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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 216

RIN 0648–XA480

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Operation of the Northeast Gateway Liquefied Natural Gas Port Facility in Massachusetts Bay

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS has received an application from Tetra Tech EC, Inc., on behalf of the Northeast Gateway® Energy Bridge™ L.P. (Northeast Gateway or NEG), for authorization to take marine mammals, by harassment, incidental to operating a liquefied natural gas (LNG) port facility by NEG, in Massachusetts Bay for the period of August 2011 through August 2012. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an authorization to Northeast Gateway to incidentally take, by harassment, small numbers of marine mammals for a period of 1 year.

DATES: Comments and information must be received no later than August 22, 2011.

ADDRESSES: Comments should be addressed to P. Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The mailbox address for providing e-mail comments on this action is *ITP.Guan@noaa.gov.* Comments sent via e-mail, including all attachments, must not exceed a 10-megabyte file size. A copy of the application and a list of references used in this document may be obtained by writing to this address, by telephoning the contact listed here (see **FOR FURTHER INFORMATION CONTACT**) and is also available at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications.*

Instructions: All comments received are a part of the public record and will generally be posted to *http://www.nmfs.noaa.gov/pr/permits/incidental.htm* without change. All Personal Identifying Information (for example, name, address, *etc.*) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

The Maritime Administration (MARAD) and U.S. Coast Guard (USCG) Final Environmental Impact Statement (Final EIS) on the Northeast Gateway Energy Bridge LNG Deepwater Port license application is available for viewing at *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Shane Guan, Office of Protected Resources, NMFS, (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A)–(D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (Secretary) to allow, upon request, the incidental, but not intentional taking of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Authorization shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such taking are set forth.

NMFS has defined ''negligible impact'' in 50 CFR 216.103 as:

> an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Except with respect to certain activities not pertinent here, the MMPA defines ''harassment'' as:

> any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny issuance of the authorization.

Summary of Request

On April 8, 2011, NMFS received an application from Excelerate Energy, L.P. (Excelerate) and Tetra Tech EC, Inc., on behalf of Northeast Gateway for an authorization to take 13 species of marine mammals by Level B harassment incidental to operations of an LNG port facility in Massachusetts Bay. They are: North Atlantic right whale, humpback whale, fin whale, minke whale, long-finned pilot whale, Atlantic white-sided dolphin, bottlenose dolphin, common dolphin, killer whale, Risso's dolphin, harbor porpoise, harbor seal, and gray seal. Since LNG Port operation activities have the potential to take marine mammals, a marine mammal take authorization under the MMPA is warranted. On May 7, 2007, NMFS issued an IHA to Northeast Gateway and Algonquin Gas Transmission, L.L.C. (Algonquin) to allow for the incidental harassment of small numbers of marine mammals resulting from the construction and operation of the NEG Port and the Algonquin Pipeline Lateral (72 FR 27077; May 14, 2007). Subsequently, NMFS issued three one-year IHAs for the take of marine mammals incidental to the operation of the NEG Port activity pursuant to section 101(a)(5)(D) of the MMPA (73 FR 29485; May 21, 2008; 74 FR 45613; September 3, 2009, and 75 FR 53672; September 1, 2010). The current IHA expires on August 30, 2011. Therefore, the company is seeking a new IHA, because it is believed that marine mammals could be affected by noise generated by operating the dynamic positioning system during the docking of LNG vessels at the NEG Port.

Description of the Activity

The Northeast Gateway Port is located in Massachusetts Bay and consists of a submerged buoy system to dock specially designed LNG carriers approximately 13 mi (21 km) offshore of Massachusetts in Federal waters approximately 270 to 290 ft (82 to 88 m) in depth. This facility delivers regasified LNG to onshore markets via the Algonquin Pipeline Lateral (Pipeline Lateral). The Pipeline Lateral consists of a 16.1-mile (25.8-kilometer) long, 24-inch (61-centimeter) outside diameter natural gas pipeline which interconnects the Port to an offshore natural gas pipeline known as the HubLine.

The Northeast Gateway 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 steel Flowline, to the subsea Pipeline Lateral. Northeast Gateway utilizes vessels from its current fleet of specially designed Energy Bridge™ Regasification Vessels (EBRVs), each capable of transporting approximately 2.9 billion ft^3 (82 million m^3) of natural gas condensed to 4.9 million ft^3 (138,000 m^3) of LNG. Northeast Gateway has recently added two vessels to its fleet that have a cargo capacity of approximately 151,000 m^3 (5.3 million ft^3). The mooring system installed at the Northeast Gateway Port is designed to handle each class of vessel. The EBRVs would dock to the STL buoys, which would serve as both the single-point mooring system for the vessels and the delivery conduit for natural gas. Each of the STL buoys is secured to the seafloor using a series of suction anchors and a combination of chain/cable anchor lines.

The proposed activity of operation of the Northeast Gateway LNG Port is described next.

NEG Port Operations

During NEG Port operations, EBRVs servicing the Northeast Gateway Port will utilize the newly configured and International Maritime Organization (IMO)-approved Boston Traffic Separation Scheme (TSS) on their approach to and departure from the Northeast Gateway Port at the earliest practicable point of transit. EBRVs will maintain speeds of 12 knots or less while in the TSS, unless transiting the Off Race Point Seasonal Management Area (SMA) between the dates of March 1 and April 30, or the Great South Channel SMA between the dates of April 1 and July 31, or when there have been active right whale sightings, active acoustic detections, or both, within 24 hours of each scheduled data review period, in the vicinity of the transiting EBRV in the TSS or at the NEG Port whereby the vessels must slow their speeds to 10 knots or less. Appendix A of the IHA application contains the Marine Mammal Detection, Monitoring, and Response Plan for Operation of the Northeast Gateway Energy Bridge Deepwater Port and Algonquin Pipeline Lateral, which describes in detail the measures required for EBRVs transiting in the TSS or within the NEG Port area.

As an EBRV makes its final approach to the Northeast Gateway Port, vessel speed will gradually be reduced to 3 knots when the vessel is within 1.86 mi (3 km) out of the Northeast Gateway Port to less than 1 knot at a distance of 1,640 ft (500 m) from the Northeast Gateway Port. When an EBRV arrives at the Northeast Gateway Port, it would retrieve one of the two permanently anchored submerged STL buoys and make final connection to the buoy through a series of engine and bow thruster actions. The EBRV would require the use of thrusters for dynamic positioning during docking procedure. Typically, the docking procedure is completed over a 10- to 30-minute period, with the thrusters activated as necessary for short periods of time in bursts, not a continuous sound source. Once connected to the buoy, the EBRV will begin vaporizing the LNG into its natural gas state using the onboard regasification system. As the LNG is regasified, natural gas will be transferred at pipeline pressures off the EBRV through the STL buoy and flexible riser via a steel flowline leading to the connecting Pipeline Lateral. When the LNG vessel is on the buoy, the vessel would be allowed to ''weathervane'' by wind and currents on the single-point mooring system; therefore, thrusters will not be used to maintain a stationary position.

It is estimated that the NEG Port could receive approximately 65 cargo deliveries a year. During this time period, thrusters would be engaged in use for docking at the NEG Port approximately 10 to 30 minutes for each vessel arrival and departure.

Detailed information on the operation activities can be found in the MARAD/USCG Final EIS on the Northeast Gateway Project (see **ADDRESSES** for availability). Detailed information on the LNG facility's operation and noise generated from operations was also published in the **Federal Register** for the proposed IHA for Northeast Gateway's LNG Port construction and operations on March 13, 2007 (72 FR 11328).

Description of Marine Mammals in the Area of the Specified Activities

Marine mammal species that potentially occur in the vicinity of the Northeast Gateway facility include several species of cetaceans and pinnipeds:

North Atlantic right whale (*Eubalaena glacialis*),

humpback whale (*Megaptera novaeangliae*),

fin whale (*Balaenoptera physalus*),

minke whale (*B. acutorostrata*),

long-finned pilot whale (*Globicephala melas*),

Atlantic white-sided dolphin (*Lagenorhynchus acutus*),

bottlenose dolphin (*Tursiops truncatus*),

common dolphin (*Delphinus delphis*),

killer whale (*Orcinus orca*),

Risso's dolphin (*Grampus griseus*),

harbor porpoise (*Phocoena phocoena*),

harbor seal (*Phoca vitulina*), and

gray seal (*Halichoerus grypus*).

Information on those species that may be affected by this activity is discussed in detail in the USCG Final EIS on the Northeast Gateway LNG proposal. Please refer to that document for more information on these species and potential impacts from construction and operation of this LNG facility. In addition, general information on these marine mammal species can also be found in Würsig *et al.* (2000) and in the NMFS Stock Assessment Reports (Waring *et al.,* 2011). This latter document is available at: *http://www.nefsc.noaa.gov/publications/tm/tm219/.* An updated summary on several commonly sighted marine mammal species distribution and abundance in the vicinity of the proposed action area is provided below.

Humpback Whale

The highest abundance for humpback whales is distributed primarily along a relatively narrow corridor following the 100-m (328 ft) isobath across the southern Gulf of Maine from the northwestern slope of Georges Bank, south to the Great South Channel, and northward alongside Cape Cod to Stellwagen Bank and Jeffreys Ledge. The relative abundance of whales increases in the spring with the highest occurrence along the slope waters (between the 40- and 140-m, or 131- and 459-ft, isobaths) off Cape Cod and Davis Bank, Stellwagen Basin and Tillies Basin and between the 50- and 200-m (164- and 656-ft) isobaths along the inner slope of Georges Bank. High abundance is also estimated for the waters around Platts Bank. In the

summer months, abundance increases markedly over the shallow waters (<50 m, or <164 ft) of Stellwagen Bank, the waters (100—200 m, or 328—656 ft) between Platts Bank and Jeffreys Ledge, the steep slopes (between the 30- and 160-m isobaths) of Phelps and Davis Bank north of the Great South Channel towards Cape Cod, and between the 50- and 100-m (164- and 328-ft) isobath for almost the entire length of the steeply sloping northern edge of Georges Bank. This general distribution pattern persists in all seasons except winter, when humpbacks remain at high abundance in only a few locations including Porpoise and Neddick Basins adjacent to Jeffreys Ledge, northern Stellwagen Bank and Tillies Basin, and the Great South Channel. The best estimate of abundance for Gulf of Maine, formerly western North Atlantic, humpback whales is 847 animals (Waring *et al.,* 2009). Current data suggest that the Gulf of Maine humpback whale stock is steadily increasing in size, which is consistent with an estimated average trend of 3.1 percent in the North Atlantic population overall for the period 1979–1993 (Stevick *et al.,* 2003, cited in Waring *et al.,* 2009).

Fin Whale

Spatial patterns of habitat utilization by fin whales are very similar to those of humpback whales. Spring and summer high-use areas follow the 100-m (328 ft) isobath along the northern edge of Georges Bank (between the 50- and 200-m (164- and 656-ft) isobaths), and northward from the Great South Channel (between the 50- and 160-m, or 164- and 525-ft, isobaths). Waters around Cashes Ledge, Platts Bank, and Jeffreys Ledge are all high-use areas in the summer months. Stellwagen Bank is a high-use area for fin whales in all seasons, with highest abundance occurring over the southern Stellwagen Bank in the summer months. In fact, the southern portion of the Stellwagen Bank National Marine Sanctuary (SBNMS) is used more frequently than the northern portion in all months except winter, when high abundance is recorded over the northern tip of Stellwagen Bank. In addition to Stellwagen Bank, high abundance in winter is estimated for Jeffreys Ledge and the adjacent Porpoise Basin (100- to 160-m, 328- to 656-ft, isobaths), as well as Georges Basin and northern Georges Bank. The best estimate of abundance for the western North Atlantic stock of fin whales is 2,269 (Waring *et al.,* 2009). Currently, there are insufficient data to determine population trends for this species.

Minke Whale

Like other piscivorous baleen whales, highest abundance for minke whale is strongly associated with regions between the 50- and 100-m (164- and 328-ft) isobaths, but with a slightly stronger preference for the shallower waters along the slopes of Davis Bank, Phelps Bank, Great South Channel and Georges Shoals on Georges Bank. Minke whales are sighted in the SBNMS in all seasons, with highest abundance estimated for the shallow waters (approximately 40 m, or 131 ft) over southern Stellwagen Bank in the summer and fall months. Platts Bank, Cashes Ledge, Jeffreys Ledge, and the adjacent basins (Neddick, Porpoise and Scantium) also support high relative abundance. Very low densities of minke whales remain throughout most of the southern Gulf of Maine in winter. The best estimate of abundance for the Canadian East Coast stock, which occurs from the western half of the Davis Strait to the Gulf of Mexico, of minke whales is 3,312 animals (Waring *et al.,* 2009). Currently, there are insufficient data to determine population trends for this species.

North Atlantic Right Whale

North Atlantic right whales are generally distributed widely across the southern Gulf of Maine in spring with highest abundance located over the deeper waters (100- to 160-m, or 328- to 525-ft, isobaths) on the northern edge of the Great South Channel and deep waters (100 B 300 m, 328-984 ft) parallel to the 100-m (328-ft) isobath of northern Georges Bank and Georges Basin. High abundance is also found in the shallowest waters (< 30 m, or <98 ft) of Cape Cod Bay, over Platts Bank and around Cashes Ledge. Lower relative abundance is estimated over deep-water basins including Wilkinson Basin, Rodgers Basin and Franklin Basin. In the summer months, right whales move almost entirely away from the coast to deep waters over basins in the central Gulf of Maine (Wilkinson Basin, Cashes Basin between the 160- and 200-m, or 525- and 656-ft, isobaths) and north of Georges Bank (Rogers, Crowell and Georges Basins). Highest abundance is found north of the 100-m (328-ft) isobath at the Great South Channel and over the deep slope waters and basins along the northern edge of Georges Bank. The waters between Fippennies Ledge and Cashes Ledge are also estimated as high-use areas. In the fall months, right whales are sighted infrequently in the Gulf of Maine, with highest densities over Jeffreys Ledge and over deeper waters near Cashes Ledge and Wilkinson Basin. In winter, Cape Cod Bay, Scantum Basin, Jeffreys Ledge, and Cashes Ledge were the main high-use areas. Although SBNMS does not appear to support the highest abundance of right whales, sightings within SBNMS are reported for all four seasons, albeit at low relative abundance. Highest sighting within SBNMS occurred along the southern edge of the Bank.

The western North Atlantic population size was estimated to be at least 345 individuals in 2005 based on a census of individual whales identified using photo-identification techniques (Waring *et al.,* 2009). This value is a minimum and does not include animals that were alive prior to 2003 but not recorded in the individual sightings database as seen from December 1, 2003, to October 10, 2008. It also does not include calves known to be born during 2005 or any other individual whale seen during 2005 but not yet entered into the catalog (Waring *et al.,* 2009). Examination of the minimum alive population index calculated from the individual sightings database, as it existed on October 10, 2008, for the years 1990–2005 suggests a positive trend in numbers. These data reveal a significant increase in the number of catalogued whales alive during this period but with significant variation due to apparent losses exceeding gains during 1998–1999. Mean growth rate for the period 1990–2005 was 1.8 percent (Waring *et al.,* 2009).

Long-Finned Pilot Whale

The long-finned pilot whale is more generally found along the edge of the continental shelf (a depth of 330 to 3,300 ft, or 100 to 1,000 m), choosing areas of high relief or submerged banks in cold or temperate shoreline waters. This species is split between two subspecies: The Northern and Southern subspecies. The Southern subspecies is circumpolar with northern limits of Brazil and South Africa. The Northern subspecies, which could be encountered during operation of the NEG Port, ranges from North Carolina to Greenland (Reeves *et al.,* 2002; Wilson and Ruff, 1999). In the western North Atlantic, long-finned pilot whales are pelagic, occurring in especially high densities in winter and spring over the continental slope, then moving inshore and onto the shelf in summer and autumn following squid and mackerel populations (Reeves *et al.,* 2002). They frequently travel into the central and northern Georges Bank, Great South Channel, and Gulf of Maine areas during the summer and early fall (May and October) (NOAA, 1993). According to the species stock report,

the population estimate for the Western North Atlantic long-finned pilot whale is 26,535 individuals (Waring *et al.,* 2010). Currently, there are insufficient data to determine population trends for the long-finned pilot whale.

Atlantic White-Sided Dolphin

In spring, summer and fall, Atlantic white-sided dolphins are widespread throughout the southern Gulf of Maine, with the high-use areas widely located either side of the 100-m (328-ft) isobath along the northern edge of Georges Bank, and north from the Great South Channel to Stellwagen Bank, Jeffreys Ledge, Platts Bank and Cashes Ledge. In spring, high-use areas exist in the Great South Channel, northern Georges Bank, the steeply sloping edge of Davis Bank and Cape Cod, southern Stellwagen Bank and the waters between Jeffreys Ledge and Platts Bank. In summer, there is a shift and expansion of habitat toward the east and northeast. High-use areas are identified along most of the northern edge of Georges Bank between the 50- and 200-m (164- and 656-ft) isobaths and northward from the Great South Channel along the slopes of Davis Bank and Cape Cod. High numbers of sightings are also recorded over Truxton Swell, Wilkinson Basin, Cashes Ledge and the bathymetrically complex area northeast of Platts Bank. High numbers of sightings of white-sided dolphin are recorded within SBNMS in all seasons, with highest density in summer and most widespread distributions in spring located mainly over the southern end of Stellwagen Bank. In winter, high numbers of sightings are recorded at the northern tip of Stellwagen Bank and Tillies Basin.

A comparison of spatial distribution patterns for all baleen whales (Mysticeti) and all porpoises and dolphins combined show that both groups have very similar spatial patterns of high- and low-use areas. The baleen whales, whether piscivorous or planktivorous, are more concentrated than the dolphins and porpoises. They utilize a corridor that extended broadly along the most linear and steeply sloping edges in the southern Gulf of Maine indicated broadly by the 100 m (328 ft) isobath. Stellwagen Bank and Jeffreys Ledge support a high abundance of baleen whales throughout the year. Species richness maps indicate that high-use areas for individual whales and dolphin species co-occur, resulting in similar patterns of species richness primarily along the southern portion of the 100-m (328-ft) isobath extending northeast and northwest from the Great South Channel. The southern edge of Stellwagen Bank and the waters around the northern tip of Cape Cod are also highlighted as supporting high cetacean species richness. Intermediate to high numbers of species are also calculated for the waters surrounding Jeffreys Ledge, the entire Stellwagen Bank, Platts Bank, Fippennies Ledge and Cashes Ledge. The best estimate of abundance for the western North Atlantic stock of white-sided dolphins is 63,368 (Waring *et al.,* 2009). A trend analysis has not been conducted for this species.

Killer Whale, Common Dolphin, Bottlenose Dolphin, Risso's Dolphin, and Harbor Porpoise

Although these five species are some of the most widely distributed small cetacean species in the world (Jefferson *et al.,* 1993), they are not commonly seen in the vicinity of the proposed project area in Massachusetts Bay (Wiley *et al.,* 1994; NCCOS, 2006; Northeast Gateway Marine Mammal Monitoring Weekly Reports, 2007). The total number of killer whales off the eastern U.S. coast is unknown, and present data are insufficient to calculate a minimum population estimate or to determine the population trends for this stock (Blaylock *et al.,* 1995). The best estimate of abundance for the western North Atlantic stock of common dolphins is 120,743 animals, and a trend analysis has not been conducted for this species (Waring *et al.,* 2007). There are several stocks of bottlenose dolphins found along the eastern U.S. from Maine to Florida. The stock that may occur in the area of the Neptune Port is the western North Atlantic coastal northern migratory stock of bottlenose dolphins. The best estimate of abundance for this stock is 7,489 animals (Waring *et al.,* 2009). There are insufficient data to determine the population trend for this stock. The best estimate of abundance for the western North Atlantic stock of Risso's dolphins is 20,479 animals (Waring *et al.,* 2009). There are insufficient data to determine the population trend for this stock. The best estimate of abundance for the Gulf of Maine/Bay of Fundy stock of harbor porpoise is 89,054 animals (Waring *et al.,* 2009). A trend analysis has not been conducted for this species.

Harbor Seal and Gray Seal

In the U.S. waters of the western North Atlantic, both harbor and gray seals are usually found from the coast of Maine south to southern New England and New York (Waring *et al.*, 2010).

Along the southern New England and New York coasts, harbor seals occur seasonally from September through late May (Schneider and Payne, 1983). In recent years, their seasonal interval along the southern New England to New Jersey coasts has increased (deHart, 2002). In U.S. waters, harbor seal breeding and pupping normally occur in waters north of the New Hampshire/Maine border, although breeding has occurred as far south as Cape Cod in the early part of the 20th century (Temte *et al.*, 1991; Katona *et al.,* 1993). The best estimate of abundance for the western North Atlantic stock of harbor seals is 99,340 animals (Waring *et al.*, 2009). Between 1981 and 2001, the uncorrected counts of seals increased from 10,543 to 38,014, an annual rate of 6.6 percent (Gilbert *et al.*, 2005, cited in Waring *et al.*, 2009). Although gray seals are often seen off the coast from New England to Labrador, within the U.S. waters, only small numbers of gray seals have been observed pupping on several isolated islands along the Maine coast and in Nantucket-Vineyard Sound, Massachusetts (Katona *et al.*, 1993; Rough, 1995). In the late 1990s, a year-round breeding population of approximately 400 gray seals was documented on outer Cape Cod and Muskeget Island (Warring *et al.*, 2007). Depending on the model used, the minimum estimate for the Canadian gray seal population was estimated to range between 125,541 and 169,064 animals (Trzcinski *et al.*, 2005, cited in Waring *et al.*, 2009); however, present data are insufficient to calculate the minimum population estimate for U.S. waters. Waring *et al*, (2009) note that gray seal abundance in the U.S. Atlantic is likely increasing, but the rate of increase is unknown.

Brief Background on Marine Mammal Hearing

When considering the influence of various kinds of sound on the marine environment, it is necessary to understand that different kinds of marine life are sensitive to different frequencies of sound. Based on available behavioral data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data, Southall *et al.* (2007) designate ''functional hearing groups'' for marine mammals and estimate the lower and upper frequencies of functional hearing of the groups. The functional groups and the associated frequencies are indicated below (though animals are less sensitive to sounds at the outer edge of their functional range and most sensitive to sounds of frequencies within a smaller range somewhere in the middle of their functional hearing range):

- Low frequency cetaceans (13 species of mysticetes): functional

hearing is estimated to occur between approximately 7 Hz and 22 kHz;

• Mid-frequency cetaceans (32 species of dolphins, six species of larger toothed whales, and 19 species of beaked and bottlenose whales): functional hearing is estimated to occur between approximately 150 Hz and 160 kHz;

• High frequency cetaceans (eight species of true porpoises, six species of river dolphins, Kogia, the franciscana, and four species of cephalorhynchids): functional hearing is estimated to occur between approximately 200 Hz and 180 kHz; and

• Pinnipeds in Water: functional hearing is estimated to occur between approximately 75 Hz and 75 kHz, with the greatest sensitivity between approximately 700 Hz and 20 kHz.

As mentioned previously in this document, 13 marine mammal species (11 cetacean and two pinniped species) are likely to occur in the NEG Port area. Of the 11 cetacean species likely to occur in NEG's project area, four are classified as low frequency cetaceans (*i.e.*, North Atlantic right, humpback, fin, and minke whales), six are classified as mid-frequency cetaceans (*i.e.*, killer and pilot whales and bottlenose, common, Risso's, and Atlantic white-sided dolphins), and one is classified as a high-frequency cetacean (*i.e.*, harbor porpoise) (Southall *et al.*, 2007).

Potential Effects of the Specified Activity on Marine Mammals

Potential effects of NEG's proposed port operations would most likely be acoustic in nature. LNG port operations introduce sound into the marine environment. The effects of noise on marine mammals are highly variable, and can be categorized as follows (based on Richardson *et al.*, 1995): (1) The noise may be too weak to be heard at the location of the animal (*i.e.*, lower than the prevailing ambient noise level, the hearing threshold of the animal at relevant frequencies, or both); (2) The noise may be audible but not strong enough to elicit any overt behavioral response; (3) The noise may elicit reactions of variable conspicuousness and variable relevance to the well being of the marine mammal; these can range from temporary alert responses to active avoidance reactions such as vacating an area at least until the noise event ceases; (4) Upon repeated exposure, a marine mammal may exhibit diminishing responsiveness (habituation), or disturbance effects may persist; the latter is most likely with sounds that are highly variable in characteristics, infrequent and unpredictable in occurrence, and associated with situations that a marine mammal perceives as a threat; (5) Any anthropogenic noise that is strong enough to be heard has the potential to reduce (mask) the ability of a marine mammal to hear natural sounds at similar frequencies, including calls from conspecifics, and underwater environmental sounds such as surf noise; (6) If mammals remain in an area because it is important for feeding, breeding or some other biologically important purpose even though there is chronic exposure to noise, it is possible that there could be noise-induced physiological stress; this might in turn have negative effects on the well-being or reproduction of the animals involved; and (7) Very strong sounds have the potential to cause temporary or permanent reduction in hearing sensitivity. In terrestrial mammals, and presumably marine mammals, received sound levels must far exceed the animal's hearing threshold for there to be any temporary threshold shift (TTS) in its hearing ability. For transient sounds, the sound level necessary to cause TTS is inversely related to the duration of the sound. Received sound levels must be even higher for there to be risk of permanent hearing impairment. In addition, intense acoustic (or explosive events) may cause trauma to tissues associated with organs vital for hearing, sound production, respiration and other functions. This trauma may include minor to severe hemorrhage.

There are three general categories of sounds recognized by NMFS: continuous (such as shipping sounds), intermittent (such as vibratory pile driving sounds), and impulse. No impulse noise activities, such as blasting or standard pile driving, are associated with this project. The noise sources of potential concern are regasification/offloading (which is a continuous sound) and dynamic positioning of vessels using thrusters (an intermittent sound) from EBRVs during docking at the NEG port facility. Noise generated from regasification/offloading is modeled to be under 120 dB, therefore, no take is expected from this activity. Based on research by Malme *et al.* (1983; 1984), for both continuous and intermittent sound sources, Level B harassment is presumed to begin at received levels of 120-dB. The detailed description of the noise that would result from the proposed LNG Port operations is provided in the **Federal Register** notice for the initial construction and operations of the NEG LNG Port facility and Pipeline Lateral in 2007 (72 FR 27077; May 14, 2007).

NEG Port Activities

Underwater noise generated at the NEG Port has the potential to result from two distinct actions, including closed-loop regasification of LNG and/or EBRV maneuvering during coupling and decoupling with STL buoys. To evaluate the potential for these activities to result in underwater noise that could harass marine mammals, Excelerate conducted field sound survey studies during periods of March 21 to 25, 2005, and August 6 to 9, 2006, while the EBRV *Excelsior* was both maneuvering and moored at the operational Gulf Gateway Port located 116 mi (187 km) offshore in the Gulf of Mexico (the Gulf) (see Appendices B and C of the NEG application). EBRV maneuvering conditions included the use of both stern and bow thrusters required for dynamic positioning during coupling. These data were used to model underwater sound propagation at the NEG Port. The pertinent results of the field survey are provided as underwater sound source pressure levels as follows:

• Sound levels during closed-loop regasification ranged from 104 to 110 dB. Maximum levels during steady state operations were 108 dB.

• Sound levels during coupling operations were dominated by the periodic use of the bow and stern thrusters and ranged from 160 to 170 dBL.

Figures 1–1 and 1–2 of NEG's IHA application present the net acoustic impact of one EBRV operating at the NEG Port. Thrusters are operated intermittently and only for relatively short durations of time. The resulting area within the 120 dB isopleth is less than 1 km^2 with the linear distance to the isopleths extending 430 m (1,411 ft). The area within the 180 dB isopleth is very localized and will not extend beyond the immediate area where EBRV coupling operations are occurring.

The potential impacts to marine mammals associated with sound propagation from vessel movements, anchors, chains and LNG regasification/offloading could be the temporary and short-term displacement of seals and whales from within the 120-dB zones ensonified by these noise sources. Animals would be expected to re-occupy the area once the noise ceases.

Anticipated Effects on Habitat

Approximately 4.8 acres of seafloor has been converted from soft substrate to artificial hard substrate. The soft-bottom benthic community may be replaced with organisms associated with

naturally occurring hard substrate, such as sponges, hydroids, bryozoans, and associated species. The benthic community in the up to 43 acres (worst case scenario based on severe 100-year storm with EBRVs occupying both STL buoys) of soft bottom that may be swept by the anchor chains while EBRVs are docked will have limited opportunity to recover, so this area will experience a long-term reduction in benthic productivity. In addition, disturbance from anchor chain movement would result in increased turbidity levels in the vicinity of the buoys that could affect prey species for marine mammals; however, as indicated in the final EIS/EIR, these impacts are expected to be short-term, indirect, and minor.

Daily removal of sea water from EBRV intakes will reduce the food resources available for planktivorous organisms. Water usage would be limited to the standard requirements of NEG's normal support vessel. As with all vessels operating in Massachusetts Bay, sea water uptake and discharge is required to support engine cooling, typically using a once-through system. The rate of seawater uptake varies with the ship's horsepower and activity and therefore will differ between vessels and activity type. For example, the *Gateway Endeavor* is a 90-ft (27 m) vessel powered with a 1,200 horsepower diesel engine with a four-pump seawater cooling system. This system requires seawater intake of about 68 gallons per minute (gpm) while idling and up to about 150 gpm at full power. Use of full power is required generally for transit. A conservatively high estimate of vessel activity for the *Gateway Endeavor* would be operation at idle for 75% of the time and full power for 25% of the time. During routine activities, this would equate to approximately 42,480 gallons of seawater per 8-hour work day. When compared to the engine cooling requirements of an EBRV over an 8-hour period (approximately 17.62 million gallons), the *Gateway Endeavor* uses about 0.2% of the EBRV requirement. To put this water use into context, the final EIS/EIR for the proposed NEG Port concluded that the impacts to fish populations and to marine mammals that feed on fish or plankton resulting from water use by an EBRV during port operations (approximately 39,780,000 gallons over each 8-day regasification period) would be minor. Water use by support vessels during routine port activities would not materially add to the overall impacts evaluated in the final EIS/EIR. Additionally, discharges associated with the *Gateway Endeavor* and/or other support/maintenance vessels that are 79 feet or greater in length, are now regulated under the Clean Water Act (CWA) and must receive and comply with the United States Environmental Protection Agency (EPA) Vessel General Permit (VGP). The permit incorporates the USCG mandatory ballast water management and exchange standards, and provides technology- and water quality-based effluent limits for other types of discharges, including deck runoff, bilge water, graywater, and other pollutants. It also establishes specific corrective actions, inspection, and monitoring requirements and recordkeeping and reporting requirements for each vessel. Massachusetts Bay circulation will not be altered, so plankton will be continuously transported into the NEG Port area. The removal of these species is minor and unlikely to affect in a measurable way the food sources available to marine mammals.

In conclusion, NMFS has preliminarily determined that NEG's proposed port operations are not expected to have any habitat-related effects that could cause significant or long-term consequences for individual marine mammals or on the food sources that they utilize. Proposed Monitoring and Mitigation Measures.

In order to issue an incidental take authorization (ITA) under the MMPA, NMFS must, where applicable, set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (where relevant). In addition, NMFS must, where applicable, set forth ''requirements pertaining to the monitoring and reporting of such taking''. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the action area.

During the construction and operations of the NEG LNG Port facility in prior years, Northeast Gateway submitted reports on marine mammal sightings in the area. While it is difficult to draw biological conclusions from these reports, NMFS can make some general conclusions. Data gathered by MMOs is generally useful to indicate the presence or absence of marine mammals (often to a species level) within the safety zones (and sometimes without) and to document the implementation of mitigation measures. Though it is by no means conclusive, it is worth noting that no instances of obvious behavioral disturbance as a result of Northeast Gateway's activities were observed by the MMOs.

In addition, Northeast Gateway was required to maintain an array of Marine Autonomous Recording Units (MARUs) to monitor calling North Atlantic right whales (humpback, fin, and minke whale calls were also able to be detected).

For the proposed IHA to NEG for LNG port operations, NMFS proposes the following monitoring and mitigation measures.

Protected Species Observers

For activities related to the NEG LNG port operations, all individuals onboard the EBRVs responsible for the navigation and lookout duties on the vessel must receive training prior to assuming navigation and lookout duties, a component of which will be training on marine mammal sighting/reporting and vessel strike avoidance measures. Crew training of EBRV personnel will stress individual responsibility for marine mammal awareness and reporting.

If a marine mammal is sighted by a crew member, an immediate notification will be made to the Person-in-Charge on board the vessel and the Northeast Port Manager, who will ensure that the required vessel strike avoidance measures and reporting procedures are followed.

Vessel Strike Avoidance

(1) All EBRVs approaching or departing the port will comply with the Mandatory Ship Reporting (MSR) system to keep apprised of right whale sightings in the vicinity. Vessel operators will also receive active detections from an existing passive acoustic array prior to and during transit through the northern leg of the Boston TSS where the buoys are installed.

(2) In response to active right whale sightings (detected acoustically or reported through other means such as the MSR or Sighting Advisory System (SAS)), and taking into account safety and weather conditions, EBRVs will take appropriate actions to minimize the risk of striking whales, including reducing speed to 10 knots or less and alerting personnel responsible for navigation and lookout duties to concentrate their efforts.

(3) EBRVs will maintain speeds of 12 knots or less while in the TSS until reaching the vicinity of the buoys (except during the seasons and areas defined below, when speed will be limited to 10 knots or less). At 1.86 mi (3 km) from the NEG port, speed will be reduced to 3 knots, and to less than 1 knot at 1,640 ft (500 m) from the buoy.

(4) EBRVs will reduce transit speed to 10 knots or less over ground from March 1–April 30 in all waters bounded by straight lines connecting the following points in the order stated below. This area is known as the Off Race Point SMA and tracks NMFS regulations at 50 CFR 224.105:

42°30′00.0″ N–069°45′00.0″ W; thence to 42°30′00.0″ N–070°30′00.0″ W; thence to 42°12′00.0″ N–070°30′00.0″ W; thence to 42°12′00.0″ N–070°12′00.0″ W; thence to 42°04′56.5″ N–070°12′00.0″ W; thence along charted mean high water line and inshore limits of COLREGS limit to a latitude of 41°40′00.0″ N; thence due east to 41°41′00.0″ N–069°45′00.0″ W; thence back to starting point.

(5) EBRVs will reduce transit speed to 10 knots or less over ground from April 1–July 31 in all waters bounded by straight lines connecting the following points in the order stated below. This area is also known as the Great South Channel SMA and tracks NMFS regulations at 50 CFR 224.105:

42°30′00.0″ N–69°45′00.0″ W
41°40′00.0″ N–69°45′00.0″ W
41°00′00.0″ N–69°05′00.0″ W
42°09′00.0″ N–67°08′24.0″ W
42°30′00.0″ N–67°27′00.0″ W
42°30′00.0″ N–69°45′00.0″ W

(6) LNGRVs are not expected to transit Cape Cod Bay. However, in the event transit through Cape Cod Bay is required, LNGRVs will reduce transit speed to 10 knots or less over ground from January 1–May 15 in all waters in Cape Cod Bay, extending to all shorelines of Cape Cod Bay, with a northern boundary of 42°12′00.0″ N latitude.

(7) A vessel may operate at a speed necessary to maintain safe maneuvering speed instead of the required 10 knots only if justified because the vessel is in an area where oceanographic, hydrographic, and/or meteorological conditions severely restrict the maneuverability of the vessel and the need to operate at such speed is confirmed by the pilot on board or, when a vessel is not carrying a pilot, the master of the vessel. If a deviation from the 10-knot speed limit is necessary, the reasons for the deviation, the speed at which the vessel is operated, the latitude and longitude of the area, and the time and duration of such deviation shall be entered into the logbook of the vessel. The master of the vessel shall attest to the accuracy of the logbook entry by signing and dating it.

Research Passive Acoustic Monitoring (PAM) Program

Northeast Gateway shall monitor the noise environment in Massachusetts Bay in the vicinity of the NEG Port using an array of 19 MARUs that were deployed initially in April 2007 to collect data during the preconstruction and active construction phases of the NEG Port and Algonquin Pipeline Lateral. A description of the MARUs can be found in Appendix A of the NEG and Algonquin application. These 19 MARUs will remain in the same configuration during full operation of the NEG Port. The MARUs collect archival noise data and are not designed to provide real-time or near-real-time information about vocalizing whales. Rather, the acoustic data collected by the MARUs shall be analyzed to document the seasonal occurrences and overall distributions of whales (primarily fin, humpback, and right whales) within approximately 10 nautical miles (18 km) of the NEG Port and shall measure and document the noise ''footprint'' of Massachusetts Bay so as to eventually assist in determining whether an overall increase in noise in the Bay associated with the NEG Port might be having a potentially negative impact on marine mammals. The overall intent of this system is to provide better information for both regulators and the general public regarding the acoustic footprint associated with long-term operation of the NEG Port in Massachusetts Bay and the distribution of vocalizing marine mammals during NEG Port activities.

In addition to the 19 MARUs, Northeast Gateway will deploy 10 auto-detection buoys (ABs) within the TSS for the operational life of the NEG Port. A description of the ABs is provided in Appendix A of this NEG and Algonquin's application. The purpose of the ABs shall be to detect a calling North Atlantic right whale an average of 5 nm (9.26 km) from each AB (detection ranges will vary based on ambient underwater conditions). The AB system shall be the primary detection mechanism that alerts the EBRV captains to the occurrence of right whales, heightens EBRV awareness, and triggers necessary mitigation actions as described in the Marine Mammal Detection, Monitoring, and Response Plan included as Appendix A of the NEG application.

Northeast Gateway has engaged representatives from Cornell University's Bioacoustics Research Program and the Woods Hole Oceanographic Institution as the consultants for developing, implementing, collecting, and analyzing the acoustic data; reporting; and maintaining the acoustic monitoring system.

Further information detailing the deployment and operation of arrays of 19 passive seafloor acoustic recording units (MARUs) centered on the terminal site and the 10 ABs that are to be placed at approximately 5-m (8.0-km) intervals within the recently modified TSS can be found in the Marine Mammal Detection, Monitoring, and Response Plan included as Appendix A of the NEG and Algonquin application.

Mitigation Conclusions

NMFS has carefully evaluated the applicant's proposed mitigation measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and
- The practicability of the measure for applicant implementation.

Based on our evaluation of the applicant's proposed measures, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Reporting

The Project area is within the Mandatory Ship Reporting Area (MSRA), so all vessels entering and exiting the MSRA will report their activities to WHALESNORTH. During all phases of the Northeast Gateway LNG Port operations, sightings of any injured or dead marine mammals will be reported immediately to the USCG and NMFS, regardless of whether the injury or death is caused by project activities.

An annual report on marine mammal monitoring and mitigation shall be submitted to NMFS Office of Protected Resources and NMFS Northeast

Regional Office within 90 days after the expiration of the IHA. The annual report shall include data collected for each distinct marine mammal species observed in the project area in Massachusetts Bay during the period of LNG facility operation. Description of marine mammal behavior, overall numbers of individuals observed, frequency of observation, and any behavioral changes and the context of the changes relative to operation activities shall also be included in the annual report.

General Conclusions Drawn From Previous Monitoring Reports

Based on monthly activity reports submitted to NMFS for the period between August 2010 and May 2011, there were no activities at the NEG Port during the period. Therefore, no take of marine mammals occurred or were reported during this period.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, the MMPA defines ''harassment'' as: Any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment]. Only take by Level B harassment is anticipated as a result of NEG's operational activities. Anticipated take of marine mammals is associated with operation of dynamic positioning during the docking of the LNG vessels. The regasification process itself is an activity that does not rise to the level of taking, as the modeled source level for this activity is 108 dB. Certain species may have a behavioral reaction to the sound emitted during the activities. Hearing impairment is not anticipated. Additionally, vessel strikes are not anticipated, especially because of the speed restriction measures that are proposed that were described earlier in this document.

Although Northeast Gateway stated that the ensonified area of 120-dB isopleths by EBRV's decoupling would be less than 1 km^2 as measured in the Gulf of Mexico in 2005, due to the lack of more recent sound source verification and the lack of source measurement in Massachusetts Bay, NMFS uses a more conservative spreading model to calculate the 120 dB isopleth received sound level. This model was also used to establish the 120-dB zone of influence (ZOI) for the previous IHAs issued to Northeast Gateway. In the vicinity of the LNG Port, where the water depth is about 80 m (262 ft), the 120-dB radius is estimated to be 2.56 km (1.6 mi) maximum from the sound source during dynamic positioning for the container ship, making a maximum ZOI of 21 km^2 (8.1 mi^2). For shallow water depth (40 m or 131 ft) representative of the northern segment of the Algonquin Pipeline Lateral, the 120-dB radius is estimated to be 3.31 km (2.06 mi), the associated ZOI is 34 km^2 (13.1 mi^2).

The basis for Northeast Gateway and Algonquin's ''take'' estimate is the number of marine mammals that would be exposed to sound levels in excess of 120 dB, which is the threshold used by NMFS for continuous sounds. For the NEG port facility operations, the take estimates are determined by multiplying the area of the EBRV's ZOI (34 km^2) by local marine mammal density estimates, corrected to account for 50 percent more marine mammals that may be underwater, and then multiplying by the estimated LNG container ship visits per year. In the case of data gaps, a conservative approach was used to ensure the potential number of takes is not underestimated, as described next.

NMFS recognizes that baleen whale species other than North Atlantic right whales have been sighted in the project area from May to November. However, the occurrence and abundance of fin, humpback, and minke whales is not well documented within the project area. Nonetheless, NMFS uses the data on cetacean distribution within Massachusetts Bay, such as those published by the National Centers for Coastal Ocean Science (NCCOS, 2006), to estimate potential takes of marine mammals species in the vicinity of project area.

The NCCOS study used cetacean sightings from two sources: (1) The North Atlantic Right Whale Consortium (NARWC) sightings database held at the University of Rhode Island (Kenney, 2001); and (2) the Manomet Bird Observatory (MBO) database, held at NMFS Northeast Fisheries Science Center (NEFSC). The NARWC data contained survey efforts and sightings data from ship and aerial surveys and opportunistic sources between 1970 and 2005. The main data contributors included: Cetacean and Turtles Assessment Program (CETAP), Canadian Department of Fisheries and Oceans, PCCS, International Fund for Animal Welfare, NOAA's NEFSC, New England Aquarium, Woods Hole Oceanographic Institution, and the University of Rhode Island. A total of 653,725 km (406,293 mi) of survey track and 34,589 cetacean observations were provisionally selected for the NCCOS study in order to minimize bias from uneven allocation of survey effort in both time and space. The sightings-per-unit-effort (SPUE) was calculated for all cetacean species by month covering the southern Gulf of Maine study area, which also includes the project area (NCCOS, 2006).

The MBO's Cetacean and Seabird Assessment Program (CSAP) was contracted from 1980 to 1988 by NMFS NEFSC to provide an assessment of the relative abundance and distribution of cetaceans, seabirds, and marine turtles in the shelf waters of the northeastern United States (MBO, 1987). The CSAP program was designed to be completely compatible with NMFS NEFSC databases so that marine mammal data could be compared directly with fisheries data throughout the time series during which both types of information were gathered. A total of 5,210 km (8,383 mi) of survey distance and 636 cetacean observations from the MBO data were included in the NCCOS analysis. Combined valid survey effort for the NCCOS studies included 567,955 km (913,840 mi) of survey track for small cetaceans (dolphins and porpoises) and 658,935 km (1,060,226 mi) for large cetaceans (whales) in the southern Gulf of Maine. The NCCOS study then combined these two data sets by extracting cetacean sighting records, updating database field names to match the NARWC database, creating geometry to represent survey tracklines and applying a set of data selection criteria designed to minimize uncertainty and bias in the data used.

Owing to the comprehensiveness and total coverage of the NCCOS cetacean distribution and abundance study, NMFS calculated the estimated take number of marine mammals based on the most recent NCCOS report published in December 2006. A summary of seasonal cetacean distribution and abundance in the project area is provided above, in the ''Description of Marine Mammals in the Area of the Specified Activities'' section. For a detailed description and calculation of the cetacean abundance data and SPUE, please refer to the NCCOS study (NCCOS, 2006). These data show that the relative abundance of North Atlantic right, fin, humpback, minke, and pilot whales, and Atlantic white-sided dolphins for all seasons, as calculated by SPUE in number of animals per square kilometer, is 0.0082, 0.0097, 0.0265, 0.0059, 0.0407, and 0.1314 n/km, respectively.

In calculating the area density of these species from these linear density data, NMFS used 1.15 mi (1.85 km) as the strip width (W). This strip width is based on the distance of visibility used in the NARWC data that was part of the NCCOS (2006) study. However, those surveys used a strip transect instead of a line transect methodology. Therefore, in order to obtain a strip width, one must divide the visibility or transect value in half. Since the visibility value used in the NARWC data was 2.3 mi (3.7 km), it thus gives a strip width of 1.15 mi (1.85 km). Based on this information, the area density (D) of these species in the project area can be obtained by the following formula:

D = SPUE/2W.

Based on this calculation method, the estimated take numbers per year for North Atlantic right, fin, humpback, minke, and pilot whales, and Atlantic white-sided dolphins by the NEG Port facility operations, which is an average of 65 visits by LNG container ships to the project area per year (or approximately 1.25 visits per week), operating the vessels' thrusters for dynamic positioning before offloading natural gas, corrected for 50 percent underwater, are 5, 5, 15, 3, 23, and 73, respectively. These numbers represent maximum of 1.32, 0.24, 1.73, 0.10, 0.08, and 0.11 percent of the populations for these species, respectively. Since it is very likely that individual animals could be ''taken'' by harassment multiple times, these percentages are the upper boundary of the animal population that could be affected. Therefore, the actual number of individual animals being exposed or taken would be far less. There is no danger of injury, death, or hearing impairment from the exposure to these noise levels.

In addition, bottlenose dolphins, common dolphins, killer whales, Risso's dolphins, harbor porpoises, harbor seals, and gray seals could also be taken by Level B harassment as a result of deepwater LNG port operations. Since these species are less likely to occur in the area, and there are no density estimates specific to this particular area, NMFS based the take estimates on typical group size. Therefore, NMFS estimates that up to approximately 10 bottlenose dolphins, 20 common dolphins, 20 Risso's dolphins, 20 killer whales, 5 harbor porpoises, 15 harbor seals, and 15 gray seals could be exposed to continuous noise at or above 120 dB re 1 µPa rms incidental to operations during the one year period of the IHA, respectively.

Since Massachusetts Bay represents only a small fraction of the western North Atlantic basin where these animals occur NMFS has preliminarily determined that only small numbers of the affected marine mammal species or stocks would be potentially affected by the Northeast Gateway LNG deepwater project. The take estimates presented in this section of the document do not take into consideration the mitigation and monitoring measures that are proposed for inclusion in the IHA (if issued).

Negligible Impact and Small Numbers Analysis and Preliminary Determination

NMFS has defined ''negligible impact'' in 50 CFR 216.103 as ''* * * an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.'' In making a negligible impact determination, NMFS considers a variety of factors, including but not limited to: (1) The number of anticipated mortalities; (2) the number and nature of anticipated injuries; (3) the number, nature, intensity, and duration of Level B harassment; and (4) the context in which the takes occur.

No injuries or mortalities are anticipated to occur as a result of Northeast Gateway's proposed port operation activities, and none are proposed to be authorized by NMFS. Additionally, animals in the area are not anticipated to incur any hearing impairment (*i.e.*, TTS or PTS), as the modeling of source levels indicates that none of the source received levels exceed 180 dB (rms).

While some of the species occur in the proposed project area year-round, some species only occur in the area during certain seasons. Humpback and minke whales are not expected in the project area in the winter. During the winter, a large portion of the North Atlantic right whale population occurs in the southeastern U.S. calving grounds (*i.e.*, South Carolina, Georgia, and northern Florida). The fact that certain activities will occur during times when certain species are not commonly found in the area will help reduce the amount of Level B harassment for these species.

Many animals perform vital functions, such as feeding, resting, traveling, and socializing, on a diel cycle (24-hr cycle). Behavioral reactions to noise exposure (such as disruption of critical life functions, displacement, or avoidance of important habitat) are more likely to be significant if they last more than one diel cycle or recur on subsequent days (Southall *et al.*, 2007). Consequently, a behavioral response lasting less than one day and not recurring on subsequent days is not considered particularly severe unless it could directly affect reproduction or survival (Southall *et al.*, 2007). Operational activities are not anticipated to occur at the Port on consecutive days. In addition, Northeast Gateway EBRVs are expected to make 65 port calls throughout the year, with thruster use needed for a couple of hours. Therefore, Northeast Gateway will not be creating increased sound levels in the marine environment for prolonged periods of time.

Of the 13 marine mammal species likely to occur in the area, four are listed as endangered under the ESA: North Atlantic right, humpback, and fin whales. All of these species, as well as the northern coastal stock of bottlenose dolphin, are also considered depleted under the MMPA. There is currently no designated critical habitat or known reproductive areas for any of these species in or near the proposed project area. However, there are several well known North Atlantic right whale feeding grounds in the Cape Cod Bay and Great South Channel. No mortality or injury is expected to occur, and due to the nature, degree, and context of the Level B harassment anticipated, the activity is not expected to impact rates of recruitment or survival.

The population estimates for the species that may be taken by Level B behavioral harassment contained in the most recent U.S. Atlantic Stock Assessment Reports were provided earlier in this document. From the most conservative estimates of both marine mammal densities in the project area and the size of the 120-dB ZOI, the maximum calculated number of individual marine mammals for each species that could potentially be harassed annually is small relative to the overall population sizes (1.73 percent for humpback whales and 1.32 percent for North Atlantic right whales and no more than 1 percent of any other species).

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, NMFS preliminarily finds that the operation activities of the Northeast Gateway LNG Port will result in the incidental take of small numbers of marine mammals, by Level B harassment only, and that the total taking from Northeast Gateway's proposed activities will have a

negligible impact on the affected species or stocks.

Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

On February 5, 2007, NMFS concluded consultation with MARAD and the USCG, under section 7 of the ESA, on the proposed construction and operation of the Northeast Gateway LNG facility and issued a biological opinion. The finding of that consultation was that the construction and operation of the Northeast Gateway LNG terminal may adversely affect, but is not likely to jeopardize, the continued existence of northern right, humpback, and fin whales, and is not likely to adversely affect sperm, sei, or blue whales and Kemp's ridley, loggerhead, green or leatherback sea turtles. An incidental take statement (ITS) was issued following NMFS' issuance of the 2007 IHA.

On November 15, 2007, Northeast Gateway and Algonquin submitted a letter to NMFS requesting an extension for the LNG Port construction into December 2007. Upon reviewing Northeast Gateway's weekly marine mammal monitoring reports submitted under the previous IHA, NMFS recognized that the potential take of some marine mammals resulting from the LNG Port and Pipeline Lateral by Level B behavioral harassment likely had exceeded the original take estimates. Therefore, NMFS Northeast Region (NER) reinitiated consultation with MARAD and USCG on the construction and operation of the Northeast Gateway LNG facility. On November 30, 2007, NMFS NER issued a revised biological opinion, reflecting the revised construction time period and including a revised ITS. This revised biological opinion concluded that the construction and operation of the Northeast Gateway LNG terminal may adversely affect, but is not likely to jeopardize, the continued existence of northern right, humpback, and fin whales, and is not likely to adversely affect sperm, sei, or blue whales.

NMFS' Permits, Conservation and Education division has preliminarily determined that the activities described in the proposed IHA are the same as those analyzed in the revised 2007 biological opinion. Therefore, a new consultation is not required for issuance of this IHA. If the IHA is issued, NMFS NER will need to issue a new ITS.

National Environmental Policy Act

MARAD and the USCG released a Final EIS/Environmental Impact Report (EIR) for the proposed Northeast Gateway Port and Pipeline Lateral. A notice of availability was published by MARAD on October 26, 2006 (71 FR 62657). The Final EIS/EIR provides detailed information on the proposed project facilities, construction methods and analysis of potential impacts on marine mammals.

NMFS was a cooperating agency (as defined by the Council on Environmental Quality (40 CFR 1501.6)) in the preparation of the Draft and Final EISs. NMFS reviewed the Final EIS and adopted it on May 4, 2007. NMFS issued a separate Record of Decision for issuance of authorizations pursuant to section 101(a)(5) of the MMPA for the construction and operation of the Northeast Gateway's LNG Port Facility in Massachusetts Bay.

Dated: July 14, 2011.

Helen Golde,

Deputy Director, Office of Protected Resources, National Marine Fisheries Service.

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