

RECORD OF DECISION

I. Applicant: Cape Wind Associates, LLC (CWA)

Application Number: NAE-2004-388

This Record of Decision (ROD) incorporates by reference the Corps of Engineers *Cape Wind Energy Project, Draft Environmental Impact Statement, November 2004*, the Minerals Management Service¹ (MMS) *Cape Wind Energy Project, Final Environmental Impact Statement, January 2009* (FEIS), the Mineral Management Service (MMS) *Cape Wind Energy Project, Environmental Assessment and Finding of No New Significant Impact, April 28, 2010*, and the MMS *Record of Decision, Cape Wind Energy Project, Horseshoe Shoal, Nantucket Sound, April 28, 2010*,. The Corps of Engineers has been a cooperating agency with MMS for purposes of complying with the National Environmental Policy Act (NEPA).

II. This permit action is being taken under authority delegated to the District Engineer from the Secretary of the Army and the Chief of Engineers by 33 CFR 325.8, pursuant to:

- Section 404 of the Clean Water Act
 Section 10 of the Rivers and Harbors Act of 1899

Under Section 404 of the Clean Water Act, the Corps of Engineers has jurisdiction to regulate the discharge of dredged or fill material in waters of the United States. The seaward limit of waters of the United States for purposes of Section 404 is the territorial seas, which extend three nautical miles from the baseline defining the territorial sea. 33 C.F.R. § 328.4(a). The baseline is generally the line on the shore reached by the ordinary low tides. 33 C.F.R. § 329.12(a)(1). Here, the only activity subject to Section 404 regulation is the discharge of dredged and fill material associated with the transition of the 115 kV submarine transmission cables from water to land at Lewis Bay in Harwich, MA.

Under Section 10 of the Rivers and Harbors Act of 1899, the Corps of Engineers has jurisdiction to regulate structures and work in and affecting navigable waters of the United States. 33 U.S.C. § 403; 33 C.F.R. § Part 322. As with Section 404, the reach of navigable waters of the United States subject to Section 10 jurisdiction extends to the territorial seas. 33 C.F.R. § 329.12. In addition, the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. § 1333(e), extended Corps Section 10 authority to the outer continental shelf (OCS) for the regulation of structures attached to the seabed. Here, the Corps's Section 10 authority extends over all structures and work associated with the project in the territorial seas, and over all structures (including transmission cables) on the outer continental shelf.

III. Description, Location and Purpose of Work:

The project includes work and structures in navigable waters, including the discharge of dredged or fill material, for a proposed wind energy facility consisting of 130 wind turbine generators

¹ On June 18, 2010, the Secretary of the Interior issued Order No. 3302, which changed the name of MMS to the Bureau of Ocean Energy Management, Regulation, and Enforcement ("BOEMRE"). In this document, the Corps refers to the agency by its old name, MMS, to avoid confusion and to be consistent with the NEPA documents for this project that were created before the name change occurred.

located on Horseshoe Shoal in Nantucket Sound between Cape Cod, Martha's Vineyard and Nantucket. The work is described on the plans attached to the Corps January 22, 2008 Public Notice entitled "Purpose: Wind Energy Generation and Submarine/Overland Transmission Cable Project," on 18 sheets dated February 15, 2007. The wind turbine generators (WTG) consist of the 3 rotor blades, transmission system, generator, yaw system, and the control and electrical systems. This is mounted on top of a steel tower supported by a monopole foundation. These will be arranged in a grid pattern 1/3 to 1/2 mile apart. A detailed description of the project can be found in Section 2 of the MMS FEIS.

The electricity produced by each turbine will be transmitted via a 33 kilovolt submarine transmission cable system to the Electric Service Platform centrally located within the turbine array. The electricity will then be transmitted to the mainland via two 115 kilovolt alternating current submarine cable circuits, making landfall at New Hampshire Avenue, Yarmouth, MA.

Several changes to the project proposal have occurred since the original permit application of 2001. The configuration and location of the turbines has changed slightly. In 2004, the state territorial boundary expanded further seaward in this area of Nantucket Sound. Ten of the original turbine locations were within these newly designated state waters, and the project was revised to move these turbines into federal waters. The proposed locations for twenty other turbines have changed to avoid archeologically sensitive areas, potential impacts to commercial fishing, and to reduce the potential for impacts to commercial navigation. See Sheet 3 of the February 15, 2007 plans for the current locations of the turbines. Rock armoring is now proposed as an alternative to the scour mats at the base of the turbine monopole foundations, if needed. The lighting plan has been developed consistent with Federal Aviation Administration (FAA) guidance. While the original application did not include any activities subject to Section 404 review, the applicant has changed the construction method for landfall transition to include backfilling the area within the temporary cofferdam, which would result in the discharge of dredged or fill material requiring a 404 permit. The landfall transition of the 115 kilovolt submarine transmission lines from water to land at Yarmouth will be through the use of horizontal directional drilling (HDD) to avoid disturbance of the shoreline. A temporary cofferdam will be installed at the seaward end of the HDD borehole. The steel sheetpile cofferdam will enclose an area of approximately 2925 square feet with dimensions of 65 feet wide and 45 feet long. It will be open at one end to allow the installation of the conduits. A temporary turbidity curtain may be used to confine sediments within the work area, if needed. Approximately 840 cubic yards of sediment will be temporarily removed, stored on a barge, and backfilled after the installation is completed. Clean sand will be used to supplement the backfill material as needed to restore the seafloor to preconstruction grade. See Sheets 12-14 of the February 15, 2007 plans.

IV. Description of General Environmental Setting: The proposed project would be located on Horseshoe Shoal in Nantucket Sound south of Cape Cod, Massachusetts and landward of the islands of Nantucket and Martha's Vineyard. A detailed description of the affected environment can be found in Section 4 of the FEIS. The offshore location where the wind turbines would be constructed is a dynamic environment subject to naturally high suspended sediment concentrations in near-bottom waters due to strong tidal currents and wind and storm generated waves, particularly in shoal areas. Water depths in the area of Horseshoe Shoal are as shallow as

0.5 ft. mean lower low water (MLLW) to 60 ft. The composition of the seafloor in the project area from Horseshoe Shoal to landfall at Lewis Bay is mainly sand with localized areas of glacial erratic (pebble to boulder sized rock fragments carried by glacial ice), and a concentrated outcrop of possible till (an unstratified glacial deposit that can include clay, silt, sand, cobbles, and boulders). Several areas within the project area have been identified as areas of potential submerged aquatic vegetation, including an eelgrass bed near Egg Island in Lewis Bay. Nantucket Sound is located within the Atlantic flyway, and it attracts many species of waterbirds year-round. In addition to waterbirds, large numbers of terrestrial birds migrate over Horseshoe Shoal in the fall and spring. The project area may be a location where bat species traverse during spring and fall migration. Horseshoe Shoal also provides habitat for numerous shellfish and finfish species, some of which are harvested by commercial and recreational fishermen. Certain species of marine mammals (seal, dolphin, and whale species) and sea turtles can also be found in or around the project area.

The Sound is an essential feature in drawing tourists to the region, and recreation and tourism are the economic base for the region. The coastal areas of the Cape and Islands provide opportunities for swimming, boating, windsurfing, jetskiing, hiking and sightseeing. Local businesses include numerous marinas, boat yards, yacht clubs, waterfront restaurants and the associated accommodations. Charter fishing, whale watching tours, birding, kayaking, scuba diving, canoeing and bicycle tours are available. The transmission line will make land fall at Lewis Bay in Yarmouth. The coastline in this area is a highly developed residential area with some coastal structures, including properties listed or eligible for listing on the National Register of Historic Places, including Traditional Cultural Properties of the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head (Aquinnah). Nantucket Sound itself has been identified as a Traditional Cultural Property of the Tribes eligible for listing on the National Register. A list of 95 shipwrecks reported lost in the general vicinity of the project area from 1744 to 1990 has been compiled. The Hyannis-Nantucket ferry traverses the area in and out of Hyannis Harbor, and there are three airports located in the vicinity of the proposed action. There are two main shipping channels used by larger vessels in Nantucket Sound, the Main Channel (south of Horseshoe Shoal) and the North Channel (north of Horseshoe Shoal).

V. Functions and Values Assessment of Resources Impacted: Nantucket Sound is used by fish, shellfish, marine mammals, birds and invertebrates, as set forth in detail in Section 4 of the FEIS. The wind turbine generators would be installed on Horseshoe Shoal; a highly dynamic, sandy area. Water depths on the shoal are from 0.5 to 60 ft MLLW with typical tidal heights of 1 to 4 ft. Red and green macro-algae and some patchy eelgrass were found in the Horseshoe Shoal area. There are hard and soft-bottom benthic habitats, shellfish, meiofauna and plankton in the area. The hard bottom area is primarily along the western border of the WTG array. These areas may be used by macroalgae, sponges, barnacles, mollusks, tunicates, crabs, sea stars, gastropods, and fish such as tautogs. The soft bottom area is primarily unstable sand which is generally used by motile organisms that can avoid the shifting sand or by organisms that can burrow below. The submarine transmission cable will cross a recreational shellfish area. The Town of Yarmouth seeds the area annually, and as a result, quahogs are the most prevalent shellfish. The cable will be installed close to, but not in, eelgrass in Lewis Bay near Egg Island. Eelgrass is submerged aquatic vegetation/ vegetated shallows, a special aquatic site considered to be an area "possessing special ecological characteristics of productivity, habitat, wildlife

protection, or other important and easily disrupted ecological values” by 40 CFR Part 230 (404(b)(1) Guidelines). Eelgrass can provide food and shelter to juvenile fish and invertebrates. The project area is designated Essential Fish Habitat in accordance with the Magnuson-Stevens Fishery Conservation and Management Act for 17 fish and three invertebrates: Atlantic cod, scup, black sea bass, winter flounder, windowpane, summer flounder, yellowtail flounder, Atlantic butterfish, Atlantic mackerel, blue shark, shortfin mako shark, bluefin tuna, king mackerel, Spanish mackerel, cobia, little skate, winter skate, long-finned squid, short-finned squid, and surf clam. This habitat is necessary to these fish for spawning, breeding, feeding, or growth to maturity. Nantucket Sound is a regionally significant area for waterbirds and attracts many species during migration for resting and feeding. Marine birds which may be found in the area include loons, grebes, Wilson’s storm-petrels, northern gannets, commorants, common eiders, long-tailed ducks, red-breasted mergansers, goldeneyes, gulls, terns and auks. Marine mammals which may use the open waters of Nantucket Sound include harbor seals, grey seals, hooded seals, Atlantic white-sided dolphin, striped dolphin, short-beaked common dolphin, harbor porpoise, long-finned pilot whale, minke whale, Atlantic spotted dolphin, Risso’s dolphin, dwarf sperm whale and pygmy sperm whale. Although there is no designated critical habitat for any endangered species within Nantucket Sound, consultation under the Endangered Species Act (ESA) has been completed for the following species which could be present in the Sound or adjacent coastal areas: North Atlantic right whale, humpback whale, fin whale, loggerhead sea turtle leatherback sea turtle, Kemp’s ridley sea turtle, green sea turtle, Northeastern beach tiger beetle, piping plover and roseate tern.

VI. Relationship to Existing Uses: Construction and operation of the facility will affect certain existing uses of the offshore areas in Nantucket Sound. The interaction between the project and existing uses are discussed in more detail at Section 5.3.3.7 of the FEIS. During construction of the facility, vessels, including commercial and recreational fishing vessels, would be precluded from using the immediate vicinity of construction activities. Also, fixed fishing gear would need to be placed outside areas where cable jetting operations would be occurring. A few wind turbine locations would be under construction at any one time, along with the cable jetting operation. After construction of the facility, vessels transiting the area would need to avoid the turbines and electrical service platform (ESP). Most commercial vessels transiting the area are restricted by their draft to the navigation channels outside the locations of the turbines and ESP, so it is smaller draft vessels that would be most affected. The space between turbines (0.39 miles by 0.63 miles) is far wider than the widths of existing channels in the area that are routinely used by commercial vessels. The turbines and ESP would present space use conflicts for commercial and recreational fishing activities and recreational boating, but fishing will not be prohibited within the project area. Fishing vessels would be able to trawl within the turbine array, but would need to avoid the turbines and ESP as they steer their courses. The transmission cable system will be buried at sufficient depths so there would not be an effect to trawling or anchoring in the area. Moderate impacts to marine radar are expected and vessel operators will need to take this into account when transiting the area. Recreational vessels—including sailboat events like the annual Figawi Race—will also be impacted, and will need to use more caution when navigating the turbine array. Construction of the transmission cable facility could affect future pipeline or cable installation projects, and would require coordination before new infrastructure is constructed, but should not prevent additional projects in the future. Those

people who value the unbroken ocean horizon—both from shore and on the water--will have a changed view across the Sound when the turbines are visible.

VII. Alternatives Analysis

The analysis of alternatives is an important requirement of both NEPA and USEPA's 404(b) Guidelines, 40 C.F.R. Part 230. However, there is an important distinction between the alternatives analysis under each legal framework. NEPA is a procedural statute, and the alternatives analysis under NEPA is a procedural requirement that does not mandate a substantive result. Unlike NEPA, however, the alternatives analysis of Section 404 does serve a substantive role in several ways, most notably in the identification of the least environmentally damaging practicable alternative (LEDPA), 40 C.F.R. § 230.10(a). Here, the Corps regulates the entire proposed project under Section 10 of the Rivers and Harbors Act of 1899, but only a small piece of the project under Section 404 of the Clean Water Act. As such, the NEPA analysis—and its consideration of alternatives—must address the entire project, but the 404(b) alternatives analysis is much more narrow because the only 404 fill associated with the project occurs in a single location where the submarine transmission cable comes ashore. As such, the 404(b) and LEDPA analysis focuses only on alternatives to the fill associated with the installation of the transmission cable, not the entire project. This is consistent with the 404(b) Guidelines, which contemplate situations where “NEPA documents may address a broader range of alternatives than required to be considered under” the 404(b) alternatives analysis. 40 C.F.R. § 230.10(a)(4).

1. **Project Purpose:** The project purpose is to develop and operate an alternative energy facility that utilizes the unique wind resources in waters offshore of New England employing a technology that is currently available, technically feasible, and economically viable, that can interconnect with and deliver electricity to the New England Power Pool, and make a substantial contribution to enhancing the region's electrical reliability and achieving the renewable energy requirements under the Massachusetts and regional renewable portfolio standards.

2. **NEPA Alternatives Analysis:**

The EIS examined several offshore sites in the New England region, configuration alternatives at the proposed Horseshoe Shoal site consisting of a smaller project alternative, a condensed configuration, and phased development, and the no-action alternative. Physical site screening was based upon water depth, extreme storm wave height, distance to the transmission grid, and wind resource availability. Sites screened out due to physical constraints were offshore areas near Portland, ME, Cape Ann, MA, Boston, MA, Nauset, MA, Nantucket Shoals, MA, Phelps Bank, MA, and Block Island, RI. Seven alternatives--the proposed action, no action, a smaller project, condensed configuration, phased development, and alternative sites at Monomoy Shoals and south of Tuckernuck Island—were subjected to detailed analysis in the FEIS, including an analysis of direct, indirect, and cumulative environmental effects.

A. **“No Action” Alternative**

The no action alternative would preclude the opportunity to develop a new renewable energy source and would not make a significant contribution to meeting the project power demand in the region. The impacts, both positive and negative, associated with the construction/decommission and operation would not occur. Burning of fossil fuels would be the only technology likely to

provide New England with the electric generation output at the level of the proposed project. The impacts would vary depending upon whether the fossil fuel is coal, oil or natural gas but all would have air quality impacts and emit CO₂. The “no action” alternative would not meet the purpose and need.

B. Geographic Alternatives

Among the geographic alternatives evaluated, two were evaluated in detail in the Final EIS. The South of Tuckernuck Island alternative would have the same impacts as the proposed project in 22 of the 28 categories evaluated. It would be expected to have less visual impact but more impact to avifauna, subtidal offshore resources, non-ESA marine mammals, fish and Essential Fish Habitat. The Monomoy Shoals alternative would have the same impacts as the proposed project in 20 of the 28 categories. It would be expected to have less impact to visual and cultural resources but more impact to avifauna, subtidal offshore resources, non-ESA marine mammals, fish and essential fish habitat and threatened and endangered species.

C. Minimization Alternatives

Alternatives evaluated to minimize impacts were configuration alternatives at the proposed Horseshoe Shoal site--a smaller project alternative, a condensed configuration, and phased development. The smaller project alternative reduced the impacts to water and air quality, noise, avifauna, subtidal offshore resources, non-ESA marine mammals, fish and Essential Fish Habitat, threatened and endangered species, visual and cultural resources and competing uses. The potential difference in impacts between the smaller project and the proposed project are not significant and not proportional to the reduction in the electric generation capacity. With only half of the generation capacity of the proposed project, the smaller project would not meet the project purpose of making a substantial contribution to enhancing the region's electrical reliability and achieving the state and regional renewable energy requirements. The phased development alternative had some potential for providing an opportunity to make changes in Phase 2 based upon what is learned in Phase 1, however this is uncertain and cannot be quantifiably articulated. A phased approach would result in increased impacts during construction/decommission activities and similar impacts during operation. The foot print of the condensed array would be approximately 16 square miles, 9 square miles less than the proposed project. However, the power production would be measurably reduced. The condensed array alternative would have less impact during construction to water quality, noise, avifauna, subtidal offshore resources, non-ESA marine mammals, fish and Essential Fish Habitat and threatened and endangered species. There would be greater impact to avifauna and threatened and endangered species during operation. Impacts in the other categories would be similar to the proposed project.

D. Environmentally Preferable Alternative

The Council on Environmental Quality (CEQ) NEPA regulations require federal agencies to identify the alternative considered to be environmentally preferable. 40 C.F.R. § 1505.2(b). CEQ has advised that the environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment, and that best protects, preserves, and enhances historic, cultural, and natural resources. CEQ, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Question 6a, 46 Fed. Reg. 18026 (Mar. 23, 1981). In this instance, the smaller project alternative is the environmentally

preferred alternative, as it is the alternative with the least impacts to resources in the affected environment, and, unlike the “no action” alternative, will result in electrical generation without emissions and associated environmental consequences that would likely result from facilities that would otherwise produce the electricity created by the action alternatives.

3. 404(b) Alternatives Analysis—Transmission cable alternatives

The 404(b) analysis focuses on the portion of the project where the transmission cables come to shore, as this is the only portion of the project where there will be a discharge of dredged or fill material into waters of the United States. The purpose of the transmission cables is to transport the power from the project’s electric service platform to the grid to serve the New England Power Pool. Because the electric service platform is located in Nantucket Sound, the transmission cable must be located in water of the United States to transmit the power to the grid, and is therefore a water-dependent activity.

The transition of the transmission cables from water to land will occur using horizontal directional drilling (HDD) from land to an offshore connection point. Conduits will be placed in the boreholes and the transmission cables will be pulled through the conduits. The offshore end of the HDD will terminate at a pre-excavated pit, which will be within a temporary 65 ft wide by 45 ft long cofferdam enclosing approximately 2925 sq ft. The boreholes will end at an elevation of approximately -10 ft mean lower low water. After construction is completed, the dredged area within the cofferdam will be backfilled with the dredged material, or, if necessary, supplemented with imported clean sandy material. This construction technique is considered the least damaging practicable methodology for the transition of a transmission cable from sea to land, as it will reduce turbidity associated with the dredging and reduces the potential for release of drilling fluids into Lewis Bay when the HDD reaches the connection point. Four alternatives were considered for the interconnection of the two 115 kV electric transmission circuits to the existing grid:

- Connect to NSTAR’s 115kV Barnstable Switching Station,
- Connect to NSTAR’s 115kV Harwich Substation,
- Connect to NSTAR’s 115kV Pine Street Substation in New Bedford,
- Connect to a new 115kV substation on Martha’s Vineyard, then proceed to the mainland.

A reasonable range of alternatives for the transmission lines were identified, the costs, technology and logistics of each considered, and the environmental impacts compared. The Barnstable Switching Station, the Harwich Substation, and the New Bedford Substation each would meet the project purpose and are practicable alternatives. The Martha’s Vineyard route is not a practicable alternative due to the excessive cost with no corresponding environmental benefit over the other alternatives--it is a longer route with greater environmental impacts, and will result in the same amount of 404 fill occurring where the cable would reach shore. The environmental impacts for any of the other alternatives is mostly temporary and substantially of the same type, just differing in length. Shallow bedrock could be an impediment to cable burial in portions of the New Bedford and Harwich routes, and construction techniques for embedding the cable in such conditions would result in greater environmental impacts than in a sandy bottom environment. The New Bedford route is the longer of the remaining three and presents some additional logistical issues due to the Corps of Engineers New Bedford and Fairhaven

navigation channel and hurricane barrier. Impacts due to necessary upgrading of the existing stations would be greater for the Harwich and New Bedford alternatives than at Barnstable. The Harwich route is longer than the Barnstable route. The jetplowing technique is generally recognized as the means of minimizing submarine cable installation impacts. Jet plow operation is not subject to 404 regulation. Moreover, to the extent jet plow operations were subject to 404 regulation, it would be considered the Least Environmentally Damaging Practicable Alternative, as other means of installing transmission cable create greater environmental impacts. Recent modeling indicated that sediment deposition quickly tapers off to below 0.2 inches (5 mm) at between 50 and 100 feet (15-30 m) on either side of the cable trench, and almost all sediment will be deposited within 100 feet of the trench. For any of the routes, it will be necessary to minimize nearshore impacts through the use of HDD technology and avoidance of eelgrass beds.

As the shortest route least likely to encounter a hard bottom environment, the Barnstable Switching Station is the Least Environmentally Damaging Practicable Alternative.

4. Mitigation: Mitigation and monitoring identified in the FEIS and MMS ROD is required through the MMS lease and the conditions of the Massachusetts Environmental Policy Act (MEPA) certificate. These include:

Geology- Preconstruction surveys and monitoring will be done to establish baseline conditions. Installation of scour protection around the wind turbine generators foundations will be accomplished as needed. Post construction monitoring will be done to assess scouring and cable exposure.

Air Quality- Cape Wind is required to purchase Emission Reduction Credits, use ultra low sulfur diesel fuel and limit idling for vessels using the Quonset Point staging set.

Water Quality- The preventive and emergency maintenance requirements of the Operation & Maintenance Plan, the Oil Spill Response Plan (OSRP) and the Stormwater Pollution Prevention Plan will help ensure water quality impacts are avoided.

Electrical and Magnetic Fields- Magnetic flux density will be reduced through the use of three-conductor cables and enclosing the inter-array and offshore transmission high-voltage conductors in a shielded cable.

Coastal and Intertidal Vegetation- Pre- and post construction monitoring of eelgrass beds will be used to determine if, and where, replanting is needed. Vessels will not be anchored in eelgrass. A dive survey will determine the limits of eelgrass in the Egg Island vicinity, which will be avoided. Current aerial photographs will be used to direct the jet-plowing route so as to avoid transient eelgrass beds.

Birds and Bats- An Avian and Bat Monitoring Plan (ABMP) will provide for pre- and post-construction monitoring. The OSRP mentioned above will also address response activities that could occur in Endangered Species habitat. Installation and testing of anti-perching mechanisms are required. Roseate tern or piping plover mortality attributable to the project will be reported within 24 hours. The results of ABMP monitoring efforts will be reported. Lighting, in compliance with Federal Aviation Administration (FAA) and United States Coast Guard (USCG) needs, will be adjusted to minimize potential bird collisions.

Visual Resources- Offshore structures will be painted off-white and no daytime white lighting will be used to minimize visibility. Night time lighting will be in accordance with requirements of FAA and USCG.

Cultural Resources– In addition to the above requirements to minimize visibility, additional preconstruction submarine surveys will be conducted to further archaeological resource assessment. At least one core will be extracted from each WTG location and analyzed for indicators of preserved landscapes, paleosols or cultural habitation. Buffer zones will be established around sites of potential shipwrecks or cultural resources. Predictive modeling and settlement pattern analysis will be used to avoid likely archaeological resources. Certain work will be monitored by a qualified archaeologist and tribal monitor. The *Procedures Guiding the Unanticipated Discovery of Cultural Resources and Human Remains* will be followed.

Airport Facilities and Air Traffic- Lighting of the offshore structures will be in accordance with the lighting plan developed in accordance with the FAA and USCG requirements. Light locations, color, intensity and flashing rate have been developed to minimize impacts will addressing hazards. The helipad lighting will be remotely activated. Construction structures and equipment will be lit at night. Equipment and vessel lights will be down shielded when possible.

Marine Activities and Port Facilities – Monthly status reports on construction activities will be submitted to MMS and USCG. Private Aids to Navigation will be installed and properly marked. Traffic management measures will be adopted with the USCG and a control center established to maintain USCG-required monitoring. Mariners will be educated on navigation safety issues related to the facility. Safety lines, mooring attachments and access ladders will be placed on each WTG as approved by the USCG.

Communications- Certain radio frequencies are not to be used during construction. Watercraft will be advised to respect a two wavelength distance from the construction cranes at the lowest frequency of interest.

Mitigation specifically required for compliance with the Section 404(b)(1) Guidelines is accomplished through the following special condition to the Corps permit:

- An eelgrass monitoring and mitigation plan will be submitted and approved in writing by the Corps of Engineers prior to the start of the submarine cable installation. This plan will include pre- and post-construction monitoring to determine if any eelgrass has been lost due to the cable installation. A planting plan and schedule to compensate for the disturbed eelgrass will be included.

VIII. Impacts to Public Interest Factors:

The decision as to whether to issue a permit is based upon an evaluation of the probably impacts of the proposal and its intended use on the public interest. Evaluation of the probable impact which the project may have on the public interest requires a careful weighing of all the relevant factors. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, is determined by this general balancing process. The decision should reflect the national concern for both protection and utilization of important resources.

Water Quality – Disturbance of sediment during construction activities such as jet plowing and backfilling is expected to result in temporary, localized impacts. The project area is a dynamic environment where high levels of suspended sediment regularly occur at the seafloor, so disturbances and impacts to water quality associated with construction will be consistent with the

background environment. MMS has determined, and the Corps agrees, that the probability of an oil spill that could have greater effect on water quality, is very small.

Benthic Flora & Fauna – Minor impacts to soft bottom benthic communities are expected. The majority of the area where construction will occur is sandy bottom habitat subject to regular disturbance by storms, waves, and tidal currents. The species and benthic communities in such areas typically recover quickly from the same types of disturbances that will be caused by construction activities.

Land Use Classification – No effect. The OCS areas of Nantucket Sound where the project is located are not designated as a National Marine Sanctuary or other such classification, but are subject to the general uses of the Outer Continental Shelf Lands Act, including leases for alternative energy projects pursuant to the 2005 Energy Policy Act.

Water Supply and Conservation -- No effect.

Wetlands -- No impacts to wetlands are expected. The onshore portions of the project (transmission line) will not cross any freshwater wetlands and should be sufficiently distant from any wetlands to avoid impacts. No work is proposed in coastal saltmarsh, and by using horizontal directional drilling for cable installation at landfall, impacts to coastal wetland resources will be avoided.

Historical- Adverse impacts are expected for 34 properties eligible for listing on the National Register of Historic Places, including two Historic Landmarks and six Traditional Cultural Properties of the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head (Aquinnah). The impacts to 33 of these properties, those located on land, are indirect adverse visual effects from the introduction of the wind turbines to the viewshed. Impacts to these properties will be mitigated by the color of paint for the turbines and the lighting scheme. Only one eligible property—Nantucket Sound itself, identified as a Traditional Cultural Property of the Tribes—will be affected by direct physical impacts from the construction of the facility. The impacts to the majority of historical resources identified come in the form of the introduction of the turbines to the visual landscape at a great distance, on the occasions where weather conditions permit them to be observed. None of the properties eligible for listing on the National Register will be so diminished by the impacts of the project as to disqualify them from such listing. For historic and cultural resources on the seabed of Nantucket Sound, identified shipwrecks will be avoided, and surveys will be conducted prior to construction to determine if additional cultural resources must be avoided.

Flooding– no effect

Drainage– no effect

Energy Needs – The project is planned to have a direct influence on the regional energy market. The project will provide additional electricity to the region without using natural gas as an energy source, helping to provide balance to a region heavily dependent on natural gas to provide its increasing demand for energy. The project is viewed as a major and necessary step in

advancing renewable energy development nationally, as well as addressing regional and Massachusetts renewable portfolio standards.

Economics – Purchasing of materials and supplies locally and the estimated 391 temporary construction jobs will benefit the local economy. Minor economic effect is expected during operation, with operation and maintenance expenses and associated employment opportunities. In addition, the applicant has agreed to pay \$350,000 annually for 20 years to the Town of Yarmouth for the onshore cable connection. It is not expected that the project will affect tourism and its associated economic benefits to the region as the project will be far from land and, for most tourists on the Cape and the Islands, at most times will not be visible.

Circulation Patterns – No effect on overall circulation patterns is expected due to the distance between structures. Some localized scouring at the turbine piles is expected and scour protection and monitoring is likely to be necessary. Sediment will be resuspended during jet plowing and backfilling activities but the effect is expected to be temporary and less than occurs during natural events in the dynamic Nantucket Sound environment or from existing trawling activities.

Air Quality – Construction equipment would create NO_x emissions in Rhode Island waters in excess of “de minimis” levels of the Rhode Island State Implementation Plan, but emissions in Massachusetts waters will not exceed the de minimis levels. To ensure conformity with Rhode Island’s SIP, MMS is requiring the applicant to purchase Emission Reduction Credits for any year in which projected NO_x emissions within Rhode Island exceed 100 tons, which would result in no net increase in NO_x emissions from the project. Emissions on the OCS are subject to EPA air permit requirements pursuant to 40 C.F.R. Part 55, and EPA is currently reviewing the applicant’s application. After construction is complete, other than the emissions associated with the operation of two maintenance vessels, there will be no emissions associated with the facility. The facility would then be generating electricity from emission-free generators, which in the absence of the project would likely be produced for the New England region by conventional fossil fueled facilities, thus producing some regional air quality benefits.

Aesthetics – Simulations show the structures will be visible from sensitive locations around Nantucket Sound on Cape Cod, Nantucket, and Martha’s Vineyard. While the aesthetics of the proposal are subjective, and opinions both favoring and opposed to the visual impact of the facility have been expressed, the change in the viewshed has been one of the most commonly cited public concerns associated with this project. The infrastructure will be miles offshore, and at locations where it can be seen from the shore it will appear small and close to the horizon. The closer a viewer is to the facility; the more highly conspicuous it will appear, so boaters on the water will see more of a change in the aesthetics of the Horseshoe Shoal.

Shore Erosion/Accretion – Horizontal Directional Drilling (HDD) will be employed to avoid impacts to the intertidal and near shore area. The offshore project area is a highly dynamic area of sand waves; no changes in that environment are expected.

Noise -- Construction of the facility would create noise as the monopiles are driven into the seabed. This will not generally be audible (i.e. above existing baseline noise) from land locations. Pile driving will be audible for individuals near construction activities, depending

upon the distance and whether the individual is upwind or downwind of the construction. During operation, the turbines will create noise that would not be perceptible from land, and for boaters near the turbines, the sound levels produced by the operating turbines are expected to be lower than existing baseline sound levels. Underwater at the turbines, there would be a slight increase in noise levels above the baseline, but this declines to the baseline level at a distance of 361 ft. from the turbines. Noise impacts are expected to be minor (at locations on the water during construction) to negligible (from land, and during operation).

Wildlife -- Moderate impacts to birds are expected during construction activities and operation of the facility due primarily to collision. There could also be minor habitat modification and disturbance. Impacts to marine mammals, sea turtles, cetaceans and finfish are expected to be minor mostly due to construction vessel activity, habitat disturbance and noise. Moderate impacts to migratory bats are possible, with minor impacts to non-migratory bats.

Mineral Needs -- MMS has reserved the right to authorize mineral and other extractive uses by others within the project area that will not interfere with this project's activities. There is currently a moratorium on oil and gas leasing in this area of the Atlantic, so the project would not impact oil and gas leasing unless this moratorium is lifted. While future sand mining and oil and gas extraction would be more difficult with the project in place, it would still be possible.

Food and Fiber Production -- No direct impacts. There is some potential for survey and construction activities to have a minor temporary effect on the benthos, plankton, and fish eggs, but no appreciable alteration in the food chain is expected. Commercial and recreational fishing will be permitted within the turbine array, and the transmission lines will be buried low enough so there will be no expected interference with trawling activities. Fishing vessels will need to exercise more caution within the turbine array to avoid the structures, but it is expected that there will be sufficient space between the turbines to allow trawlers to operate and fish these waters.

Navigation -- Minor to moderate impacts, including possible impacts to marine radar, are expected within the wind turbine array. Pursuant to Section 414(a) of the Coast Guard and Maritime Transportation Act of 2006, the USCG developed terms and conditions for operation of the facility to ensure navigational safety. As part of its analysis, the USCG assessed the potential impacts to marine radar from the facility. The Corps concurs with USCG's analysis, and agrees that the USCG mitigation measures incorporated into the MMS approval appropriately address impacts to navigation.

Floodplain Values -- No effect.

Recreation -- Moderate impacts to recreational boating and within the project area as users will need to exercise more caution to avoid the turbines and ESP. Minor impacts to fishing are expected, as fishing will not be prohibited in the turbine array, and some benefits can be expected for recreational fishing as some fish species are expected to be attracted to the turbine and ESP piles as plant and invertebrate communities develop on the structures. Indirect effects to shoreline activities such as beachgoing, birdwatching and sightseeing are possible from the introduction of the turbines and ESP to the visual landscape, but this is not expected to prevent these activities from continuing.

General Environmental Concerns – As this was the first major offshore wind project proposed in the United States, concerns have been expressed that the impacts cannot be known with any certainty. Regulatory agencies have relied upon extensive data available from similar projects in Europe, experiences with offshore oil and gas projects in the United States, and site-specific research conducted for this project. The record reflects a thorough consideration of all environmental concerns, and the analysis of the FEIS reveals no expected major environmental impacts.

Safety -- Boaters will need to be more careful within the turbine array. The USCG has issued “Terms and Conditions” to provide for safer conditions.

Property Ownership -- No effect. Cape Wind is obtaining leases from MMS to install the structures and cable system on federal lands on the OCS. An annual payment to the town of Yarmouth will help to compensate for the use of the municipal infrastructure.

Finfish/plankton – Impacts are expected to be short term, localized, and minor during construction due to sediment disturbances. Time of year restrictions will be required by MMS to avoid impacts to winter flounder eggs during spawning in Lewis Bay. During operation of the facility, the turbines and ESP may provide attractive habitat for fish as plant and invertebrate communities develop on the structures.

Aviation – Concerns have been expressed about the impacts of the project on aviation and aviation radar systems. After reviewing the issue extensively, the Federal Aviation Administration (FAA), the federal agency responsible for aviation safety, issued a “no hazard” finding that with modifications to existing radar systems, the project will not constitute a hazard to aviation.

Needs and Welfare of the People – After 9 years of local, state and federal review, the need for a major renewable energy source has been the focus of project advocates nationwide, while the visual impact and navigational space use conflicts for those closest to the project have been the focus of opponents. The benefits are regional while the impacts are local. Thus, the perceived needs and welfare of the people vary depending upon their location. When viewed in this context, however, the production of renewable energy will provide a benefit to all, even those impacted by the project, and as set forth in the FEIS, the local impacts are relatively minor. Mariners will need to exercise more caution, but they will still be able to transit and fish in the Horseshoe Shoal area. The viewshed will be changed, but from land the structures will appear as small intrusions on the visual horizon.

IX. Findings:

1. State Water Quality Certification: Massachusetts Department of Environmental Protection issued the Water Quality Certification August 15, 2008.

2. State Coastal Zone Management Concurrence: Massachusetts Office of Coastal Zone Management has concurred that the project is consistent with the CZM enforceable program policies.

3. Minerals Management Service lease: In a Record of Decision dated April 28, 2010, MMS documented the decision to offer a lease to Cape Wind Associates, LLC (CWA). On October 6, 2010, MMS and CWA signed a lease agreement for the project.

4. Historic and Cultural Resources: National Historic Preservation Act (NHPA) Section 106 and government-to-government (tribal) consultation began with the Corps in 2002 and was our responsibility until 2005. The consultation was completed by MMS when that agency became the lead federal agency pursuant to the Energy Policy Act of 2005. Once MMS was the lead agency, it led the consultation process on behalf of the Corps pursuant to 36 C.F.R. § 800.2(a)(2). MMS hosted consultation meetings including the Corps, other federal agencies, the Massachusetts State Historic Preservation Officer (SHPO), the Tribal Historic Preservation Officers (THPO) and several other interested parties. The Advisory Council on Historic Preservation (ACHP) was represented at some of these meetings. The numerous meetings and efforts of MMS during this consultation process are documented in the MMS ROD.

In December 2008, MMS issued a finding, and the Corps concurred, that the project would result in an adverse effect on 29 historic properties, including one property culturally important to the Mashpee Wampanoag tribe and two National Historic Landmarks. This finding was revised in January 2010 to add Nantucket Sound--considered a Wampanoag traditional cultural property (TCP)--and four individual onshore Wampanoag TCPs. Based on the visual impact assessment, effects to the following National Register listed or eligible historic places are expected: Cotuit Historic District, Wianno Historic District, Hyannis Port Historic District, Edgartown Village Historic District, Nobska Point Light Station, Col. Charles Codman Estate, Wianno Club, Monomoy Point Lighthouse, West Chop Light Station, East Chop Light, Dr. Harrison A. Tucker Cottage, Edgartown Harbor Lighthouse, Cape Poge Light, Nantucket (Great Point) Light, Falmouth Heights Historic District, Ocean Grove Historic District, West Chop Historic District, Maravista Historic District, Menauhant Historic District, Church Street Historic District, Park Avenue Historic District, Champlain Road Historic District, Cottage City Historic District, Vineyard Highlands Historic District, Hithe Cote, Nantucket Cliffs Historic District, Kennedy Compound, and Stage Harbor Light.

The impacts to these 28 identified above-ground historic properties constitute an indirect, adverse visual effect because it will change the character of the properties' setting that contributes to their historic significance and the project will introduce visual elements that are out of character with the historic setting of the properties. However, due to the distance and open viewshed, the integrity of the properties would not be so diminished as to disqualify any of them from eligibility for the National Register.

The project also constitutes an indirect, adverse visual effect for five onshore TCPs of the Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe because it will change the character of the properties' physical features from a location where the southeastern horizon is unimpeded, to one in which the horizon is partially obstructed. The project will also

introduce visual elements that are out of character with the ceremonial use of the property. The project also constitutes a direct, physical effect on the seabed of Nantucket Sound, a TCP of the Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe because the undertaking will introduce elements that are out of character with the property and alter its setting and will change the character of the property's physical features that contribute to its historic and cultural significance to the Tribes. The undertaking also constitutes physical destruction, damage, and alteration of part of the seabed of Nantucket Sound which, according to the Tribes, cannot be mitigated nor reversed once done. After extensive efforts to address the adverse effects of the project with Tribes, ultimately, on March 1, 2010, the Secretary of the Interior notified the ACHP that the agency would terminate consultation as further efforts to agree on a Memorandum of Agreement (MOA) would not be productive. After this, on April 2, 2010, the ACHP provided comments to the Secretary, and the Section 106 process was concluded.

Impacts to historic and archaeological resources associated with the project will be mitigated. The mitigation measures of painting the turbines off white and no daytime white lighting will minimize the visual impact. Archaeological investigations indicated three locations of moderate probability of being historic shipwrecks on Horseshoe Shoal. MMS is requiring that these be avoided by all bottom-disturbing activities. Corps permit conditions will also require that work stop and the Corps be notified of any unexpected finds. MMS is also requiring additional surveys of the entire Wind Turbine Generator Array Field out to 1000 feet beyond the Area of Potential Effect and the transmission cable corridor at a minimum of 300m wide to identify and avoid additional archaeological resources. In addition to these surveys, MMS is requiring that one or more cores be extracted from the location of each Wind Turbine Generator for geotechnical analysis and examinations by an archaeologist, Tribal representatives, and a geoscientist. These surveys and core sampling may result in reconfiguration of the project to avoid impacts to historic and cultural resources. MMS continues to work with the Tribes to determine if the Tribes are amenable to additional mitigation measures, including financial support of up to \$200,000 per year from CWA (split between the tribes) for the 21 year project life and up to \$3.5 million from a fund administered by MA CZM to mitigate for cultural and/or historical tribal interests.

5. Protected Species: MMS, as the lead federal agency, has completed formal consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) on behalf of the Corps as required by Section 7 of the Endangered Species Act (ESA).

USFWS provided a "no jeopardy" opinion in response to the Biological Assessment. This opinion addressed potential impacts to roseate tern, piping plover and the northeastern beach tiger beetle. USFWS concurred that the project was not likely to adversely affect the northeastern beach tiger beetle as it occurs on the periphery of the project area and the low probability of an oil spill attributable to Cape Wind. It has been determined that the project is likely to adversely affect the roseate tern and piping plover but not jeopardize their continued existence, nor adversely modify designated critical habitat of listed species. Injury and mortality due to collision with the wind turbines, their monopole support structures and the electric service platform is the primary expected impact. USFWS provided an Incidental Take Statement

estimating that 80-100 roseate terns over the 20 year life of the project are likely to be injured or killed. USFWS estimated that a maximum of 10 piping plovers will likely be taken over the 20 years. USFWS provided reasonable and prudent measures necessary to minimize the incidental take of these two species, and these measures have been adopted by MMS and incorporated as lease conditions. MMS continues to work with Cape Wind to implement the following measures:

- Pre- and post- construction monitoring to assess the effects and incidental take associated with the Cape Wind Project
- Oil Spill Response Plan
- Review of pre-and post-construction monitoring activities, perching deterrents and operational adjustments based on monitoring results
- Reporting requirements

In addition, USFWS provided discretionary conservation recommendations which neither MMS nor the Corps plan to adopt. MMS is already using existing authorities to implement some of the recommended conservation measures through research efforts to test technology aimed at improving detection of birds offshore and in flight, and some of the recommended conservation actions are being addressed through mitigation required by the state.

Threatened or endangered species within NMFS jurisdiction which may occur within the project area are right whale, humpback whale, fin whale, loggerhead sea turtle, leatherback sea turtle, Kemp's ridley sea turtle and green sea turtle. NMFS provided a Biological Opinion and Incidental Take Statement through formal consultation. NMFS concluded that the project is not likely to adversely affect right, humpback or fin whales. NMFS concluded that the project may adversely affect loggerhead, Kemp's ridley, leatherback and green sea turtles but is not expected to jeopardize their continued existence. The turtles could be exposed to noise levels during surveys and construction activities which may be high enough to disturb their normal activities and thus be considered harassment. NMFS has estimated that 3-7 turtles during each pile driving and 13-28 turtles during the geophysical survey could be exposed to noise levels sufficient to be harassing. NMFS provided the following reasonable and prudent measures to minimize and monitor the incidental take of these species:

- MMS must ensure that any endangered species monitors contracted by Cape Wind are approved by NMFS.
- During the conduct of pile driving activities related to turbine monopile and electric service platform installation, the 750 meter exclusion zone must be monitored by a NMFS-approved endangered species monitor for at least 60 minutes prior to pile driving.
- During the conduct of the high resolution geophysical survey, the 500 meter exclusion zone must be monitored by a NMFS-approved endangered species monitor for at least 60 minutes prior to the survey.
- Acoustic measurement of the first pile being driven must be conducted to confirm the sound levels modeled by MMS and reported in the Biological Assessment.

- Prior to decommissioning, MMS must provide to NMFS a complete plan for the decommissioning activities.

NMFS also provided discretionary conservation recommendations, which neither MMS nor the Corps will adopt. NMFS recommended additional aerial surveys for sea turtles in Nantucket Sound. MMS is currently working with NMFS and the U.S. Navy on Atlantic coast-wide aerial and vessel surveys for sea turtles and other species, and this will include areas of Nantucket Sound. NMFS also recommended minimizing pile driving to the extent practicable during the June-October timeframe when sea turtles are expected to be in the area. MMS and the Corps believe existing measures will provide adequate protection to sea turtles, and by minimizing pile driving during the summer months the result would be shifting work schedules into winter months, a less safe time to operate in North Atlantic waters.

Subsequent to the completion of the NMFS Biological Opinion, there were unexpected sightings of right whales to the south and west of Martha's Vineyard. MMS re-initiated Section 7 consultation with NMFS to determine if the existing mitigation measures designed to protect sea turtle and marine mammal species would serve to ensure that the project will not likely adversely affect endangered and threatened marine mammal species. In a Biological Opinion dated December 30, 2010, NMFS provided reasonable and prudent measures and terms and conditions that were the same as in the original Biological Opinion which have been incorporated into the requirements of the lease and will be further refined in the Construction and Operations Plan.

The applicant intends to seek a Marine Mammal Protection Act (MMPA) Incidental Harassment Authorization as there is a potential for the taking of non-ESA listed marine mammals. MMS requires that MMPA authorizations and the ESA Incidental Take Statement be in place prior to the start of construction. Moderate impacts to marine mammals are expected due to the pile-driving noise. Vessel activity during operations could cause minor impacts.

6. Essential Fish Habitat: MMS has completed consultation with NMFS on behalf of the Corps regarding the effects of this project on Essential Fish Habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act. Appendix H of the FEIS was provided to NMFS as the Final EFH Assessment. Negligible to minor impacts are expected to benthic/demersal habitat, the water column and submerged aquatic vegetation. In accordance with the consultation with NMFS, the following are required in the CWA lease:

- includes a time of year restriction to avoid in water silt producing work during the winter flounder spawning period in Lewis Bay,
- requires soft-start for monopole installation so that fish can leave and avoid noise,
- requires periodic inspection of the scour mats and cables to determine if deterioration is occurring, and if armoring with rock is appropriate,
- requires monitoring of the benthic community recovery and determine if additional studies are necessary,
- requires eelgrass monitoring and replanting as needed.

7. General Conformity Rule. The EPA regulations published as “General Conformity Rule” (58 FR 63214, November 30, 1993) to implement section 176(c) of the Clean Air Act for non-attainment areas and maintenance areas require that Federal actions, unless exempt, conform with the Federally approved state implementation plan. Activities associated with this project that result in emissions in state waters were subject to the relevant State Implementation Plans (SIP). Here, the emissions occurring in Massachusetts were below threshold levels to require a conformity determination, but the projected NOx emissions in Rhode Island for the first year of the construction phase exceed the 100 tons per year threshold. In the conformity determination dated December 2009, MMS determined that Cape Wind construction activities would meet Rhode Island conformity requirements with conditions that would be included in the lease. The lease requires that prior to commencing construction activities Cape Wind shall meet general conformity requirements through purchase of offsets that meet the requirements under RIDEM regulations or a combination of offsets and emission control measures. MMS has also committed to collecting data to calculate emissions to ensure that actual emissions do not exceed the offsets purchased. For emissions on the OCS, the applicant has applied for a permit from EPA for its construction activities, and this air permit application is currently under review. MMS acknowledged that if there are any requirements in the EPA air permit that would affect the assumptions in this analysis or if there are any changes in Cape Wind’s construction plan, their conformity determination may need to be revised.

8. Application of 404(b) (1) Guidelines: The final guidelines of the Environmental Protection Agency for the discharge of fill or dredged material (40 CFR 230) as published in the Federal Register, dated 24 December 1980, have been applied in evaluating this permit application. The project does comply with the Section 404(b)(1) Guidelines as there is no less environmentally damaging practicable alternative, and it does not violate water quality or effluent standards, does not jeopardize threatened or endangered species, and does not violate marine sanctuary requirements. The proposed discharge of dredged or fill material will not result in significant degradation of the aquatic ecosystem. Practicable and appropriate measures to minimize potential harm to the aquatic ecosystem are included. With the inclusion of the following special conditions the discharge of dredged or fill material has been found to comply with the guidelines:

An eelgrass monitoring and mitigation plan will be submitted and approved in writing by the Corps of Engineers prior to the start of the submarine cable installation. This plan will include pre- and post-construction monitoring to determine if any eelgrass has been lost due to the cable installation. A planting plan and schedule to compensate for the disturbed eelgrass will be included.

9. Adoption of EIS: The Corps of Engineers has determined that this project constitutes a major Federal action significantly affecting the human environment, and that an Environmental Impact Statement (EIS) is required. The Corps has served as a Cooperating Agency to the MMS in accordance with NEPA, and has provided appropriate input and review comments during the EIS process. The FEIS and associated NEPA documents prepared by MMS, with referenced materials, and comments received in response to them, are hereby adopted in accordance with 40 C.F.R. §1506.3. It is my conclusion that the FEIS and subsequent NEPA documents have

adequately addressed all the relevant environmental issues and considered all reasonable alternatives.

10. Public Involvement and Response to Public Comment: Both the Corps and MMS provided the public with extensive opportunity to learn about the project and to provide comment, both through public meetings and hearings, and through formal public comment periods. These opportunities for public involvement are described below. Through the NEPA process, MMS has appropriately addressed all comments received on the environmental and social impacts associated with the Cape Wind proposal in the FEIS and Environmental Assessment/Finding of No New Significant Impacts documents. In addition to the comments addressed in the FEIS, in response to the 2008 Corps Public Notice, the Corps received several comment letters that raised concerns specific to the Corps and its review process, and these comments are addressed in this section.

a. Public meetings and hearings: The Corps hosted public scoping meetings in Boston and West Yarmouth, MA on March 6 and March 7, 2002, respectively, within the 60 day scoping comment period. Public information meetings were held on November 21, 2002 and October 29, 2003 on Cape Cod and on April 18, 2002 on Martha's Vineyard. The Corps also participated in the Cape & Islands Offshore Wind Stakeholder Process sponsored by the Massachusetts Technology Collaborative between 2002 and 2005 (<http://www.masstech.org/offshore/index.htm>). After the Corps Draft EIS was released in November 2004, public comment hearings were held on December 6, 2004 in Oak Bluffs, December 7, 2004 in West Yarmouth, December 8, 2004 in Nantucket, and December 16 in Cambridge, MA. After release of its Draft EIS, MMS held public comment hearings in which the Corps participated on March 10, 2008 in West Yarmouth, March 11, 2008 in Nantucket, March 12, 2008 in Oak Bluffs, and March 13, 2008 in South Boston, MA.

b. Comment Periods: On January 30, 2002, the Corps published its notice of intent to prepare an EIS for the Cape Wind proposal in the Federal Register and sought scoping comments for the NEPA process. Upon completion of the Corps Draft EIS, a notice of its availability and request for comments was published in the Federal Register November 9, 2004 and by Public Notice dated November 9, 2004. Subsequently a new Corps Public Notice was issued January 22, 2008 describing the revised permit application to correspond with the project as proposed in the MMS Draft EIS. The Corps Public Notices were sent to all known interested parties and posted on the New England District webpage, and all comments received in response to these Notices are included in our administrative record of this action.

On May 30, 2006, MMS published a notice of intent to prepare a new EIS for the project in the Federal Register, and sought scoping comments for the NEPA process. MMS incorporated the comments received on the original Corps Draft EIS as scoping comments for the MMS Draft EIS. MMS published a notice of the availability of its DEIS in the Federal Register on January 18, 2008, and sought public comments on the proposal. In response to comments on the MMS Draft EIS, the Corps comment period was extended to March 30, 2008 and the MMS comment period was extended to April 21, 2008.

c. Concerns Raised to Corps:

The Corps and MMS received numerous comments, both for and against the project, during the NEPA review process, and MMS, as lead agency, responded to these comments in Appendix L to the FEIS. Here, we address comments addressed specifically to the Corps (and not to MMS) in response to the 2008 Corps Public Notice that raise issues pertinent to the Corps review of the Section 10/404 permit application. The responses to comments contained in the FEIS are also incorporated here by reference.

1) Alliance to Protect Nantucket Sound, Hyannis, MA, dated Feb. 21, 2008 and Mar. 31, 2008²

a. Project is not economically viable, socio-economic impacts were not addressed and the economic analysis is incomplete- Corps regulations state that “[w]hen private enterprise makes application for a permit, it will generally be assumed that appropriate economic evaluations have been completed, the proposal is economically viable, and is needed in the marketplace.” 33 C.F.R. § 320.4(q). The Corps does not have the expertise or resources to evaluate the economic viability of the wide variety of projects that it reviews through Section 10 and 404 permit applications, so the regulation’s presumption is based on a view that individuals and institutions do not typically pursue projects that are known economic “losers.” Here, this presumption of economic viability is a rational one based on huge investments of money, time, and effort involved in the planning and construction of this project. Investors and project proponents would not likely undertake such a project if it was not expected to generate a profit or was not needed in the marketplace. To the extent that concerns over the viability/profitability of the venture bear relevance to the Corps public interest review, it is from a concern that an unprofitable venture could go bankrupt, and the structures would remain in the waters of Nantucket Sound unmaintained and become a hazard to navigation. This concern, however, has been addressed by MMS in lease requirements for financial assurances that would ensure removal of the structures in the event of bankruptcy. While the NEPA review did not evaluate the commercial viability of the project, it did evaluate ten alternative locations, and concluded that the proposed site, Horseshoe Shoal, appears to have the greatest economic potential. A small scale project was also evaluated, and was found to have less economic potential with a higher cost of energy. Corps regulations further state that in appropriate cases a permit application review “may make an independent review of the need for the project from the perspective of the overall public interest,” as the “economic benefits of many projects are important to the local community and contribute to needed improvements in the local economic base, affecting such factors as employment, tax revenues, community cohesion, community services, and property values.” 33 C.F.R. § 320.4(q). Here, potential impacts to the tourism economy of Cape Cod, Martha’s Vineyard, and Nantucket caused by the presence of the facility on Horseshoe Shoals were a concern expressed throughout the project review. However, based on the visual impacts assessment, it is not expected that people will stop using the beaches or boating and fishing in and around Nantucket Sound, and impacts to tourism, recreation and fishing are expected to be minor. The applicant will provide annual payments of \$350,000 or \$7 million over 20 years to the Town of Yarmouth for the land portion of the transmission line. The

² The commenter also submitted a letter to the Corps signed by Glen G. Wattlely, dated March 23, 2009 after the FEIS was released, reiterating concerns expressed in the earlier comment letters and the treatment of these issues in the FEIS document, and asking the Corps to deny the permit application.

United States will receive payments for the lease in the amount of \$88,278 in annual rent prior to production, and a 2 to 7 percent operating fee during production, and the Commonwealth of Massachusetts will receive 27 percent of payments collected. Negligible to minor impacts are expected on the local infrastructure during construction and decommissioning. The impact on the energy industry would be moderate due to the project's substantial impact on meeting Massachusetts's Renewable Energy Portfolio Standards. The project is expected to have negligible to minor impacts on fisheries and benthos, mostly temporary, during construction and decommission.

b. Project will yield nominal air quality or climate change reduction benefits – If fossil fuel plants were to produce the energy anticipated to be produced by the Cape Wind facility, 0.88 million tons of CO₂ would be emitted per year. This project has the potential to reduce the increase in CO₂ by approximately 1 percent. Likewise, NOx emissions associated with fossil fuel electricity generation would be displaced by energy from the facility, with an expected slight reduction of about 1 ton/day (in the 2002 Massachusetts inventory the total NOx emissions from all sources on a summer day in the state was 771.8 tons/day). Concerns were expressed about the Cape Wind project “crowding out” other more desirable renewable energy projects in the Massachusetts Renewable Portfolio Standards program, but this is a policy choice for the Massachusetts legislature to address, not the Corps. The Independent System Operation New England (ISO-NE) and the U.S. Department of Energy have expressed concerns on the over-reliance on natural gas in the region and the need to diversify the energy sources without exacerbating air quality concerns.

c. The Applicant has overstated the needs for power – The regional need for power has been addressed by ISO-NE and by the Energy Facility Siting Board for the Commonwealth of Massachusetts. ISO-NE, the regional transmission manager, has projected that 2100MWs will be needed in the New England Power Pool by 2014. The Department of Energy has stressed, throughout the project review, the need to diversify the regional energy portfolio and strive to include renewable energy sources. Again, Corps regulations presume that permit applicants do not pursue economically irrational projects, and that projects seeking Corps permits are “needed in the market place.” 33 C.F.R. § 320.4(q). Here, this presumption is supported by the agencies and entities with expertise in the field stating the needs for power and renewable energy sources in the region.

d. Conservation interests weigh strongly against the project—A general concern was expressed about the project's impacts to Nantucket Sound and the “authentic” Cape Cod scenery and ecology. The various natural and socioeconomic resources potentially impacted by the project are discussed extensively in the FEIS. As to the overall general impact to the “authentic” Cape Cod experience, the presence of the wind turbines and ESP on Horseshoe Shoal are expected to generally have minor impacts on the various natural resources affected. The structures will be visible at various locations on land, but these will be small and close to the horizon to the naked eye, and it is not expected that this minor impact to the viewshed will have a significant impact to recreational and other uses on land.

e. Economic analysis is flawed and does not consider socioeconomic impacts-- The economic analysis was intended to address the economic viability of the technology and provide

for comparison of the alternatives. Minor impacts on housing, construction and manufacturing industries, service industries, waste disposal and military activity were discussed in the FEIS. A moderate positive impact to the energy industry is projected. Effects to commercial fisheries, recreation and other factors were evaluated separately, and were generally determined to be minor or negligible.

f. Comprehensive analysis of impact to aesthetic resources needed—Aesthetic impacts of the project were given extensive consideration in the review of this project. An extensive visual impact assessment is included in the FEIS. Visual simulations from some of the most sensitive locations were included to demonstrate the expected aesthetic effect from various locations surrounding the project area. The project introduces large manmade structures where there are currently none, and will be visible for several miles in clear weather conditions. This impact was assessed as moderate in the FEIS. Aesthetic perception is highly personal and subjective and a variety of comments have been received. Some people feel the structures will industrialize what they perceive as a pristine area, others find them graceful and interesting like a kinetic sculpture and others feel the surrounding area has already been over developed and this is an inevitable progression. This subject was given extensive consideration during the review process.

g. The project adversely impacts wetlands-- The project is not expected to impact wetlands. The onshore portions of the project (transmission line) will not cross any freshwater wetlands and should be sufficiently distant from any wetlands to avoid impacts. No work is proposed in coastal saltmarsh, and by using horizontal directional drilling for cable installation at landfall, impacts to coastal wetland resources will be avoided.

h. Historic properties will be adversely affected-- As part of the review of this project, MMS completed a National Historic Preservation Act Section 106 consultation and review on behalf of the Corps. There will be an adverse effect to properties eligible for listing on the National Register of Historic Places, including tribal Traditional Cultural Properties and National Landmarks. MMS, in a letter dated April 28, 2010 to the Advisory Council on Historic Preservation, listed these effects and the proposed mitigation measures. With the exception of physical impacts to Nantucket Sound—considered an eligible property as a tribal Traditional Cultural Property—the impacts to eligible properties are entirely from the indirect impact of the introduction of the turbines to the visual landscape at a great distance, on the occasions where weather conditions permit them to be observed. None of the properties eligible for listing on the National Register will be so diminished by the impacts of the project as to disqualify them from such listing. For historic and cultural resources on the seabed of Nantucket Sound, identified shipwrecks will be avoided, and surveys will be conducted prior to construction to determine if additional cultural resources must be avoided. The commenter suggested that the project cannot be constructed in its proposed location due to adverse effects on National Historic Landmarks, but courts have been clear that the Section 106 process does not require agencies to choose alternatives with less (or no) impacts to 106 resources, but only “to complete the Section 106 consultation process by identifying adverse impacts on historic resources and develop methods to mitigate the identified adverse impacts.” Advocates for Transportation Alternatives v. USACE, 453 F. Supp 2d 289, 312 (D. Mass. 2006). That is what occurred here.

i. Fisheries, marine-protected species, avian species, and terrestrial ecology will be seriously harmed and DEIS evaluation of impacts to fisheries, marine-protected species, and birds are insufficient - The FEIS presented extensive analysis of the impacts to the Horseshoe Shoals ecosystem, addressing effects on fisheries, avian species, marine mammals and turtles, including species protected by federal statutes like the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). The concerns on impacts to fish raised by the commenter—contamination from turbine oil, hydraulic fluid, cooling oil, boat fuel, and sacrificial anodes—were not found to likely have any impacts on fisheries. Indeed, the turbines may become attractive habitat for some species. As for marine mammals and turtles, the FEIS and consultation with NMFS indicates that the mitigation measures for the project are likely to result in negligible to minor impacts. For marine birds, the FEIS revealed the potential for moderate impacts to certain marine birds species from collision with the structures. These impacts will be monitored, and mitigation measures have been developed based on the recommendations of USFWS. As to the impacts on protected marine species, both USFWS and NMFS concluded that the project would not jeopardize the continued existence of any ESA listed species likely to be found in the project area. The applicant will be responsible for securing any necessary MMPA permits for the project. The FEIS discusses and analyzes the impacts of the transmission line after it reaches shore, but there are no wetland fill activities on shore subject to Corps jurisdiction. The impacts from on-shore activities—the installation of a transmission line in an existing right of way--to wildlife are expected to be minor to negligible. The FEIS addressed impacts to the species known to frequent the area and was based upon best available scientific information, including site specific field work conducted by the applicant and others such as Massachusetts Audubon Society. Discussion of the limitations and uncertainties of the data is disclosed and addressed in the FEIS.

The commenter states that the Corps would violate the Migratory Bird Treaty Act (MBTA) by issuance of a permit for this project. The MBTA is a federal criminal statute that prohibits the “take” of migratory birds without appropriate permits. Here, the Corps is not the entity taking the actions that may result in take of migratory birds, it is the applicant (and leaseholder) who will be constructing the wind turbines and ESP on Horseshoe Shoal. Thus, it would not be the Corps but Cape Wind who would be the proper entity to receive a permit pursuant to the MBTA. USFWS administers this statute and issues such permits, but there is currently no permitting regime governing “incidental takes” by which birds are killed unintentionally by structures or activities that are performed without the intent of killing or harming birds (as opposed to activities like hunting or depredation). USFWS has pursued criminal cases against individuals and entities that have “incidentally taken” migratory birds. But in the USFWS Interim Guidelines on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, May 13, 2003 at 2, USFWS has stated that:

[w]hile it is not possible under the Act to absolve individuals, companies or agencies from liability if they follow these recommended guidelines, the Office of Law Enforcement and Department of Justice have used prosecutorial discretion in the past regarding individuals, companies or agencies who have made good faith efforts to avoid the take of migratory birds.

Presently, USFWS has no similar guidelines covering wind energy facilities in the off-shore environment.

On January 10, 2001, President Clinton issued Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds." 66 Fed. Reg. 3853 (Jan. 17, 2001). The Order creates a more comprehensive strategy for migratory bird conservation by the federal government. This Order requires federal agencies taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement a Memorandum of Understanding (MOU) with USFWS to promote conservation of migratory birds. On June 4, 2009, MMS entered into a MOU with USFWS pursuant to Executive Order 13186 to address the conservation of migratory birds as it implements its mission of developing energy and mineral resources on the OCS. The MOU contains a number of provisions encouraging MMS, within the confines of its statutory, regulatory, and budgetary constraints, "to integrate migratory bird conservation principles, as well as reasonable and feasible conservation measures and management practices into [its] approvals." MOU at Sec. F.1. These include, to varying degrees, avoiding, minimizing, and mitigating adverse impacts to migratory birds. MOU at Sec. F.2, F.5. Here, MMS, on behalf of the Corps and other federal agencies, has worked and continues to work with USFWS to address the impacts of the project on migratory birds. As part of the MMS-issued lease, and consistent with their underlying ROD, the applicant is required to submit a plan addressing any needed conservation measures, for MMS approval. The applicant continues to work with MMS and USFWS to develop an acceptable plan.

j. The project interferes with federal, state, and local land uses—The commenter criticizes the project's use of federal lands on the OCS without "competitive bidding" and suggests the project excludes other uses. However, in EPAct 2005, Congress expressly authorized MMS to make such OCS lands available for alternative energy production leases, and allowed the Cape Wind project to proceed without restarting the process for the applicant. With the passage of EPAct 2005, MMS became the lead agency for this process, and the decision on the proper mechanism for the terms and availability of leases is for MMS, not the Corps. The commenter further suggests that issues regarding the Cape Cod Commission's (CCC) review of the project should prevent the Corps from making a permit decision. Since the time of the comment letter, the issues regarding the interplay between the Massachusetts Energy Facility Siting Board (MEFSB) and the CCC have been resolved by the Massachusetts Supreme Court, which concluded that the MEFSB had properly granted an "all-in-one" permit that overruled the CCC's denial of Cape Wind's application for a Development of Regional Impact approval.

k. Negative effects to navigation, including physical obstruction/collision threat, radar interference, commercial fishing disruption, damage to structures by vessels and ice, interference from transmission cables, and oil spills - There will be some increase in vessel traffic on Horseshoe Shoal during construction activities. However, Horseshoe Shoal is a shallow area limiting the size boats traversing the area, and the project is more than 1100 feet from the Hyannis Harbor Main Channel, which should avoid interference with commercial navigation. Moderate impacts to navigation were noted in the FEIS. Pursuant to Section 414(a) of the Coast Guard and Maritime Transportation Act of 2006, the USCG conducted an extensive and detailed review of the impacts of the project on navigation, and developed terms and conditions for operation of the facility to ensure navigational safety, which are expected to

mitigate impacts to navigation and marine radar. These measures, required in the MMS lease, include installation of Private Aids to Navigation, traffic management, status reports to the Coast Guard, establishing a control center, communications with mariners, and providing safety equipment and plan. As part of its review, the U.S. Coast Guard considered various studies on the impacts of the project on marine radar systems, and ultimately concluded that the project would hinder the effectiveness of marine radar for detecting vessels inside the turbine array, but with reasonable care vessels would be able to navigate safely within and in the vicinity of the proposed wind farm, and that the impact of the proposed wind farm on navigation safety is "moderate." The commenter raised concern about the impact of the turbine array on helicopter search and rescue efforts, but the Coast Guard Sector Southeastern New England concluded that there would be negligible impacts to Coast Guard search and rescue efforts in the area of Horseshoe Shoal. The commenter raised concern about navigational impacts to commercial fishing vessels, but as discussed in the FEIS, fishing will not be prohibited in the turbine array, and with the Coast Guard's terms and conditions, the moderate impact to navigation safety will be reduced to an acceptable level. Concerns were also raised about the presence of ice floes in the turbine array, and the risk of ice on the turbine blades causing catastrophic blade failures or jettisoned ice chunks. Severe icing is rare in Nantucket Sound, but should ice floes develop, Coast Guard Sector Southeastern New England monitors conditions and warns mariners. Likewise, the Coast Guard's Terms and Conditions will require the applicant to provide a plan to mitigate the impacts of surface icing. As for ice on turbine rotors, the turbines will have sensors that will shut down the turbines if ice builds up on them making the likelihood of blade failure or jettisoned ice unlikely. The commenter raised concern about the impacts of the transmission cable system on anchoring or fishing gear, but as the Coast Guard concluded, the MMS lease requirement of six foot cable embedment will avoid impacts on navigation or fishing. The commenter expressed concern about potential oil spills associated with the project impacting navigation as vessels would maneuver around spills. As noted in the FEIS, the likelihood of a catastrophic oil spill associated with the proposal is low, and the contingencies associated with such an event are addressed in an Oil Spill Response Plan developed for this project, which both MMS and the Coast Guard have found to be adequate. Concerns were raised about the impacts of the project to air navigation, and the FAA's review of impacts to aviation radar systems. After reviewing the issue extensively, FAA, the federal agency responsible for aviation safety, issued a "no hazard" finding that with modifications to existing radar systems, the project will not constitute a hazard to aviation.

l. An Ocean Dumping Act permit and a NPDES permit are required for the project – The installation of transmission lines on land will require a NPDES General Stormwater Construction Permit, and the applicant must acquire such a permit from USEPA before construction commences. A permit is not required pursuant to the Marine Protection, Research, and Sanctuaries Act (also known as the Ocean Dumping Act), as there is no proposed transportation of dredged material for disposal in ocean waters.

m. The risk of oil spills must be fully evaluated – The NEPA process evaluated the issue of potential releases of dielectric cooling oil, other lubricants, and fuels associated with the project. Two models, HYDROMAP and OILMAP, have been used to assess potential oiled areas and travel times. As the probability of a major oil spill is very small, effects were expected to be negligible. While the likelihood of such events are considered low, the FEIS analyzed the

worst case scenarios involving a complete release of all dielectric cooling oil from the ESP. The commenter raised concern over the possibility of oil tankers striking structures in the turbine array. However, as the facility is located in an area of shallow waters where larger vessels cannot transit—and such vessels use existing navigation channels distant from the facility—it is unlikely that the facility will cause oil spills from vessel collisions. As the Coast Guard concluded, with the mitigation measures that MMS will require, the moderate impacts of the facility on navigation will be reduced to an acceptable risk.

n. The project will cause water quality impacts to eelgrass and benthic resources -- Eelgrass at Egg Island has been addressed through the MEFSB requirement for a control impact plan and that the eelgrass location will be marked so that contractors can ensure avoidance during construction. The Corps will also include permit conditions to avoid eelgrass beds and address any impacts that do occur. The benthic habitat impacts are expected to be mostly temporary as these communities have adapted to survival in dynamic sediments. The Material Safety Data Sheet for the external coating for the wind turbine generators and electric service platform is included in Appendix E of the FEIR. There will be an epoxy coating applied at the waterline/splash zone. HDD will be employed to minimize water quality impacts as it involves less re-suspension of sediment than traditional cut and cover construction.

o. Risks to public safety will be severe – The commenter raises concerns over the safety of workers at the facility, the hazard of ice being thrown from turbine blades, and the safety of transmission lines. Workers' safety for a facility on the OCS is addressed in various statutory regimes administered by the Coast Guard and MMS, and if there are safety concerns associated with the construction and operation of the facility, these agencies are responsible for addressing them. As noted above, the turbines will have sensors that will shut them down if ice forms on the blades, making it unlikely that ice will be hurled to nearby vessels. As noted by the Coast Guard, the required six foot depth of the transmission cables makes it unlikely that trawling gear or anchors would strike the cables.

p. Food and fiber production will be affected - The FEIS evaluated the potential for survey and construction activities to have a minor temporary effect on the benthos and plankton but no appreciable alteration in the food chain is expected. It is important to recognize that the impacts raised by the commenter—turbidity from construction disturbance—are a normal event in the dynamic environment of Nantucket Sound. The sandy benthos is regularly disturbed, and quickly settles after such disturbances. The construction activities here will be smaller in duration and impact than the frequent natural events that cause such impacts. To the extent there is concern over the impacts of construction on breeding winter flounder, MMS has imposed time of year restrictions to avoid turbidity when winter flounder eggs and larvae could be impacted. As to the impacts on food production in the form of fishing (commercial and recreational), while trawlers may need to exercise more caution in their fishing activities, such activities will not be prohibited in the turbine array. For recreational anglers, there may be benefits from the presence of the turbines as they may serve as fish attractants.

q. Project interferes with property values – The commenter raises concerns over the decline in property values after construction of the project. It is important to recognize, however, that the Corps public interest factor regarding property ownership is not concerned with property

values, but issues relating to the rights of property owners. 33 C.F.R. 320.4(g). However, studies of property values in areas near wind energy facilities constructed in the United States have not shown a decline in property values. While the proposed facility, an offshore wind energy facility, is the first of its kind in the U.S., it is not clear that the presence of turbines and the ESP at such a distance on Nantucket Sound will have any impact on property values on land.

r. The project presents national security concerns – The commenter raises concerns about the impacts of the project on defense, air traffic, and navigation radar systems, as well as Coast Guard operations. The Department of Defense’s Missile Defense Agency reviewed the impacts of the project on the PAVE PAWS radar system at Cape Cod Air Force Station and the Upgraded Early Warning Radar at Beale Air Force Base, and determined that the impacts could be readily mitigated. The FAA has reviewed the project and determined that with modifications to aviation radar systems required as part of the MMS lease, the project will not constitute a hazard to aviation. The Coast Guard concluded that while there would be moderate impacts on the operation of marine radar in and near the turbine array, with the mitigation measures the impacts to navigation will be reduced to an acceptable risk. In addition to impacts on navigation and navigation radar, the Coast Guard also considered the impacts of the project on its own operations, and concluded that it would have negligible to no impacts on its missions, and in some instances, may facilitate the success of some operations.

s. The project interferes with recreation – The commenter expresses concern over the impact of the project on beachgoers, birdwatchers, and boaters. Introduction of these structures will result in a noticeable change in the seascape. The effect of the visual impact was considered moderate to recreational resources on shore, but it is not expected that the general public will no longer frequent these areas. The project will be distant from shore, and when visible will appear as small objects on the horizon. It is not expected that this will keep individuals from enjoying beaches or birdwatching. Recreational boaters will need to exercise caution when traversing Horseshoe Shoal to avoid the turbines and ESP, but as noted above, with the required mitigation measures the moderate impacts to navigation will be reduced to an acceptable risk. Moreover, recreational anglers may benefit from the presence of the structures as they may prove to be fish attractants, similar to oil rigs in the Gulf of Mexico have.

t. The project is inconsistent with the need for uniform and comprehensive ocean governance – The commenter’s perception of inadequate comprehensive ocean planning is beyond the scope of the decision before the Corps. Such a planning framework would require a congressional remedy. The Corps is not able to halt review of permit applications because such a planning framework does not exist, doing so could arguably represent a usurpation of the legislative/policymaking powers of Congress. Congress has directed MMS to make lands available on the OCS for alternative energy projects, and that is what is before the Corps. MMS has finalized the Renewable Energy Rule to implement the provisions of the Energy Policy Act of 2005. The Cape Wind project will be subject to 30 CFR Part 285 “Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf.” The intent of these regulations is to provide a comprehensive program to grant leases, easements, and rights-of-way for environmentally responsible renewable energy projects on the OCS. If Congress establishes a planning framework envisioned by the commenter that mandates a moratorium on consideration of such projects while plans are developed, that is for Congress to decide, not the

Corps.

u. The project harms the interests of Indian tribes – MMS conducted the NHPA Section 106 consultation for this project, extensively involving the Mashpee Wampanoag and the Wampanoag Tribe of Gay Head (Aquinnah) in the process. The 106 process has been completed, and impacts to the Tribes' traditional cultural properties have been acknowledged. Mitigation was offered as part of this process, but was not accepted by the Tribes.

v. The project does not satisfy the 404(b)(1) Guidelines – The commenter states that the Corps must deny the application under the 404(b)(1) Guidelines found at 40 C.F.R. Part 230. The Corps does not agree, and the various points raised are addressed below.

1. The project is not the least environmentally damaging practicable alternative (LEDPA) -- The commenter suggests that the Corps cannot issue a Section 404 permit for the project, as there are alternatives that would be less environmentally damaging, such as (unnamed) land-based sites. It is important to recognize, however, that the concept of the LEDPA applies only in the Section 404 permitting context, and here, most of the project is outside the waters of the United States subject to Section 404 permitting. Section 404 of the Clean Water Act only applies to discharges of fill and dredged material occurring in coastal waters to the limit of the territorial seas, which extend three nautical miles³ from the baseline defining the territorial sea. 33 C.F.R. § 328.4(a). Here, the entire turbine array is outside the territorial sea, and is therefore not subject to Section 404 permitting. The Corps also regulates all structures and work within the territorial seas pursuant to Section 10 of the Rivers and Harbors Act of 1899, and all structures (but not work) on the OCS pursuant to Section 10, and the NEPA analysis conducted for this project appropriately addresses the impacts associated with all these structures and works in both the territorial seas and on the OCS. However, the limited reach of Section 404 jurisdiction to territorial waters is important, as the concept of the LEDPA only arises in a 404 permit review, not Section 10.

It is also important to recognize that the only activity associated with this project that is subject to 404 permitting—the only activity resulting in the discharge of dredged or fill material—is the 2925 sq ft area of discharge of dredged and fill material associated with the transition of the 115 kV submarine transmission cables from water to land at Lewis Bay in Harwich, MA. Thus, the only activity of the project subject to a Section 404 permit is the fill that will be placed inside the cofferdam where the ocean cables reach the horizontal directional drilled conduit from land, and the 404(b) analysis is focused on this activity, not the entire project. Because of the limited scope of the 404 activities in relation to the entire project, it is not appropriate to apply the LEDPA concept to the entire project, but rather only to the small portion of the project subject to Section 404. The NEPA analysis appropriately examined the environmental impacts of all aspects of the project—the components in the territorial sea, the OCS, and uplands, and aspects of the project subject to 404 permitting, Section 10 permitting, MMS lease authority, and areas not subject to federal permitting but part of the overall project.

³ The FEIS describes the seaward limit of jurisdiction of the Clean Water Act as extending 3.5 miles, a conversion of nautical miles to statute miles.

The use of horizontal directional drilling and the fill associated represents the least environmentally damaging practicable alternative for bringing the transmission cables to landfall. The other practicable method of bringing the cable to land would be cut and cover trenching, which involves much more bottom disturbance, more material rehandling, more turbidity, and it is disruptive for a longer period of time. Resource agencies always recommend jet plow or HDD over cut and cover trenching.

The commenter suggests that a Section 404 permit should be required for all jet plow activity within territorial seas. Contrary to commenter's suggestion, the Corps does not consider jet plowing to be subject to 404 permitting as it does not represent a discharge of dredged or fill material.⁴ Jet plowing is a means of laying submarine cables with a jet plow device. The jet plow blade is lowered to the seabed, water pump systems are initiated, and a trench is created from the pressurized water jets. As the jet plow progresses, the cable is simultaneously laid and buried in the trench as the jetted material settles back into the trench behind the jet plow. Because the vast majority of jetted material falls back into the trench at the same time and same location where it had just been excavated, the Corps does not consider this to be a discharge of dredged or fill material. To the extent that some jetted material lands outside the trench, this is the same incidental effect that would occur with a traditional navigational dredging operation, and Corps regulations direct that such incidental movement of materials during dredging operation generally do not require a 404 authorization. As such, the Corps does not consider the jet plow installation method to be subject to 404 permitting. This approach of Section 404 not applying to jet plowing is a consistent Corps practice in the New England District, as evidenced by a permit issued pursuant to Section 10, not Section 404, in 2005 for a power cable from Barnstable to Nantucket installed with jet plowing techniques, permit NAE-2004-1533.

It is important to note, however, that even if the Corps considered jet plow operations to be subject to Section 404 permitting, the proposed transmission cable and its associated jet plow installation in the territorial seas would be considered the LEDPA. The route chosen to Barnstable is the most direct route of the alternatives considered, and would therefore result in the least impacts. Moreover, the use of jet plow in these waters is the least damaging means of installing a utility cable at the distances required. The other practicable alternative to jet plow installation is cut and cover trenching, which involves much more bottom disturbance, more material rehandling, more turbidity, and it is disruptive for a longer period of time. Thus, even if the Corps did subject the entire transmission cable installation to the 404(B) requirements, the jet plow methodology and the route chosen would be considered the LEDPA.

2. The project will cause or contribute to violations of applicable water quality standards – Contrary to the commenter's assertions on water quality standard violations, the Massachusetts Department of Environmental Protection (MA DEP) issued a Water Quality Certification pursuant to Section 401 of the Clean Water Act for the project on August 15, 2008. Under Section 401, applicants are required to receive certification that Clean Water Act discharges will be consistent with state water quality standards. In addition to finding that the discharges associated with the project (ie the cofferdam fill) complied with state water quality standards, the MA DEP also considered non-discharge activities such as the jet plow operation,

⁴ The FEIS incorrectly stated that the Corps would require a 404 permit for jet plowing activities. The DEIS correctly stated that the Corps would only require a 404 permit for the fill at the cofferdam.

and found these also to be consistent with state water quality standards.

3. The project will jeopardize the continued existence of endangered or threatened species or will result in the destruction or adverse modification of critical habitat – Contrary to the commenter’s assertions on impacts to endangered species and their habitat, the USFWS issued a biological opinion dated November 21, 2008, and NMFS issued biological opinions November 13, 2008 and December 20, 2010, the culmination of the agencies’ ESA Section 7 consultation, which concluded that the project would not jeopardize the continued existence of species listed pursuant to the ESA, nor would the project affect designated critical habitat.

4. The proposed discharge would significantly adversely affect aquatic ecosystems- The 404 discharge associated with this project—fill in the 2925 sq. ft. cofferdam—will result in minor to insignificant impacts. The use of horizontal directional drilling is the least damaging means of bringing a cable to landfall, and the impacts of the fill activities will be minimized by use of the cofferdam and time of year restrictions to avoid impacts to winter flounder eggs and larvae. A water-filled temporary dam around the exit point of the horizontal directional drill will act as an underwater “silt fence” to contain any escaping drilling fluid.

5. The project will significantly and adversely affect recreational, aesthetic, and economic values – As discussed in response to the commenter’s points on the public interest factors, the project will have some impacts on recreational uses on Horseshoe Shoal and the viewshed, these are not expected to be substantial. Likewise, the economic values of real estate and the tourism industry are not expected to be greatly impacted by the project.

6. The project does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem – The measures to minimize impacts associated with horizontal directional drilling and the fill associated with the cofferdam are adequate. The comments on this point do not provide additional measures that should be imposed, but only seek additional detail on the implementation of the mitigation measures and operations plan, such as who will be operating the equipment and their level of experience. At this point in the permitting process, the level of detail provided is appropriate, and the Corps will ensure that the mitigation is implemented properly as part of its permit oversight.

7. There is insufficient information to determine if the discharge will comply with the 404(B)(1) Guidelines – The Corps believes there is sufficient information to make its permit decision. The NEPA process has provided ample information for the Corps to review the impacts of the project, and the specific 404 discharge associated with the project is not a new or unusual activity. To the contrary, the cofferdam discharge is of the nature and type that the Corps has extensive history reviewing in the New England District, and at the scale involved here, the associated impacts are predictable and minor.

2) Elizabeth Durkee, Oak Bluffs Conservation Agent, dated February 7, 2008

Dispose sand to replenish Oak Bluffs beaches rather than disposal in ocean waters –

The only dredged material being placed in waters of the United States is the material dredged from within the cofferdam where the transmission line reaches the connection with the horizontal directional drill coming from shore. The material may be placed back into the area where it had been dredged in order to cover and protect the cable, and will not be disposed of in ocean disposal areas. The volume (roughly 840 cubic yards of material) would not provide much beach replenishment material, nor would it be cost effective to transport such a small amount of material to Oak Bluffs beaches when fill material would still be needed to cover the cable and backfill the area inside the cofferdam.

3) Paul Conlin, Pocasset, MA, dated March 16, 2008

Project should be located on land at Otis AFB – Massachusetts Military Reservation/Otis Air Force Base in Sandwich, MA was evaluated earlier in the review process for this project. The site did have some attributes for an energy generating facility as there is access to surplus transmission capacity and there are large undeveloped portions of this 22,000 acre site. However, it was found that there is an inadequate wind resource for a commercial wind power facility, that structures could interfere with military airspace, that existing unexploded ordinance may exist in the undeveloped areas large enough to accommodate a wind facility, and there are significant environmental resource issues known to exist at the site.

4) Charles Mansfield, West Falmouth, MA, dated March 22, 2008

Project should not be located in Nantucket Sound, economic and environmental impacts are uncertain, and political favors being provided to project by state politicians – The environmental and economic impacts are thoroughly documented in the FEIS and reflect the best available information. The interaction of the project proponents and state politicians is beyond the scope of the Corps review of this project.

5) Oceans Public Trust Initiative, Cindy Lowry, Portland, ME, dated March 28, 2008

Project violates public trust doctrine and negatively impacts the public interest factors - There are numerous legislative provisions in place for addressing the propriety of allocating use of the public resources in the waters of Nantucket Sound, including state laws such as Massachusetts Chapter 91, and federal laws including Section 10 of the Rivers and Harbors Act, Section 404 of the Clean Water Act, and the Outer Continental Shelf Lands Act as amended by the Energy Policy Act of 2005. These provisions do not prohibit, but do regulate, the use of public resources, and establish procedures by which such public resources can be used by individuals and entities. Congress and the Massachusetts Legislature have set up these frameworks to govern the use of such public trust resources, and agencies like the Corps and MMS are responsible for implementing them. The extensive reviews by state and federal agencies have been conducted to determine whether it is appropriate to allow the proposed use of, and impacts on, the public resources. The commenter raises concerns similar to those addressed in Comment 1 above, and the responses there are incorporated here by reference. The commenter stated that Nantucket Sound contains a Massachusetts state marine sanctuary, but the Massachusetts permitting agencies have issued their authorizations for the cable crossing within state waters. The commenter suggests that these areas “qualify” as a federal marine sanctuary,

but neither the state waters nor federal waters where the project is designated as a federal marine sanctuary under the Marine Protection, Research and Sanctuaries Act.

6) Barbara W. Nye, Centerville, MA, dated January 24, 2008

Project consists of too many windmills – The FEIS compared impacts of a smaller project alternative with the proposed project. While some impacts would be lessened others would remain approximately the same. The smaller project alternative and its reduced electric generating capacity would not meet the project purposes of making a substantial contribution to enhancing electric reliability and achieving the regional renewal energy requirements.

7) Clean Power Now Nantucket Chapter, Carl K. Borchert, Nantucket, MA, dated February 17, 2008

Benefits of project outweigh minor negative impacts, wind parks in Denmark are quiet and benign – The FEIS for the project examines the impacts of the project on various resources. Some were determined to be moderate, but most were found to be negligible to minor. The wind parks in Denmark provide some understanding to what can be expected with this project.

8) Charles J. Miller, Monument Beach, MA, dated March 21, 2008

Horseshoe Shoals is foggy in summer, will not be visible to most summer visitors, structures will enhance fishery – The visual impacts of the project have been thoroughly analyzed in the FEIS and accompanying studies. When the structures are visible from shore they will appear as small objects on the horizon, and as the commenter notes, weather conditions will often prevent them from being seen. The impacts of the project on fisheries are discussed in the FEIS. The main impacts will occur during construction, and after the structures are in place they may serve as attractive habitat for fish.

9) National Grid, Hanover, MA, dated March 21, 2008

The transmission lines for the project will cross a 46 kV National Grid cable northwest of Bishops and Clerks reef, installation of the new lines must be done with care to avoid impacting electrical service to Nantucket – The FEIS discusses the National Grid cable and how the two will be “bridged” to allow safe crossing. The Corps will address this through a permit condition that will require coordination with National Grid to ensure that its cable will not be adversely impacted.

10) Rear Admiral John Linnon, East Falmouth, MA, dated March 26, 2008

The project will adversely impact the effectiveness of marine radar systems, forwards copy of report from Dr. Eli Brookner – The Brookner report addresses the impacts of the project on marine radar systems. This report was reviewed by the U.S. Coast Guard in its evaluation of the impacts of the project on navigation and marine radar. The Coast Guard determined that the wind turbine array would impact marine navigation radar, but with the required mitigation measures these impacts would be within an acceptable level of risk.

11) J. Randolph Barrett, Oliver Wyman, Reston, VA, dated March 28, 2008

The project will adversely impact the effectiveness of aviation radar systems, forwards copy of report from Dr. Eli Brookner – The FAA is the federal agency with expertise and responsibility to address potential hazards to aviation. The Brookner report was considered and evaluated as part of their review. The FAA has determined that the structures could cause “clutter” on the existing air traffic control displays and are requiring the applicant to provide upgraded equipment to mitigate this problem. In light of these requirements, the FAA has issued a *Determination of No Hazard to Air Navigation* dated May 17, 2010 and a subsequent *Notice of Denial of Request for Discretionary Review of Determination of No Hazard to Air Navigation* dated August 4, 2010.

12) Hyannis Marina, Wayne Kurker, Hyannis, MA, dated March 26, 2008

The project will result in scouring at the base of structures on Horseshoe Shoal, Massachusetts CZM is politically motivated -- The issue of scour at the base of structures has been analyzed and addressed through the NEPA process. Scour mats are the intended means to prevent scour, and tests on these mats have shown success. Rock armoring may be used around the base of the structures if the scour mats are not adequate. With regard to the political motivations of Massachusetts state agencies, this is beyond the purview of the Corps permit review process. Massachusetts CZM has issued a finding of consistency with the state CZM policies, the motivations for such a finding is not a matter for Corps review. The commenter submitted identical comments to the Corps and MMS, and the Corps agrees with the MMS response to these comments.

13) James Liedell, Yarmouth Port, MA, dated February 16, 2008

Changes to project articulated in 2008 Corps Public Notice reduce impacts, DEIS shows little impact from project and environmental management system will benefit public interest – The changes to the project as articulated in the 2008 Public Notice should result in less visual impacts from lighting, but the new horizontal directional drill plan resulted in minor fill activities that were not part of the project before. The mitigation, monitoring, and coordination (pre-construction, construction, and post-construction) required for the project are extensive and the Corps agrees that these will benefit the public interest.

14) Ken Elkstrom, Cambridge, MA, dated March 24, 2008

Proponent overstates energy production from wind in Nantucket Sound, electromagnetic fields from project may inhibit winter chlorophyll blooms in Nantucket Sound – The commenter asserts that the applicant’s projections of power generation are overstated, but this is based on the commenter’s observations of wind conditions at South Beach on Martha’s Vineyard. It is not clear why the wind conditions at South Beach would be more accurate than the wind data captured at the instrument tower on Horseshoe Shoal. The federal agencies have relied heavily upon input from the Independent System Operation New England (ISO-NE) and the U.S. Department of Energy that this project will substantially contribute to

enhancing the region's electrical reliability and to achieving the renewable energy portfolio standards. MMS conducted an independent economic analysis to compare the alternatives, and this took into account wind resources and production capacity at various locations. However, as noted above, Corps regulations presume that an applicant will not pursue an economically unviable project. As to the impact of electromagnetic fields from the project on chlorophyll blooms, the FEIS concluded that impacts of electric and magnetic fields would be negligible. The electric field is contained within the grounded metallic shielding of the offshore cables. Peak magnetic flux densities will be directly above the cable, which will be buried six feet below the substrate. This decreases rapidly moving away from the cable. Mobile species will have minimal exposure. Scientific literature indicates there is no anticipated adverse effect from these magnetic fields, and the commenter provides no more than speculation as to whether there will be an impact on chlorophyll blooms. In fact, in the email string that generated the comment, the prompt for the concern about electromagnetic impacts appears to be an email discussing the effect of iron-poor waters on photosynthetic planktons, but this email says nothing about electromagnetic fields creating iron-poor waters.

15) U.S. Fish and Wildlife Service, Michael J. Bartlett, Concord, NH, dated February 20, 2008

Jet plow operation may need regulation under Section 404, a more recent study shows greater sedimentation impacts from jet plow operation. As discussed above, jet plow operation is not subject to 404 regulation. Moreover, to the extent jet plow operations were subject to 404 regulation, it would be considered the LEDPA, as other means of installing transmission cable create greater environmental impacts. As to the sedimentation impacts shown in the newer modeling study on jet plow activities in Nantucket Sound conditions, discussion with the study author revealed that while the results were worded differently in the two reports, the substance of the two reports was not different. Specifically, the author of the report indicated that the more recent model simulation indicated that sediment deposition quickly tapers off to below 0.2 inches (5 mm) at between 50 and 100 feet (15-30 m) on either side of the cable trench, and almost all sediment will be deposited within 100 feet of the trench.

11. General Evaluation:

In November 2001, Cape Wind Associates, LLC submitted a Department of the Army permit application to construct and operate a wind-power facility in federal waters on Horseshoe Shoal in Nantucket Sound, Massachusetts. In December 2001, the Corps determined that an environmental impact statement was required for the Cape Wind Energy Project. A Notice of Intent to prepare the environmental impact statement was published in the Federal Register on January 30, 2002. The Corps of Engineers Draft EIS was released in November 2004. Subsequent to the enactment of the Energy Policy Act of 2005, the Department of the Interior was given authority for issuing leases, easements, or rights-of-way for alternative energy project activities on the Outer Continental Shelf. MMS, an agency within the Department of the Interior, was responsible for implementing these new provisions.

MMS determined that the regulations and requirements under which it would review the proposed action are substantially different than those under which the Corps would have

reviewed the proposed action, and a new Draft EIS would need to be prepared. MMS considered public comments on the Corps Draft EIS as scoping comments in preparation of the MMS Draft EIS.

On January 18, 2008, the MMS Draft EIS was made available for review and comment for a total of 90 days. MMS received more than 42,000 comments through its website, emails, hard copy and comments provided at the four public and hard copy mailed comments. Comments were addressed in the Final EIS which was announced in the Federal Register dated January 21, 2009. MMS issued an Environmental Assessment/Finding of No New Significant Impact to evaluate post-FEIS Information and a Record of Decision on April 28, 2010.

As a cooperating agency for purposes of complying with the NEPA, the Corps provided input to the MMS for development of their EIS, and the Corps has relied upon MMS as the lead federal agency to address the federal requirements under Section 7 of the Endangered Species Act, Section 106 of the National Historic Preservation Act, Essential Fish Habitat consultation pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, and the conformity provisions of the Clean Air Act. MMS, through their lease requirements and Construction and Operations Plan (COP), will ensure that the mitigation and monitoring identified through the NEPA process and the various consultations with federal and state agencies and Indian tribes will be accomplished. The MMS NEPA documents and public involvement process have provided an extensive and intensive evaluation of the alternatives and environmental impacts consistent with the Corps regulatory requirements.

The Corps Permit is conditioned to ensure mitigation of any impacts to eelgrass, a special aquatic site, in accordance with the 404(b)1 guidelines:

An eelgrass monitoring and mitigation plan will be submitted to, and approved in writing by, the Corps of Engineers prior to the start of the installation of submarine cable between the electric service platform and Yarmouth. This plan will include pre- and post-construction monitoring to determine if any eelgrass has been lost due to the cable installation. A planting plan and schedule to compensate for any disturbed eelgrass will be included.

In addition the Corps permit is conditioned to require coordination with National Grid to avoid impacts to electric service to Nantucket when the project transmission lines are being installed across the National Grid cable northwest of Bishops and Clerks reef:

The permittee shall survey and locate, horizontally and vertically, the National Grid cable authorized by permit number NAE-2004-1533 at all locations where the permittee's installation activities may occur within 500 feet of the National Grid cable. This data will be made available to the Corps and National Grid. Final design plans and installation procedures for work within 150 feet of the National Grid cable shall meet the technical requirements of National Grid and be submitted to the Corps and National Grid for written approval prior to the start of work and will be submitted at least 30 days prior to the scheduled work.

The permit is conditioned to require as-built drawings so that we will have that information on file should there be a Federal Navigation Project or some other project proposed in the vicinity. Additionally, these will be provided to NOAA so that the information can be included on the coastal charts.

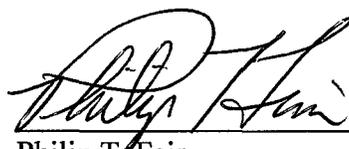
The permittee shall submit as-built, full-sized drawings of the authorized work to the Corps of Engineers. The as-built drawing shall include at least one plan view showing horizontal alignment and a profile view showing the vertical alignment of all cables. Plans will include a bar (graphic) scale, the dates of the survey and drawings, and horizontal state plane coordinates and vertical elevation. Show the cable's horizontal state plane coordinates in U.S. survey feet based on NAD 83. Show the vertical elevation as MLLW with a reference to NAVD 88 and document how this information was derived using the latest National Tidal Datum Epoch for that area, typically 1983-2001. Plans will be stamped by a professional engineer or land surveyor registered in the Commonwealth of Massachusetts. Any changes in the location or type of structures requires notification to the Corps and may require a new survey.

The permittee shall submit the as-built drawings to the Corps and the National Oceanic and Atmospheric Administration (NOAA) within 60 days of construction completion. The Corps may note the location on future survey drawings and NOAA may use the information for charting purposes. The NOAA address is: "Nautical Data Branch, N/CS26, Station 7349, 1315 East-West Highway, Silver Spring, MD 20910-3282."

Although MMS has required biennial inspection of the inner array cables to ensure they remain buried, the Corps needs to also ensure that all the cables are inspected and properly maintained:

The permittee will ensure all cables, including the portions within state waters, remain buried in the same manner as required for the inner array cable by the Lease of the Bureau of Offshore Energy Management, Regulation and Enforcement.

12. Public Interest Review: I have considered all factors relevant to this proposal including cumulative effects. Potential factors included conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people. After weighing favorable and unfavorable effects as discussed in this document, I find that this project is not contrary to the public interest and that a Department of the Army permit should be issued.



Philip T. Feir
Colonel, Corps of Engineers
District Engineer

5 January 2011
Date