region 1.

Adaptive management is a process by which data that is collected on an ongoing basis informs real changes in practices to abate unanticipated environmental consequences and compensate for truly unavoidable impacts.[1] "Adaptive management is not a trial and error approach."[2] Rather, an adaptive management plan should be agreed on and put in place *before the facility begins operation*. A good adaptive management plan must be predicated on an appropriate plan for ongoing monitoring during operation of the facility to detect unexpected harm to the environment or unexpected conflicts with other uses.

The Adaptive Management Plan should include provisions for: (1) additional data collection by the project owner/operator in the event that a harmful impact is detected or suspected; (2) a mechanism by which the owner/operator will report back results of monitoring data collection and make such data publicly available; (3) thresholds over which the facility will take action to mitigate/eliminate harms; (4) a plan specifying the types of actions the facility will take in the event of each category of environmental impact; and (5) provisions for monitoring to assess whether the adaptive measures are effective at remedying the impact, and a re-evaluation of goals if it is determined that the prescribed actions are not working.[3] Finally, EPA should include a re-opener in this permit that would allow EPA to require the project to modify its operations for a portion or all of the facility if ongoing monitoring data reveals that the project's environmental impacts are significant.

RESPONSE 10

The NPDES permit regulations, and this permit in particular, contain several mechanisms to assist EPA in assessing the facility's impacts and, if necessary, taking responsive action.

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[1] See Shawn Smallwood and Linda Spiegel, California Energy Commission, *Assessment To Support An Adaptive Management Plan For The APWRA, (January 19, 2005), available at* http://www.biologicaldiversity.org/swcbd/Programs/bdes/altamont/CEC-assessment-mitigation-plan.pdf (last accessed 5/14/07).

[2] Id., at 2.

[3] Shawn Smallwood and Linda Spiegel, California Energy Commission, *Assessment To Support An Adaptive Management Plan For The APWRA*, (January 19, 2005), *available at* http://www.biologicaldiversity.org/swcbd/Programs/bdes/altamont/CEC-assessment-mitigation-plan.pdf (last accessed 5/14/07).

The permit contains monitoring requirements for each discharge outfall and a monitoring program in Part I.C. The Water Technical Unit of EPA Region 1's Office of Environmental Stewardship will review the regular monthly monitoring reports to ensure that discharges are meeting effluent limits prescribed in the permit, as well as for compliance with the conditions applicable to the intakes. In addition, the Ocean and Coastal Unit of EPA Region 1's Office of Ecosystem Protection will review the annual biological monitoring reports on an annual basis as meaningful data sets are developed. These annual reports will be submitted to the aforementioned EPA offices, to NMFS, and to the Stellwagen Bank National Marine Sanctuary Office.

If necessary and appropriate, EPA may modify, revoke, or terminate the permit pursuant to applicable procedures. See 40 C.F.R. §§ 122.62, 122.64, 124.5; Permit Part I.A.18.

Comments 11 through 13 from Polly Bradley, Margaret Hinrichs and Nancy Hodgson Smith, Nahant Safer Waters in Massachusetts, Inc. (SWIM).

COMMENT 11

The Northeast Gateway LNG facility has already been constructed nearby, so all the harmful effects of the Neptune project will in essence be doubled.

SWIM commented extensively in written and spoken testimony at the Northeast Gateway NPDES hearing. That testimony, and the EPA responses, are relevant to the Neptune NPDES permit application.

The EPA responses to comments at the Northeast Gateway hearing state that independent third party monitoring would be a "notable departure from standard NPDES program practice." SWIM's response to this is that the EPA "standard NPDES program practice" is inadequate and improper. Monitoring by an independent third party is still essential. Both SWIM and the Whale Center of New England voiced concern about and objection to the "standard NPDES program practice." SWIM also believes that the monitoring plan is inadequate in size and comprehensive-ness, recommending a plan similar to that required for the Massachusetts Water Resources Authority outfall monitoring plan.

The comments at the Northeast Gateway hearing and the EPA responses also address the issue of plankton loss, which the EPA states will have minimal impact on feeding whales. The EPA also states that if monitoring results in the future suggest an impact greater that anticipated, then the permit can be modified to address the issue.

SWIM firmly states that monitoring by the energy companies themselves is inadequate and thus unlikely to result in data that would ever require a change in the permit.

After reading the comments mailed to us by the EPA stating that the Whale Center of New England offered to participate in such a monitoring plan and that the EPA still has stuck to its original inadequate monitoring plan leaves us speechless (well almost!), disappointed and disillusioned over this entire process.

Qualified third party experts, not liquefied natural gas (LNG) corporations or governmental bodies, should be monitoring every step of the way. Improvements need to be made in monitoring the discharge of cooling water at the start-up and shut-down periods. The plankton, which are extremely sensitive to temperature, are subjected to temperature increases high enough to kill them even if they escape being entrained in the seawater withdrawn or being caught up with fish and other organisms in the intake screens

and racks. A monitoring program is needed with specific, quantitative limits designed to trigger action, including if necessary closing down the LNG terminal temporarily or permanently if limits are exceeded.

RESPONSE 11

EPA's NPDES program is governed by the regulations at 40 C.F.R. Part 122 and guided in part by the U.S. EPA NPDES Permit Writer's Manual (1996). The regulations require that NPDES permits include appropriate monitoring requirement, "including biological monitoring methods when appropriate." 40 C.F.R. § 122.48(a); see also id. §§ 122.44(i), 125.123(d)(2).

The comment raises three distinct arguments, which this response answers in turn.

First, the comment argues that the monitoring plan is inadequate in size and comprehensiveness, and suggests a monitoring plan comparable to that developed for the Massachusetts Water Resources Authority. The MWRA monitoring plan is indeed more complex than the monitoring required by this permit. However, while such mechanisms are appropriate for certain permits, they are not required for every permit, and are not necessary here. The volume of the MWRA discharge is several orders of magnitude greater than this proposed discharge. The MWRA is a continuous discharge of municipal sewerage of over 500 MGD. This permit allows for an intake of seawater at a maximum flow of 2.25 MGD during port operation, and an intake and discharge of 8.2 MGD during limited vessel commissioning activities. The monitoring program in the permit meets the requirements of 40 C.F.R. § 125.123(d)(2) and is appropriately scaled for the possible adverse environmental effects of this proposed project.

Second, the comment argues that monitoring conducted by the permittee (or outside consultants that the permittee hires) is inherently inadequate and "unlikely to result in data that would ever require a change in the permit." The monitoring requirements contained in a NPDES permit are enforceable permit requirements, and the permittee is legally obligated to comply with them. A permittee that does not conduct monitoring in compliance with permit requirements, or does not truthfully report the results of such monitoring, may be subject to civil and/or criminal penalties. See 40 C.F.R. § 122.41. As the NPDES Permit Writer's Manual explains[4]:

> Requiring the permittee to routinely self-monitor its discharge and to report the analytical results of such monitoring provides the permitting authority with the information necessary to evaluate discharge characteristics and compliance status. Periodic monitoring and reporting also serve to remind the permittee of its compliance responsibilities and provides feedback regarding the performance of the . . . facility(s) operated by the permittee. Permit writers should be aware of and concerned with the potential problems that may occur in a self-monitoring program such as improper sample collection procedures, poor analytical techniques, and poor or improper report preparation and documentation. To prevent or minimize these problems, the permit writer should clearly detail monitoring and reporting requirements in the permit.

In this case, EPA has specified detailed monitoring and reporting requirements in the permit. Moreover, Neptune has retained a qualified consultant, Normandeau Associates, to conduct

[4] USEPA, U.S. EPA NPDES Permit Writers' Manual, EPA-833-B-96-003, December 1996, page 115, available at <www.epa.gov/npdes/pubs/owm0243.pdf>.

biological monitoring. There is no evidence that Neptune and Normandeau do not intend to conduct biological monitoring and reporting as required by the permit.

Third, the comment argues that "improvements need to be made in monitoring the discharge of cooling water at the start-up and shut-down periods," and suggests that the permit include "specific, quantitative limits designed to trigger action, including if necessary closing down the LNG terminal temporarily or permanently if limits are exceeded." EPA does not believe the inclusion of triggers into the monitoring program is warranted as the impacts associated with this activity are predicted to be limited spatially and temporally.

COMMENT 12

Baleen whales, including the critically endangered North Atlantic Right Whale, depend upon plankton for food. SWIM urges the EPA to consult carefully with the Commonwealth of Massachusetts in accordance with the federal-state agreement concerning protection of the North Atlantic Right Whale. SWIM is also concerned about other endangered species that frequent Massachusetts Bay: blue whale, humpback whale, fin whale, sei whale, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, hawksbill sea turtle and green sea turtle.

Where the plankton is destroyed, baleen whales in particular suffer. The whole ecological structure surrounding the LNG terminals can be altered in ways deleterious to the health and safety of endangered whales and sea turtles. More and more the whales are being found nearer shore from Stellwagen Bank, perhaps because of global warming. Adding a local water temperature increase to global warming will not help the whales of Stellwagen Bank and adjacent waters.

Please consider what happens when a whale opens its mouth and goes after the plankton while the LNG vessels are weathervaning -- moving around their anchoring points with the currents and winds. Whales have not evolved to avoid a moving "island" in the sea, and as the vessel moves with the wind and the whales chase the plankton, collisions are probable. The mass of an LNG tanker is still much, much greater than even the greatest Great Whale. When a whale hits a moving tanker, the result can be disastrous - for the whale. The same is true when a moving tanker hits a whale. There is no way a huge LNG tanker can stop to avoid a whale in its path. It simply takes too long to stop.

RESPONSE 12

A wide range of possible adverse impacts to marine mammals and sea turtles from the construction and presence of the port were assessed in the Final Environmental Impact Statement (FEIS) for the Neptune deepwater.[5] NOAA and EPA determined that the quantity of plankton lost from entrainment over the course of a year would have minimal impact on feeding whales. The NPDES permit provides additional protection by requiring that CWISs be located at least 17 feet below the water surface. If monitoring results in the future suggest an impact greater than anticipated, then the permit can be modified to address the issue. At this point in time, the best

[5] The project modifications to the site location and construction schedule as well as the commissioning intakes and discharges were evaluated by USCG, EPA and NOAA in 2008, prior to the issuance of the draft NPDES permit. The reviewers found nothing in the proposed modifications or commissioning activities that would alter the conclusions of the FEIS.

data available and reasonable projections do not point to entrainment of plankton as having a significant effect on whale feeding.

Although no state is issuing this permit in conjunction with EPA (since the port lies in federal, but not state waters), EPA sent copies of the draft permit and public notice to the Massachusetts Division of Marine Fisheries (DMF), which implements the Commonwealth's right whale conservation program, and other Commonwealth agencies, to solicit their comments (if any) on the draft permit. No comments have been received from these agencies other than the one above from the Massachusetts Division of Energy Resources. However, Massachusetts agencies, including DMF, were involved in the review of the project during the EIS phase of work, in compliance with the Massachusetts Environmental Policy Act, and the project ultimately gained approval from the Governor of Massachusetts in 2006 as required by the Deepwater Port Act.

EPA agrees with the concern expressed for the potential for vessel strikes against whales due to the increase in vessel traffic around the port area. Under the Clean Water Act, however, the NPDES permit regulates water intake and discharges associated with the operation of the port, rather than vessels in transit. The issue of vessel strikes was addressed in the Biological Opinion and the Incidental Take Statement (ITS) issued by NOAA. The NPDES permit is contingent on the port obtaining and maintaining an effective ITS, as stated on page 1 of the permit.

COMMENT 13

Although SWIM has focused here on monitoring and the effect on the whales, other major concerns include the presence of toxic, chemical, hazardous and radioactive wastes in close proximity to the new LNG terminals; the effect on the fisheries; the proximity of three ocean protected areas, including Stellwagen Bank National Marine Sanctuary; safety in case of an LNG spill/explosion or a terrorist attack; the lack of a regional energy plan that would accentuate renewable and alternative energy sources as well as conservation, and the danger of a disabled tanker drifting to shore in a major storm.

The North Shore was fortunate that no blizzard with high winds occurred when the liquefied LNG tanker Catalunya Spirit lost propulsion recently off Cape Cod and was towed to the site of the new Northeast Gateway LNG terminal. A Nor'easter at that time could have wrecked the Catalunya Spirit on our shore, and once ignited it could have obliterated Nahant.

RESPONSE 13

Under the Clean Water Act, the NPDES permit regulates water intake and discharges associated with the operation of the port. The construction and safety issues raised in the comment are beyond the scope of the NPDES permit.

Comments 14 through 23 from Mason Weinrich, Executive Director and Chief Scientist, The Whale Center of New England.

COMMENT 14

First, we would like to emphasize the importance of this review process for the proposed discharge as undertaken by the EPA. As you may know, the review process for the FEIS of this project was rushed to say the least. The review and comment period was limited to 30 days, which is hardly sufficient time for such a complex document with so many issues and components. If that were not enough, the review was essentially simultaneous with that of

the nearby Neptune LNG project, who had an equally complex project and accompanying FEIS. The EPA review of this discharge request should therefore proceed in a cautious and critical manner.

RESPONSE 14

The Deepwater Port Act directs relevant federal agencies to act on an expedited schedule for certain aspects of the licensing process. See 29 U.S.C. § 1504. With respect to this NPDES permit, EPA has proceeded appropriately.

EPA received the NPDES permit application in May 2006 and began actively working on preparation of the draft permit in 2007 after the issuance of the FEIS by the U.S. Coast Guard. During the preparation of the draft permit, EPA requested additional information from Neptune to ensure that the permit was based on a comprehensive understanding of all discharges and intakes. EPA relied heavily on the in depth considerations developed in the Biological Opinion issued by NOAA in drafting permit requirements for biological monitoring.

With respect to the public comment periods, EPA notes that the relevant federal agencies provided separate comment periods on the EIS and then on the NPDES permit. The public comment period on the EIS closed well over a year ago. With respect to the public comment process for this NPDES permit, EPA initially provided the 30-day comment period required by 40 CFR § 124.10(b). Although the scheduling of a public hearing is at the discretion of the EPA

Regional Administrator, see 40 CFR § 124.12, in response to anticipated public interest in this permit and the Neptune LNG project as a whole, EPA held a public meeting (in which EPA solicited and responded to questions from the project) and a public hearing (to enter into the record comments from the public) on March 27, 2008. As a result of a request made at the public hearing, EPA extended the public comment period by five days.

In this response to comments, EPA has reprinted all written comments and unique oral comments in their entirety and responded fully to all comments related to the draft permit.

COMMENT 15

As we repeatedly commented during the EIS process, the proponents have chosen one of the most important marine environments in which to locate their deep water port. The location is designated Essential Fish Habitat, is immediately adjacent to the Stellwagen Bank National Marine Sanctuary, and our own sighting data shows that it is an important marine mammal feeding habitat, especially for humpback and fin whales in September and October (Weinrich and Sardi 2005; Dickey et al. 2006; Weinrich et al. 2006), and for North Atlantic right whales in the winter and early spring (Weinrich and Sardi 2005; Weinrich et al. 2006). To substantiate this, we have attached several maps of whale distribution around the site, and several photos obtained in the past few weeks of whales in close proximity to the project's construction equipment. Hence, we urge the EPA to proceed with extreme caution in allowing discharges with largely unknown consequences, simply because unforeseen circumstances or unexpected outcomes could disrupt this vital ecosystem.

The Whale Center of New England is ultimately opposed to the issuance of this discharge permit, as being far too risky in a fragile and important marine location. If, however, the EPA chooses to issue the permit, we would like to see a number of modifications made to the draft permit in order to insure that unforeseen and drastic consequences [do not] result from the discharge.

Everyone involved in the review of this project knows that it has the potential to be an environmental disaster, and that despite that risk it is being undertaken to provide the region with energy and to generate a profit for private corporations. We think it is a terrible tragedy to risk such an important part of the ocean for energy which could be obtained in many other ways. There are risks to the environment from many components of the project, including increased traffic of massive ships and production of significant man-made noise.

RESPONSE 15

The potential risks associated with the location, construction and operation of the Neptune LNG deepwater port were evaluated in the FEIS. Under the Clean Water Act, a NPDES permit such as this one can impose requirements on the facility's cooling water intake structure and its discharges to waters of the United States. Traffic and noise impacts are beyond the scope of the NPDES program. That said, the permit's effectiveness is contingent upon NOAA obtaining and maintaining an Incidental Take Statement in effect for the port, as stated on page one of the permit.

COMMENT 16

The proposed discharge of water used for cooling the LNG is one of the risks of primary concern (actually, the draft permit does not discuss the temperature of the discharge, only the volume of cooling water; more specifics are necessary and need to be required here). Already, changes in the distribution of several fin-fish species in response to small amounts of warming has been documented on a regional scale. The key issue with this discharge is its potential to affect plankton abundance and distribution in both the near and far fields from the project, especially when considered in combination with the nearby Northeast Gateway LNG facilities. Many species of plankton are highly temperature dependent, and even minor changes to their habitats can result in shifts of abundance and distribution between species. Since each plankton species plays a different role in the ecosystem, such changes can have cascading and unforeseen effects. Warmed waters have also been tied to increased presence of harmful algal blooms, with disastrous consequences for marine life.

RESPONSE 16

The draft permit lists the temperature requirements applicable to the commissioning discharge in Part I.A.3, on page 3 and footnotes 4 and 5. As stated on that page, the applicable limits are a maximum daily temperature increase (over the intake temperature) of 8 degrees Celsius and a maximum instantaneous temperature increase of 10 degrees Celsius.

EPA does not anticipate long term warming of ocean waters in the near or far fields from the deepwater port as a result of the non-contact cooling water discharge during vessel and port commissioning. The reasons for this are twofold. First, the commissioning activities are limited, not ongoing, flow events, which are limited by the permit to 45 days per vessel, and which are estimated to occur only a few times during the permit period. Second, the flows from commissioning are very low compared to the flow of ocean water past the intake structure occurring at the port location.

As reported in response 4, Neptune has submitted CORMIX thermal modeling results which are provided herein as Attachment A. The model conservatively assumes a sustained 5,700 gpm flow at the maximum temperature differential of 10ºC (the 13,900 gpm referred to in the comment would be only if the steam dump condenser were in operation and would not be

sustained). The model results indicate that the effects of the commissioning thermal discharges will cause negligible impacts to fish or marine mammals due to the limited water volume affected by temperature increases and due to the temporary nature of the discharge.

EPA does not dispute that ocean waters have warmed as a result of global climate change. However, the CORMIX modeling results strongly suggest that the very limited thermal discharges authorized by this permit will have no long term impact on regional ocean temperatures.

COMMENT 17

The draft permit states, as one of its conditions, "this permit shall be modified or revoked at any time if, on the basis of any new data, the director determines that continued discharges may cause unreasonable degradation of the marine environment." The associated fact sheet further states "These guidelines define "unreasonable degradation of the marine environment" to mean:

- **Significant adverse changes in ecosystem diversity, productivity, and stability of the biological community within the area of discharge and surrounding biological communities;**
- **Threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms; or**
- **Loss of aesthetic, recreational, scientific or economic values which is unreasonable in relation to the benefit derived from the discharge."**

These are all very vague terms, which would be very hard to apply in any realistic sense. We would like to see pre-defined specific, quantitative levels at which appropriate actions would be taken. Ideally, these would exist in the form of a document legally attached to the permit which could be modified and overseen by a working group of project personnel, EPA staff, independent scientists, and area environmentalists. We would envision this process and document to be similar to the Massachusetts Water Resources Authority's contingency plan for its 10-mile long outfall pipe, which was first used in the early part of this decade. That plan has specific levels at which caution and warning actions are triggered, with those actions clearly stated. The Whale Center of New England would commit to be glad to participate in both development of such a plan, and on-going review of the results which indicate whether or not such effects are being seen.

RESPONSE 17

The commenter questions the adequacy of the permit provision (I.A.19) that states: "In addition to any other grounds specified herein, this permit shall be modified or revoked at any time if, on the basis of any new data, the director determines that continued discharges may cause unreasonable degradation of the marine environment." This precise language is required by 40 C.F.R. § 125.123(d)(4). The definition of "unreasonable degradation of the marine environment" on page 9 of the Fact Sheet is quoted directly from 40 C.F.R. § 125.121(e). The comment does not offer or suggest how or at what levels its proposed pre-defined specific, quantitative levels should be established. The text of I.A.19, though not establishing numeric action levels, does identify specific qualitative standards with sufficient specificity to enable action by EPA if necessary.

The comment proposes that EPA develop a monitoring plan of a complexity similar to the monitoring plan that the technical advisory committee developed for the Massachusetts Water Resources Authority (MWRA). EPA's response to this comment is provided in the third paragraph of response 11.

COMMENT 18

We are also concerned that the permit does not deal with the cumulative effects of the release of warmed water from four offloading stations that are in close proximity to each other. The permit never acknowledges the existence of the Neptune LNG [sic] **project, due to begin construction nearby in the near future, which will also put the nearby ecosystem at serious risk. This cumulative impact also needs to be addressed, and should be part of the same monitoring and contingency requirements as suggested above.**

RESPONSE 18

EPA agrees that the cumulative impact of multiple vessels from multiple LNG deepwater port projects is appropriate for consideration. As an initial matter, the vessels from the Neptune project will have no long term thermal discharges as they will recycle their cooling water into ballast. Consequently, the only long-term thermal discharges will be from the vessels at Northeast Gateway.

As part of the process of developing this final permit, EPA has evaluated those cumulative impacts, and has determined that in this case the cumulative impacts are acceptable. EPA examined the projected size of the thermal plumes from vessels from both Northeast Gateway and Neptune and determined that there would not be unacceptable cumulative impacts even if there were vessels on all four buoys.

COMMENT 19

Of course, understanding the effects, or lack thereof, from the warm water discharge depends on monitoring data gathered during the project, especially in its early phases, and a realistic test against baseline data. We are concerned about whether appropriate baseline data exists for the area in most measurable biological features (see below for one area where we *do* think such data exists). Because the ocean is a highly variable environment, appropriate baseline data requires a time series of data across several years with consistent methodologies, against which environmental variability can be teased apart from project effects. The EPA should examine whether such data actually exists and, if it does not, how impacts of the warmed water could be assessed.

RESPONSE 19

Several ichthyoplankton monitoring efforts exist within Massachusetts Bay. NOAA has been monitoring ichthyoplankton and zooplankton throughout the Gulf of Maine for years. Several of the NOAA sampling stations are within the general vicinity of the proposed project. In addition, Northeast Gateway has collected ichthyoplankton data for the past year and a half, which EPA (and others) can use as a baseline. Finally, Neptune will begin its ichthyoplankton monitoring program in October 2008, which will provide at least 1 year of pre-operational data. Sampling methodologies between these 3 efforts are consistent allowing for reviewers to combine the datasets to gain a more comprehensive picture than any one program could generate on its own.

COMMENT 20

We have reviewed the monitoring plan attached to the proposal, and have also found what we feel is a significant flaw in the proposed sampling scheme. The plan proposes to sample plankton in two ways: at the 20-40 foot depth, where the warm water discharge takes place, and in a vertical average throughout the water column to within 15 feet of the bottom. However, plankton tends to aggregate at marine borders: the ocean surface, the sea floor, and thermoclines. At these edges, plankton concentrations can be spectacular. It is these concentrations on which many marine predators rely. For instance, Dr. Charles "Stormy" Mayo's work on feeding right whales in Cape Cod Bay has shown that they require plankton in concentrations of 3,750 organisms/m^3 in order to feed, and such concentrations are only found along these edges. However, by averaging plankton concentrations across the entire water column, the actual density of plankton in these aggregations is lowered several-fold. Further, the bottom layer would not even be sampled. This both makes it hard to know when such aggregations are present and, by default, makes it harder to show a statistically significant or biologically meaningful change. The monitoring program needs to find some way to determine the potential effects on plankton aggregations, which is what any marine predator looks for.

RESPONSE 20

The purpose of the monitoring plan is not to target the thermocline, but the actual depths from which the intakes are drawing water. The proposed sampling will take place in two ways, at the 20 to 40 foot depth and vertically averaged over the water column. The sample at the 20 to 40 foot depth represents the area in the water column which corresponds with the intake structure. EPA agrees with the commenter that plankton aggregations occur along edges, at the surface, near the bottom or on thermoclines. However, these vessels will not draw water from near the sea floor or from the sea surface, but at least 20 feet below the surface. The most likely way for these plankton aggregations to be entrained is for them to be associated with thermoclines that may have formed between the 20 to 40 foot depths. Thus, the sampling scheme is designed to identify plankton aggregations at greatest risk of entrainment, if they occur within the project area.

The thermocline is a seasonal feature that forms in midsummer and, depending on the weather, may last into fall until storm activity causes it to disperse. When a thermocline is present, its actual depth will vary on a weekly basis. There are some years when thermoclines do not even form and the plankton population disperses more evenly. The twice a month, year round sampling effort described in the monitoring plan is designed to be consistent across such seasonal variations in the ocean environment. In addition, the sampling plan is designed to be consistent with NOAA's and Northeast Gateway's monitoring programs to allow for data comparison between these 3 efforts.

COMMENT 21

Further, the proposed monitoring system contains the following language in its introduction: "Long-term monitoring of ichthyoplankton for power plants with open water intakes, such as Seabrook Nuclear Power Station located in coastal New Hampshire, has demonstrated that spatial differences in the ichthyoplankton populations in the source water body can not be readily detected even with a Before-After Control-Impact (BACI) sampling design because stations well outside the zone of influence of the intake are hydrologically linked to the intake area. Given the circulation patterns in outer

Massachusetts Bay, therefore, additional survey areas would provide no greater resolution of the potential impacts of the Neptune vessels." We would point out that other projects, such as the MWRA discharge monitoring program (a model system which was designed in large part with EPA input) has numerous far-field locations. If there is no attempt to collect data outside of the immediate project area, we won't know if such influences can be detected, as unlikely as they are.

RESPONSE 21

In this permit, EPA is authorizing the long term intake of 2.25 MGD without any long term discharges. MWRA outfall is a continuous discharge pollutants associated with 500 MGD of treated municipal sewerage. The nature or magnitude of these facilities with regards to water quality or biological impacts are vastly different and it is not appropriate to require the permittee to monitor far field ichthyoplankton populations in Massachusetts Bay based on an analogy to the MWRA outfall monitoring plan. In addition, NOAA's ECOMON sampling stations could provide farfield comparisons, if that comparison is ever deemed necessary. The proposed monitoring program meets the requirements of 40 C.F.R. § 125.123(d)(2) and is appropriately scaled for the possible adverse environmental effects of this proposed project.

COMMENT 22

We understand that the EPA does not have the resources to monitor the water flow, plankton concentrations, and other potential effects of the project, and we must therefore rely on independent monitoring of the environmental effects. We suggest that in order to make sure that fair and accurate monitoring takes place, a working group of project personnel, EPA staff, and concerned local citizens and environmental groups together agree on an independent party to monitor the discharge, to be paid for by the project proponents. Ideally, this group would also review the monitoring results, and suggest changes to the monitoring program as required. One obvious way to do this would be to combine this group with the one suggested above for the contingency planning. The Whale Center of New England would commit to participating in this effort.

RESPONSE 22

As stated earlier, EPA does not believe that the size of this discharge warrants convening an advisory committee or working group. However, monitoring results submitted to EPA will be available upon request to interested parties who may review monitoring results and submit feedback. EPA recommends that such feedback be submitted to the contacts identified in Part I.C. of the permit. If necessary, EPA has the authority to modify the permit's monitoring program under 40 C.F.R. § 122.62, and/or ask for additional information pursuant to Section 308 of the Clean Water Act.

COMMENT 23

Finally, we would suggest to the EPA that there is a way to monitor whether there are effects on the ecosystem from the project: through monitoring the area for its use by large whales. In the reports we prepared for both Northeast Gateway and Neptune, we have shown how important the near- and far-field is to feeding whales. The number of acoustic buoy detections of whales being reported on a daily basis through the winter of 2008, and the number of whale sightings and detections reported by Northeast Gateway in their 2007 weekly marine mammal activity reports, only substantiate our contentions. Right whales in

the area feed on calenoid copepods; humpback and fin whales in the area feed on either eupahsiids or amphipods. All of these prey species are plankton that could be affected by warm water infusion, and they are all prey to many species besides whales. However, whales have been shown to require dense concentrations of their prey to feed; they are easily detectable from the surface; and The Whale Center of New England has an on-going 27-year database of whale use of the area to act as a baseline for comparison. Monitoring of these three species, through methods consistent with those used to develop the baseline, should be a required part of the permit if approved. It is notable that already in 2007 although we still saw both species actively feeding in the general LNG project area in fall 2007 while Northeast Gateway LNG construction was on-going, there were fewer whales, and those whales were resident for shorter periods, than in the previous three years. We do not have annual measurements of prey biomass, so it is possible that this is merely related to annual fluctuations in food availability. However, we cannot rule out that there was avoidance of the area because of the project's activities, and this should be considered in both the current Neptune request and any proposed monitoring programs designed to understand the project's impacts.

RESPONSE 23

As part of the Deepwater Port license, marine mammal monitoring is required. The license required the deployment of a series of acoustic buoys that will detect the presence of whales by listening for their songs. Visual monitoring of whales is also required during construction and operation of the ports. Both EPA and NOAA have agreed that this level of marine mammal monitoring is sufficient. Thus, EPA does not believe that additional visual monitoring of whales should be required by this permit.

The following written comment from Philip Joyce was submitted following testimony at the public hearing on March 27, 2008

COMMENT 24

Your report admitted that there would be harm to fish and mammals, Douglas Jones [Environmental Manager, Neptune]. Therefore this project must be aborted. Two ocean sanctuaries should <u>not</u> be disturbed and harmed.

Is Boston Electric Company in Everett going to use LNG gas?

We don't want Nahant obliterated from disabled LNG tankers.

Monitoring should not be done by vested interests (such as federal government agencies).

This country is set up for the people to influence the government. Not the government to the people.

RESPONSE 24

Under the Ocean Discharge Criteria (40 CFR §125 Subpart M) EPA is required to "*determine whether a discharge will cause unreasonable degradation of the marine environment*" (40 CFR § 125.122(a). "*Unreasonable degradation of the marine environment*" is defined in 40 CFR §125.121(e) to mean:

> (1) *Significant adverse changes in ecosystem diversity, productivity, and stability of the biological community within the area of discharge and surrounding biological communities,*

(2) *Threat to human health through direct exposure to pollutants or through consumption of exposed aquatic organisms, or*

(3) *Loss of esthetic, recreational, scientific or economic values which is unreasonable in relation to the benefit derived from the discharge."*

EPA finds that the operation of the Neptune deepwater port will not cause unreasonable degradation of the marine environment and therefore has developed a permit intended to mitigate and monitor any potential impact on the marine environment to the extent practicable.

EPA cannot comment on the potential purchasers of the LNG.

The potential for LNG tankers to be disabled and/or to cause a safety threat to onshore communities is outside the scope of the NPDES permit. Such issues are instead addressed in the Deepwater Port Act license issued by the Maritime Administration. The 2006 FEIS evaluated safety issues related to the Neptune deepwater port construction and operation.

With respect to third-party monitoring, see fourth paragraph in response 11.

Heidi Roberts presented the following comment in testimony at the public hearing on March 27, 2008

COMMENT 25

I am Heidi Roberts with the Sierra Club. I'm going to keep it brief. I am just going to say that the Sierra Club supports the comments and concern of Nahant SWIM and the other concerned agencies and citizens with this project. And I would like to have the EPA check the results of any monitoring or study that has been done since the construction of the Gateway pipeline. And I want them to determine if there have been any adverse effects on marine life or the ocean floor before you forge ahead in such a hurry.

RESPONSE 25

The monitoring study that examined the impact of the construction of the Northeast Gateway project is currently being compiled by its consultant and is due to EPA at the end of the year. Preliminary findings from limited data currently available do not indicate a measurable impact on aquatic life as a result of the port construction. Since the Northeast Gateway port has not yet been commissioned or used for LNG delivery, ongoing monitoring studies cannot yet measure impacts of the NEG port operation. In addition, Neptune's regasification vessel operations differ from those of Northeast Gateway in that Neptune vessels have no thermal discharges at all during operation. Therefore, the impacts, if any, are likely to be different in nature.

Polly Bradley presented the following comment in testimony at the public hearing on March 27, 2008

COMMENT 26

To get back to what I was going to say, the Northeast Gateway LNG terminal is going to be right nearby, as we all know, right near the shipping channels, which is a real problem, especially for the sailors who are going to be going in and out of the shipping channel. But, it is so near so, essentially, all of the harmful effects of Neptune are going to be doubled because they will be doing the same thing. So, what we should do is multiply everything you say by double. Another member of SWIM, Peg Heinrichs, she's going to talk more about the need for monitoring. So, I will skip over to the matter of the -- of the ecology. I also

want to say that the people in the Whale Center of New England were not able to be here tonight. But SWIM enthusiastically supports the comments of the Whale Center of New England in response to this NPDES permit application. They are the experts. We are concerned citizens in SWIM. We have some experts, but not nearly as much expertise as we would like or as Whale Center of New England has. So, I urge you to pay special attention to their comments, even more than to mine.

On the matter of the whales, our concerns reach from the whales down to the plankton. And the effect, they are all related to each other, as we know. And the whales, especially the baleen whales, the North Atlantic right whale, they're all -- they eat primarily plankton. And so, the biggest thing is dependent on the littlest thing. And everything in between, we know, they're all connected. So therefore, we are concerned about that temperature rise against the effect on the plankton. Not so much on the whales, they can swim away. And very much concerned about the entrainment in those one inch openings that we just heard about, and the plankton goes in, it's -- it's goodbye to them. And that makes us concerned about all of the endangered species that frequent Massachusetts Bay. The blue whale, the humpback whale, the fin whale, the sei whale, and the turtles, Kemp's Ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, hawksbill sea turtle and green sea turtle. I have seen a number of lists of different ones. But anyway, there are about 10 of them that are endangered species that frequent the sanctuary, the national marine sanctuary, Stellwagen Bank, which is so close to this, so dangerously close. And also, as far as the whales are concerned, they are not -- they haven't evolved to avoid islands that are moving. And they're not going to be able to stay away from the ships, especially when they are weather vaning, moving about with the wind and particularly, when they are hunting for plankton. I understand that the whales have moved slightly towards -- in from Stellwagen Bank. I think you can read more about this in Mason Weinrich's comments. So, I focused here on the monitoring and the effects on the whales and the plankton. But, we're still concerned about the toxic chemical and hazardous wastes; the radioactive wastes that are down there. The proximity of three ocean protected areas, two state, one federal, safety in case of an LNG spill and explosion or terrorist attack.

Oh, and I wanted to mention, I gather you're not also planning to close down the LNG terminal in Boston. Now, that's the one that should really go before it goes.

Also, the lack of a regional energy plan, to accentuate renewable alternative energy, and the danger -- there is always the danger of a disabled tanker during a major storm. We were very fortunate when that tanker was disabled off of Cape Cod. And then, we read in the Cape Cod papers that it was towed safely to sea. Well, their idea of towing it safely to sea, of course, which is to tow it up to the already constructed Northeast Gateway terminal. And there it sat. And fortunately, we didn't have a major storm. Because, we had been told that, if there is a major storm, they will know ahead of time so that they will be able to take those tankers far out to sea and there will be no problem. Well, here at these disabled tanker – this disabled tanker sitting there for almost a week. And if we had had a major storm, like the blizzard of '78 30 years ago, it could have obliterated Nahant, which is only 1 square mile.

Any way, those are a few of the reasons that we are against the issuance of this permit. My husband and I were kidding around this afternoon. And he couldn't come tonight, but he does a wonderful windmill -- a wonderful windmill, which I can't do. And he was doing a windmill, and I was doing Don Quixote. And I feel like I am Don Quixote after the windmill. But, you know -- what we want you to know is that you are going to be watched.

We are going to be there. And there are going to be people who care. There are people who care out there. They care about the whales. They care about the environment. And we are going to continue to care. And the younger people are caring too. So, we just came, not because we want to tilt at windmills, because that's no fun. But because we want you to know, we care and we are going to be there watching. Thank you very much.

RESPONSE 26

The effects of discharges and intakes from the two deepwater ports will not be equivalent, as the regasification technology used at the two ports will differ. While the cooling water intake volume per vessel visit will be similar, the Neptune regasification process involves no thermal discharges at all (except during port commissioning), so there will be no added thermal effects related to the permitted discharges to Massachusetts Bay.

EPA shares the concern expressed regarding the potential for vessels to strike endangered whales. As described in response 12, the NPDES permit is contingent on the port having an effective Incidental Take Statement (ITS), as stated on page 1 of the permit.

The development of a regional energy plan and the potential for LNG tankers to be disabled and/or to cause a safety threat to onshore communities are outside the scope of the NPDES permit. The 2006 FEIS evaluated safety issues related to the Neptune deepwater port construction and operation.

EPA applauds the efforts of members of the public to comment on the draft permit and has considered all comments submitted. We encourage the commenter and other members of the public to continue to monitor and provide feedback to EPA during the effective period of the permit.