

U.S. DEPARTMENT OF THE INTERIOR  
BUREAU OF OCEAN ENERGY MANAGEMENT

Conditions of Construction and Operations Plan Approval  
Lease Number OCS-A 0486  
November 17, 2023<sup>†</sup>

The Bureau of Ocean Energy Management’s (BOEM) approval of Revolution Wind, LLC’s (Lessee or Revolution Wind) conduct of activities under the Construction and Operations Plan (COP) for the Revolution Wind Farm and the Revolution Wind Export Cable (Project) is subject to the conditions set forth in this document. The Department of the Interior (DOI) reserves the right to amend these conditions or impose additional conditions authorized by law or regulation on any future approvals of COP revisions.

The Lessee must maintain a full copy of these terms and conditions on every Project-related vessel and is responsible for the implementation of, or the failure to implement, each of these terms and conditions by the Lessee’s contractors, consultants, operators, or designees.

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<sup>†</sup> with corrections issued on April 25, 2024.

## 1. GENERAL PROVISIONS

- 1.1. Adherence to the Approved Construction and Operations Plan, Statutes, Regulations, Permits, and Authorizations (Planning) (Construction) (Operations) (Decommissioning).<sup>1</sup> The Lessee must conduct all activities as proposed in its approved COP<sup>2</sup> for the Project as stated in these terms and conditions and in any final plans with which the DOI BOEM and/or the Bureau of Safety and Environmental Enforcement (BSEE) have concurred. Additionally, the Lessee must comply with all applicable requirements in commercial lease OCS-A 0486 (Lease), statutes, regulations, consultations, and permits and authorizations issued by federal, state, and local agencies for the Project. BOEM and/or BSEE, as applicable, may issue a notice of noncompliance, pursuant to 30 C.F.R. § 585.106(b) and 30 C.F.R. § 285.400(b), if it is determined that the Lessee failed to comply with any provision of its approved COP, the Lease, the Outer Continental Shelf Lands Act (OCSLA), or OCSLA's implementing regulations. BOEM and/or BSEE may also take additional actions pursuant to 30 C.F.R. § 585.106 and 30 C.F.R. § 285.400, where appropriate.
  - 1.1.1. As depicted in the COP and modified by selected Alternative G in the Record of Decision (ROD), the Lessee may construct and install on the Outer Continental Shelf (OCS) in the area described in Lease OCS-A 0486 (Lease Area) up to 65 wind turbine generators (WTGs) within 79 possible positions, up to 2 offshore substations (OSSs), inter-array cables linking the individual WTGs to the OSSs, substation interconnector cables linking the substations, and up to 2 offshore export cables within the area described in Lease Addendum "D".
- 1.2. Record of Decision (Planning) (Construction) (Operations) (Decommissioning). All mitigation measures selected in the ROD for this Project are incorporated herein by reference and are considered terms and conditions of this COP. To the extent there is any inconsistency between the language used in the ROD and that found in the terms and conditions, the language in the latter will prevail.
- 1.3. Effectiveness (Construction) (Operations). This COP approval and these associated terms and conditions become effective on the date BOEM notifies the Lessee that its COP has been approved, and remain effective until the termination of the Lease, which, unless renewed, has an operations term of 25 years from the date of COP approval.
- 1.4. Consistency with Other Agreements and Authorizations (Planning) (Construction) (Operations) (Decommissioning). In the event that these terms and conditions are, or become, inconsistent with the terms and conditions of the Project's Biological Opinion (BiOp) issued by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) on July 21, 2023;<sup>3</sup> the BiOp issued by the U.S. Fish and

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<sup>1</sup> Parenthetical indicators of (Planning) (Construction) (Operations) and/or (Decommissioning) at the start of a condition denote the primary development stage(s) to which the condition is relevant.

<sup>2</sup> Revolution Wind LLC. 2023. Construction and Operations Plan, Revolution Wind Farm. Volume I.

<sup>3</sup> See BiOp § 11.3 Letter from Michael Pentony, Regional Administrator, US Dept of Commerce, National Oceanic and Atmospheric Administration, NMFS GARFO, to Karen Baker, Chief Office of Renewable Energy Programs, BOEM, Re:

Wildlife Service (USFWS) on May 30, 2023;<sup>4</sup> Incidental Take Authorizations (ITA) issued for the Project under the Marine Mammal Protection Act (MMPA); the Section 106 Memorandum of Agreement (Section 106 MOA) executed on August 18, 2023, or amendments thereto; the language in the NMFS BiOp, USFWS BiOp, ITAs, Section 106 MOA or amendments thereto, will prevail. To the extent the Lessee identifies inconsistencies within or between the language in the NMFS BiOp, USFWS BiOp, ITAs, Section 106 MOA or amendments thereto, it must direct questions regarding potential inconsistencies to BSEE and BOEM. BSEE, in consultation with BOEM, will determine how the Lessee must proceed. Activities authorized by COP approval will be subject to any terms and conditions and reasonable and prudent measures resulting from any BOEM-reinitiated consultation for the Project's NMFS BiOp or USFWS BiOp, and any stipulations resulting from amendments to the Section 106 MOA.

- 1.5. Variance Requests (Planning) (Construction) (Operations) (Decommissioning). The Lessee may submit a written request via email to the BOEM Office of Renewable Energy Programs Chief and to BSEE through TIMSWeb (<https://timsweb.bsee.gov/>), seeking a variance from particular requirements of these terms and conditions. The request must explain why compliance with a particular requirement is not technically and/or economically practical or feasible. To the extent not otherwise prohibited by law and after consideration of all relevant facts and applicable legal requirements, BOEM or BSEE in consultation with the other Bureau, may grant the request for a variance if the appropriate Bureau determines that the variance: (1) would not result in a change in the Project impact levels described in the Final Environmental Impact Statement (FEIS) and ROD for the Project, (2) would not alter obligations or commitments resulting from consultations performed by BOEM and BSEE under Federal law in connection with this COP approval, in a manner that would require BOEM to reinitiate or perform additional consultation (e.g., Endangered Species Act (ESA), Coastal Zone Management Act (CZMA), National Historic Preservation Act (NHPA), Magnuson-Stevens Fishery Conservation and Management Act (MSA)), and (3) would not alter BOEM's determination that the activities associated with the Project would be conducted in accordance with Section 8(p)(4) of OCSLA. After making a determination regarding a request for variance, BOEM or BSEE will notify the Lessee in writing whether the appropriate Bureau will allow the proposed variance from the identified requirements set forth in this COP approval. Approvals of variance requests will be made publicly available. This provision applies to the extent it is not inconsistent with more specific provisions in these terms and conditions for variances or departures.
- 1.6. 48-Hour Notification Prior to Construction Activities (Construction) (Operations) (Decommissioning). The Lessee must submit a 48-hour notification to BSEE through TIMSWeb prior to the start of each of the following construction activities occurring on

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Endangered Species Act Section 7 Consultation (July 21, 2023), <https://www.boem.gov/renewable-energy/state-activities/nmfs-esa-consultations> (hereinafter NMFS BiOp). This is inclusive of the avoidance, minimization, and mitigation measures described in the proposed action and included in the BiOp's ITS.

<sup>4</sup> See BiOp Letter from Audrey Mayer, Field Supervisor, New England Field Office, Fish and Wildlife Serv., to Katherine Segarra, BOEM. (May 30, 2023), <https://www.boem.gov/renewable-energy/state-activities/fws-esa-consultations> (hereinafter BiOp). This is inclusive of the avoidance, minimization, and mitigation measures described in the proposed action and included in the BiOp's ITS.

the OCS: seabed preparation activities such as boulder relocation and pre-lay grapnel runs, export cable installation, inter-array cable installation, WTG and OSS foundation installation, WTG tower and nacelle installation, OSS topside installation, and cable and scour protection installation.

- 1.7. Inspections (Construction) (Operations) (Decommissioning). The Lessee must plan for and have the capacity to receive federal personnel who arrive for inspections and assessments to be conducted under 30 C.F.R. §§ 285.820–285.825. As provided for in Reasonable and Prudent Measure 6 of the NMFS BiOp, the Lessee must consent to on-site observations and inspections by Federal agency personnel, including NOAA personnel, during activities described in the NMFS BiOp, for the purpose of evaluating the effectiveness and implementation of measures designed to minimize or monitor incidental take. BSEE may conduct unscheduled inspections. Federal agency personnel from agencies other than BSEE will provide at least 96-hour notice to the Lessee for on-site observations and inspections.
- 1.8. Project Website (Planning) (Construction) (Operations) (Decommissioning). The Lessee must develop and maintain a Project website to provide a means for the public to communicate with the Lessee about the Project, including fisheries communication and outreach. The website must provide a method for the public to register comments or ask questions through either a direct link to a comment form or email, or by providing the contact information (phone and/or email address) of a Lessee representative who can respond to these communications.
  - 1.8.1. The Lessee must post construction notices and other publicly relevant information to the Project website on a monthly basis. The Project website must allow users to subscribe (or unsubscribe) to an electronic mailing list for Project update notifications.
  - 1.8.2. The Lessee must post the following information to the Project website within 5 business days of availability.
    - a) Locations where target burial depths were not achieved and locations of cable protection measures.
    - b) Project-specific information found in the most current Local Notice to Mariners (LNM).
    - c) Communication Plan (COP Volume I, Table 4.7-2, Public Services, Recreation and Tourism, Commercial Shipping, Commercial and Recreational Fishing, and Appendix EE). The Communication Plan must be submitted to BOEM ([renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov)) and BSEE via TIMSWeb for a 30-day review prior to being finalized.
    - d) Fisheries Communication Plan.

- e) Project Mitigation Report identified in Section 1.9. The Project Mitigation Plan must be submitted to BOEM ([renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov)) and BSEE via TIMSWeb for a 30-day review prior to being finalized.

1.8.3. Geographic information system (GIS) location data must be downloadable from the Project website and packaged in an ESRI-compatible format, preferably an ESRI shapefile. Files must use a NAD83 UTM Zone 19 or a geographic coordinate system in NAD83. A text file with table field descriptions that contain measurement units, where applicable, must be included.

1.9. Project Mitigation Report (Planning) (Construction) (Operations) (Decommissioning). The Lessee must develop a Project Mitigation Report that reflects public engagement and consultation concerning environmental mitigation measures completed to date with the appropriate tribal nations, federal and state agencies, and regional and non-governmental organizations. The Project Mitigation Report will be a comprehensive compilation of all environmental mitigation measures or commitments required by the terms and conditions of COP approval, as well as other federal and state authorizations and consultations (e.g., ESA, CZMA, MOA) required for the construction and operation of the Project. The Project Mitigation Report must (1) describe and provide technical details for each mitigation measure (including the type of Project impact to which it relates and the consultation, authorization, or conditions under which it is required); and (2) identify procedures to evaluate additional or modified measures that respond to impacts detected in Project monitoring and other monitoring and research studies and initiatives, including the Lessee's Fisheries Research and Monitoring Plan. The Lessee must update the Project Mitigation Report periodically, as described in such Report, for status and completion of mitigation measures.

1.10. Submissions (Planning) (Construction) (Operations) (Decommissioning). Unless otherwise stated, the Lessee must provide any submissions required under these conditions to BOEM<sup>5</sup> and/or BSEE through the following:

1.10.1. Via email to the Office of Renewable Energy Programs Project Coordinator for submissions to BOEM for Sections 2 through 4,

1.10.2. Via email to [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov) for submissions to BOEM for Sections 5 through 8, and

1.10.3. TIMSWeb for submissions to BSEE.

## **2. TECHNICAL CONDITIONS**

2.1. Munitions and Explosives of Concern (MEC) and Unexploded Ordnances (UXO) Survey Results Implementation (Construction). The Lessee must implement the "as low as reasonably practical" (ALARP) risk mitigation principle with the following steps: (1) a desktop study (DTS); (2) an investigation survey to determine the presence of objects; (3)

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<sup>5</sup> BOEM will notify the Lessee in writing if BOEM designates a different process for BOEM submissions.

an identification survey to determine the nature of the identified objects; (4) MEC/UXO mitigation (avoidance or relocation); and (5) a certification that MEC/UXO risks from installation and operation of the facility have been reduced to ALARP levels. The Lessee must implement the mitigation methods identified in the approved COP, DTS, and the subsequent survey report(s) following the resolution of all comments provided by BOEM and BSEE. As part of the Fabrication and Installation Report (FIR) and prior to commencing installation activities, the Lessee must make available to the approved Certified Verification Agent (CVA), BOEM, and BSEE for review the complete and final versions of information on implementation and installation activities associated with the ALARP mitigation process, including the: (1) DTS; (2) investigation surveys to determine the presence of objects; (3) identification surveys to determine the nature of the identified objects; and (4) MEC/UXO relocation, disposition, and/or construction re-routing.

- 2.2. MEC/UXO ALARP Certification (Planning). The Lessee must provide to BOEM, BSEE, and the approved CVA, a certification confirming that MEC/UXO risks related to the installation and operation of the facility have been reduced to ALARP levels. The certification must be made available by a qualified third party and made available with the submission of the Facility Design Report (FDR) or FIR, whichever is submitted earlier.
- 2.3. MEC/UXO Discovery Notification (Construction) (Operations) (Decommissioning). In the event of a confirmed MEC/UXO, the Lessee must coordinate with the U.S. Coast Guard (USCG) to ensure the MEC/UXO discovery is published in the next version of the LNM for the specified area and provide BOEM and BSEE a copy of the LNM once it is available. The Lessee must also provide the following information to BOEM ([BOEM\\_MEC\\_Reporting@boem.gov](mailto:BOEM_MEC_Reporting@boem.gov)), BSEE ([env-compliance-arc@bsee.gov](mailto:env-compliance-arc@bsee.gov)), and relevant agency representatives within 24 hours of any such discovery made during activities, such as seabed clearance, construction, and operations:
  - 2.3.1. Narrative describing activities that resulted in the identification of confirmed MEC/UXO;
  - 2.3.2. Activity at the time of discovery (e.g., survey, seabed clearance, cable installation);
  - 2.3.3. Location (latitude (DDD MM.MMM'), longitude (DDD MM.MMM)), lease area, and block;
  - 2.3.4. Water depth (meters (m));
  - 2.3.5. MEC/UXO type, dimensions, and weight; and
  - 2.3.6. MEC/UXO vertical position (description of exposure or estimated depth of burial).
- 2.4. Munitions Response Plan for Confirmed MEC/UXO (Planning) (Construction). The Lessee must implement methods identified in the approved COP and as described in the MEC/UXO Survey Results Implementation (as referenced in Section 2.1) for MEC/UXO mitigation activities. Under all circumstances of confirmed MEC/UXO, the Lessee must demonstrate to BSEE and BOEM that avoidance through micrositing of planned infrastructure (e.g., wind turbines, offshore substations, inter-array cables, or export cables)

of confirmed MEC/UXO is not feasible. For confirmed MEC/UXO on the OCS where avoidance through micrositing is not feasible, the Lessee must provide a Munitions Response Plan. The Munitions Response Plan must include the following:

- 2.4.1. Method of munitions response (in situ disposal, or relocation through “lift and shift”) and an analysis describing the identification and determination of the method chosen for each confirmed MEC/UXO;
  - 2.4.2. Hazard analysis of the response;
  - 2.4.3. Type and designation of work vessels, remotely operated vehicles, unmanned surface vehicles, or craft planned to be used in proximity to the MEC/UXO;
  - 2.4.4. Contact information of the identified munitions response contractor;
  - 2.4.5. Contractor qualifications and competencies to safely carry out the response work;
  - 2.4.6. Proposed timeline of activities;
  - 2.4.7. Position of confirmed MEC/UXO and, if applicable, planned relocation position (latitude (DDD MM.MMM’), longitude (DDD MM.MMM));
  - 2.4.8. Potential impact of weather and sea state on munitions response operations;
  - 2.4.9. Potential for human exposure;
  - 2.4.10. Medical emergency procedures plan;
  - 2.4.11. Protective measures to be implemented to reduce risk and/or monitor effects to protected species and habitats or other ocean users; and
  - 2.4.12. Plan for accidental detonation.
- 2.5. Munitions Response After Action Report (Planning). The Lessee must submit a Munitions Response After Action Report detailing the activity and outcome to BOEM and BSEE. The report must include the following information:
- 2.5.1. Narrative describing the activities that were undertaken by the Lessee, including the following:
    - a) As Found Location and, if applicable, As Left Location (latitude (DDD°MM.MMM’), longitude (DDD°MM.MMM)), lease area, and block;
    - b) Water depth (m);
    - c) Weather and sea state at the time of munitions response;
    - d) Number and detailed characteristics (e.g., type, size, classification) of MEC items subject to response efforts;

- e) Duration of the munitions response activities, including start and stop times;
  - 2.5.2. Summary describing how the Lessee followed its Munitions Response Plan and any deviations from the plan;
  - 2.5.3. Description of safety measures used, including but not limited to the presence of a U.S. Coast Guard (USCG) safety-zone, notices to mariners, other USCG safety actions in place prior to taking any munitions response actions, and how security call protocols were used;
  - 2.5.4. Results of the munitions response;
  - 2.5.5. Description of any threats and effects to health, safety, or the marine environment;
  - 2.5.6. Description of any effects on protected species and marine mammals and measures implemented to reduce risk and monitor effects;
  - 2.5.7. Details and results of any geophysical surveys conducted after the completion of the munitions response activities; and
  - 2.5.8. If applicable, a description of anticipated future munitions response activities.
- 2.6. Safety Management System (Planning) (Construction) (Operations) (Decommissioning). Pursuant to 30 C.F.R. § 285.810, a lessee, designated operator, contractor, or subcontractor constructing, operating, or decommissioning renewable energy facilities on the OCS must have a Safety Management System (SMS) that will guide all activities described in the approved COP (hereafter the “Lease Area’s Primary SMS”). The Lessee will submit its Lease Area’s Primary SMS to BSEE within 30 days of COP approval. BSEE will review the Lease Area’s Primary SMS and compare it to the regulations and requirements below (Sections 2.6.1 through 2.6.4) and verify whether it is acceptable.
- 2.6.1. The Lease Area’s Primary SMS must identify and assess risks to health, safety, and the environment associated with the offshore wind facilities and operations and must include an overview of the methods that will be used and maintained to control the identified risks.
  - 2.6.2. Pursuant to 30 C.F.R. § 285.811, the Lease Area’s Primary SMS must be functional when the Lessee begins activities described in the approved COP. The Lessee must provide to BSEE a description of any changes to the Lease Area’s Primary SMS to address new or increased risk before each phase of the Project commences (i.e., construction, operation, maintenance, decommissioning). In addition, the Lessee must demonstrate to BSEE’s satisfaction the functionality of the Lease Area’s Primary SMS by providing evidence of such functionality no later than 30 days<sup>6</sup> prior to beginning the relevant activities described in the COP. The Lessee will satisfy its requirement to demonstrate the Lease Area’s Primary SMS functionality by means including but not limited to those listed in Section 2.6.4.

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<sup>6</sup> Unless otherwise specified in the terms and conditions, the term “days” means “calendar days.”



- 2.6.3. The Lessee may employ a similar SMS that it is already using elsewhere as the Lease Area's Primary SMS if the Lessee demonstrates to BSEE the proper functioning of the similar SMS by providing certifications of that SMS from recognized accreditation organizations (e.g., International Organization for Standardization (ISO) International Electric Code (IEC) 45001, American National Standards Institute (ANSI) Z10, American Petroleum Institute (API) Recommended Practices 75, 4<sup>th</sup> or later edition), or by providing reports of third-party or internal audits of the SMS. The Lessee must also provide BSEE an explanation of how the Lessee has adapted the similar, audited SMS to become the Lease Area's Primary SMS. If the Lessee uses a similar SMS as described here, the Lessee must demonstrate to BSEE's satisfaction that the SMS is functional as provided in Section 2.6.2.
- 2.6.4. If the Lessee does not have a similar SMS that it is using elsewhere, demonstration of functionality may include the following:
- a) A desktop exercise in which the Lessee evaluates how the Lease Area's Primary SMS functions in response to different scenarios, including an evaluation of the strengths and weaknesses of Lessee's preparedness to control various risks.
  - b) A description of the personnel who have been trained on the Lease Area's Primary SMS, an overview of the training content, and a description of controls the Lessee has established to ensure trained personnel's understanding of and adherence to the Lease Area's Primary SMS.
  - c) A detailed description of how the Lessee intends to monitor whether the implementation of the Lease Area's Primary SMS is achieving the desired goals, and an overview of how the SMS will be adjusted as necessary to control identified risks.
  - d) A description of how the Lessee intends to manage the interface with contractors, subcontractors, and other critical stakeholders.
- 2.6.5. The Lessee must conduct periodic Lease Area Primary SMS audits and provide BSEE with a report summarizing the results of the most recent audit at least once every 3 years, and upon BSEE's request. The report must include any corrective actions implemented or being implemented as a result of that audit and an updated description of the Lease Area's Primary SMS, highlighting changes that were made since the last such submission to BSEE. Following BSEE's review of the report, the Lessee must engage with and respond to BSEE until any questions or concerns BSEE has are resolved, and BSEE is satisfied that the Lease Area Primary SMS is effective and functional.
- 2.6.6. In addition to maintaining an acceptable Lease Area's Primary SMS, the Lessee, designated operator, contractor, and subcontractor(s) constructing, operating, or decommissioning renewable energy facilities on the OCS are required to follow the policies and procedures of any other SMS(s) applicable to their contracted activities

and to take corrective action whenever there is a failure to follow the relevant SMS(s) or where the relevant SMS(s) failed to ensure safety.

2.7. Emergency Response Procedure (Planning) (Construction) (Operations). Prior to construction of the Project, the Lessee must submit an Emergency Response Procedure addressing non-routine events for review and concurrence by BSEE. The Lessee must submit any revisions of the procedure once every 3 years and upon BSEE's request, consistent with Section 2.6.3. The Emergency Response Procedure must address the following:

2.7.1. Standard Operating Procedures. The Lessee must describe the procedures and systems that will be used at Project facilities in the case of emergencies, accidents, or non-routine conditions, regardless of whether man-made or natural. The Lessee must include, as a part of the standard operating procedures for non-routine conditions, descriptions of high-consequence and low probability events and methods to address those events, including methods for: (1) establishing and testing WTG rotor shutdown, braking, and locking; (2) lighting control; (3) notifying the USCG of mariners in distress or potential/actual search and rescue incidents; (4) notifying BSEE and the USCG of any events or incidents that may impact maritime safety or security; and (5) providing the USCG with environmental data, imagery, communications, and other information pertinent to search and rescue or marine pollution response.

2.7.2. Communications. The Lessee must describe the capabilities to be maintained by the control center to communicate with the USCG.

2.7.3. Monitoring. The Lessee must ensure that the control center maintains the capability to monitor (e.g., using cameras) the Lessee's installation and operations in real time, including at night and in periods of poor visibility.

2.8. Oil Spill Response Plan (Planning). Pursuant to 30 C.F.R. § 585.627(c), the Lessee must submit an Oil Spill Response Plan (OSRP) to the BSEE Oil Spill Preparedness Division (OSPD) at [BSEEOSPD\\_ATL\\_OSRLPs@bsee.gov](mailto:BSEEOSPD_ATL_OSRLPs@bsee.gov) for review and approval prior to the installation of any component that may handle or store oil on the OCS. The OSRP may be lease-specific, or it may be a regional OSRP covering multiple leases. Facilities and leases covered in a regional OSRP must have the same owner or operator (including affiliates) and must be located in the Atlantic OCS region. For a regional OSRP, subject to BSEE OSPD approval, the Lessee may group leases into sub-regions for the purposes of determining worst-case discharge (WCD) scenarios, conducting stochastic trajectory analyses, and identifying response resources. The Lessee's OSRP must be consistent with the National Contingency Plan and the appropriate Area Contingency Plan(s), as defined in 30 C.F.R. § 254.6. To continue operating, the Lessee must operate consistent with the OSRP approved by BSEE. The Lessee's OSRP, including any regional OSRP, must contain the following information:

2.8.1. Bookmarks. Appropriately labeled bookmarks that are linked to their corresponding sections of the OSRP.

- 2.8.2. Table of Contents.
- 2.8.3. Record of Change. A table identifying the changes made to the current version of the OSRP and, as applicable, a record of changes made to previously submitted versions of the OSRP.
- 2.8.4. Facility and Oil Information. “Facility”, as defined in 30 C.F.R. § 585.113, means an installation that is permanently or temporarily attached to the seabed of the OCS. An OSS and WTG, as examples, each meet this definition of facility. “Oil,” as defined in 33 U.S.C. 1321(a), means oils of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. Dielectric fluid, as an example, meets this definition of oil. The OSRP must:
- a) List the latitude and longitude, water depth, and distance to the nearest shoreline for each facility that may handle and/or store oil.
  - b) List the oil(s) by product/brand name and corresponding volume(s) on each type of facility covered under the Lessee’s OSRP.
  - c) Include a map depicting the location of each facility that may handle and/or store oil within the boundaries of the covered lease area(s) and their proximity to the nearest shoreline. The map must also feature a compass rose, scale, and legend.
- 2.8.5. Safety Data Sheets. The OSRP must include a safety data sheet for every type of oil present on any OCS facility in quantities equal to or greater than 100 gallons.
- 2.8.6. Response Organization. The OSRP must identify a trained Qualified Individual (QI), and at least one alternate, with full authority to implement removal actions and ensure immediate notification of appropriate Federal officials and response personnel. The Lessee must designate personnel to serve as trained members of an Incident Management Team (IMT) and identify them by name and Incident Command System (ICS) position in the OSRP.
- a) “Qualified Individual” means an English-speaking representative of the Lessee who is located in the United States, available on a 24-hour basis, and given full authority to obligate funds, carry out removal actions, and communicate with the appropriate Federal officials and the persons providing personnel and equipment in removal operations.
  - b) “Incident Management Team” means the group of personnel identified within the Lessee’s organizational structure who manage the overall response to an incident in accordance with the Lessee’s OSRP. The IMT consists of the IC, Command and General Staff, and other personnel assigned to key ICS positions designated in the Lessee’s OSRP. With respect to the IMT, the Lessee must identify at least one alternate in the OSRP as the Incident Commander (IC), Planning Section Chief (PSC), Operations Section Chief (OSC), Logistics

Section Chief (LSC), and Finance Section Chief (FSC). If a contract has been established with a third-party IMT, the Lessee must provide evidence of such a contract in the OSRP.

- 2.8.7. Notification Procedures. The OSRP must describe the procedures for spill notification. Notification procedures must include the 24-hour contact information for:
- a) The QI and an alternate, including phone numbers and email addresses.
  - b) IMT members, including phone numbers and email addresses.
  - c) Federal, state, and local regulatory agencies that must be notified when a spill occurs, including, but not limited to, the National Response Center.
  - d) The Oil Spill Removal Organizations (OSRO) and Spill Response Operating Teams (SROT) that are available to respond.
  - e) Other response organizations and subject matter experts that the Lessee will rely on for the Lessee's response.
- 2.8.8. Spill Mitigation Procedures. The OSRP must describe the different discharge scenarios that could occur from the Lessee's facilities and the mitigation procedures by which the offshore facility operator and any listed/contracted OSROs would follow when responding to such discharges. The mitigation procedures must address responding to both smaller spills (with slow, low-volume leakage) and larger spills, to include the largest WCD scenario covered under the Lessee's OSRP. To achieve compliance with this section, the OSRP must include the following:
- a) Procedures for the early detection of a spill (i.e., monitoring procedures for detecting dielectric fluid and other oil-based substances handled or stored on the facility when spilled to the ocean).
  - b) General procedures for ensuring that the source of a discharge is controlled as soon as possible after a spill occurs.
  - c) Procedures to remove oil and oiled debris from shallow waters and along shorelines.
  - d) Procedures to store, transfer, and dispose of recovered oil and oil-contaminated materials and to ensure that all disposal is in accordance with federal, state, and local requirements.
- 2.8.9. The OSRP must include a concise list of the sensitive resources that could be impacted by a spill. In lieu of listing sensitive resources, the Lessee may identify the areas that could be impacted by a spill from the Lessee's facility and provide hyperlinks to corresponding Environmentally Sensitive Index Maps and Geographic

Response Strategies/Plans for those areas from the appropriate Area Contingency Plans.

- 2.8.10. OSRO(s) and SROT(s). The “Oil Spill Removal Organization” is an entity contracted by the Lessee to provide spill response equipment and/or manpower in the event of an oil spill. The “Spill Response Operating Team” are the trained persons who deploy and operate oil spill response equipment in the event of a spill, threat of a spill, or an exercise. The OSRP must include a list (with contact information) of the OSRO(s) and SROT(s) who are under contract and/or membership agreement to respond to the WCD of oil from the Lessee’s offshore facilities. Evidence of such contracts or membership agreements must be provided in the OSRP.
- 2.8.11. Oil Spill Response Equipment. The OSRP must include a list, or a hyperlink to a list, of the oil spill response equipment that is available to the Lessee through a contract and/or membership agreement with the OSRO(s). The OSRP must include a map that shows the oil spill response equipment storage depot(s) and planned/potential staging area(s) for the oil spill response equipment that would be deployed by the facility operators or the OSRO(s) listed in the plan in the event of a discharge.
- a) The Lessee must ensure that the oil spill response equipment is maintained in proper operating condition.
  - b) The Lessee must ensure that all oil spill response equipment maintenance, modification, and repair records are kept for a minimum of 3 years.
  - c) The Lessee must provide oil spill response equipment maintenance, modification, and repair records to BSEE OSPD upon request.
  - d) The Lessee or the OSRO must provide BSEE OSPD with physical access to the oil spill equipment storage depots and perform functional testing of the equipment upon request.
  - e) BSEE OSPD may require maintenance, modifications, or repairs to oil spill response equipment or require the Lessee to remove response equipment from being listed in the OSRP if it does not operate as intended.
- 2.8.12. Training. The OSRP must include a description of the training necessary to ensure that the QI, IMT, OSRO(s) and SROT(s) are sufficiently trained to perform their respective duties. The Lessee must ensure that the IMT, OSRO(s), and SROT(s) receive annual training. The Lessee’s OSRP must provide the most recent dates of applicable training(s) completed by the QI, IMT, OSRO(s) and SROT(s). The Lessee must maintain and retain for 3 years training records and must provide the training records to BSEE upon request.
- 2.8.13. Worst-Case Discharge (WCD) Scenario. The OSRP must describe the WCD scenario for the facility containing the highest cumulative volume of oil(s). For a

regional OSRP covering multiple sub-regions, a WCD scenario must be described for each sub-region.

- a) If multiple candidate WCD facilities contain the same cumulative volume of oil(s), the WCD facility is the one closest to shore.
- b) In addition to the facility information required by Condition 2.8.4, the information for a WCD facility must include the longitude and latitude, water depth, distance to the nearest shoreline, and its location shown on a map.
- c) The OSRP must identify the subset of oil spill response equipment from the inventory listed in the OSRP that will be used to contain and recover the WCD volume. The OSRP must include timeframes for response resources to deploy to the WCD facility. Timeframes must include times for equipment procurement, loadout, travel, and deployment.

2.8.14. Stochastic Trajectory Analysis. The OSRP must include a stochastic spill trajectory analysis for the WCD facility. For a regional OSRP containing multiple WCD scenarios, a stochastic trajectory analysis must be included for each WCD scenario. The stochastic trajectory analysis must:

- a) Be based on the WCD volume.
- b) Be conducted for the longest period that the discharged oil would reasonably be expected to persist on the water's surface, or 14 days, whichever is shorter.
- c) Identify the probabilities for oiling on the water's surface and on shorelines, and minimum travel times for the transport of the oil over the duration of the model simulation. Oiling probabilities and minimum travel times must be calculated for exposure threshold concentrations reaching 10 grams per square meter. Stochastic analysis must incorporate a minimum of 100 different trajectory simulations using random start dates selected over a multi-year period.

2.8.15. Response Plan Exercise. The OSRP must include a triennial exercise plan for review and concurrence by BSEE to ensure that the Lessee is able to respond quickly and effectively whenever oil is discharged from the Lessee's facilities. Compliance with the National Preparedness for Response Exercise Program guidelines will satisfy the exercise requirements of this section. If the Lessee chooses to follow an alternative exercise program, the OSRP must provide a description of that program. For a regional OSRP covering multiple sub-regions, the IMT exercise scenarios must be rotated between each sub-region within the triennial exercise period.

- a) The Lessee must conduct an annual scenario-based notification exercise, an annual scenario-based IMT tabletop exercise (if applicable), and, during the triennial exercise period, at least one functional exercise.

- b) The Lessee must conduct an annual oil spill response equipment deployment exercise.
- c) The Lessee must notify BSEE OSPD at least 30 days in advance of any exercise it intends to conduct for compliance with this condition.
- d) BSEE will advise the Lessee about the options it has to satisfy these requirements and may require changes in the type, frequency, or location of the required exercises, exercise objectives, equipment to be deployed and operated, or deployment procedures or strategies.
- e) BSEE may evaluate the results of the exercises and advise the Lessee of any needed changes in response equipment, procedures, tactics, or strategies.
- f) BSEE may periodically initiate unannounced exercises to test the Lessee's spill preparedness and response capabilities.
- g) The Lessee must maintain and retain for at least 3 years exercise records and must provide the exercise records to BSEE upon request.

2.8.16. OSRP Review and Update. The Lessee must review and update the OSRP at least once every 3 years and more frequently as needed, starting from the date the OSRP was initially approved. The Lessee must send a written notification to BSEE OSPD upon completion of this review and submit any updates for concurrence. BSEE OSPD may require the Lessee to make changes to the OSRP at any time if it is determined to be outdated or to contain significant inadequacies as discovered through a review of the Lessee's OSRP, information obtained during exercises or actual spill responses, or other relevant information obtained by BSEE OSPD.

2.8.17. OSRP Maintenance. The Lessee must submit a revised OSRP to BSEE OSPD within 15 days if any of the following conditions occur:

- a) The Lessee experiences a change that would significantly reduce their oil spill response capability.
- b) The calculated WCD volume has significantly increased.
- c) The Lessee removes a contracted IMT, OSRO, or SROT from the Lessee's plan.
- d) There has been a significant change to the applicable area contingency plan(s).

2.9. Cable Routings (Planning). The Lessee must submit the final Cable Burial Risk Assessment (CBRA) package and engineered cable routings for all cable routes on the OCS to BSEE for review and concurrence no later than the submittal of the relevant FDR. The final CBRA package must include a summary of final information on (1) natural and man-made hazards; (2) sediment mobility, including high and low seabed levels from both mobile and stable seabed, expected over the Project lifetime; (3) feasibility and effort level information required to meet burial targets; (4) profile drawings of the cable routings

illustrating cable burial target depths; and (5) minimum burial depths from seabed to address threats to the cable including, but not limited to, anchoring risk, military activity, third-party cable crossings, and fishing gear interaction. Detailed supporting data and analysis may be incorporated by reference or attachments, including relevant geospatial data. The Lessee must resolve any BSEE comments on the CBRA to BSEE's satisfaction before BSEE completes its review of the associated FDR under 30 C.F.R. § 285.700.

- 2.10. Cable Burial (Planning) (Construction) (Operations). The export, interconnector, and inter-array cables are expected to be installed using jetting, vertical injection, control flow excavation, trenching, and plowing as described in Section 3.3.3.2 of the approved COP. For the approved COP, BOEM has determined the proper burial depth to be a minimum of 1.2 m (4 feet) below seabed along federal sections of the export, interconnector, and inter-array cables. This depth is consistent with the approved COP and the cable burial performance assessment provided in Appendix F Cable Burial Feasibility Assessment. Unless otherwise authorized by BSEE, the Lessee must comply with cable burial conditions described in the COP by demonstrating proper burial depth of the installed submarine cables along at least 90 percent of the total export cable length on the OCS and at least 90 percent of the inter-array cable routing, excluding cable crossings and approaches to foundations. The Lessee must demonstrate proper burial depth by providing cable monitoring reports (Section 2.14) and final, as-built information (Section 2.20).
- 2.11. Cable Protection Measures (Planning) (Construction) (Operations). The export, interconnector, and inter-array cables must be installed using jetting, vertical injection, control flow excavation, trenching, or plowing as described in Section 3.3.3.2 of the approved COP. In areas where final cable burial depth is less than 1.2 m below seabed, excluding within the vicinity of WTG/OSS foundations where cables are enclosed within a cable protection system, the Lessee must install secondary protection such as concrete mattresses, fronded mattresses, rock bags or rock placement, and must adhere to the scour and cable protection measures in Section 5.5.7.
  - 2.11.1. The use of cable protection measures must not exceed 10 percent of the total export cable length on the OCS or 10 percent of the interconnector and inter-array cable routing, excluding cable crossings and approaches to foundations. The Lessee must employ cable protection measures when proper burial depth, as defined in Section 2.10, is not achieved. The Lessee must include design information and drawings as part of the relevant cable FDR, and must include installation information as a part of the relevant FIR. Alternatively, prior to installing cable protection, the Lessee must submit to BSEE a standalone design and installation report, containing design information, drawings, and installation information respectively, and obtain concurrence from BSEE. The Lessee must also provide BSEE with detailed drawings/information of the actual burial depths and locations where protective measures were used, no later than when the final, as-built cable drawings are submitted. The Lessee must post on the Project website (Section 1.8 Project Website) notice of locations where target burial depths were not achieved and where cable protection measures were used, including accessible graphic/geo-referenced repository.



- 2.11.2. If the Lessee cannot comply with the requirements in Section 2.11.1, the Lessee must request a variance under Section 1.5. As a component of its request, the Lessee must provide BSEE information explaining the proposed alternatives (including a justification of the equivalent level of protection and CVA verification of the proposed alternative) and must resolve any BSEE comments.
- 2.12. Crossing Agreements (Planning). The Lessee must provide final cable crossing agreements for each active, in-service submarine cable or other types of in-use infrastructure, such as pipelines, to BOEM at least 60 days before seabed preparation activities, including boulder clearance. The Lessee must make the agreements and crossing designs available to the CVA for review, unless otherwise determined by BOEM.
- 2.12.1. If the Lessee concludes that it will be unable to reach a cable crossing agreement, the Lessee must inform BOEM as soon as possible, and no later than 60 days before seabed preparation activities, including boulder clearance. A cable crossing agreement will not be required if BOEM has determined—at its sole discretion and based on its review of the record of relevant communications from the Lessee to owners or operators of active, in-service submarine cables or other types of in-use infrastructure—that the Lessee made reasonable efforts to enter an agreement and was unable to do so. Information to support a claim of reasonable efforts may include call logs, emails, letters, or other methods of communication.
- 2.13. Post-Installation Cable Monitoring (Construction) (Operations). The Lessee must conduct an inspection of each inter-array, interconnector, and export cable to determine cable location, burial depths, the state of the cable, and site conditions within 6 months, 1 year, and 2 years of commissioning, and every 5 years thereafter (e.g., years 7, 12, 17, 22 after commissioning). These inspections must also be conducted within 180 days of a storm event (as defined in the Post-Storm Event Monitoring Plan, described in Section 2.17). The Lessee must provide BSEE and BOEM with a cable monitoring report within 90 days following each inspection. Inspections of the inter-array and export cables must include high resolution geophysical (HRG) methods involving, for example, multibeam bathymetric survey equipment; and must identify seabed features, natural and man-made hazards, and site conditions along federal sections of the cable routing.
- 2.13.1. If BSEE determines that conditions along the cable corridor warrant adjusting the frequency of inspections (e.g., due to changes in cable burial or seabed conditions that may impact cable stability or other users of the seabed), then BSEE may require the Lessee to submit a revised inspection schedule for review and concurrence.
- 2.13.2. If BSEE determines that burial conditions have deteriorated or changed significantly and remedial actions are warranted, BSEE will notify the Lessee that the Lessee must submit to BSEE the following within 90 days of being notified: a seabed stability analysis, a remedial action plan, and a schedule for completing remedial actions. All remedial actions must be consistent with the approved COP. BSEE will review the plan and schedule and provide any comments within 60 days of receiving the plan. The Lessee must resolve all comments to BSEE's satisfaction.

- 2.13.3. If the Lessee determines that burial conditions have deteriorated or changed significantly and remedial actions are warranted, the Lessee must submit the following to BSEE within 90 days of making the determination: the data used to make the determination, a seabed stability analysis, a plan for remedial actions, and a schedule for the proposed work. All remedial actions must be consistent with those described in the approved COP. BSEE will review the plan and schedule and provide comments within 60 days, if applicable. The Lessee must resolve all comments to BSEE's satisfaction.
- 2.14. WTG and OSS Foundation Depths (Planning). In a letter dated December 3, 2020, BOEM granted a departure from 30 C.F.R. § 585.626(a)(4) and (6), permitting the Lessee to provide the final geotechnical investigation at the proposed foundation locations in the FDR. The FDR must include geotechnical investigations at all approved foundation locations, along with associated geotechnical design parameters and recommendations consistent with 30 C.F.R. § 585.626(a)(4) and (6). The geotechnical investigations at each OSS must include, at a minimum, one deep boring located within the footprint of each OSS.
- 2.15. Structural Integrity Monitoring (Construction) (Operations). The Lessee must conduct annual above-water inspections to ensure structural integrity is maintained. The Lessee must inspect the condition of cathodic protection system(s) and for indications of obvious overloading; deteriorating coating systems; excessive corrosion; and bent, missing, and/or damaged members of the structure in the splash zone and above the water line. The Lessee must provide a summary of the findings in the Annual Self-Inspection Report pursuant to 30 C.F.R. § 285.824(b). See Section 2.17 for post-storm structural integrity monitoring.
- 2.16. Foundation Scour Protection Monitoring (Construction) (Operations) (Decommissioning). The Lessee must minimize the footprint of scour protection measures at the WTG foundations and must inspect scour protection performance. The Lessee must submit an Inspection Plan to BSEE at least 60 days prior to initiating inspection activities described in the Inspection Plan. BSEE will review the Inspection Plan and provide comments, if any, on the plan within 60 days of its submittal. The Lessee must resolve all comments on the Inspection Plan to BSEE's satisfaction and receive concurrence prior to initiating the inspection program. If BSEE does not send comments within 60 days, the Lessee may presume concurrence.
- 2.16.1. The Lessee must carry out an initial foundation scour inspection within 6 months of completing installation of each foundation location, thereafter at intervals not greater than 5 years, and within 180 days after a storm event (as defined in the Post-Storm Event Monitoring Plan, described in Section 2.17).
- 2.16.2. The Lessee must provide BSEE with a foundation scour monitoring report within 90 days of completing each foundation scour inspection. If multiple foundation locations are inspected within a single survey effort, the foundation scour monitoring reports for those locations may be combined into a single foundation scour monitoring report provided within 90 days of completing the last foundation

scour inspection. The schedule of reporting must be included in the Inspection Plan for BSEE review and concurrence.

- 2.16.3. The Lessee must submit a plan for additional monitoring and/or mitigation to BSEE for review and concurrence if scour protection losses develop within 10 percent of the maximum loss allowance, edge scour develops within 10 percent of the maximum allowance, or spud depressions from installation affect scour protection stability.
- 2.17. Post-Storm Event Monitoring Plan (Construction) (Operations) (Decommissioning). The Lessee must provide a plan for post-storm event condition monitoring of the facility infrastructure, foundation scour protection, and cables to BSEE for review at least 60 days prior to commencing installation activities. The Lessee must receive BSEE's concurrence prior to commencing installation activities. Plans may be submitted separately for the cables (including cable protection), WTG, and OSS. The plan must describe how the Lessee will measure and monitor environmental conditions and duration of storm events; specify the environmental condition thresholds (and their associated technical justification) above which post-storm event monitoring or mitigation is necessary; describe potential monitoring, mitigation, and damage identification methods; and state when the Lessee must notify BSEE of post-storm event related activities. At a minimum, post-storm event inspections must be conducted following a storm where conditions exceed one-half the design return period. For example, a WTG platform designed for 50-year environmental conditions must be inspected following a storm event with 25-year environmental conditions. BSEE reserves the right to require post-storm mitigations to address conditions that could result in safety risks and/or impacts to the environment.
- 2.18. High Frequency Radar Interference Analysis and Mitigation (Planning) (Construction) (Operations). The Project has the potential to interfere with oceanographic high frequency (HF) radar systems in the U.S. Integrated Ocean Observing System (IOOS®), which is managed by the IOOS Office within NOAA pursuant to the Integrated Coastal and Ocean Observation System Act of 2009 (Pub. L. No. 111-11), as amended by the Coordinated Ocean Observation and Research Act of 2020 (Pub. L. No. 116-271, Title I), codified at 33 U.S.C. §§ 3601–3610 (referred to herein as “IOOS HF-radar”). IOOS HF-radar measures the sea state, including ocean surface current velocity and waves in near real time. These data have many vital uses including tracking and predicting the movement of spills of hazardous materials or other pollutants, monitoring water quality, and predicting sea state for safe marine navigation. The USCG also integrates IOOS HF-radar data into its Search and Rescue systems. The Project is within the measurement range of 11 IOOS HF-radar systems listed in the table below:

**Table 2.18. Identified IOOS HF-radar Systems**

<b>Radar Name</b>	<b>Radar Operator</b>
Amagansett, NY SeaSonde	Rutgers University
Block Island Long Range, RI SeaSonde	Rutgers University
Block Island Standard Range, RI SeaSonde	Rutgers University
Camp Varnum, RI LERA*	Woods Hole Oceanographic Institution (WHOI)
Horseneck Beach State Reservation, MA LERA	WHOI
Long Point Wildlife Refuge, MA LERA	WHOI
Martha’s Vineyard, MA SeaSonde	WHOI
Moriches, NY SeaSonde	Rutgers University
Nantucket, MA LERA	WHOI
Nantucket Island, MA SeaSonde	Rutgers University
Nauset, MA SeaSonde	University of Massachusetts Dartmouth

\*“LERA” is least expensive radar

- 2.18.1. Mitigation Requirement. Due to the potential interference with IOOS HF-radar and the risk to public health, safety, and the environment, the Lessee must mitigate unacceptable interference with IOOS HF-radar from the Project. Interference must be mitigated before rotor blades are installed within the Project and continue throughout the life of the Project until the point of decommissioning where all rotor blades are removed. Interference is considered unacceptable if, as determined by BOEM in consultation with NOAA IOOS, IOOS HF-radar performance falls or may fall outside any of the specific radar systems’ operational parameters or fails or may fail to meet IOOS’s mission objectives.
- 2.18.2. Mitigation Review. The Lessee must submit to BOEM documentation demonstrating how it will mitigate unacceptable interference with IOOS HF-radar systems. The Lessee must submit this documentation to BOEM at least 120 days prior to the installation of the first rotor blades. After the Lessee submits the documentation and after BOEM, in consultation with NOAA IOOS, deems the mitigation acceptable, the Lessee must conduct activities in accordance with the proposed mitigations.
- 2.18.3. Mitigation Agreement. The Lessee is encouraged to enter into an agreement with NOAA IOOS to implement mitigation measures, and any such Mitigation Agreement may satisfy the requirement to mitigate unacceptable interference with IOOS HF-radar. The point of contact for development of a Mitigation Agreement with NOAA IOOS is the Surface Currents Program Manager, whose contact information is available at <https://ioos.noaa.gov/about/meet-the-ioos-program-office/> and upon request from BOEM. If the parties reach a mitigation agreement, the Lessee must submit the agreement to BOEM. The Lessee may satisfy its obligations under Section 2.19.2 by providing BOEM with an executed Mitigation Agreement between the Lessee and NOAA IOOS. If there is any discrepancy between Section 2.18.2 and the terms of a Mitigation Agreement, the terms of the Mitigation Agreement will prevail.

2.18.4. Mitigation Data Requirements. Mitigation required under Section 2.18.2 must address the following:

- a) Before rotor blades are installed within the Project, and continuing throughout the life of the Project until the point of decommissioning when all rotor blades are removed, the Lessee must make publicly available via NOAA IOOS near real-time, accurate numerical telemetry of surface current velocity, wave height, wave period, wave direction, and other oceanographic data measured at Project locations selected by the Lessee in coordination with NOAA IOOS.
- b) If requested by NOAA IOOS, the Lessee must share with IOOS accurate numerical time-series data of blade rotation rates, nacelle bearing angles, and other information about the operational state of each WTG in the Lease Area to aid interference mitigation.

2.18.5. Additional Notification and Mitigation.

- a) If at any time NOAA IOOS or a HF-radar operator informs the Lessee that the Project will cause unacceptable interference to a HF-radar system, the Lessee must notify BOEM of the determination and propose new or modified mitigation pursuant to Section 2.18.5(b) as soon as possible and no later than 30 days from the date on which NOAA IOOS communicated the determination to the Lessee.
- b) If mitigation measures other than those identified in Section 2.18.2 are proposed, then the Lessee must submit information on the proposed mitigation measure to BOEM for its review and concurrence. If, after consultation with NOAA IOOS, BOEM deems the mitigation acceptable, the Lessee must conduct activities in accordance with the proposed mitigations. The Lessee must resolve all comments on the documentation to BOEM's satisfaction, in consultation with the NOAA IOOS office, prior to implementation of the plan.

2.19. Critical Safety Systems and Equipment (Planning) (Construction). The Lessee must provide to BSEE a qualified third-party verification of (1) the identification, (2) proper installation, and (3) commissioning of all critical safety systems and equipment designed to prevent or ameliorate major accidents that could result in harm to health, safety, or the environment (hereinafter "critical safety systems"). The documentation provided to BSEE must demonstrate that the qualified third-party verified that the critical safety systems were identified based on a standardized risk assessment methodology, were installed and commissioned in conformity with the Original Equipment Manufacturer's (OEM's) standards and the Project's functional requirements, and are functioning properly, as required by the surveillance reporting requirements in Section 2.19.5.

2.19.1. Qualified Third-Party. A qualified third-party must be either a technical classification society, a licensed professional engineering firm, or a registered professional engineer capable of providing the necessary certifications,

verifications, and reports. The qualified third-party must not have been involved in the design of the Project.

2.19.2. Critical Safety Systems and Equipment. Critical safety systems and equipment as that term is used in this condition are those designed to prevent or ameliorate fires, spillages, or other major accidents that could result in harm to health, safety, or the environment. Critical safety systems and equipment include, but are not limited to, equipment, devices, engineering controls, or system components that are designed to prevent, detect, or mitigate impacts from major accidents that could result in harm to health, safety, or the environment, including systems that facilitate the escape and survival of personnel.

2.19.3. Identification of Critical Safety Systems and Equipment Risk Assessment. The Lessee must conduct a risk assessment to identify the hazards and the critical safety systems and equipment used within its facilities including the WTG, tower, and each OSS to prevent or mitigate hazards. The Lessee must submit the risk assessment to BSEE and the qualified third-party for review no later than submission of the FDR. The Lessee must arrange with the qualified third-party and provide the information necessary for a qualified third-party to make a recommendation to BSEE on the acceptability of the risk assessment(s), and any associated conclusions regarding identified hazards and implemented or changed critical safety systems and equipment. The Lessee must address BSEE's comments to BSEE's satisfaction before BSEE completes its review of the associated FDR under 30 C.F.R. § 285.700.

2.19.4. Installation and Commissioning Surveillance Requirements. The Lessee must ensure the proper installation and commissioning of the critical safety systems and equipment. The Lessee must arrange for a qualified third-party to evaluate whether the installation and commissioning of the critical safety systems and equipment are in conformance with the OEM requirements and the Project's functional requirements. BSEE and the Lessee may agree to perform additional tests during commissioning surveillance activities.

The third-party evaluation must include: (1) an examination of the commissioning records of the critical safety systems and equipment for every WTG and OSS, (2) witnessing the commissioning of the critical safety systems and equipment of 5 percent of the WTG, including at least one WTG in the first array string, and each OSS. The Lessee must arrange for a qualified third-party, at a minimum, to verify the following:

- a) The installation procedures and/or commissioning instructions supplied by the manufacturer and identified in the Project's functional requirements are adequate.
- b) During commissioning the Lessee is following the instructions supplied by the manufacturer and identified in the Project's functional requirements.

- c) The systems and equipment function as designed.
- d) The final commissioning records are complete.

2.19.5. Surveillance Reporting. The Lessee must submit to BSEE surveillance records (for example, the final results and acceptance of the commissioning test by the qualified third-party) or a Conformity Statement and supporting documentation (prepared consistent with *International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications* (IECRE OD-502)) for the critical safety systems identified in Section 2.19.2. Surveillance records for each OSS must be submitted within two weeks of verification by the qualified third-party. After the commissioning of the critical safety systems and equipment has been completed for the first WTG, the Lessee must, on a bi-weekly basis, submit the surveillance records or Conformity Statement and supporting summary documentation for all WTGs which have been verified by a qualified third-party within the previous two weeks. If BSEE has not responded to the surveillance records or Conformity Statement and supporting documentation submitted by the qualified third party within five business days, then the Lessee may presume concurrence and continue operating. If the surveillance records or Conformity Statement and supporting documentation are not submitted within two weeks of qualified third-party verification of the commissioning of the safety systems or if BSEE objects to the submission, the facility to which the surveillance records or Conformity Statement pertains must stop operating.

2.20. Engineering Drawings (Construction) (Operations) (Decommissioning). The Lessee must compile, retain, and make available to BSEE the drawings and documents specified in Table 2.20.

**Table 2.20. Engineering Drawings and Documents**

<b>Drawing Type</b>	<b>Time Frame to Submit “Issued for Construction” Drawings</b>	<b>Time Frame to Make Available Post-Fabrication Drawings</b>	<b>Deadline to Submit Final, As-Built Drawings</b>
Complete set of structural drawing(s), including major structural components and evacuation routes <sup>1</sup>	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A	Submit no later than March 31st of each calendar year, for all structures installed the prior year and submitted annually until completion of installation.
Front, side, and plan view drawings <sup>2</sup>	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A	N/A
Location plat for all Project facilities <sup>3</sup>	With FDR submittal. Drawings must be reviewed and stamped by a registered professional land surveyor.	N/A	Submit no later than March 31st of each calendar year, for all assets installed the prior year and updated annually until completion of installation. Drawings must be reviewed and stamped by a registered professional land surveyor.
Complete set of cable drawing(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Prior to completion of Final FIR review as contemplated in 30 C.F.R. § 285.700(b) <sup>4</sup>	Submit quarterly for all assets installed in the previous quarter.
Proposed Anchoring Plat as required by Section 5.5.2 and 7.2	120 days before anchoring activities. If there are less than 120 days between anchoring activities and this COP approval, no later than 60 days prior to commencing anchoring activities.	N/A	N/A
As-placed Anchor Plats for all anchoring activities (as required by Section 2.21.4 and 5.5.2)	N/A	N/A	Submit 90 days after completion of an activity or construction of a major facility component.
Piping and instrumentation diagram(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A	Submit quarterly for all facilities installed in the previous quarter.
Safety diagram(s) <sup>5</sup>	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A	Submit quarterly for all facilities installed in the previous quarter.
Electrical drawings, i.e., Electrical one-line drawing(s) and Protective Relay Coordination Study/Diagram	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A	Submit quarterly for all facilities installed in the previous quarter.
Cause and Effect Chart	With FDR submittal.	N/A	N/A



Drawing Type	Time Frame to Submit “Issued for Construction” Drawings	Time Frame to Make Available Post-Fabrication Drawings	Deadline to Submit Final, As-Built Drawings
Schematics of fire and gas-detection system(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A	Submit quarterly for all assets installed in the previous quarter.
Area classification diagrams	With FDR submittal.	N/A	Submit quarterly for all facilities installed in the previous quarter.

Notes:

<sup>1</sup> As required by 30 C.F.R. § 285.701(a)(4). This is applicable to the WTGs and OSSs.

<sup>2</sup> As required by 30 C.F.R. § 285.701(a)(3). This is applicable to the WTGs and OSSs.

<sup>3</sup> As required by 30 C.F.R. § 285(a)(2). This is applicable for all installed assets on the OCS including scour protection, cables, WTGs, and OSSs.

<sup>4</sup> As-installed location must be submitted with the final FIR.

<sup>5</sup> Safety diagrams must depict the location of critical safety systems and equipment designed to prevent or ameliorate major accidents that could result in harm to health, safety, or the environment. This must include, but not be limited to, escape routes, station bill, fire/gas detectors, fire-fighting equipment, etc.

- 2.20.1. Engineering drawings and the associated engineering report(s) must be reviewed and stamped by a licensed professional engineer or a professional land surveyor as outlined in Table 2.20. For modified systems, only the modifications are required to be reviewed and stamped by a licensed professional engineer(s) or a professional land surveyor. The professional engineer or land surveyor must be licensed in a state or territory of the United States and have sufficient expertise and experience to perform the duties.
- 2.20.2. The Lessee must certify, in a letter accompanying the as-built design documents, that the as-built design documents have been reviewed for compliance with the applicable FDR/FIR, do not make material changes from the stamped issued for construction drawings (IFC), and accurately represent the as-installed facility. The drawings must be clearly marked “as-built.”
- 2.20.3. The Lessee must ensure that the engineer of record submits a stamped report showing that the as-built design documents have been reviewed, do not make material changes from the IFC drawings, and accurately represent the as-installed facility. The Lessee must also ensure that the engineer of record documents any differences between the IFC drawings and the as-built drawings in the stamped report and submits the report with the as-built drawings.
- 2.20.4. As-Placed Anchor Plats. The Lessee must provide as-placed anchor plats to BOEM and BSEE within 90 days of completion of an activity (including during operations and decommissioning) or construction of a major facility component (e.g., buoys, export cables, WTGs, OSSs, and inter array cables) or decommissioning to demonstrate that seabed-disturbing activities complied with avoidance requirements

for seabed features and hazards, complex habitat,<sup>7</sup> archaeological resources, and/or anomalies. As-placed plats must be certified by a professional land surveyor showing the “as-placed” location of all anchors and any associated anchor chains and/or wire ropes and relevant locations of interest or avoidance on the seabed for all seabed disturbing activities. The plats must be at a scale of 1 inch = 1,000 feet (300 m) with Differential Global Positioning System (DGPS) accuracy.

- 2.21. Construction Status (Construction). On a monthly basis, the Lessee must provide BSEE, BOEM, and the USCG with a construction status update and any changes to the construction schedule or process described in the plan required by Section 3.2.1 (Installation Schedule).
- 2.22. Maintenance Schedule (Operations). On a quarterly basis, the Lessee must provide BSEE with its maintenance schedule for any planned WTG or OSS maintenance.
- 2.23. Pre-lay Grapnel Run Plan (Planning). The Lessee must submit a Pre-lay Grapnel Run Plan for BSEE review and concurrence. The plan must be submitted at least 60 days prior to pre-lay grapnel run activities. BSEE will review the plan and provide comments, if applicable, within 60 days of submittal. If BSEE does not provide comments on the plan within 60 days of its submittal, then the Lessee may presume BSEE’s concurrence with the plan. The plan must be consistent and meet the conditions of the SMS in Section 2.7.

2.23.1. The plan must include the following:

- a) Figures of the location of pre-lay grapnel run activities.
- b) A description of pre-lay grapnel run methods, including expected grapnel penetration depth, vessel specifications, and metocean limits on operation, etc.
- c) A description of debris removal and disposal methods, and applicable environmental regulations.
- d) A description of safety distances or zones to limit pre-lay grapnel activities near third-party assets.
- e) The environmental footprint of disturbance activities and measures taken to avoid further adverse impacts to archaeological resources, seafloor hazards, complex habitat, and fishing operations.
- f) A summary of any consultation and outreach with resource agencies and the fishing industry in development of the plan (e.g., notifications to mariners).

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<sup>7</sup> Complex habitat is defined as coarse, unconsolidated mineral substrates (i.e., substrates containing 5% or greater gravels), rock substrates (e.g., bedrock), and shell substrates (e.g., mussel reef) consistent with Coastal and Marine Ecological Classification Standard definitions as well as vegetated habitats (e.g., submerged aquatic vegetation).

2.23.2. The Lessee must submit a letter to BSEE outlining any deviations from the Pre-lay Grapnel Run Plan within 90 days following the completion of pre-lay grapnel run activities.

### **3. NAVIGATIONAL AND AVIATION SAFETY CONDITIONS**

#### **3.1. Design Conditions (Planning) (Construction) (Operations).**

3.1.1. **Marking.** The Lessee must mark each WTG and OSS with private aids to navigation (PATON). No sooner than 60 and no fewer than 30 days before foundation installation, the Lessee must file an application (form CG-2554), either in paper form or electronically at this website: (<http://www.usharbormaster.com>), with the Commander of the First Coast Guard District to establish PATON, as provided in 33 C.F.R. Part 66. USCG approval of the application must be obtained before the Lessee begins installation of the facilities. The lighting, marking, and signaling plan and design specifications for maritime navigation lighting must be included in the PATON application. The Lessee must:

- a) Provide a lighting, marking, and signaling plan for review by BOEM, BSEE, and the USCG at least 180 days before foundation installation. The Lessee must obtain BOEM's and BSEE's concurrence with this plan. The plan must conform to applicable Federal law and regulations, and guidelines, e.g., International Association of Marine Aids to Navigation and Lighthouse Authorities Recommendation G1162, *The Marking of Man-Made Offshore Structures*; USCG's LNM (D1 LNM: 19/23) or the most recent version on Ocean-Structure PATON Marking Guidance; and BOEM's Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development (April 28, 2021).
- b) Mark each individual WTG and OSS with clearly visible, unique, alpha-numeric identification characters consistent with the attached Rhode Island and Massachusetts Structure Labeling Plot in the Lease Area. The Lessee must additionally display this label on each WTG nacelle, visible from above. If the Lessee's OSS includes helicopter landing platforms, as described in Section 3.1.3, the Lessee must also display this label on the platforms.
- c) For each WTG, the Lessee must install red obstruction lighting that is compatible with night vision goggles and consistent with the Federal Aviation Administration (FAA) Advisory Circular 70/7460-1M and 150/5345-43.
- d) Provide signage that is visible to mariners in a 360-degree arc around the structures to inform vessels of the vertical blade-tip clearance air draft below the turbine blades as determined at Highest Astronomical Tide (HAT).
- e) Cooperate with the USCG and NOAA to ensure that cable routes, OSS, and WTGs are depicted on appropriate government-produced and commercially available nautical charts.

- f) Provide mariner information sheets on the Lessee's website within 90 days of installation of WTGs and OSS foundations, with details on the location of the WTGs and OSS and specifics, such as blade-tip clearance above sea level. If multiple structures are being installed in a short timeframe, the information sheets may be combined into a single update to be posted within 90 days of completing the last foundation installation.
- g) Submit summary documentation of mariner information to BSEE, within 90 days of the completion of commissioning activities showing the Lessee's compliance with Sections 3.1.1(a) through (f).
- h) Immediately report discrepancies in the status of all PATONs to the local USCG Sector Command Center (a timeline of when discrepancies can be resolved must be sent to USCG within 14 days of identifying the discrepancy).

3.1.2. Blade/Nacelle Control. The Lessee must equip all WTG rotors (blade assemblies) with control mechanisms constantly operable from the Lessee's control center.

- a) Control mechanisms must enable the Lessee to immediately initiate the shutdown of any WTG upon emergency order from the Department of Defense (DOD) or the USCG. The Lessee must initiate braking and shut down of each requested WTG after the shutdown order. The Lessee may resume operations only upon notification from the entity (DOD or USCG) that initiated the shutdown.
- b) The Lessee must include a shutdown procedure in its Emergency Response Procedure and test the shutdown capability (functioning) of at least one WTG within the field at least annually. The Lessee must submit the results of testing to BSEE with the Project's annual inspection results.
- c) The Lessee must work with the USCG to establish the proper blade configuration during WTG shutdown for USCG air assets conducting search and rescue operations.
- d) The Lessee must notify the USCG and BSEE in advance of trainings and exercises to test and refine notification and shutdown procedures and allow the USCG and BSEE to participate in these trainings and exercises.

3.1.3. Structure Micrositing. The Lessee must not adjust approved structure locations in a way that narrows any northwest-southeast or northeast-southwest transit corridors to less than 0.6 nautical miles, nor to a layout that eliminates two distinct lines of orientation in a grid pattern. The Lessee must submit the final as-built structure locations as part of the as-built documentation outlined in Section 2.20.

## 3.2. Installation Conditions (Planning) (Construction).

3.2.1. Installation Schedule. As early as possible, but not less than 60 days prior to commencing offshore construction activities, the Lessee must provide the USCG

with a plan that describes the schedule and process for seabed preparation; export, substation interconnector, and inter-array cable installation; and WTGs and OSS installation. This plan must include all planned mitigations to be implemented to minimize any adverse impacts to navigation while installation is ongoing. Appropriate LNM submissions must accompany the plan and its revisions.

3.2.2. Design Modifications. Any changes or modification in the design of the Lease Area that may impact navigation safety (including, but not limited to, a change in number, size, or location of WTGs, or change in construction materials or construction method), requires written approval by BSEE.

3.2.3. Cable Burial. A detailed submarine cable system burial plan must be submitted to the USCG and BSEE for BSEE review no later than the relevant FIR submittal. No later than 90 days post-cable installation of all cable lines (export, interconnector, and array), the Lessee must submit to BSEE, BOEM, and the USCG a copy of the final submarine cable system route positioning list that depicts the precise location and burial depths of the entire cable system.

### 3.3. Reporting Conditions (Planning) (Construction) (Operations) (Decommissioning).

3.3.1. Complaints. On a monthly basis, the Lessee must provide BSEE with (1) a description of any complaints received (written or oral) by boaters, fishermen, commercial vessel operators, or other mariners regarding impacts to navigation safety allegedly caused by construction or operations vessels, crew transfer vessels, barges, or other equipment; and (2) a description of remedial action(s) taken in response to complaints received, if any. BSEE reserves the right to require additional remedial action consistent with 30 C.F.R. Part 285.

3.3.2. Correspondence. On a monthly basis, the Lessee must provide BSEE, BOEM, and the USCG with copies of any correspondence received from other federal, state, or local agencies regarding navigation safety issues.

3.4. Meeting Attendance (Planning) (Construction) (Operations). As requested by BSEE, BOEM, and the USCG, the Lessee must attend meetings (i.e., Harbor Safety Committee, Area Committee) to provide briefings on the status of construction and operations, and on any problems or issues encountered with respect to navigation safety.

## 4. NATIONAL SECURITY CONDITIONS

4.1. Hold and Save Harmless – United States Government (Planning) (Construction) (Operations). Whether compensation for such damage or injury might otherwise be due under a theory of strict or absolute liability or any other theory, the Lessee assumes all risks of damage or injury to any person or property that occurs in, on, or above the OCS in connection with any activities being performed by the Lessee in, on, or above the OCS, if the injury or damage to any person or property occurs by reason of the activities of any agency of the United States Government, its contractors or subcontractors, or any of its officers, agents, or employees, being conducted as a part of, or in connection with, the

programs or activities of the individual military command headquarters (hereinafter “the appropriate command headquarters”) listed below:

United States Fleet Forces (USFF) N46  
1562 Mitscher Ave, Suite 250  
Norfolk, VA 23551  
(757) 836-6206

The Lessee assumes this risk, whether or not such injury or damage is caused in whole or in part by any act or omission, regardless of negligence or fault, of the United States, its contractors or subcontractors, or any of its officers, agents, or employees. The Lessee further agrees to indemnify and save harmless the United States against all claims for loss, damage, or injury in connection with the programs or activities of the appropriate command headquarters, whether the same is caused in whole or in part by the negligence or fault of the United States, its contractors or subcontractors, or any of its officers, agents, or employees, and whether such claims might be sustained under a theory of strict or absolute liability or otherwise.

- 4.2. Falmouth Airport Surveillance Radar-8 System (Construction) (Operations). To mitigate impacts on the North American Aerospace Defense Command’s (NORAD’s) operation of the Falmouth, MA, Air Surveillance Radar-8 (ASR-8), the Lessee must complete the following:
  - 4.2.1. Mitigation Agreement. The Lessee must enter into a mitigation agreement with the DOD for purposes of implementing Sections 4.2.2 and 4.2.3 below. If there is any discrepancy between Sections 4.2.2 and 4.2.3 and the terms of the mitigation agreement, the terms of the mitigation agreement will prevail. Within 15 days of entering into the mitigation agreement, the Lessee must provide BOEM with a copy of the executed mitigation agreement. Within 45 days of completing the requirements in Sections 4.2.2 and 4.2.3, the Lessee must provide BOEM with evidence of compliance with those requirements. The NORAD point of contact for development of the agreement is John Rowe; [John.Rowe.14@us.af.mil](mailto:John.Rowe.14@us.af.mil). If the NORAD point of contact is no longer active, the Lessee must identify a point of contact through the DOD Clearinghouse.
  - 4.2.2. NORAD Notification. At least 30, but no more than 60, days prior to the completion of commissioning of the last WTG (i.e., that date by which every WTG in the Project is installed with potential for blade rotation), the Lessee must notify NORAD for Radar Adverse Impact Management (RAM) scheduling.
  - 4.2.3. Funding for RAM Execution. At least 30, but no more than 60, days prior to the completion of commissioning of the last WTG (i.e., that date by which every WTG in the Project is installed with potential for blade rotation), the Lessee must contribute funds in the amount of \$80,000 to NORAD toward the execution of the RAM.

- 4.3. Distributed Fiber-Optic Sensing Technology (Planning) (Construction) (Operations). To mitigate potential impacts on the Department of the Navy's (DON's) operations, the Lessee must coordinate with the DOD/DON on any proposal to use distributed fiber-optic sensing technology as part of the Project or associated transmission cables. The DON point-of-contact for coordination is Matthew Senska; [matthew.senska@navy.mil](mailto:matthew.senska@navy.mil); 571-970-8400.
- 4.4. Electromagnetic Emissions (Planning) (Construction) (Operations). Before entering any designated defense operating area, warning area, or water test area for the purpose of carrying out any survey activities under the approved COP, the Lessee must enter into an agreement with the commander of the appropriate command headquarters to coordinate the electromagnetic emissions associated with such survey activities. The Lessee must ensure that all electromagnetic emissions associated with such survey activities are controlled as directed by the commander of the appropriate command headquarters. The Lessee must provide BOEM with a copy of the agreement within 15 days of entering into the agreement.

## 5. PROTECTED SPECIES<sup>8</sup> AND HABITAT CONDITIONS

- 5.1. General Environmental Conditions (Planning) (Construction) (Operations) (Decommissioning).
- 5.1.1. Aircraft Detection Lighting System (Construction) (Operations). The Lessee must use an FAA-approved vendor for the Aircraft Detection Lighting System (ADLS), which will activate the FAA hazard lighting only when an aircraft is in the vicinity of the wind facility to reduce visual impacts at night. The Lessee must confirm the use of and submit to BOEM and BSEE, information about the FAA-approved vendor for ADLSs on WTGs and the OSS at the time the relevant FIR is submitted.
- 5.1.2. Marine Debris<sup>9</sup> Awareness and Elimination (Planning) (Construction) (Operations) (Decommissioning).
- a) The Lessee must submit required documents related to marine debris awareness training, reporting, and recovery (e.g., annual training compliance, incident reporting, 24-hour notices, recovery plans, recovery notifications, monthly reporting, annual survey and reporting, and decommissioning and site clearance) described in Section 5.1.2(b) through (i) to BSEE via TIMSWeb with a notification email sent to [marinedebris@bsee.gov](mailto:marinedebris@bsee.gov).
- b) Marine Debris Awareness Training and Certification. The Lessee must ensure that all vessel operators, employees, and contractors engaged in offshore activities pursuant to the approved COP complete marine debris awareness

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<sup>8</sup> As used herein, the term "protected species" means species of fish, wildlife, or plant that have been determined to be endangered or threatened under Section 4 of the Endangered Species Act (ESA). ESA-listed species are provided in 50 C.F.R. § 17.11-12. The term also includes marine mammals protected under the MMPA.

<sup>9</sup> Throughout this document, "marine debris" is defined as any object or fragment of wood, metal, glass, rubber, plastic, cloth, paper, or any other man-made item or material that is lost or discarded in the marine environment.

training initially (i.e., prior to engaging in offshore activities pursuant to the approved COP) and annually. Operators must implement a marine debris awareness training and certification process that ensures that their employees and contractors are adequately trained. The training and certification process must include the following elements: (1) training through viewing of either a marine debris video or training slide pack posted on the BSEE website or by contacting BSEE; (2) an explanation from management personnel that emphasizes their commitment to the requirements; and (3) documented certification that all personnel listed above have completed their initial and annual training. The Lessee must make this certification available for inspection by BSEE upon request.

- c) Training Compliance Report. By January 31 of each year, the Lessee must submit to BSEE an annual report that describes its marine debris awareness training process and certifies that the training process has been followed for the preceding calendar year.
- d) Marking. Any materials, equipment, tools, containers, and other items that are used in OCS activities and that are of a shape or configuration that make them likely to snag or damage fishing devices or be lost or discarded overboard, must be clearly marked with the vessel or facility identification number and must be properly secured to prevent loss overboard. All markings must clearly identify the owner and must be able to resist the effects of the environmental conditions to which they may be exposed.
- e) Recovery. Discarding trash or debris in the marine environment is prohibited. Debris accidentally released by the Lessee into the marine environment while performing any activities associated with the Project must be recovered within 24 hours when the marine debris is likely to (1) cause undue harm or damage to natural resources (e.g., entanglement or ingestion by protected species); or (2) interfere with OCS uses (e.g., snagging or damaging fishing equipment, or presenting a hazard to navigation). If the marine debris was lost within the boundaries of an archaeological resource/avoidance area, or a sensitive ecological/benthic resource area, the Lessee must contact BSEE for concurrence before conducting any recovery efforts. The Lessee must take steps to prevent similar releases of marine debris and must submit a description of these preventative actions to BSEE within 30 days from the date on which the release of marine debris occurred.
- f) Notification. The Lessee must notify BSEE within 24 hours of any releases of marine debris and indicate whether the released marine debris was immediately recovered. If the marine debris was not recovered, the Lessee must provide its rationale for not recovering the marine debris (e.g., marine debris is located within the boundaries of a sensitive area, recovery was not possible because conditions were unsafe, or recovery was not practicable and warranted because the released marine debris is not likely to result in items (1) or (2) listed in Section 5.1.2(e)).



- g) Remedial Recovery. After reviewing the notification and rationale for any decision by the Lessee to forego recovery as described in Section 5.1.2(e), BSEE may order the Lessee to recover the marine debris if BSEE finds that the reasons provided by the Lessee in the notification are insufficient and the marine debris would cause undue harm or damage to natural resources or interfere with OCS uses.
- i) Recovery Plan. If BSEE requires the Lessee to recover the marine debris, the Lessee must submit a Recovery Plan to BSEE within 10 days after receiving BSEE's order. Unless BSEE objects within 48 hours after the Recovery Plan has been accepted or is in review status by BSEE in TIMSWeb, the Lessee may proceed with the activities described in the Recovery Plan. Recovery activities must be completed 30 days from the date on which marine debris was released, unless BSEE grants the Lessee an extension.
- ii) Recovery Completion Notification. Within 30 days after the marine debris is recovered, the Lessee must provide notification to BSEE that recovery was completed and, if applicable, describe any substantial variance from the activities described in the Recovery Plan that was required during the recovery efforts.
- h) Monthly Reporting. The Lessee must submit to BSEE a monthly report, no later than the fifth day of the month, of all marine debris lost or discarded during the preceding month. The Lessee is not required to submit a report for those months in which no marine debris was lost or discarded. The monthly report must include the following:
- i) If applicable, information related to 48-Hour Reporting and Recovery Plan and the referenced TIMSWeb Submittal ID (SID);
- ii) Project identification and contact information for the Lessee and for any operators or contractors involved;
- iii) Date and time of the incident;
- iv) Lease number, OCS area and block, and coordinates of the object's location (latitude and longitude in decimal degrees);
- v) Detailed description of the dropped object, including dimensions (approximate length, width, height, and weight), composition (e.g., plastic, aluminum, steel, wood, or paper), and buoyancy (floats or sinks);
- vi) Pictures, data imagery, data streams, and/or a schematic or illustration of the object, if available;
- vii) Indication of whether the lost or discarded object could be detected as a magnetic anomaly of greater than 50 nanotesla, a seafloor target of greater

than 1.6 feet (0.5 m), or a sub-bottom anomaly of greater than 1.6 feet (0.5 m) when operating a magnetometer or gradiometer, side scan sonar, or sub-bottom profiler;

- viii) Explanation of how the object was lost; and
- ix) Description of immediate recovery efforts and results, including photos.
- i) Annual Surveying and Reporting, Periodic Underwater Surveys, Reporting of Monofilament and Other Fishing Gear Around WTG Foundations (Operations). The Lessee must monitor indirect impacts associated with charter and recreational fishing gear lost from expected increases in fishing around WTG foundations by annually surveying at least 10 of the WTGs in the Lease Area for the first 3 years following COP approval and every 5 years thereafter.<sup>10</sup> The Lessee may conduct surveys by remotely operated vehicles, divers, or other means to determine the frequency and locations of marine debris. The Lessee must report the results of the surveys to BOEM and BSEE in an annual report, submitted by January 31, for the preceding calendar year. Annual reports must be submitted in both Microsoft Word and Adobe PDF format. Photographic and videographic materials (TIFF or Motion JPEG 2000) must be provided with the submittal of the annual report. Photographic and videographic files can also be submitted to [marinedebris@bsee.gov](mailto:marinedebris@bsee.gov) if the files cannot be uploaded in TIMSWeb. Survey design and effort (i.e., the number of WTGs and frequency of reporting) may be modified only upon concurrence by BOEM and BSEE. Survey design and effort (i.e., the number of WTGs and frequency of reporting) may be modified; but any modification must be reviewed and concurred by BOEM and BSEE.
- i) Annual reports must include a summary of the survey reports that includes survey date(s); contact information of the operator; location and pile identification number; photographic and/or video documentation of the survey and debris encountered; any animals sighted; and the disposition of any located debris (i.e., removed or left in place). Annual reports must also include claim data attributable to the Project from the Lessee's corporate gear loss compensation policy and procedures. Required data and reports may be archived, analyzed, published, and disseminated by BOEM and BSEE.
- j) Site Clearance and Decommissioning. The Lessee must include information on unrecovered marine debris in the description of the site clearance activities provided in the decommissioning application required under 30 C.F.R. §§ 585.906 and 285.906.

## 5.2. Avian and Bat Protection Conditions.

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<sup>10</sup> The Lessee must also comply with any reporting requirements in the MMPA Letter of Authorization.

- 5.2.1. The Lessee must submit all required documents related to avian and bat protection conditions in Sections 5.2.2 through Section 5.2.14 to: BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov); to BSEE via TIMSWeb and notification email at [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov); and to USFWS New England Field Office at [newengland@fws.gov](mailto:newengland@fws.gov). The Lessee must confirm the relevant point of contact before submitting the required documents and must also confirm that the agencies have received the documents.
- 5.2.2. Bird-Deterrent Devices and Plan (Construction) (Operations). To minimize attracting birds to operating turbines, the Lessee must install bird perching deterrent device(s) on each WTG and OSS. The Lessee must submit a plan to deter perching on offshore infrastructure by roseate terns and other marine birds for BOEM and BSEE approval. BOEM, BSEE, and USFWS will review the Bird Perching Deterrent Plan and provide any comments on the plan to the Lessee within 60 days of its submittal. The Lessee must resolve all comments on the Bird Perching Deterrent Plan to BOEM's and BSEE's satisfaction before the Lessee may begin installation of WTGs or OSS(s). The Bird Perching Deterrent Plan must include the type(s) and locations of bird perching deterrent devices, a monitoring plan for the life of the Project, allow for modifications and updates as new information and technology become available, and track the efficacy of the deterrents. The plan must be based on best available science regarding the effectiveness of perching deterrent devices on minimizing collision risk. The Lessee must propose the location of bird perching deterrent devices based on best management practices applicable to the appropriate operation and safe installation of the devices. The Lessee must submit the Bird Perching Deterrent Plan with the FDR. The Lessee must also provide the location and type of bird-deterrent devices as part of the as-built submittals to BSEE.
- 5.2.3. Navigation Lighting Upward Illumination Minimization (Planning) (Construction) (Operations). Conditional on USCG approval, the top of each USCG-required marine navigation light must be shielded to minimize upward illumination to minimize the potential of attracting migratory birds. The Lessee must provide BOEM, BSEE, and USFWS with a copy of the application to USCG to establish PATON (Section 3.1.1).
- 5.2.4. Avian and Bat Monitoring Program (Construction) (Operations) (Decommissioning). The Lessee must develop and implement an Avian and Bat Post-Construction Monitoring Plan based on the Revolution Wind Avian and Bat Post-Construction Monitoring Framework in COP Appendix AA, in coordination with USFWS, and other relevant regulatory agencies. Annual monitoring reports will be used to determine the need for adjustments to monitoring approaches, consideration of new monitoring technologies, and/or additional periods of monitoring. Prior to or concurrent with offshore construction activities, including seabed preparation activities, the Lessee must submit an Avian and Bat Post-Construction Monitoring Plan for BOEM, BSEE and USFWS review. BOEM, BSEE, and USFWS will review the Avian and Bat Post-Construction Monitoring Plan and provide any comments on the plan to the Lessee within 60 days of its

submittal. The Lessee must resolve all comments on the Avian and Bat Post-Construction Monitoring Plan to BOEM's and BSEE's satisfaction before implementing the plan and before commissioning of the first WTG.

- 5.2.5. Monitoring. The Lessee must conduct monitoring as outlined in the Revolution Wind Avian and Bat Post-Construction Monitoring Framework in COP Appendix AA. In addition, the Lessee must monitor the action area for piping plovers and rufa red knots. The monitoring method(s) must be informed by the best available information and technology and could include boat-based monitoring, Motus stations, remote sensing, cameras, microphones, Doppler and NEXRAD radar, eDNA, etc. The monitoring must occur during the time(s) of year when collisions are most likely. Initially, monitoring will proceed according to the Lessee's Avian and Bat Post-Construction Monitoring Framework and be operational for the first piping plover and rufa red knot migratory seasons after the WTGs are operational (see Monitoring and Reporting Requirements in USFWS BiOp). Subsequently, consideration of new methods and timing by BOEM and USFWS will occur on the same timeline as the collision minimization report (CMR) described in the Terms and Conditions of the USFWS BiOp unless BOEM and USFWS agree to a different schedule.
- 5.2.6. Annual Monitoring Reports. The Lessee must submit to BOEM, BSEE, and USFWS a comprehensive report after each full year of monitoring (pre- and post-construction) within 12 months of completion of the survey season. The report must include all data, analyses, and summaries regarding ESA-listed and non-ESA-listed birds and bats. In addition, the Lessee must report observations of injured or dead piping plovers and rufa red knots; any listed species perching on Project infrastructure (including offshore substations); implementation and effectiveness of avoidance and minimization measures; and any other relevant activity and information related to the proposed action and potential impacts to listed species (see Monitoring and Reporting Requirements in USFWS BiOp).
- 5.2.7. Post-Construction Quarterly Progress Reports. During the first 12 months the Project is fully operational and commissioned (all installed WTGs producing power), the Lessee must submit quarterly progress reports concerning the implementation of the Avian and Bat Post-Construction Monitoring Plan to BOEM, BSEE, and USFWS by the 15th day of the first month following the end of each quarter. The Lessee must include a summary of all work performed, an explanation of overall progress, and any technical problems encountered in the progress reports.
- 5.2.8. Monitoring Plan Revisions. Within 30 days of submitting the annual monitoring report, the Lessee must meet with BOEM, BSEE, USFWS, and appropriate state wildlife agencies to discuss the monitoring results, the potential need for revisions to the Avian and Bat Post-Construction Monitoring Plan, including technical refinements or additional monitoring, and the potential need for any additional efforts to reduce impacts. If, following that meeting, BOEM, BSEE, and USFWS jointly determine that revisions to the Avian and Bat Post-Construction Monitoring Plan are necessary, the Lessee must modify the Avian and Bat Post-Construction

Monitoring Plan. If the reported monitoring results deviate substantially from the impact analysis included in the FEIS,<sup>11</sup> the Lessee must transmit to BOEM, BSEE, and USFWS recommendations for new mitigation measures and/or monitoring methods. In consultation with USFWS, BOEM and BSEE may adjust the frequency, duration, and methods for various monitoring efforts in future revisions of the Avian and Bat Post-Construction Monitoring Plan based on current technology (including its cost), and the evolving weight of evidence regarding the likely levels of collision mortality for each listed bird species.

- 5.2.9. Operation Reporting (Operations). Upon commissioning of the first WTG, the Lessee must submit to BOEM and BSEE an annual report, due by January 31, summarizing monthly operational data from the preceding year calculated from 10-minute supervisory control and data acquisition (SCADA) data for all WTGs together in tabular format, including the proportion of time the WTGs were spinning each month, the average rotor speed (monthly revolutions per minute) of spinning WTGs plus 1 standard deviation, and the average pitch angle of blades (degrees relative to rotor plane) plus 1 standard deviation. Any data considered by the Lessee to be privileged or confidential must be clearly marked as confidential business information and will be handled by BOEM and BSEE in a manner consistent with 30 C.F.R. § 585.114.
- 5.2.10. Raw Data. The Lessee must store the raw data from all avian and bat surveys and monitoring activities using accepted archiving practices. Such data must be accessible to BOEM, BSEE, and USFWS upon request for the duration of the Lease. The Lessee must work with BOEM to ensure the data are publicly available. All avian tracking data (i.e., from radio and satellite transmitters) must be stored, managed, and made available to BOEM and USFWS following the protocols and procedures outlined in the agency document entitled *Guidance for Coordination of Data from Avian Tracking Studies*.
- 5.2.11. Annual Bird/Bat Mortality Reporting (Construction) (Operations) (Decommissioning). The Lessee must submit an annual report to BOEM, BSEE, and USFWS, covering each calendar year, due by January 31, documenting any dead or injured birds or bats found on vessels and structures during construction, operations, and decommissioning in the preceding year. The report must contain the following information: the name of species, date found, location, a photo to confirm species identity (if possible), and any other relevant information. Carcasses with federal or research bands must be reported to the United States Geological Survey Bird Band Laboratory.<sup>12</sup> The Lessee must also submit to BOEM, BSEE, and USFWS an annual report covering each calendar year, due by January 31, documenting the implementation of any collision measures during the preceding year.

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<sup>11</sup> <https://www.boem.gov/renewable-energy/state-activities/revolution-wind-final-eis>

<sup>12</sup> <https://www.usgs.gov/centers/eesc/science/bird-banding-laboratory>

- 5.2.12. Immediate Reporting (Construction) (Operations) (Decommissioning). Any occurrence of dead or injured ESA-listed birds or bats must be reported to BOEM, BSEE, and USFWS (New England Field Office at [newengland@fws.gov](mailto:newengland@fws.gov) and 603-223-2541) as soon as practicable (taking into account crew and vessel safety), ideally within 24 hours and no more than 2 business days after the sighting. If practicable, the Lessee must carefully collect the dead specimen and preserve the material in the best possible state, contingent on the acquisition of the any necessary wildlife permits and compliance with the Lessee's health and safety standards (see Monitoring Requirements in USFWS BiOp).
- 5.2.13. Collision Minimization (Planning) (Construction) (Operations). Within 5 years of the commissioning of the first WTG and every 5 years thereafter for the operational life of the Project, the Lessee must provide BOEM with a review of best available scientific and commercial data on technologies and methods that have been implemented or are being studied to reduce or minimize bird collisions at WTGs. The review must be worldwide and include both offshore and onshore WTGs. This review will inform BOEM's Collision Minimization Report, consistent with Term and Condition 1b of the USFWS BiOp. Within 60 days of BOEM's issuance of the final Collision Minimization Report, the Lessee must participate in a meeting to discuss the report with BOEM, BSEE, USFWS, and appropriate state agencies.
- 5.2.14. Compensatory Mitigation for Piping Plover and Red Knot (Planning) (Construction) (Operations). At least 180 days prior to the commissioning of the first WTG, the Lessee must distribute a Compensatory Mitigation Plan to BOEM, BSEE, and the USFWS for review and comment. BOEM, BSEE, and USFWS will review the Compensatory Mitigation Plan and provide any comments on the plan to the Lessee within 60 days of its submittal. The Lessee must resolve all comments on the Compensatory Mitigation Plan to BOEM's and BSEE's satisfaction before implementing the plan and before commissioning of the first WTG. The Compensatory Mitigation Plan must provide compensatory mitigation actions to offset take of Piping Plover and Red Knot by the fifth year of WTG operation. The Compensatory Mitigation Plan must include a) detailed description of the mitigation actions; b) the specific location for each mitigation action; c) a timeline for completion of the mitigation actions; d) itemized costs for implementing the mitigation actions; e) details of the mitigation mechanisms (e.g., mitigation agreement, applicant-proposed mitigation); and f) monitoring to ensure the effectiveness of the mitigation actions in offsetting take.
- 5.3. Benthic Habitat and Fisheries Monitoring Conditions (Planning) (Construction) (Operations).
- 5.3.1. The Lessee must submit the Fisheries Research and Monitoring Plan to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), to BSEE via TIMSWeb with status updates of submittals in the Annual Certification, and to NMFS Greater Atlantic Regional Fisheries Office (GARFO) Habitat and Ecosystem Services Division (HESD) at [NMFS.GAR.HESDoffshorewind@noaa.gov](mailto:NMFS.GAR.HESDoffshorewind@noaa.gov).

- 5.3.2. Fisheries Research and Monitoring Plan (Planning) (Construction) (Operations). The Lessee must conduct fisheries monitoring consistent with the Revolution Wind Fisheries Research and Monitoring Plan in Appendix Y of the COP to assess fisheries status in the Project area pre-, during, and post-construction.
- 5.3.3. The Lessee must submit an annual report to BOEM, BSEE, and NMFS GARFO's Protected Resources Division ([nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov)) for benthic habitat and fisheries monitoring activities in the preceding calendar year by February 15 (i.e., the report of 2023 activities is due by February 15, 2024). The report must include a summary of all activities conducted, the dates and locations of all ventless trap surveys and otter trawl surveys, number of sets and soak duration for all ventless trap surveys and tows and duration for all trawl surveys summarized by month, number of vessel transits, and a summary table of any observations and captures of ESA listed species during these surveys. The report must also summarize all acoustic telemetry and benthic monitoring activities that occurred, inclusive of vessel transits. The Lessee must share data consistent with its data sharing plan and upon BOEM's or BSEE's request.
- 5.3.4. The Lessee must submit all resulting data and metadata to GARFO HESD. The Lessee must share data consistent with its data sharing plan and upon BOEM's or BSEE's request.
- 5.4. Protected Species Monitoring Plan Conditions (Planning) (Construction) (Operations) (Decommissioning).
- 5.4.1. The Lessee must submit all required documents related to protected species in Sections 5.4.2 through 5.4.10 (e.g., passive acoustic monitoring (PAM), pile driving monitoring plans, UXO/MEC PAM Plan, sound field verification (SFV), and vessel strike) to: BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov); BSEE via TIMSWeb with a notification email sent to BSEE at [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov); NMFS GARFO at [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov); NMFS's Office of Protected Resources (OPR) at [pr.itp.monitoringreports@noaa.gov](mailto:pr.itp.monitoringreports@noaa.gov); and United States Army Corps of Engineers (USACE) at [cenae-r-@usace.army.mil](mailto:cenae-r-@usace.army.mil). The Lessee must follow final plans.
- 5.4.2. Passive Acoustic Monitoring (PAM) During Construction (Planning) (Construction). The Lessee must conduct PAM to supplement visual monitoring of marine mammals before, during, and after all monopile installations and UXO/MEC detonations.
- 5.4.3. UXO/MEC PAM Plan (Planning) (Construction) (Operations). The Lessee must prepare and implement a UXO/MEC PAM Plan that describes all proposed equipment, deployment locations, detection review methodology, and other procedures and protocols related to the use of PAM to supplement visual monitoring prior to, during, and after UXO/MEC detonation. The Lessee must submit this plan to the contacts listed in Section 5.4.1 for review and BOEM's and BSEE's concurrence at least 180 days before the planned start of UXO/MEC

activities. The UXO/MEC PAM Plan must incorporate the list of requirements for the Pile Driving PAM Plan described in Section 5.4.4.

- 5.4.4. Pile Driving PAM Plan (Planning) (Construction). The Lessee must prepare and implement a Pile Driving PAM Plan. The Lessee must submit this plan to BOEM, BSEE, NMFS GARFO, and NMFS OPR at least 180 days before impact pile driving is planned. BOEM, BSEE, and NMFS GARFO will review the plan and will provide comments within 45 days of receipt of the plan. NMFS GARFO will assess whether the plan is consistent with the requirements outlined in the July 21, 2023, BiOp and its Incidental Take Statement (ITS) and provide comments to BOEM and BSEE. If BOEM and BSEE inform the Lessee that the plan is inconsistent with those requirements, the Lessee must resubmit a modified plan that addresses the identified issues within 30 days of the receipt of the comments but at least 15 days before the start of the associated activity. BOEM, BSEE, and NMFS GARFO will discuss a timeline for review of the modified plan to meet the Lessee's schedule to the maximum extent practicable. The Lessee must obtain BOEM's and BSEE's concurrence with this plan prior to the start of any pile driving. The plan must include a description of all proposed PAM equipment and hardware, the calibration data, bandwidth capability and sensitivity of hydrophones, and address how the proposed PAM will follow standardized measurement, processing methods, reporting metrics, and metadata standards for offshore wind (Van Parijs et al., 2021). The plan must describe and include all procedures, documentation, and protocols, including information (i.e., testing, reports, equipment specifications) to support that it will be able to detect vocalizing whales, including the North Atlantic right whale (NARW), within the clearance and shutdown zones (see Section 5.10.5). This information includes deployment locations, procedures, detection review methodology, and protocols; hydrophone detection ranges with and without foundation installation activities and data supporting those ranges; where PAM Operators will be stationed relative to hydrophones and protected species observers (PSOs) on pile driving vessels calling for delay/shutdowns; and a full description of all proposed software, call detectors and their performance metrics (i.e., false positives and false negatives), and filters. The plan must also incorporate the requirements relative to NARW reporting in Section 5.14.

The Lessee must submit, as provided on the website below, full detection data, metadata, and location of recorders (or Global Positioning System (GPS) tracks, if applicable) from all real-time hydrophones used for monitoring during construction within 90 days after pile driving has ended, and instruments have been pulled from the water. Reporting must use the webform templates on the NMFS Passive Acoustic Reporting System website at <https://www.fisheries.noaa.gov/resource/document/passive-acoustic-reporting-system-templates>. The Lessee must submit the full acoustic recordings from all the real-time hydrophones to the National Centers for Environmental Information (NCEI) for archiving, using the email or other contact information on the website above or using any updated instructions for submission provided by NOAA, within 90 days after pile driving has ended, and instruments have been pulled from the water. Confirmation of both submittals must be sent to NMFS GARFO.



- 5.4.5. Sound Field Verification Plan (Planning) (Construction). The Lessee must submit, prepare, and implement (as concurred by BOEM and BSEE) a SFV Plan prior to pile driving and UXO/MEC detonation. The Lessee must submit a SFV Plan or Plans, if separate Pile Driving SFV Plans and UXO/MEC SFV Plans are prepared, to BOEM, BSEE, NMFS OPR, and NMFS GARFO at least 180 days before impact pile driving or UXO detonation is planned to begin. BOEM, BSEE, and NMFS GARFO will review the plan(s) and provide comments within 45 days of receipt of the plan. NMFS GARFO's comments to BOEM, BSEE, and the Lessee will include a determination as to whether the plan is consistent with the requirements outlined in the July 23, 2023, BiOp and its ITS. If BOEM and BSEE determine the plan is inconsistent with these requirements, the Lessee must resubmit a modified plan that addresses the identified issues. The Lessee must obtain BOEM's and BSEE's concurrence with this plan prior to the start of pile driving or UXO detonation activities or UXO detonation activities.

To validate the estimated sound fields, SFV measurements will be conducted during pile driving of the first three monopiles installed over the course of the Project, with noise attenuation systems in place and activated. The plan(s) must describe how the first three monopile installation sites and installation scenarios (i.e., hammer energy and number of strikes) are representative of the rest of the monopile installations and, therefore, why these monopile installations would be representative of the remaining monopile installations. If the monitored pile locations are different from the ones used for exposure modeling, the Lessee must provide a justification for why these locations are representative of the modeling. In the case that these sites are not determined to be representative of all other monopile installation sites, the Lessee must include information on how additional monopiles/sites will be selected for SFV. The plan must also include methodology for collecting, analyzing, and preparing SFV data for submission to NMFS GARFO including instrument deployment, locations of all hydrophones including direction and distance from the pile, hydrophone sensitivity, recorder/measurement layout and analysis methods, and a template of the interim report to be submitted. The plan must also identify the number and location of hydrophones that will be reported in the SFV Interim Reports (see Section 5.14.4(a)) and any additional hydrophone locations that will be included in the SFV final report(s) (see Section 5.14.4(c)). The Lessee's plan must describe how the effectiveness of the sound attenuation methodology will be evaluated based on the results. The plan must address how Revolution Wind will implement the July 23, 2023, BiOp Term and Condition 2a which includes, but is not limited to, identifying additional noise attenuation measures (e.g., add noise attenuation device, adjust hammer operations, adjust noise mitigation system (NMS)) that will be applied to reduce sound levels if measured distances are greater than those modeled.

- a) If any SFV interim report submitted for any of the first 3 monopiles (see Section 5.14.4(a)) indicates the sound fields exceed the modeled distances to any protected species injury or behavioral harassment/disturbance thresholds (as modeled assuming 10-decibel (dB) attenuation), the Lessee must carry out SFV for the next 3 monopiles (e.g., the fourth, fifth, and sixth pile driven). After

reviewing the SFV interim reports for the first 6 monopiles, BOEM, BSEE, or NMFS GARFO may require the Lessee to carry out additional SFV if the measured sound fields continue to exceed the modeled results. These requirements are in addition to the requirement for the Lessee to implement additional sound attenuation measures and/or adjustments to clearance and shutdown zones if sound fields exceed the modeled distances to any protected species injury or behavioral harassment/disturbance thresholds (as modeled assuming 10-dB attenuation; see Sections 5.10.3 and 5.10.5).

- b) Attenuation Measures. If any of the SFV measurements from any pile indicate that the distance to any isopleth of concern is larger than those modeled assuming 10-dB attenuation (see July 21, 2023, BiOp Tables 7.1.8, 7.1.9, 7.1.23, 7.1.24, 7.1.31, 7.1.32), the Lessee must identify and implement measures that are expected to reduce sound levels to the modeled distances before the next pile is installed. Attenuation measures that could reduce sound levels to the modeled distances include, but are not limited to adding noise attenuation device, adjusting hammer operations, and adjusting the NMS. Additionally, the Lessee must also provide an explanation to BOEM, BSEE, NMFS GARFO, and NMFS OPR as to why the additional measures to be implemented for the next pile will reduce sound levels to the modeled distances. The Lessee must implement those additional measures before installing subsequent piles (e.g., if threshold distances are exceeded on pile 1 then additional measures must be deployed before installing pile 2).
- i) If after implementation of the additional noise attenuation measures, any subsequent SFV measurements are still larger than those modeled assuming 10-dB attenuation, then the Lessee must either implement additional noise attenuation measures (e.g., additional bubble curtain or modify the pile driving operations) in a way that is expected to reduce noise and the distance to thresholds of concern to no greater than the modeled distances (assuming 10 dB attenuation). Additionally, the Lessee must provide an explanation to BOEM, BSEE, NMFS GARFO, and NMFS OPR as to why the additional measures to be implemented for the next pile will reduce sound levels to the modeled distances. The Lessee must implement those additional noise attenuation measures before installing subsequent piles (e.g., if threshold distances are still exceeded on pile 2 the additional measures must be deployed for pile 3).
- ii) If, following installation of the pile with the additional noise measures required above, the SFV results indicate that any isopleths of concern are still larger than those modeled assuming 10-dB attenuation, then before any additional piles can be installed, the Lessee must determine, in coordination with NMFS GARFO/OPR, BOEM, BSEE, and USACE, what additional measures can be implemented. The Lessee must either implement those measures or, if no additional measures are identified, then pile installation must continue with implementation of the measures required above and any expanded clearance and shutdown zone sizes (and

any required additional PSOs). Additionally, the Lessee must continue SFV for the next two piles (for a total of three) and submit the interim reports within 48 hours as required above.

- iii) If the SFV results from all three of those piles described above are within the distances to isopleths of concern modeled assuming 10-dB attenuation, then the Lessee, upon confirmation from BOEM and BSEE, can revert to the original clearance and shutdown zones (Table 5.10.5) or continue with the approved expanded clearance and shutdown zones (and any required additional PSOs). The Lessee must continue to implement the measures required above (Section 5.4.5.(b)(i)). during the installation of all future piles.

5.4.6. Long-term PAM (Construction) (Operations). The Lessee must conduct long-term monitoring of ambient noise and baleen whales; and commercially important fish vocalizations in the Lease Area before, during, and following construction. The Lessee must conduct continuous<sup>13</sup> recording at least 30 days before the start of pile installation, through pile installation, initial operation, and for at least 3 but no more than 10 calendar years of full operations to monitor for potential impacts. The Lessee must meet with BOEM and BSEE at least 60 days prior to conclusion of the third full calendar year of operation monitoring (and at least 60 days prior to the conclusion of each subsequent year until monitoring is concluded) to discuss 1) monitoring conducted to-date, 2) the need for continued monitoring, and 3) if monitoring is continued, whether adjustments to the monitoring are warranted. The monitoring instrument(s) must be configured to ensure that the specific locations (with confidence intervals) of vocalizing NARW anywhere within the lease area can be identified, assuming a 10 kilometer (km) detection range for their calls. The Lessee may satisfy this condition through either of the options set forth more fully below.

- a) Option 1 – Lessee Conducts Long-term Passive Acoustic Monitoring. If the Lessee chooses to comply with Section 5.4.6 using this option, it must conduct PAM, including data processing and archiving following the Regional Wildlife Science Collaborative (RWSC) best practices to ensure data comparability and transparency. PAM instrumentation must be deployed to allow for identification of any NARW that vocalize anywhere within the lease area as well as Atlantic cod that may use Priority Area 1 for spawning.

Priority Area 1 encompasses 7 WTG positions in the center portion of the Lease Area. This Area is defined in Appendix K of the Final EIS for Revolution Wind, depicted in Figure K-1 of the Final EIS, and includes WTG positions WTG\_39, WTG\_40, WTG\_47, WTG\_48, WTG\_49, WTG\_56, and WTG\_58.

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<sup>13</sup> Continuous recording in this measure recognizes that PAM devices can be damaged or lost from weather and other ocean uses, mechanical failures, and general maintenance. The Lessee must make every effort to maintain the PAM system as near continuous as possible. If temporal gaps in recording are expected, the lessee must ensure that additional recorders can be deployed to fill gaps.

The sampling rate (minimum 10 kHz) of the recorders must prioritize baleen whale detections, but must also have a minimum capability to record noise from vessels, pile driving, and WTG operation in the lease area. The system must be configured for continuous recording over the entire year. If temporal gaps in recording are expected, the Lessee must ensure that additional recorders can be deployed to fill gaps. The Lessee must use trawl-resistant moorings to ensure that instruments are not lost, and must replace any lost instruments as soon as possible. The Lessee must also notify BOEM if this occurs.

The Lessee must follow the best practices outlined in the RWSC best practices document,<sup>14</sup> unless otherwise required through conditions of COP approval. The best practices include engaging with the RWSC, calibrating the instruments, running quality assurance/quality control (QA/QC) on the raw data, following the templates for reporting species vocalizations, and preparing the data for archiving at National Centers for Ecological Information (NCEI). Although section III of the RWSC best practices document specifies steps for Section 106 compliance, the Lessee must instead follow the conditions outlined in Section 7.13 and the Section 106 MOA.

In terms of data processing, the Lessee must document the occurrence of whale vocalizations (calls of North Atlantic right, humpback, sei, fin, and minke whales, as well as odontocete clicks, as available, based on sample rate) using automatic or manual detection methods. In addition, data must be processed with either manual or automatic detection software to detect vocalizations of spawning cod. The Lessee must submit a log of these detections as well as the detection methodology to BOEM (at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov)), BSEE (at [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov)) and NMFS (at [nmfs.pacmdata@noaa.gov](mailto:nmfs.pacmdata@noaa.gov)) within 120 days following each recorder retrieval. All raw data must be sent to the NCEI Passive Acoustic Data archive on an annual basis and the Lessee must follow NCEI guidance for packaging the data and pay the fee.

- i) Long-term Passive Acoustic Monitoring Plan. The Lessee must prepare and implement a Long-term PAM Plan under this option. No later than 120 days prior to instrument deployment and before any construction begins, the Lessee must submit to BOEM and BSEE ([renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov) and [OSWsubmittals@bsee.gov](mailto:OSWsubmittals@bsee.gov)) the Long-term PAM Plan that describes all proposed equipment (including number and configuration of instruments), deployment locations, mooring design, detection review methodology, and other procedures and protocols related to the required use of PAM. If there are fewer than 120 days between the commencement of any construction activity and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities. As the Lessee prepares the Long-term PAM Plan, it must coordinate with the RWSC.

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<sup>14</sup> <https://rwsc.org/wp-content/uploads/2022/12/RWSC-PAM-Data-Management-Storage-Best-Practices.pdf>.

BOEM and BSEE will review the Long-term PAM Plan and provide comments, if any, on the plan within 45 days of its submittal. The Lessee may be required to submit a modified Long-term PAM Plan based on feedback from BOEM and BSEE. The Lessee must address all outstanding comments to BOEM's and BSEE's satisfaction and will need to receive written concurrence from BOEM and BSEE. If BOEM or BSEE do not provide comments on the Long-term PAM Plan within 45 days of its submittal, the Lessee may conclusively presume BOEM's and BSEE's concurrence with the Long-term PAM Plan.

- b) Option 2 – Financial and Other Contributions to BOEM's Environmental Studies Program.<sup>15</sup> As an alternative to conducting long-term PAM in the Lease Area, the Lessee may opt to make a financial contribution to BOEM's Environmental Studies Partnership for an Offshore Wind Energy Regional Observation Network (POWERON) initiative on an annual basis and cooperate with the POWERON team to allow the team's access to the Lease Area for deployment, regular servicing, and retrieval of instruments. The Lessee's financial contribution must provide for all activities necessary to conduct PAM within and adjacent to the Lease Area, such as vessel and staff time for regular servicing of instruments, QA/QC on data, data processing to obtain vocalizations of sound-producing species and ambient noise metrics, as well as long-term archiving of data at NCEI. At the Lessee's request, BOEM will provide an estimate of the necessary amount of the financial contribution. BOEM will also invite the Lessee to contribute to discussions about the scientific approach of the POWERON initiative via the RWSC. The Lessee may request temporary withholding of the public release (i.e., the placement into the NCEI public data archive) of raw acoustic data collected within the Lease Area for up to 180 days after collection of that data. During this temporary hold, BOEM may elect to provide the Lessee with a copy of the raw PAM data collected under this option after the DON has cleared the data for national security concerns.

- 5.4.7. Vessel Strike Avoidance Plan (Planning) (Construction) Operations (Decommissioning). The Lessee must submit the Vessel Strike Avoidance Plan to BOEM, BSEE, and NMFS GARFO Protected Resources Division ([nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov)) at least 90 days prior to the commencement of vessel use outside of Narragansett Bay (including cable installation), with the exception of vessels deployed for the fisheries surveys. BOEM, BSEE, and NMFS GARFO will review the plan and provide comments within 45 days of receipt of the plan. The plan must provide details on all relevant mitigation and monitoring measures for listed species, minimum separation distances, vessel transit protocols from all planned ports, vessel-based observer protocols, communication and reporting plans, proposed alternative monitoring equipment to maintain effective

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<sup>15</sup> The Lessee may elect Option 2 initially or during any subsequent calendar year of monitoring, subject to agreement with BOEM and BSEE. If the Lessee elects Option 2 in Year 1, the Lessee is not required to develop a Long-Term Passive Acoustic Monitoring Plan (Option 1). BOEM will deem the execution and implementation of such an agreement to meet the long-term PAM requirements set forth in Section 5.4.6.

visual monitoring of vessel strike avoidance zones in varying weather conditions, darkness, sea states, and in consideration of the use of artificial lighting. If the Lessee plans to implement PAM in any transit corridor to allow vessel transit above 10 knots, the plan must describe how the Lessee will conduct PAM, in combination with visual observations, to ensure the transit corridor is clear of NARW. Any inclusion of PAM must be consistent with the requirements of Section 5.4.4. The plan must also include any strike avoidance measures for marine mammals, including NARW, included in the ITA. The plan must acknowledge and indicate compliance with applicable vessel speed restrictions per the ITA, other NMFS regulations, or state regulations. The Lessee must submit a summary of all vessel speed requirements applicable to Project activities in the plan. The Lessee must obtain BOEM's and BSEE's concurrence with the plan prior to the commencement of in-water construction activities outside of Narragansett Bay (including cable installation).

NMFS GARFO's comments to BOEM, BSEE, and the Lessee will assess whether the plan is consistent with the requirements outlined in the July 21, 2023, BiOp and its ITS (including Appendix A of the 2023 BiOp). If BOEM and BSEE inform the Lessee that the plan is inconsistent with these requirements, the Lessee must resubmit a modified plan that addresses the identified issues within 30 days of receipt of the comments and at least 15 days before the start of the associated activity. BOEM, BSEE, and NMFS will discuss a timeline for review of the modified plan to meet the Lessee's schedule to the maximum extent practicable. If further revisions are necessary, the Lessee will provide at least 3 business days for review. The plan must provide details on the vessel-based observer protocols on transiting vessels.

- 5.4.8. Marine Mammal and Sea Turtle Monitoring Plan for Pile Driving and UXO Detonation (Planning) (Construction). The Lessee must submit a Marine Mammal and a Sea Turtle Monitoring Plan for Pile Driving and UXO Detonation to BOEM, BSEE, and NMFS GARFO at least 180 days before any pile driving or UXO detonation is planned. BOEM, BSEE, and NMFS GARFO will review the plan and provide comments within 45 days of receipt of the plan. NMFS GARFO's comments to BOEM, BSEE, and the Lessee will assess whether the plan is consistent with the requirements outlined in the July 21, 2023, BiOp and its ITS. If BOEM and BSEE inform the Lessee that the plan is inconsistent with these requirements, the Lessee must resubmit a modified plan that addresses the identified issues within 30 days of receipt of the comments and at least 15 days before the start of the associated activity; at that time, BOEM, BSEE, and NMFS GARFO will discuss a timeline for review and approval of the modified plan to meet the Lessee's schedule to the maximum extent practicable. If further revisions are necessary, the Lessee will provide at least 3 business days for review. The Lessee must obtain BOEM's and BSEE's concurrence with the Marine Mammal and Sea Turtle Monitoring Plan(s) before starting any pile driving for foundation installation or carrying out any UXO detonation. The plan(s) must include:

- a) A description of how all relevant mitigation and monitoring requirements contained in the July 21, 2023 BiOp's ITS will be implemented.
- b) A pile driving installation summary and sequence of events.
- c) A description of all training protocols for all Project personnel (PSOs, PAM Operators, trained crew lookouts, etc.).
- d) A description of all monitoring equipment and evidence (i.e., manufacturer's specifications, reports, testing) that the Lessee can use to effectively monitor and detect ESA listed marine mammals and sea turtles in the identified clearance and shutdown zones (i.e., field data demonstrating reliable and consistent ability to detect ESA listed large whales and sea turtles at the relevant distances in the conditions planned for use).
- e) Communications and reporting details.
- f) PSO monitoring and mitigation protocols (including number and location of PSOs) for effective observation and documentation of sea turtles and ESA listed marine mammals during all pile driving events and UXO/MEC detonations.

The plan(s) must demonstrate sufficient PSO and PAM Operator staffing (in accordance with watch shifts), PSO and PAM Operator schedules, and contingency plans for instances if additional PSOs and PAM Operators are required. The plan must detail all plans and procedures for sound attenuation, including procedures for adjusting the noise attenuation system(s) and available contingency noise attenuation measures/systems if distances to modeled isopleths of concern are exceeded during SFV. The plan must also describe how the Lessee would determine the number of sea turtles exposed to noise above the 175-dB harassment threshold during impact pile driving of WTG and OSS foundations and how the Lessee would determine the number of ESA listed whales exposed to noise above the Level B harassment threshold during impact pile driving of WTG and OSS foundations. If any clearance or shutdown zones are expanded, the Lessee must submit a proposed monitoring plan describing the location of all PSOs to NMFS GARFO, BOEM and BSEE for review. The Lessee must resolve comments to the proposed monitoring plan to BOEM's and BSEE's satisfaction and must conduct activities in accordance with the plan.

- 5.4.9. Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan (Planning) (Construction). The Lessee must submit the Reduced Visibility Monitoring/Nighttime Pile Driving Monitoring Plan (or plans if separate plans are submitted) to BOEM, BSEE, and NMFS GARFO at least 180 days before impact pile driving is planned to begin unless a longer time period is identified in the MMPA Letter of Authorization. BOEM, BSEE, and NMFS GARFO will review the Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan and provide comments within 45 days of receipt of the plan. NMFS GARFO's comments to BOEM, BSEE, and the Lessee will assess whether the plan is

consistent with the requirements outlined in the July 21, 2023, BiOp and its ITS. The Lessee must obtain BOEM's and BSEE's concurrence with the Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan prior to the start of pile driving. The plan must contain a thorough description of how the Lessee will monitor pile driving activities during reduced visibility conditions (e.g. rain, fog) and at night, including proof of the efficacy of monitoring devices (e.g., mounted thermal/infrared camera systems, hand-held or wearable night vision devices, spotlights) in detecting ESA-listed marine mammals and sea turtles over the full extent of the required clearance and shutdown zones, including demonstration that the full extent of the minimum visibility zones (WTG foundations: May-November, 2,300 m, and December, 4,400 m; OSS foundations: May-November, 1,600 m, and December, 2,700 m) can be effectively and reliably monitored in reduced visibility conditions. The plan must identify the efficacy of the technology at detecting marine mammals and sea turtles in the clearance and shutdown zones under all the various conditions anticipated during construction, including varying weather conditions, sea states, and in consideration of the use of artificial lighting. The plan must include a full description of the proposed technology, monitoring methodology, and data demonstrating that marine mammals and sea turtles can reliably and effectively be detected within the clearance and shutdown zones for monopiles before, during, and after impact pile driving at night. Additionally, this plan must contain a thorough description of how the Lessee will monitor pile driving activities during daytime when unexpected changes to lighting or weather occur during pile driving that prevent visual monitoring of the full extent of the clearance and shutdown zones. Without approval of this plan, no pile driving may be initiated later than 1.5 hours prior to civil sunset or earlier than 1 hour before civil sunrise.

5.5. Pre-Seabed Disturbance Conditions (Planning) (Construction) (Operations) (Decommissioning).

5.5.1. The Lessee must submit all required documents related to pre-seabed disturbance and specified in Sections 5.5.2 to 5.5.11 to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), BSEE via TIMSWeb, with a notification email sent to NMFS GARFO HESD at [NMFS.GAR.HESDoffshorewind@noaa](mailto:NMFS.GAR.HESDoffshorewind@noaa).

5.5.2. Anchoring Plan (Planning) (Construction) (Operations) (Decommissioning). The Lessee must prepare and implement Anchoring Plans/Plats for all areas where anchoring or buoy placement occurs during construction, operations/maintenance, or decommissioning, and include avoidances of complex habitats including coarse unconsolidated mineral substrates (i.e. substrates containing 5 percent or greater gravels), rock substrates (e.g. bedrock), and shell substrates (e.g. mussel reef) consistent with Coastal and Marine Ecological Classification Standard definitions, boulders  $\geq 0.5$  m; Ancient Submerged Landform Features (ASLF), known and potential shipwrecks; potentially significant debris fields, potential hazards, and any related facility installation activities (such as cable, WTG, and OSS installation). Any required avoidance buffers must be consistent with state and federal permits, authorizations, and agreements, such as: potential unexploded ordnances with an



exclusion zone of 10 m; confirmed unexploded ordnances with exclusion zones relative to their charge weight and water depth; shipwrecks with an avoidance buffer of 50 m; and ASLFs that are not anticipated to be impacted with avoidance distances identified in the Section 106 MOA. If this condition differs from final authorizations issued by other agencies, the conditions presented by the other agencies will prevail. For areas where complex habitats cannot be fully avoided, the anchoring plan should prioritize avoidance or minimization in order of decreasing density and size of boulders where they are present within areas of complex habitat (as defined above); e.g., the highest priority would be complex habitat with the highest density of large boulders and the lowest priority would be complex habitat with no large boulders. The Lessee must provide to all construction and support vessels the locations where anchoring or buoy placement must be avoided according to the plan, including complex habitat; boulders  $\geq 0.5$  m; ASLFs; known and potential shipwrecks; potentially significant debris fields; potential hazards; and any related facility installation activities (such as cable, WTG, and OSS installation), during operations and decommissioning. If anchoring is necessary at these locations, then all vessels deploying anchors must extend the anchor lines to the extent practicable to minimize the number of times the anchors must be raised and lowered to reduce the amount of habitat disturbance, unless the anchor chain sweep area includes complex habitat that may be impacted by the chain sweep. On all vessels deploying anchors, the Lessee must use mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seabed, unless the Lessee demonstrates, and BOEM and BSEE accept, that (1) the use of mid-line anchor buoys to reduce the amount of anchor chain or line that touches the seabed is not technically practical or feasible; or (2) a different alternative is as safe and provides the same or greater environmental protection.

- a) The Lessee must provide the Anchoring Plan to BOEM and BSEE with a notification to NMFS GARFO HESD for a 60-day review at least 120 days before anchoring activities and construction begins for export and inter-array cables. The Lessee must resolve all comments on the Anchoring Plan to BOEM's and BSEE's satisfaction before conducting any OCS seabed-disturbing activities that require anchoring. If there are less than 120 days between anchoring activities and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities.
- b) For operations and decommissioning, the Lessee must provide Anchoring Plans to BOEM and BSEE for review and concurrence before anchoring activities occur. The Anchoring Plans must include avoidances identified in Section 5.5.2 above and as-placed anchor plans must be submitted per Section 2.21.4.

5.5.3. Micrositing Plan (Planning) (Construction). The Lessee must prepare and implement a Micrositing Plan that describes how WTG locations, inter-array cables, and export cable routes will be microsited to avoid or minimize impacts to complex habitat, boulders, and confirmed MEC/UXO. The plan must specifically describe how WTG\_38, WTG\_39, WTG\_40, WTG\_41, WTG\_44, WTG\_45, WTG\_47,

WTG\_48, WTG\_49, WTG\_53, WTG\_56, WTG\_58, WTG\_62, WTG\_63, WTG\_64, WTG\_65, WTG\_72, WTG\_73, WTG\_81, and WTG\_82 and inter-array and export cable routes will be microsited to avoid or minimize impacts to complex benthic habitat and boulders  $\geq 0.5$  m. The Lessee must not microsite structure locations in a way that narrows any WTG corridors to less than the distance required by Section 3.1.3. The Lessee must submit detailed supporting data and analysis as part of the FDR or FIR, including relevant geophysical and geospatial data. The submission of the data may be incorporated by reference or submitted as an attachment to the FDR or FIR. The Micrositing Plan must be consistent with MEC/UXO ALARP Certification (Section 2.2), Cable Routings (Section 2.10), and Boulder Identification and Relocation (Section 5.5.6). The Micrositing Plan must include a figure for each microsited WTG or cable segment, including benthic habitat delineations showing complex habitat and locations of boulders  $\geq 0.5$  m. The plan must include a figure depicting large boulder locations, multibeam backscatter returns, and the proposed microsited locations for cables and WTGs.

- a) For WTGs and cables that cannot be microsited to avoid impacts to complex habitat or boulders  $\geq 0.5$  m, the micrositing plan must identify technically and economically practical or feasible impact minimization measures and use the following prioritized list of complex habitat sub-types to avoid during micrositing:
  - i) Complex habitats (i.e., areas of medium to high backscatter) with high density large boulders.
  - ii) Complex habitats (i.e., areas of medium to high backscatter) with medium density large boulders.
  - iii) Complex habitats (i.e., areas of medium to high backscatter) with low density large boulders.
  - iv) Complex habitats (i.e., areas of medium to high backscatter) with scattered large boulders.
  - v) Complex habitats (i.e., areas of medium to high backscatter) with no large boulders.
- b) The Micrositing Plan must be submitted to BOEM and BSEE with notification to NMFS GARFO HESD for a 60-day review, 120 days prior to site preparation activities for cables and WTGs. The Lessee must resolve all comments on the Micrositing Plan to BOEM's and BSEE's satisfaction prior to implementation of the plan. If there are less than 120 days between site preparation activities and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities.

5.5.4. Cod Spawning Monitoring Plan (Planning) (Construction). Prior to OCS seabed prep, inter-array cable installation, foundation site preparation, and other construction-related bottom disturbing activities (e.g., boulder relocation, cable lay

and burial, scour protection installation), the Lessee must prepare and implement a Cod Spawning Monitoring Plan to monitor for Atlantic cod aggregations in the lease area between November 1 and March 31 of each year during which construction activities are planned.

- a) The Lessee must submit the plan to BOEM and BSEE with notification to NMFS GARFO HESD for a 60-day review at least 120 days before the commencement of in-water construction on the OCS. The Lessee must resolve all comments on the plan to BOEM's and BSEE's satisfaction prior to implementation of the Plan. If there are less than 120 days between commencement of in-water construction on the OCS and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities.
- b) The Lessee must submit an annual Cod Spawning Monitoring Report within 90 days of the completion of each survey season to BOEM, BSEE, and NMFS GARFO HESD. The report must include documentation of any cod detections and contain information on all survey activities that took place during the season, including location of equipment and location, time, and date of detections. The report on survey activities must be comprehensive of all activities, regardless of whether cod were detected.

5.5.5. Sequencing Plan (Planning) (Construction). The Lessee must prepare and implement a Sequencing Plan that describes how construction activities will be sequenced to avoid or minimize impacts to Atlantic cod spawning. The plan must specifically describe how construction activities (e.g., seabed prep, inter-array cable installation and burial, scour protection installation, boulder relocation, foundation site preparation, WTG or OSS installation including pile driving, and other construction-related bottom disturbing activities) will occur such that construction activities in the center portion of the lease area are avoided between November 1 to March 31. The Sequencing Plan must be consistent with MEC/UXO ALARP Certification (Section 2.2), Cable Routings (Section 2.10), the Boulder Identification and Relocation Plan (Section 5.5.6), and seasonal restrictions for NARW (5.10.2). All pile driving must also comply with requirements for noise abatement as stipulated in Section 5.10.3.

- a) The Sequencing Plan must describe, to BSEE and BOEM's satisfaction, how the construction schedule is designed to the extent technically feasible to avoid any pile driving in the lease area between November 1 and December 31 each year (in addition to the January 1 to April 30 restriction on pile driving for NARW). If pile driving is necessary during this time, the Lessee must prioritize limiting pile driving to Priority Area 3a. Priority Area 3a is defined in Appendix K of the Final EIS for Revolution Wind, depicted in Figure K-1 of the Final EIS, and includes WTG positions WTG\_64 to WTG\_68 and WTG\_75 to WTG\_79.

- b) If full avoidance is not feasible and pile driving beyond Priority Area 3a during November and December is deemed necessary, the Lessee must prioritize avoiding pile driving in Priority Area 1 from November 1 to December 31, followed in priority order by the areas radiating out of Priority Area 1 moving north and east within the lease area. Priority Area 1 encompasses 7 WTG positions in the center portion of the Lease Area. This Area is defined in Appendix K of the Final EIS for Revolution Wind, depicted in Figure K-1 of the Final EIS, and includes WTG positions WTG\_39, WTG\_40, WTG\_47, WTG\_48, WTG\_49, WTG\_56, and WTG\_58.
  - c) The Sequencing Plan must describe how the construction schedule for activities other than pile driving is designed to avoid and minimize potential impacts to spawning cod from construction-related bottom-disturbing activities from November 1 to March 31 by sequencing construction activities other than pile driving that must occur during this time so that they are limited to the northernmost and easternmost portions of the lease area between November 1 and March 31. The lessee must prioritize avoiding construction activities during this time in the following areas in order of priority: Priority Area 1, followed by the areas radiating north and east from Priority Area 1, with priority given to those areas immediately adjacent to Priority Area 1.
  - d) The Sequencing Plan must provide a detailed construction schedule that includes installation timeframes and locations for inter-array cable, and foundation construction.
  - e) The Lessee must submit the Sequencing Plan to BOEM and BSEE with notification to NMFS GARFO HESD for a 60-day review, 120 days prior to site preparation activities for inter-array cables and WTGs. The Lessee must resolve all comments on the Sequencing Plan to BOEM's and BSEE's satisfaction prior to implementation of the plan. If there are less than 120 days between site preparation activities and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities.
- 5.5.6. Boulder Identification and Relocation Plan (Planning) (Construction). The Lessee must submit a Boulder Identification and Relocation Plan to BSEE for review and concurrence. The plan must detail how the Lessee will relocate boulders as close as practicable to areas immediately adjacent to existing and similar habitat, and to reduce facility installation and operational risks. The plan must be submitted to BOEM and BSEE with notification to NMFS GARFO HESD for a 60-day review, 120 days prior to boulder relocation activities. If there are less than 120 days between boulder relocation activities and this COP approval, the Lessee must submit the plan as soon as practicable and no later than 60 days prior to commencing activities. The Lessee must resolve all comments on the Boulder Relocation Plan to BOEM's and BSEE's satisfaction prior to implementation of the plan. If BOEM or BSEE do not provide comments on the plan within 60 days of its submittal, then the Lessee may presume concurrence with the plan. The plan must include sufficient scope to mitigate boulders for facility installation and operation

risks. The plan must be consistent with and meet the conditions of the SMS in Section 2.7. The plan must include the following for boulders that are proposed to be relocated:

- a) A summary and detailed description of surface boulders  $\geq 0.5$  m in diameter, locations of areas with subsurface boulders, and locations along the cable routes and wind turbine areas where such boulders have been found.
  - i) A detailed summary of methodologies used in boulder identification, including geological and geophysical survey results.
  - ii) Figures of the location of boulder relocation activities specified by activity type (e.g., pick or plow, removal, or placement). Separate submissions of these depictions overlaid on multibeam bathymetry and backscatter data must also be submitted.
  - iii) A description of boulder removal and/or relocation methods for each type of boulder relocation activity and technical feasibility constraints, including capacity of crane used in grab systems, vessel specifications, and metocean limits on operation, etc.
  - iv) A comprehensive list and shapefile of locations of boulders that would be relocated (latitude, longitude), boulder dimensions (m), areas of active (within last 5 years) bottom trawl fishing (latitude, longitude), areas where boulders  $> 2$  m in diameter are anticipated to occur (latitude, longitude), and identification of approximate areas to which boulders would be relocated (latitude, longitude).
  - v) The measures taken to minimize the quantity of seafloor obstructions from relocated boulders in areas of active bottom trawl fishing.
  - vi) A description of safety distances or zones to limit boulder relocation near third-party assets.
  - vii) A summary of any consultation and outreach conducted with resource agencies and the fishing industry in development of the plan (e.g., notifications to mariners).
  - viii) A statement of consistency with the Micrositing Plan.
- b) The Lessee must provide USCG, NOAA, and the local harbormaster with a comprehensive list and shapefile of positions and areas to which boulders would be relocated (latitude, longitude) at least 60 days prior to boulder relocation activities.

5.5.7. Scour and Cable Protection Plan (Planning) (Construction). In addition to FDR submission(s), the Lessee must prepare and implement a Scour and Cable Protection Plan(s) that includes descriptions and specifications for all scour and

cable protection materials. The plan(s) must include a depiction of the location and extent of proposed scour or cable protection, the habitat delineations for the areas of proposed scour and cable protection, detailed information on the proposed scour or cable protection materials for each area and habitat type.

- a) The Lessee must avoid the use of engineered stone or concrete mattresses in complex habitat or demonstrate, to BSEE and BOEM's satisfaction, technical or economic infeasibility or impracticability within the plan(s). The Lessee must ensure that all materials used for scour and cable protection measures consist of natural or engineered stone that does not inhibit epibenthic growth and provides three-dimensional complexity in height and in interstitial spaces. The Lessee must minimize the use of scour protection to the minimum amount necessary to accomplish the purpose.
- b) Cable protection measures must have tapered or sloped edges to reduce hangs for mobile fishing gear. The Lessee must avoid the use of plastics/recycled polyesters/net material (i.e., rock-filled mesh bags, fronded mattresses) for scour protection.
- c) The Lessee must submit the plan(s) to BOEM and BSEE with notification to NMFS GARFO HESD for a 60-day review at least 120 days before placement of scour and cable protection. The Lessee must resolve all comments on the plan(s) to BOEM's and BSEE's satisfaction before placement of the scour and cable protection materials.

5.5.8. WTG Removal (Planning) (Construction). The Lessee must prioritize removal of WTG positions WTG\_47 and WTG\_48 from the Project layout. If the Lessee determines that fewer than 65 WTGs will be constructed from the Project layout, the Lessee must prioritize removal in the following order of priority:

- a) Other positions in Priority Area 1 which are WTG\_39, WTG\_40, WTG\_49, WTG\_56, and WTG\_58 (the Lessee may choose the order in which the listed WTGs are removed);
- b) WTG position WTG\_38 and WTG\_41 (the Lessee may choose order);
- c) WTG position WTG\_72; and
- d) WTG positions WTG\_44, WTG\_45, WTG\_65, WTG\_81, and WTG\_82 (the Lessee may choose order).

5.5.9. Spare WTG Locations (Planning) (Construction). If the Lessee determines that any of the spare WTG positions (as defined in Chapter 2 of the Revolution Wind FEIS in the description of Alternative G) are necessary to be constructed, the Lessee must prioritize the use of spare locations that would have the least impacts on complex habitats and areas of cod spawning to the extent it is technically and/or economically practical or feasible for the Lessee. Namely, the Lessee must avoid

the use of spare WTG positions from the Project layout in the following order of priority:

- a) WTG positions WTG\_47, WTG\_48, and WTG\_56
- b) WTG positions WTG\_53, WTG\_62, WTG\_63, and WTG\_73;
- c) WTG position WTG\_64;
- d) WTGs positions within complex habitats and impacts cannot be minimized through micrositing; and,
- e) Locations where impacts to complex habitats from inter array cable connecting the turbines would be reduced.

5.5.10. Avoid Zinc Anodes (Construction) (Operations). The Lessee must avoid using Zinc sacrificial anodes in WTG foundations to reduce the release of metal contaminants in the water column.

5.5.11. Use of Jack-up Barges (Construction) (Operations) (Decommissioning). Jack-up barge locations must avoid complex habitats and the Lessee must minimize deployment in complex habitats. Where full avoidance is not feasible, the Lessee must avoid locations for the jack-up barge in order of the following priority:

- a) Complex habitats (i.e., areas of medium to high backscatter) with high density large boulders.
- b) Complex habitats (i.e., areas of medium to high backscatter) with medium density large boulders.
- c) Complex habitats (i.e., areas of medium to high backscatter) with low density large boulders.
- d) Complex habitats (i.e., areas of medium to high backscatter) with scattered large boulders.
- e) Complex habitats (i.e., areas of medium to high backscatter) with no large boulders.

5.6. Post-Seabed Disturbance Conditions (Construction) (Operations) (Decommissioning).

5.6.1. Micrositing Report (Construction). The Lessee must provide BOEM, BSEE, and NMFS HESD with a post-installation Micrositing Report. The report must include a summary of the micrositing activities for WTGs, inter-array cables, and the export cable and demonstrate (i.e., figures of as-built locations overlaid on multibeam echosounder backscatter survey data) how impacts to complex habitats and benthic features were avoided and/or minimized within the lease area and export cable corridors (i.e., RWEC-OCS and RWEC-RI). The report must also identify and

depict (i.e., figures) areas in which WTGs or cables could not be microsited to avoid complex habitats with a description of the complex habitat sub-types impacted (see prioritized list of complex habitat sub-types listed under the Micrositing Plan Section 5.5.3) and include documentation of technical feasibility issues encountered. The report must be submitted within 60 days of completion of all WTG and cable installations. The Lessee must also provide BOEM, BSEE, and NMFS HESD a shapefile of as-built WTGs, inter-array cables, and the export cables, as well as best-available multibeam echosounder backscatter survey data (i.e., as a raster file for use in ArcGIS).

- 5.6.2. Berm Survey and Report (Construction) (Operations). Where plows, jets, grapnel runs, or other similar methods are used, post-construction surveys capable of detecting bathymetry changes of 1 foot or less must be completed to determine the height and width of any created berms. The Lessee must capture bathymetry changes greater than 3 feet during the Year 1 and Year 2 multi-beam echosounder (MBES) bathymetry surveys along the cable routes. If there are bathymetric changes in berm height greater than 3 feet above grade after the Year 2 survey, the Lessee must develop and implement a Berm Remediation Plan to restore created berms to match adjacent natural bathymetric contours (isobaths). The Lessee must submit the Berm Remediation Plan to BOEM and BSEE to coordinate with NMFS for a 60-day review within 90 days of completion of the Year 1 MBES bathymetry survey. BOEM and BSEE will also review the plan to determine if the scope of activities (e.g., methods, disturbance area, vessel trips, emissions) is within the already completed National Environmental Policy Act analysis and ESA and Essential Fish Habitat consultations and, if not, will complete additional environmental review and consultations. The Lessee must resolve all comments on the Berm Remediation Plan to BOEM's and BSEE's satisfaction prior to initiating restoration activities.
- 5.6.3. Boulder Relocation (Construction). The Lessee must implement methods identified in the approved COP and described in the Boulder Identification and Relocation Plan (Section 5.5.6) for boulder relocation activities. The Lessee must consider the spatial extent of boulder relocation in the micrositing of WTGs and OSS foundations and inter-array and export cables for this Project and must relocate boulders as close as practicable in areas immediately adjacent to existing similar habitat. The relocation of boulders must be consistent with the Project easement.
- 5.6.4. Boulder Relocation Report (Construction). The Lessee must provide to BSEE and make available to the approved CVA a Boulder Relocation Report. The report must include a post-relocation summary of the Boulder Relocation activities and information to certify boulder risks related to the installation and operation of the facility have been properly mitigated. The report must also identify boulders that could not be relocated with documentation of technical feasibility concerns, including information on how, if at all, the final boulder placement differs from the Boulder Relocation Plan and why such changes were necessary. The report must be submitted within 60 days of completion of the boulder relocation activities. The Lessee must also provide BOEM and BSEE a comprehensive list and shapefile of



boulder locations to which boulders were relocated (latitude, longitude), boulder dimensions (m), any safety distances or zones to limit boulder relocation near third-party assets (m), and areas of active (within last 5 years) bottom trawl fishing (i.e., as a raster file for use in ArcGIS).

5.6.5. Jack-up Barge Post-Completion Report (Construction) (Operations) (Decommissioning). The Lessee must provide a Jack-up Barge Post-Completion Report to BOEM, BSEE, and HESD within 90 days of construction, repair, or decommissioning of a major facility component (e.g., export cable installation; WTG or OSS installation; inter array cable installation) to demonstrate that seabed-disturbing activities complied with avoidance requirements in Section 5.5.11. The report must include “as-placed” plats depicting the locations in which jack-up barge legs contacted the seabed. The report must include a summary of how impacts to complex habitats were avoided and/or minimized, as required by Section 5.5.11 and include documentation of technical feasibility issues encountered. The plats must be at a scale of 1 inch = 1,000 feet (300 m) with DGPS accuracy.

5.7. Endangered and Threatened Species Conditions for Fishery Monitoring (Planning) (Construction) (Operations).

5.7.1. The Lessee must submit all required documents related to endangered and threatened species conditions for fishery monitoring in Sections 5.7.2 through 5.7.7 (e.g., marine debris, visual and PSOs, incidental take, and annual reporting) to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), BSEE via TIMSWeb with a notification email sent to [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov) or [marinedebris@bsee.gov](mailto:marinedebris@bsee.gov) (if related to marine debris/lost gear), and NMFS GARFO Protected Resources Division at [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov).

5.7.2. The Lessee must ensure that any lost survey gear is reported and recovered according to the Marine Debris Awareness and Elimination conditions in Section 5.1.2. All lost gear must also be reported to NMFS GARFO and BSEE within 24 hours (or as required in the MMPA Incidental Take Regulations (ITR)) of the documented time when gear is discovered to be missing or lost. This report must include information on any markings on the gear and any efforts undertaken or planned to recover the gear.

a) Marine mammal monitoring must occur prior to, during, and after haul-back of gear used for fisheries monitoring surveys. If a marine mammal is determined to be at risk of interaction with the deployed gear, all gear must be immediately removed.

b) If marine mammals are sighted in the area within 15 minutes before deploying gear and are considered to be at risk of interaction with the research gear, then the sampling station must be either moved or canceled, or the activity must be suspended, until there are no marine mammal sightings within 1 nautical mile (1,852 m) of sampling location for 15 minutes. If this occurs, this information must be included in PSO reporting, as applicable.

- c) The Lessee must ensure all vessels deploying fixed gear (e.g., ventless traps) have adequate disentanglement equipment (i.e., knife and boathook) onboard. Any disentanglement must occur consistent with the Northeast Atlantic Coast Sea Turtle Disentanglement Network Guidelines and the procedures described in “Careful Release Protocols for Sea Turtle Release with Minimal Injury.”<sup>16</sup>

5.7.3. Conditions for Trawl Surveys (Planning) (Construction) (Operations).

- a) The Lessee must ensure all vessels have at least one survey team member onboard each trawl survey who has completed Northeast Fisheries Observer Program (NEFOP) observer training, or equivalent training (i.e., another training in protected species identification and safe handling, inclusive of taking genetic samples from Atlantic sturgeon), within the last 5 years. Reference materials for identification, disentanglement, safe handling, and genetic sampling procedures must be available on board each survey vessel. This requirement applies to any trips where gear is set or hauled. The Lessee must provide documentation of training to NMFS and BSEE at least 7 days prior to the start of the trawl surveys and at any later time that a different observer is deployed on the survey. If the Lessee will deploy non-NEFOP trained observers, the Lessee must submit a training plan to BSEE and NMFS GARFO describing the training that will be provided to the survey observers. The Lessee must submit the PSO Training Plan for Trawl Surveys no later than 7 days prior to the start of trawl surveys. This plan must include a description of the elements of the training (i.e., curriculum, virtual or hands on, etc.) and identify who will carry out the training and their qualifications. Once the training is complete, confirmation of the training and a list of trained survey staff must be submitted to NMFS; this list must be updated if additional staff are trained for future surveys. The Lessee must inform BOEM and BSEE of any response it receives from NMFS GARFO on this plan before starting any trawl surveys, unless BOEM or BSEE informs the Lessee that it has received NMFS GARFO’s response. The Lessee must submit a list of trained survey staff to NMFS GARFO at least one business day prior to the beginning of the survey.
- i) The Lessee must ensure that any sea turtles or Atlantic sturgeon incidentally caught and/or collected in any fisheries survey gear are identified by species or species group and reported to BOEM, BSEE, and NMFS GARFO. Each individually ESA-listed species incidentally caught and/or collected must then be properly documented using appropriate equipment and the NMFS take report form.<sup>17</sup> Biological data, samples, and tagging must occur as outlined below. The Lessee must follow the Sturgeon and Sea Turtle Take Standard Operating Procedures.<sup>18</sup>

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<sup>16</sup> <https://www.fisheries.noaa.gov/resource/document/careful-release-protocols-sea-turtle-release-minimal-injury>

<sup>17</sup> <https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null>

<sup>18</sup> <https://media.fisheries.noaa.gov/2021-11/Sturgeon-Sea-Turtle-Take-SOPs-external-11032021.pdf>

- ii) The Lessee must equip survey vessels with a passive integrated transponder (PIT) tag reader onboard capable of reading 134.2 kHz and 125 kHz encrypted tags (e.g., Biomark GPR Plus Handheld PIT Tag Reader), and this reader must be used to scan any captured sea turtles and sturgeon for tags. Any recorded tags must be recorded on the NMFS take report form and reported to BOEM, BSEE, and NMFS GARFO.
  - iii) The Lessee must take genetic samples from all captured Atlantic sturgeon (alive or dead) to allow for identification of the distinct population segment (DPS) of origin of captured individuals and the tracking of the amount of incidental take. This sample collection must be done consistent with the Procedures for Obtaining Sturgeon Fin Clips.<sup>19</sup>
  - iv) The Lessee must send fin clips to a NMFS GARFO-approved laboratory capable of performing genetic analysis and assignment to DPS of origin. The Lessee must submit the results of genetic analysis, including assigned DPS of origin, to BOEM, BSEE, and NMFS GARFO within 6 months of the sample collection.
  - v) The Lessee must hold and submit subsamples of all fin clips and accompanying metadata form to the Atlantic Coast Sturgeon Tissue Research Repository on a quarterly basis using the Sturgeon Genetic Sample Submission Form.<sup>20</sup>
- b) The Lessee must ensure any live, uninjured animals are returned to the water as quickly as possible after completing the required handling and documentation. Live and responsive sea turtles or Atlantic sturgeon incidentally caught and retrieved in gear used in any fisheries survey must be released according to established protocols and whenever at-sea conditions are safe for those releasing the animal(s). Any unresponsive sea turtles or Atlantic sturgeon caught and retrieved in gear used in fisheries surveys must be handled and resuscitated whenever at-sea conditions are safe for those handling and resuscitating the animal(s).
- i) To the extent allowed by sea conditions, the Lessee must give priority to the handling and resuscitation of any sea turtles or sturgeon that are captured in the gear being used. Handling times for these species must be minimized (i.e., kept to 15 minutes or less) to limit the amount of stress placed on the animals.
  - ii) All survey vessels must be equipped with copies of the sea turtle handling and resuscitation requirements found at 50 C.F.R. § 223.206(d)(1) prior to

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<sup>19</sup> [https://media.fisheries.noaa.gov/dam-migration/sturgeon\\_genetics\\_sampling\\_revised\\_june\\_2019.pdf](https://media.fisheries.noaa.gov/dam-migration/sturgeon_genetics_sampling_revised_june_2019.pdf)

<sup>20</sup> <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic>

the commencement of any on-water activity.<sup>21</sup> These handling and resuscitation procedures (the latter, when necessary) must be executed any time a sea turtle is incidentally captured and brought onboard a survey vessel.

- iii) For sea turtles that appear injured, sick, distressed, or dead (including stranded or entangled individuals), survey staff must immediately contact the Greater Atlantic Region Marine Animal Hotline at 866-755-6622 for further instructions and guidance on handling, retention, and/or disposal of the animal. If survey staff are unable to contact the hotline (e.g., due to distance from shore or lack of ability to communicate via phone), then survey staff must contact the USCG via very high frequency (VHF) marine radio on Channel 16. If required, hard-shelled sea turtles (i.e., non-leatherbacks) may be held on board for up to 24 hours, provided conditions during holding are authorized by the NMFS GARFO Protected Resources Division and safe handling practices are followed. If the hotline or an available veterinarian cannot be contacted and the injured animal cannot be taken to a rehabilitation center, activities that could further stress the animal must be stopped. When sea-to-shore contact with the hotline or an available veterinarian is not possible, the animal must be allowed to recover and be responsive before safely releasing it to the sea.
- iv) The Lessee must make attempts to resuscitate any Atlantic sturgeon that are unresponsive or comatose by providing a running source of water over the gills as described in the Sturgeon Resuscitation Guidelines.<sup>22</sup>
- v) Carcasses of incidentally caught sea turtles and sturgeon must be held in cold storage (frozen is preferred, although refrigerated is permitted if a freezer is not available) until retention or disposal procedures are authorized by the NMFS GARFO Protected Resources Division, which may include transfer to an appropriately permitted partner or facility on shore. Following reporting of an incidental capture, NMFS may authorize that incidentally captured dead sea turtles or Atlantic sturgeon be retained on board the survey vessel, provided that appropriate cold storage facilities are available on the survey vessel.
- c) The captain and/or a member of the scientific crew must conduct marine mammal monitoring before, during, and after haul back.
- d) The Lessee must commence trawl operations as soon as possible once the vessel arrives on station; the target tow time must be limited to 20 minutes.
- e) The Lessee must initiate marine mammal watches (visual observation) within 1 nautical mile (1,852 m) of the site 15 minutes prior to sampling.

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<sup>21</sup> [https://media.fisheries.noaa.gov/dam-migration/sea\\_turtle\\_handling\\_and\\_resuscitation\\_measures.pdf](https://media.fisheries.noaa.gov/dam-migration/sea_turtle_handling_and_resuscitation_measures.pdf)

<sup>22</sup> <https://media.fisheries.noaa.gov/dam-migration-miss/Resuscitation-Cards-120513.pdf>

- f) If a marine mammal is sighted within 1 nautical mile (1,852 m) of the planned sampling station in the 15 minutes before gear deployment, the Lessee must delay setting the trawl until marine mammals have not been sighted for 15 minutes, or the Lessee may move the vessel away from the marine mammal to a different section of the sampling area. If, after moving on, marine mammals are still visible from the vessel, the Lessee may decide to move again or to skip the sampling station.
- g) The Lessee must maintain visual monitoring effort during the entire period of time that trawl gear is in the water (i.e., throughout gear deployment, fishing, and retrieval). If marine mammals are sighted before the gear is fully removed from the water, (i.e., prior to haul back) the vessel must slow its speed and steer away from the sighted animal in order to minimize potential interactions.
- h) The Lessee must open the codend of the net close to the deck/sorting area to avoid damage to animals that may be caught in gear.
- i) The Lessee must empty gear as close as possible to the deck/sorting area and as quickly as possible after retrieval.
- j) The Lessee must fully clean and repair trawl nets (if damaged) before setting again.
- k) In the case of a marine mammal interaction, the Lessee must contact the Marine Mammal Stranding Network immediately.

5.7.4. Notification Report. The Lessee must notify BOEM, BSEE, and NMFS GARFO via email within 24 hours of any interaction with a sea turtle or sturgeon and include the NMFS take reporting form.<sup>23</sup> The report must include, at a minimum, the following: (1) survey name and applicable information (e.g., vessel name, station number); (2) GPS coordinates describing the location of the interaction (in decimal degrees); (3) gear type involved (e.g., bottom trawl, gillnet, longline); (4) soak time, gear configuration and any other pertinent gear information; (5) time and date of the interaction; (6) identification of the animal to the species level (if possible); and (7) a photograph or video of the animal (multiple photographs are suggested, including at least one photograph of the head scutes). If reporting within 24 hours is not possible (e.g., due to distance from shore or lack of ability to communicate via phone, fax, or email), the Lessee must submit reports as soon as possible and must submit late reports with an explanation for the delay.

5.7.5. Annual Report. The Lessee must submit an annual report within 90 days of the completion of each survey season to BOEM, BSEE, and NMFS GARFO. The report must include all information on any observations of and interactions with ESA-listed species and contain information on all survey activities that took place during the season, including location of gear set, duration of soak/trawl, and total

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<sup>23</sup> <https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null>

effort. The report on survey activities must be comprehensive of all activities, regardless of whether ESA-listed species were observed.

- 5.8. Protected Species Training and Coordination (Construction) (Operations) (Decommissioning). Before beginning any in-water activities involving vessel use, pile driving, UXO/MEC detonation, and HRG surveys, and when new personnel join the work, the Lessee must conduct briefings for construction supervisors and crews, PSO and PAM teams, vessel operators, and all staff in order to explain responsibilities, communication procedures, and protected species mitigation, monitoring, and reporting requirements. This must occur prior to the start of all pile driving, UXO/MEC detonation, HRG survey activity, and fisheries resources surveys.
- 5.8.1. The Lessee must submit all required documents and reports related to protected species training and coordination conditions in Sections 5.8.2. and 5.8.3 to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), BSEE via TIMSWeb with a notification email sent to [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov), NMFS's OPR at [pr.itp.monitoringreports@noaa.gov](mailto:pr.itp.monitoringreports@noaa.gov), and NMFS GARFO Protected Resources Division at [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov).
- 5.8.2. Vessel Crew and Protected Species Observer Training Requirements (Construction) (Operations) (Decommissioning). The Lessee must provide Project-specific training to all vessel crew members, PSOs, and Trained Lookouts on the identification of sea turtles and marine mammals, vessel strike avoidance and reporting protocols, how and when to communicate with the vessel operator, the authority of the PSOs, and the associated regulations for avoiding vessel collisions with protected species prior to the start of in-water construction or detonation activities. The Lessee must make available aboard all Project vessels reference materials for identifying sea turtles and marine mammals, copies of the Marine Mammal and Sea Turtle Monitoring Plan (see Section 5.4.8) and Vessel Strike Avoidance Plan (see Section 5.4.7). Confirmation of the training and understanding of the requirements must be documented on a training course log sheet, and the Lessee must provide the log sheets to BOEM and BSEE upon request. The Lessee must communicate to all crew members its expectation for them to report sightings of sea turtles and marine mammals to the designated vessel contacts. The Lessee must communicate to all crew members its expectation that the crew report sightings of sea turtles and marine mammals (including live, entangled, and dead individuals) to the designated vessel contact and all crew members. The Lessee must post the reporting instructions, including communication channels, in highly visible locations aboard all Project vessels.
- 5.8.3. PSO Requirements (Construction) (Operations) (Decommissioning). The Lessee must use independent, dedicated, qualified PSOs provided by a third-party. The PSOs sole Project-related duty must be to observe, collect and report data, and communicate with and instruct relevant vessel crew regarding the presence of protected species and mitigation requirements (including brief alerts regarding maritime hazards). PSOs or any PAM operators serving as PSOs must have completed a commercial PSO training program for the Atlantic with an overall

examination score of 80 percent or greater. The Lessee must use NMFS-approved PSOs and PAM operators. The Lessee must provide training certificates for individual PSOs to BOEM or BSEE upon request. PSOs and PAM operators must be approved by NMFS before the start of construction activities. Application requirements to become a NMFS-approved PSO for construction activities can be found on the NOAA website or for geological and geophysical surveys by sending an inquiry to [nmfs.psoreview@noaa.gov](mailto:nmfs.psoreview@noaa.gov). PSOs and PAM operators must be on watch for no more than a maximum of 4 consecutive hours, followed by a break of at least 2 hours between watches.

5.9. Vessel Strike Avoidance Conditions (Planning) (Construction) (Operations) (Decommissioning).

5.9.1. The Lessee must submit any required documents related to vessel strike avoidance as a result of the July 21, 2023 BiOp to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), BSEE via TIMSWeb with a notification email sent to [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov), and NMFS GARFO Protected Resources Division at [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov).

5.9.2. Protected Species Observer Requirements (Construction) (Operations) (Decommissioning). The Lessee must ensure that vessel operators and crew members maintain a vigilant watch for marine mammals and sea turtles, and reduce vessel speed, alter the vessel's course, or stop the vessel as necessary to avoid striking marine mammals or sea turtles.

- a) All vessels must have a visual observer on board who is responsible for monitoring the vessel strike avoidance zone for marine mammals and sea turtles. Visual observers may be PSO or crew members, but crew members responsible for these duties must be provided sufficient training by the Lessee to distinguish marine mammals and sea turtles from other phenomena and must be able to identify a marine mammal as a NARW, other whale (defined in this context as sperm whales or baleen whales other than NARW), or other marine mammal, as well as identify sea turtles. Crew members serving as visual observers must not have other duties while observing for marine mammals while the vessel is operating over 10 knots.

5.9.3. Vessel Communication of Threatened and Endangered Species Sightings (Planning) (Construction) (Operations) (Decommissioning). The Lessee must ensure that whenever multiple Project vessels are operating, any detections of ESA-listed species (marine mammals and sea turtles) are communicated in near real time to these personnel on the other Project vessels (PSOs, vessel operators, or both).

- a) Year-round, all vessel operators must monitor the Project's Situational Awareness System, WhaleAlert, USCG VHF Channel 16, and the Right Whale Sighting Advisory System for the presence of NARWs once every 4-hour shift during Project-related activities. The PSO and PAM operator monitoring teams for all activities must also monitor these systems no less frequently than every

12 hours. If a vessel operator is alerted to a NARW detection within the Project area, the operator must immediately convey this information to the PSO and PAM teams. For any UXO/MEC detonation, vessel operators must monitor these systems for 24 hours prior to detonating any UXO/MEC.

- b) Any observations of any large whale by any of the Lessee's staff or contractor, including vessel crew, must be communicated immediately to PSOs and all vessel operators to increase situational awareness.

5.9.4. Vessel Strike Avoidance of Sea Turtles (Construction) (Operations) (Decommissioning).

- a) On vessels operating north of the Virginia/North Carolina border between June 1 and November 30, the Lessee must post a trained lookout on all vessel transits during all phases of the Project to observe for sea turtles. The trained lookout must communicate any sightings, in real time, to the vessel operator so that the requirements below can be implemented.
- b) On vessels operating south of the Virginia/North Carolina border, the Lessee must post a trained lookout on all vessel transits during all phases of the Project to observe for sea turtles. The trained lookout must communicate any sightings, in real time, to the vessel operator so that the requirements below can be implemented.
- c) If a vessel is carrying a PSO or trained lookout for the purposes of maintaining watch for NARWs, an additional lookout is not required and this PSO or trained lookout must also maintain watch for sea turtles.
- d) The trained lookout must monitor <https://seaturtlesightings.org/> prior to each trip and report any observations of sea turtles in the vicinity of the planned trip to all vessel operators and lookouts on duty that day.
- e) The trained lookout must maintain a vigilant watch and monitor a Vessel Strike Avoidance Zone (500 m) at all times to maintain minimum separation distances from ESA-listed species. Alternative monitoring technology (e.g., night vision, thermal cameras, etc.) must be available to ensure effective watch at night and in any other low visibility conditions. If the trained lookout is a vessel crew member, monitoring must be their designated role and primary responsibility while the vessel is transiting. Any designated crew lookouts must receive training on protected species identification, vessel strike minimization procedures, how and when to communicate with the vessel operator, and reporting requirements.
- f) If a sea turtle is sighted within 100 m or less of the operating vessel's forward path, the vessel operator must slow down to 4 knots (unless it is operationally unsafe) and then proceed away from the turtle at a speed of 4 knots or less until there is a separation distance of at least 100 m, at which time the vessel may resume normal operations. If a sea turtle is sighted within 50 m of the forward



path of the operating vessel, the vessel operator must shift to neutral when operationally safe to do so and then proceed away from the turtle at a speed of 4 knots when the sea turtle is no longer in the forward path of the vessel. The vessel may resume normal operations after it has passed 100 m from the turtle.

- g) Vessel operators must avoid transiting through areas of visible jellyfish aggregations or floating sargassum lines or mats. If operational safety prevents avoidance of such areas, vessels must slow to 4 knots while transiting through such areas.
- h) All vessel crew members must be briefed on the identification of sea turtles and on regulations and best practices for avoiding vessel collisions. Reference materials must be available aboard all Project vessels for identification of sea turtles. The requirement and process for reporting of sea turtles (including live, entangled, and dead individuals) must be clearly communicated and posted in highly visible locations aboard all Project vessels, so that there is a clear requirement for reporting to the designated vessel contact (such as the lookout or the vessel operator), as well as a communication channel and process for crew members to do so.
- i) The only exception to the requirements regarding vessel speed and avoiding jellyfish, sargassum, and/or sea turtles is when the safety of the vessel or crew during an emergency necessitates deviation from these requirements. If any such incidents occur, they must be reported to BSEE and NMFS GARFO within 24 hours.
- j) Vessel transits to and from the Project area that require PSOs must maintain a speed commensurate with weather conditions and effectively detecting sea turtles prior to reaching the 100-m separation distance mentioned above, at which point the vessel must reduce speed and avoid sea turtles.

5.10. WTG and OSS Foundation Installation Conditions (Construction) (Operations). Monopiles must be no larger than 15 m in diameter. For all monopiles, the minimum amount of hammer energy necessary to effectively and safely install and maintain the integrity of the piles must be used. Hammer energies must not exceed 4,000 kilojoules.

5.10.1. The Lessee must submit all required documents related to WTG and OSS foundation installation conditions in Sections 5.10.2 through 5.10.5 to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), BSEE via TIMSWeb with a notification email sent to [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov), and NMFS GARFO Protected Resources Division at [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov).

5.10.2. Seasonal and Daily Restrictions (Construction). No foundation impact pile driving activities are allowed to occur January 1 through April 30 or until BOEM has notified the Lessee that all necessary ESA Section 7 consultations addressing foundation impact pile driving have concluded. No more than three foundation monopiles are allowed to be installed per day. The Lessee must not conduct pile

driving operations at any time when lighting or weather conditions (e.g., darkness, rain, fog, sea state) prevent visual monitoring of the full extent of the clearance and shutdown zones. The lead PSO must determine when sufficient light exists to allow effective visual monitoring in all cardinal directions. If light is insufficient, the lead PSO must call for a delay until the visual clearance zone is visible in all directions or must implement the Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan (as required by the terms of the July 21, 2023 BiOp; see Section 5.4.8(a)). The Lessee is not allowed to conduct night-time pile driving (i.e., initiation of pile driving more than 1 hour prior to civil sunrise or 1.5 hours before civil sunset), unless the Lessee has received concurrence from BOEM and BSEE on the Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan (see Section 5.5.1).

- 5.10.3. Noise Abatement Systems (Construction). The Lessee must employ noise abatement systems, also known as NMS, during all impact pile driving, consistent with the Protected Species Mitigation and Monitoring Plan in Appendix Z of the COP, to reduce the sound pressure levels that are transmitted through the water in an effort to reduce ranges to acoustic thresholds and minimize any acoustic impacts resulting from pile driving. The Lessee must employ a double big bubble curtain or a combination of two or more noise mitigation systems during these activities; the method used must be capable of achieving, at a minimum, 10 dB of modeled sound attenuation during all impact pile driving of foundation piles. The Lessee must also adjust operational protocols to minimize noise levels.
- a) The bubble curtain(s) must distribute air bubbles using an airflow rate of at least  $0.5 \text{ m}^3/(\text{minutes} \cdot \text{m})$ . The bubble curtain(s) must surround 100 percent of the piling perimeter throughout the full depth of the water column. In the unforeseen event of a single compressor malfunction, the offshore personnel operating the bubble curtain(s) must make appropriate adjustments to the air supply and operating pressure such that the maximum possible sound attenuation performance of the bubble curtain(s) is achieved.
  - b) The lowest bubble ring must be in contact with the seabed for the full circumference of the ring, and the weights attached to the bottom ring must ensure 100 percent seabed contact.
  - c) No parts of the ring or other objects may prevent full seabed contact.
  - d) The Lessee must use qualified and experienced staff to train personnel in the proper balancing of airflow to the ring. The Lessee must ensure that construction contractors submit inspection/test (pre-installation) and performance (during installation) reports. The inspection/test must occur prior to each pile and reported as described below. Corrections to the bubble ring(s) to meet the performance standards must occur prior to impact pile driving of monopiles and additional testing must be conducted to ensure corrections have met performance standards prior to impact pile driving commencing. Bubble curtain performance must be monitored throughout each pile installation and

reported as described below. If the Lessee uses a noise mitigation device in addition to the big bubble curtain, the Lessee must maintain similar quality control measures as described here. The Lessee must submit inspection and performance reports for piles for which SFV interim reports are required within 48 hours following the performance test to NMFS GARFO, NMFS OPR, BOEM, and BSEE. Reports must include BBC hose length, bubble ring deployment plots, number of compressors in-use, wind speed, current speed and direction, water depth, wave height, date and time hose(s) deployed, compressor flow meter readings at 30-minute intervals for the duration of the test or pile installation, and photographs of flow meters at 30-minute interval readings.

- e) The Lessee must submit performance reports for all piles. Reports must include BBC hose length, bubble ring deployment plots, number of compressors in-use, wind speed, current speed and direction, water depth, wave height, date and time hose(s) deployed, compressor flow meter readings at 30-minute intervals for the duration of the test or pile installation, and photographs of flow meters at 30-minute interval readings. Reports must be submitted following the same submission schedule and recipient list as the weekly reports specified in Section 5.14.5.

5.10.4. Use of PSOs and PAM Operators for Pile Driving (Construction). The Lessee must use NMFS-approved PSOs and PAM operators to monitor the identified clearance and shutdown zones before, during, and after all foundation installation activities. At minimum, four visual PSOs must be actively observing for marine mammals and sea turtles before, during, and after pile driving. At least two visual PSOs must be stationed on the pile driving vessel and at least two visual PSOs must be stationed on a secondary, PSO-dedicated vessel. The dedicated PSO vessel must be positioned at the outer edge of the large whale clearance zone. For WTG foundations, this distance is 2.3 km in the summer and 4.4 km in the winter. For OSS foundations, this distance is 1.6 km in the summer and 2.7 km in the winter. The lessee must adjust this distance as required based upon SFV results. At least one active PSO on each platform must have a minimum of 90 days at-sea experience working in those roles in offshore environments, with no more than 18 months elapsed since the conclusion of the at-sea experience. These PSOs must maintain watch at all times when impact pile driving of monopiles is underway. Concurrently, at least one PAM operator must actively monitor for vocalizing marine mammals before, during, and after pile driving. Furthermore, all crew and personnel working on the Project are required to maintain situational awareness of marine mammal presence (discussed further above) and are required to report any sightings to the PSOs.

- a) The Lessee must ensure that PSO coverage is sufficient to reliably detect marine mammals and sea turtles at the surface in the identified clearance and shutdown zones (Section 5.10.5) to execute any pile driving delays or shutdown requirements. If, at any point prior to or during construction, the PSO coverage is determined not to be sufficient to reliably detect ESA-listed marine mammals and sea turtles within the clearance and shutdown zones, additional PSOs and/or

platforms must be deployed. Determinations prior to construction must be based on review of the Marine Mammal and Sea Turtle Monitoring Plan for Pile Driving and UXO Detonations (Section 5.5). Determinations during construction must be based on review of the weekly reports and other information, as appropriate.

- b) The Lessee must ensure that, if the clearance and/or shutdown zones are expanded due to the verification of sound fields from Project activities, PSO coverage is sufficient to reliably monitor the expanded clearance and/or shutdown zones. Additional observers must be deployed on additional platforms for every 1,500 m that a clearance or shutdown zone is expanded beyond the initial clearance and shutdown zones (Table 5.10.5; Section 5.10.5). In the event that the clearance or shutdown zone for sea turtles needs to be expanded, the Lessee must submit a proposed monitoring plan for the expanded zones to BOEM and BSEE, who will coordinate with NMFS GARFO prior to granting approval.

5.10.5. Clearance and Shutdown Zones (Construction). The Lessee must use visual PSOs and PAM operators to monitor the area around each foundation pile before, during, and after pile driving. The clearance and shutdown zones for May to November are defined in the table below (numbers in parentheses are distances for December). The clearance procedures for WTG foundation pile driving cannot begin until the lead PSO has determined that there is minimum visibility of at least 2,300 m from May to November, and 4,400 m in December; for OSS foundations, the minimum visibility requirements are 1,600 m May to November and 2,700 m in December.

**Table 5.10.5. Clearance and Shutdown Zones for Pile Driving May to November**

Species	Clearance Zone (Meters)	Shutdown Zone (Meters)
North Atlantic right whale – visual PSO	Minimum Visibility Zone plus any additional distance observable by the visual PSOs	Minimum Visibility Zone plus any additional distance observable by the visual PSOs
North Atlantic right whale – PAM	WTG: 3,900 (4,300) OSS: 4,100 (4,700)	WTG: 3,900 (4,300) OSS: 4,100 (4,700)
Large whales	WTG: 2,300 (4,400) OSS: 1,600 (2,700)	WTG: 2,300 (4,400) OSS: 1,600 (2,700)
Seals	500 (900)	500 (900)
Sea Turtles	500	500

Notes: Numbers in parentheses for the month of December.

Minimum Visibility Zone for WTG foundations is 2,300 m from May to November, and 4,400 m in December; OSS foundations are 1,600 m from May to November, and 2,700 m in December.

- a) Clearance or Shutdown Zone Adjustment After Sound Field Verification. The Lessee must conduct SFV consistent with an approved SFV Plan (see Section 5.4.5). If any of the SFV measurements indicate that the distances to level A thresholds for ESA listed whales or PTS peak or cumulative thresholds for sea turtles are larger than the modeled distances (assuming 10-dB attenuation, per thresholds in the July 21, 2023 BiOp for the Project in Tables 7.1.8, 7.1.9, 7.1.23, 7.1.24, 7.1.31, 7.1.32), the clearance and shutdown zones (Table 5.10.5) for subsequent piles must be increased so that they are at least the size of the distances to those thresholds as indicated by SFV (e.g., if threshold distances are exceeded on pile 1 then the clearance and shutdown zones for pile 2 must be expanded). For every 1,500 m that a marine mammal clearance or shutdown zone is expanded, additional PSOs must be deployed from additional platforms to ensure adequate and complete monitoring of the expanded shutdown and/or clearance zone; the Lessee must submit a proposed monitoring plan describing the location of all PSOs for review by NMFS GARFO. In the event that the clearance or shutdown zone for sea turtles needs to be expanded, the Lessee must submit a proposed monitoring plan for the expanded zones to NMFS GARFO for review. BOEM and BSEE, after consultation with NMFS OPR and NMFS GARFO, may approve the Lessee’s request for reductions in the shutdown zones based upon SFV of a minimum of three piles; however, the shutdown zone must not be reduced to less than 1,000 m for large whales, or 500 m for sea turtles. No reductions in the clearance or shutdown zones for NARWs will be considered regardless of the results of SFV.
- b) If any SFV interim report submitted for any of the first 3 monopiles, as required in Section 5.14.4, indicate the sound fields exceed the modeled distances to protected species injury and behavioral harassment thresholds (assuming 10-dB attenuation), then the Lessee must implement both the required additional sound

attenuation measures and adjustments to clearance and shutdown zones as described in Sections 5.10.3 and in 5.10.5, respectively.

- c) Pile Driving Clearance Zones for Marine Mammals and Sea Turtles. The Lessee must establish and implement clearance (all distances to the perimeter are the radii from the center of the pile being driven) as described above for all WTG and OSS foundation installation. The Lessee must use visual PSOs and PAM operators to monitor the area around each foundation pile before, during, and after pile driving. PSOs must visually monitor clearance zones for marine mammals and sea turtles for a minimum of 60 minutes prior to commencing pile driving. Acoustic PSOs (at least one PAM operator) must review data from at least 24 hours prior to pile driving and actively monitor hydrophones for 60 minutes prior to pile driving. Prior to initiating soft-start procedures, the entire minimum visibility zone must be visible (i.e., not obscured by dark, rain, fog, etc.), and all clearance zones must be confirmed to be free of marine mammals and sea turtles for 30 minutes immediately prior to starting a soft-start of pile driving. If a marine mammal or sea turtle is observed entering or within the relevant clearance zone prior to the initiation of impact pile driving activities, pile driving must be delayed and must not begin until either the marine mammal(s) or sea turtle(s) has voluntarily left the specific clearance zones and has been visually or acoustically confirmed beyond that clearance zone, or, when specific time periods have elapsed with no further sightings or acoustic detections have occurred (i.e., 15 minutes for small odontocetes and 30 minutes for all other marine mammal species and sea turtles). The clearance zone may be declared clear only if no confirmed NARW acoustic or visual detections have occurred during the 60-minute monitoring period. Any large whale sighting by a PSO or detected by a PAM operator that cannot be identified as a non-NARW must be treated as if it were a NARW.
- d) Pile Driving Shutdown for Marine Mammals and Sea Turtles. If a marine mammal or sea turtle is observed entering or within the respective shutdown zone (as defined above) and impact pile driving has begun, the PSO must call for a temporary cessation of impact pile driving. The Lessee must immediately cease pile driving upon orders of the PSO unless shutdown is not practicable due to imminent risk of injury or loss of life to an individual, pile refusal, or pile instability. In this situation, reduced hammer energy must be implemented instead, as determined to be practicable.
- e) Pile Driving Restart Procedures for Marine Mammal or Sea Turtle Detections. Pile driving must not restart until either the marine mammal(s) or sea turtle(s) has voluntarily left the specific clearance zones and has been visually or acoustically confirmed beyond that clearance zone, or, when specific time periods have elapsed during which no further sightings or acoustic detections have occurred. The specific time periods are 15 minutes for small odontocetes and 30 minutes for all other marine mammal species and sea turtles. In cases where these criteria are not met, pile driving may restart only if necessary to maintain pile stability at which time the lowest hammer energy must be used to

maintain stability. If impact pile driving has been shut down due to the presence of a NARW, pile driving may not restart until the NARW is no longer observed or 30 minutes has elapsed since the last detection. Upon re-starting pile driving, soft start protocols must be followed.

- f) Soft Start for Pile Driving (Construction). The Lessee must use a soft start protocol for impact pile driving of monopiles by performing 4–6 strikes per minute at 10 to 20 percent of the maximum hammer energy, for a minimum of 20 minutes. Soft start must be used at the beginning of each day's monopile installation, and at any time following a cessation of impact pile driving of 30 minutes or longer. If a marine mammal or sea turtle is detected within or about to enter the applicable clearance zones, prior to the beginning of soft-start procedures, impact pile driving must be delayed until the animal has been visually observed exiting the clearance zone or until a specific time period has elapsed with no further sightings (i.e., 15 minutes for small odontocetes and 30 minutes for all other marine mammal species and sea turtles).

5.11. HRG Survey Conditions for Marine Mammals and Sea Turtles (Planning) (Construction) (Operations through October 4, 2028<sup>24</sup>).

5.11.1. The Lessee must submit all required documents related to HRG survey conditions in Sections 5.11.2 through 5.11.7 to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), to BSEE via TIMSWeb with a notification email sent to [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov), and to NMFS GARFO Protected Resources Division at [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov).

5.11.2. Use of PSOs. The Lessee must employ qualified NMFS-approved PSOs during HRG surveys related to the Project using sound sources operating at frequencies below 180 kHz. Between 4 and 6 PSOs must be present on every 24-hour survey vessel, and 2 to 3 PSOs must be present on every 12-hour survey vessel. At least 1 PSO must be on active duty during HRG surveys conducted during daylight, and at least 2 PSOs must be on activity duty during HRG surveys conducted at night. Any PSO must have the authority to call for a delay or shutdown of survey activities. PSOs must begin visually monitoring 30 minutes prior to the initiation of the specified acoustic source (i.e., ramp-up, if applicable) through 30 minutes after the use of the specified acoustic source has ceased. Any observations of marine mammals must be communicated to PSOs on all nearby survey vessels during concurrent HRG surveys. PSOs must establish and monitor the clearance and shutdown zones described below. These zones must be based on the radial distance from the acoustic source and not from the vessel.

5.11.3. HRG Clearance Procedures. The Lessee must implement a 30-minute clearance period of the clearance zones immediately prior to the commencing of the survey or

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<sup>24</sup> The measures in Section 5.11 are effective during the period of the rulemaking under the MMPA for this project. The scheduled duration of the final rule as published in the proposed rule is October 5, 2023 – October 4, 2028 (see Federal Register 87 FR 79072, December 12, 2022).

when there is more than a 30-minute break in survey activities and PSOs are not actively monitoring. The clearance and shutdown zones prescribed by the ITA must be followed for all marine mammals for all HRG surveys. The clearance zone for all sea turtles is 500 m. The clearance zones must be monitored by PSOs, using the appropriate visual technology. If a marine mammal or sea turtle is observed within a clearance zone during the clearance period, ramp-up must not begin until the animal(s) has been observed voluntarily exiting its respective clearance zone or until additional time has elapsed with no further sighting (i.e., 15 minutes for small odontocetes and seals, and 30 minutes for all other marine mammal species and sea turtles). In any case when the clearance process has begun in conditions with good visibility, including via the use of night vision equipment (infrared (IR)/thermal camera), and the Lead PSO has determined that the clearance zones are clear of marine mammals, survey operations may commence (i.e., no delay is required) for periods of inclement weather and/or loss of daylight.

- 5.11.4. HRG Shutdown Procedures. After the survey has commenced, the Lessee must shut down boomers, sparkers, and compressed high-intensity radiated pulses (CHIRPs) if a marine mammal or sea turtle enters a respective shutdown zone. In cases when the shutdown zones become obscured for brief periods due to inclement weather, survey operations may continue (i.e., no shutdown is required) so long as no marine mammals or sea turtles have been detected. The use of boomers, and sparkers, and CHIRPS must not commence or resume until the animal(s) has been confirmed to have left the Level B harassment zone or until a full 15 minutes (for small odontocetes and seals), or 30 minutes (for all other marine mammals and sea turtles) have elapsed with no further sighting. Any large whale sighted by a PSO within 1,000 m of the boomers, sparkers, and CHIRPs that cannot be identified as a non-NARW must be treated as if it were a NARW.

Shutdown zones are defined as a 500-meter zone for the NARW and a 100-meter zone for all other marine mammal species (with exception of specific delphinid species). The shutdown requirement is waived for small delphinids of the following genera: *Delphinus*, *Stenella*, *Lagenorhynchus*, and *Tursiops*. Specifically, if a delphinid from the specified genera is visually detected approaching the vessel (i.e., to bow-ride) or towed equipment, shutdown will not be required. If there is uncertainty regarding identification of a marine mammal species (i.e., whether the observed marine mammal(s) belongs to one of the delphinid genera for which shutdown is waived), the PSOs must use their best professional judgment in making the decision to call for a shutdown. Additionally, shutdown is required if a delphinid that belongs to a genus other than those specified is detected in the shutdown zone. During periods of low visibility (e.g., darkness, rain, fog), PSOs must use alternative technology (i.e., IR/thermal camera) to monitor the clearance and shutdown zones.

- 5.11.5. Ramp-Up Procedures. At the start or restart of the use of boomers, sparkers, and/or CHIRPs, a ramp-up procedure (i.e., gradual increase in source level output) must be followed unless the equipment operates on a binary on/off switch. Operators must ramp up sources to half power for 5 minutes and then proceed to full power. Prior to



starting a ramp-up procedure, the operator must notify a PSO of the planned start of the ramp-up. This notification time must not be less than 60 minutes prior to the planned ramp-up activities, as all relevant PSOs must use the appropriate 30-minute period to monitor prior to the initiation of ramp-up. Prior to starting ramp-up, visual clearance zones must be fully visible (e.g., not obscured by darkness, rain, fog, etc.), and the operator must receive confirmation from the PSO that the clearance zone is clear of any marine mammals and sea turtles. All ramp-ups must be scheduled to minimize the overall time spent with the source being activated. The ramp-up procedure must be used at the beginning of construction survey activities or after more than a 30-minute break in survey activities using the specified HRG equipment to provide additional protection to marine mammals and sea turtles in or near the survey area by allowing them to vacate the area prior to operation of survey equipment at full power.

- a) The Lessee must not initiate ramp-up until the clearance process has been completed (see Section 5.11.3). Ramp-up activities must be delayed if a marine mammal(s) enters its respective shutdown zone. Ramp-up may be reinitiated only if the animal(s) has been observed exiting its respective shutdown zone or until additional time has elapsed with no further sighting (i.e., 15 minutes for small odontocetes and seals, and 30 minutes for all other marine mammal species and sea turtles).
- b) HRG Restart Procedures (Construction). If a boomer, sparker, or CHIRP is shut down for reasons other than mitigation (e.g., mechanical difficulty) for less than 30 minutes, it may be activated again without ramp-up only if (1) PSOs have maintained constant observation, and (2) no additional detections of any marine mammal or sea turtles occurred within the respective shutdown zones. If a boomer, sparker, or CHIRP was shut down for a period longer than 30 minutes, then all clearance and ramp-up procedures must be initiated.

5.11.6. The Lessee must deactivate acoustic sources during periods when no data are being collected, except as determined to be necessary for testing. Any unnecessary use of the acoustic source(s) must be avoided.

5.11.7. During daylight hours when survey equipment is not operating, the Lessee must ensure that visual PSOs conduct, as rotation schedules allow, observations for comparison of sighting rates and behavior with and without use of the specified acoustic sources. Off-effort PSO monitoring must be reflected in the monthly PSO monitoring reports.

5.12. UXO Detonation Activity Conditions (Construction). The Lessee may detonate a maximum of 13 UXO/MECs of varying sizes. Upon encountering a UXO/MEC of concern, the Lessee may resort to high-order removal (i.e., detonation) only after all other means of removal of the UXO/MEC have been exhausted. The Lessee must not detonate a UXO/MEC if another means of removal is practicable.

- 5.12.1. The Lessee must submit all required documents related to UXO/MEC activity conditions in Sections 5.12.2 through 5.12.7 to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), BSEE via TIMSWeb with a notification email sent to [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov), and NMFS GARFO Protected Resources Division at, and NMFS GARFO Protected Resources Division at [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov).
- 5.12.2. Seasonal and Daily Restrictions (Construction). UXO detonation is prohibited from December 1 to April 30 to reduce impacts to NARWs during peak migratory periods in the offshore wind area. UXO/MEC detonation must be limited to daylight hours only. The Lessee may not detonate UXO in calendar year 2023 or until BOEM has notified the lessee that all necessary ESA Section 7 consultations addressing UXO detonation have concluded.
- 5.12.3. Noise Abatement Systems (Construction). The Lessee must use a dual noise abatement system during all UXO/MEC detonation events and operate that system in a manner that achieves maximum noise attenuation levels practicable, but, at minimum, results in noise levels equal or less than those modeled assuming 10-dB attenuation.
- 5.12.4. Use of PAM and PSO Operators (Construction). The Lessee must monitor the entire (100 percent) clearance and shutdown zones identified below using at least 2 visual PSOs on each observing platform (i.e., vessels, plane) and at least 1 acoustic PSO to monitor for marine mammals in the clearance zones prior to detonation. If the clearance zone is larger than 2 km (based on charge weight), the Lessee must deploy a secondary PSO vessel. If the clearance is larger than 5 km (based on charge weight), an aerial survey must be conducted of the entire clearance zone prior to detonation and immediately after detonation to monitor for marine mammals. Two PSOs must also be on the plane during aerial surveys and must monitor for marine mammals before, during, and after UXO/MEC detonation events. All PSOs must begin monitoring 60 minutes prior to UXO detonation and for 30 minutes after detonation. The Lessee may not detonate UXO/MEC(s) unless the clearance zone is fully visible for at least 60 minutes prior to planned detonation and all marine mammal(s) are visually confirmed to be outside of the clearance zone for at least 30 minutes prior to detonation. PAM must be conducted for at least 60 minutes prior to detonation and for 30 minutes after detonation, and the zone must be acoustically clear of marine mammals during this entire duration. The PAM operator must monitor in and past the clearance zone for large whales.
- 5.12.5. Clearance Zones (Construction). Prior to any detonation activities, the Lessee must clear the clearance zones identified by NMFS in the ITA for marine mammals and in the July 21, 2023 BiOp for sea turtles.
- a) For marine mammals, these zone sizes will be identified in the ITR and may be further adjusted based on the SFV and confirmation of UXO/donor charge sizes. Any changes to clearance zones must be done in coordination with NMFS GARFO and NMFS OPR and only after receiving approval of these adjusted

zones from NMFS OPR under the terms of the ITR. If a marine mammal is observed entering or within the clearance zone prior to denotation, the UXO/MEC activity must be delayed. The Lessee may continue with detonation only when the marine mammals have been confirmed to have voluntarily left the clearance zones and visually confirmed to be beyond the clearance zone, or when 60 minutes have elapsed without any redetections for whales (including the NARW) or 15 minutes have elapsed without any redetections of delphinids, harbor porpoises, or seals.

- b) For sea turtles, the Lessee must establish a clearance zone extending 500 m around any planned UXO/MEC detonation. The Lessee must maintain the clearance zone for at least 60 minutes prior to any UXO detonation. The Lessee must ensure that there is sufficient PSO coverage to reliably document sea turtle presence within the clearance zone. In the event that a PSO detects a sea turtle inside the 500 m clearance zone, the Lessee must delay detonation until the sea turtle has not been observed for 30 minutes.

5.12.6. Sound Field Verification for UXO/MEC Detonation. During each UXO/MEC detonation, the Lessee must implement SFV to empirically determine source levels (peak and cumulative sound exposure level), the ranges to the isopleths corresponding to the Level A harassment and Level B harassment thresholds (for marine mammals) and distances to peak and cumulative injury thresholds for sea turtles, and estimated transmission loss coefficient(s). SFV must be carried out in a manner consistent with the approved SFV plan.

- a) If SFV measurements on any of the detonations indicate that the ranges to the isopleths corresponding to the Level A harassment and Level B harassment thresholds (for marine mammals) and distances to injury, temporary threshold shift or behavioral disturbance thresholds for sea turtles are larger than those modeled (assuming 10-dB attenuation), the Lessee must increase the clearance and shutdown zones as indicated by SFV for subsequent detonations. For every 1,500 m that a zone is expanded, additional PSOs must be deployed from additional platforms to ensure adequate and complete monitoring of the expanded clearance zone. If SFV measurements exceed modeled thresholds (assuming 10-dB attenuation), the Lessee must submit a revised monitoring plan describing the location of all PSOs for review by NMFS GARFO and approval by BOEM and BSEE. In the event that BOEM or BSEE notifies the Lessee that the clearance zone for sea turtles needs to be expanded, the Lessee must submit a revised monitoring plan for the expanded zones to NMFS GARFO for review and BOEM and BSEE approval.
- b) If SFV measurements on any of the detonations indicate that the ranges to Level A harassment and Level B harassment thresholds (for marine mammals) or distances to injury, temporary threshold shift or behavioral disturbance thresholds for sea turtles are larger than those modeled (assuming 10-dB attenuation), the Lessee must: identify additional noise attenuation measures (e.g., add noise attenuation device, adjust noise mitigation system) that are

expected to reduce sound levels to the modeled distances; provide an explanation to NMFS GARFO and NMFS OPR supporting that determination; and, deploy those additional measures for any subsequent detonations (e.g., if threshold distances are exceeded on detonation 1, then additional measures must be deployed for detonation 2).

- c) Following detonation of UXO/MEC with additional noise attenuation measures required above, if SFV results indicate that any isopleths of concern are larger than those modeled assuming 10-dB attenuation, the Lessee must determine, in cooperation with NMFS GARFO/OPR, BOEM, BSEE, and USACE, and before any additional UXO/MEC may be detonated, what additional noise attenuation measures can be implemented; identified measures must be implemented. If no additional measures are identified, then detonation must continue with implementation of the enhanced sound attenuation measures required above and any expanded zone sizes (and any required additional PSOs).

5.12.7. Notification (Construction). The Lessee must provide BSEE and NMFS GARFO with notification of planned UXO/MEC detonation as soon as possible, but at least 48 hours prior to the planned detonation, unless this 48-hour notification creates delays to the detonation that result in imminent risk of human life or safety. This notification must include the coordinates of the planned detonation, the estimated charge size, and any other information available on the characteristics of the UXO/MEC. NMFS GARFO will provide alerts to NMFS sea turtle and marine mammal stranding network partners consistent with best practices. The Lessee must provide notification to NMFS GARFO via email to [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov), NMFS GARFO Protected Resources Division by phone (978-281-9328), and BSEE via TIMSWeb with email notification to [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov). See Section 5.14.3(a) for requirements associated with reporting of UXO detonations.

5.13. Project Design Criteria and Best Management Practices for Protected Species (Planning) (Construction) (Operations) (Decommissioning). Per the NMFS July 21, 2023 BiOp, the Lessee's OCS activities related to HRG, geotechnical, and biological surveys and deployment, maintenance, operations, and retrieval of meteorological and oceanographic data buoys must comply with the standards in the Project Design Criteria and Best Management Practices included in the 2021 programmatic ESA consultation (<https://www.boem.gov/sites/default/files/documents/renewable-energy/OSW-surveys-NLAA-programmatic.pdf>).<sup>25</sup>

5.13.1. Alternative Monitoring Plan (Planning). If HRG surveys are necessary during periods of low visibility (e.g., darkness, rain, fog, etc.), the Lessee must submit an Alternative Monitoring Plan to BOEM and BSEE detailing the monitoring methodology that will be used during nighttime and low-visibility conditions and an explanation of how it will be effective at ensuring that the shutdown zone(s) can be

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<sup>25</sup> The 2021 Biological Assessment and letter of concurrence from which these measures were derived may be found here: <https://www.boem.gov/renewable-energy/final-nlaa-osw-programmatic>.

maintained during nighttime and low-visibility survey operations. The plan must be submitted 60 days before low visibility survey operations are set to begin.

5.14. Reporting (Planning) (Construction) (Operations) (Decommissioning).

5.14.1. Reporting of All NARW Detections (Planning) (Construction) (Operations) (Decommissioning).

- a) If a NARW is observed at any time by PSOs or Project personnel, the Lessee must ensure the sighting is immediately reported to NMFS using the appropriate contact below. If immediate reporting is not feasible, the Lessee must report as soon as possible and no longer than 24 hours after the sighting. The sighting report must include the time in Coordinated Universal Time (UTC) (HH:MM), date (YYYY-MM-DD), and location (latitude/longitude in decimal degrees; coordinate system used) of the sighting, number of whales, animal description/certainty of sighting (provide photos/video if taken), Lease Area/Project Name, PSO/personnel name, PSO provider company (if applicable), and reporter's contact info.
  - i) If in the Greater Atlantic Region (ME to VA/NC border) call (866-755-6622).
  - ii) If in the Southeast Region (NC to FL) call (877-WHALE-HELP or 877-942-5343).
  - iii) If calling the hotline is not possible, reports can also be made to the U.S. Coast Guard via channel 16 or through the WhaleAlert app (<http://www.whalealert.org/>).
- b) If a NARW is detected at any time via PAM, the Lessee must ensure the detection is reported as soon as possible and no longer than 24 hours after the detection to NMFS via the 24-hour North Atlantic right whale Detection Template (<https://www.fisheries.noaa.gov/resource/document/passiveacoustic-reporting-system-templates>). Calling the hotline is not necessary when reporting PAM detections via the template.
- c) The Lessee must send a summary report within 24 hours to NMFS GARFO ([nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov)) and NMFS OPR ([PR.ITP.MonitoringReports@noaa.gov](mailto:PR.ITP.MonitoringReports@noaa.gov)) with the information submitted to the hotline/template and confirmation the sighting/detection was reported to the respective hotline; the vessel/platform from which the sighting/detection was made; the activity the vessel/platform was engaged in at time of sighting/detection; the Project construction and/or survey activity ongoing at the time of sighting/detection (e.g., pile driving, cable installation, HRG survey); the distance from the vessel/platform to the animal at the time of initial sighting/detection; the closest point of approach of a whale to the vessel/platform; the vessel speed; and any mitigation actions taken in response to the sighting.

- 5.14.2. Reporting of ESA-Listed Species within Shutdown Zone During Active Pile Driving (Construction). In the event that any ESA-listed species is observed within the identified shutdown zone during active pile driving, the Lessee must file a report with BOEM, BSEE, and NMFS GARFO within 48 hours of the incident and include the following: duration of pile driving prior to the detection of the animal, location of PSOs and any factors that impaired visibility or detection ability, time of first and last detection of the animal, distance of animal at first detection, closest point of approach of animal to pile, behavioral observations of the animal(s), time the PSO called for shutdown, hammer log (number of strikes, hammer energy), time the pile driving began and was stopped, and any measures implemented (e.g., reduced hammer energy) prior to shutdown. The Lessee must include in its report the time that the animal was last detected and any PSO reports on the behavior of the animal. If shutdown was determined not to be feasible, the Lessee report must include an explanation for that determination and the measures that were implemented (e.g., reduced hammer energy).
- 5.14.3. Detected or Impacted Protected Species Reporting (Planning) (Construction) (Operations) (Decommissioning). The Lessee must report within 48 hours all observations or collections of injured or dead whales, sea turtles, or sturgeon to BSEE and NMFS GARFO, including observations and interactions during the fisheries surveys. The Lessee must ensure its reports reference the Project and include the Take Report Form available on NMFS webpage (<https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null>). The Lessee must ensure reports of Atlantic sturgeon take include a statement as to whether a fin clip sample for genetic sampling was taken. Fin clip samples are required in all cases with the only exception being when additional handling of the sturgeon may result in an imminent risk of injury to the fish or the PSO. Incidents falling within the exception are expected to be limited to capture and handling of sturgeon in extreme weather. Instructions for fin clips and associated metadata are available at <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic> under the “Sturgeon Genetics Sampling” heading.

The Lessee must report any suspected or confirmed vessel strike of a sea turtle or sturgeon by any Project vessel in any location, including observation of any injured sea turtle or sturgeon, or sea turtle or sturgeon parts, to BOEM, BSEE, NMFS GARFO, and to appropriate NOAA stranding hotline (for marine mammals between Maine-Virginia, report to 866-755-6622, and from North Carolina-Florida to 877-942-5343 and for sea turtles from Maine-Virginia, report to 866-755-6622, and from North Carolina-Florida to 844-732-8785) as soon as feasible. The Lessee must include in the report the following information: (1) time, date, and location (latitude/longitude in decimal degrees) of the incident; (2) species identification (if known) or description of the animal(s) involved; (3) vessel’s speed during and leading up to the incident; (4) vessel’s course and heading, and what operations were being conducted (if applicable); (5) status of all sound sources in use; (6) description of avoidance measures and requirements that were in place at the time

of the strike and what additional measures were taken, if any, to avoid strike; (7) environmental conditions (e.g., wind speed and direction, Beaufort scale, cloud cover, visibility) immediately preceding the strike; (8) estimated size and length of animal that was struck; (9) description of the behavior of the animal immediately preceding and following the strike; (10) estimated fate of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and (11) photographs or video footage of the animal(s), to the extent practicable.

In the event that an injured or dead marine mammal or sea turtle is sighted, the Lessee must report the incident to BOEM, BSEE, NMFS GARFO, and the appropriate hotline (options above), as soon as feasible, but no later than 24 hours from the sighting. The Lessee must include in the report the following information: (1) time, date, and location (latitude/longitude in decimal degrees) of the first discovery (and updated location information if known and applicable); (2) species identification (if known) or description of the animal(s) involved; (3) condition of the animal(s) (including carcass condition if the animal is dead); (4) observed behaviors of the animal(s), if alive; (5) photographs or video footage of the animal(s), if available; and (6) general circumstances under which the animal was discovered. The Lessee must follow any instructions provided by staff responding to the hotline call for handling or disposing of any injured or dead animals, which may include coordination of transport to shore, particularly for injured sea turtles.

- a) UXO Detonation Reports (Construction). The Lessee must compile and submit reports following any UXO/MEC detonation that provide details on the UXO/MEC that was detonated (e.g., charge size), location of the detonation, the start and stop of associated observation periods by the PSOs and PAM operators, details on the deployment of PSOs at PAM operators, and a record of all observations of marine mammals and sea turtles including time (UTC) of sighting/detection, species ID, behavior, distance (m) from vessel to animal at time of sighting/detection, vessel activity, platform/vessel name, and mitigation measures taken (if any). These reports must include any observations of dead or injured fish or other marine life in the post detonation monitoring period. The Lessee must ensure that the PSO providers submit these reports directly to NMFS GARFO, BSEE, and BOEM within one week of the detonation. The reports may consist of raw data that has undergone initial QA/QC review or be made available upon request. The Lessee must also ensure that the PSO providers submit all reports of dead or injured ESA listed species directly to NMFS GARFO, BSEE, and BOEM immediately, but no later than 24 hours following the observation.
- b) Detected or Impacted Dead Non-ESA-Listed Fish (Planning) (Construction) (Operations) (Decommissioning). The Lessee must report any occurrence of at least 10 dead non-ESA-listed fish within established shutdown or monitoring zones to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov) and to BSEE via email to [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov) as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting. BOEM or BSEE will

notify NMFS GARFO via [NMFS.GAR.HESDoffshorewind@noaa.gov](mailto:NMFS.GAR.HESDoffshorewind@noaa.gov). The Lessee must confirm the relevant point of contact prior to reporting and confirm the reporting was received.

5.14.4. SFV Reporting (Construction). The Lessee must submit all SFV reports to: BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov); BSEE via TIMSWeb with a notification email sent to BSEE at [protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov); NMFS GARFO at [nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov); and NMFS's OPR at [pr.itp.monitoringreports@noaa.gov](mailto:pr.itp.monitoringreports@noaa.gov).

- a) SFV Interim Reports for Pile Driving. The Lessee must provide, as soon as they are available but no later than 48 hours after the installation of each of the first three monopiles, the initial results of the SFV measurements after installation of each of the first three monopiles in an interim report to BOEM, BSEE, and NMFS GARFO. If technical or other issues prevent submission within 48 hours, the Lessee must notify NMFS GARFO within that 48-hour period with the reasons for delay and provide an anticipated schedule for submission of the report. This report is required for each of the first three monopiles installed and any additional piles for which SFV is required. The interim report must include data from hydrophones identified for interim reporting in the SFV Plan and include a summary of pile installation activities (pile diameter, pile weight, pile length, water depth, sediment type, hammer type, total strikes, total installation time (start time, end time), duration of pile driving, max single strike energy, network attached storage (NAS) deployments), pile location, recorder locations, modeled and measured distances to thresholds, received levels (root mean square (rms), peak, and sound exposure level (SEL)) results from Conductivity, Temperature, and Depth (CTD) casts/sound velocity profiles, signal and kurtosis rise times, pile driving plots, activity logs, and weather conditions. If additional SFV is required after the first 3 monopiles are installed (see Section 5.4.5) the lessee must submit additional SFV interim reports to BOEM, BSEE, and NMFS GARFO for the next 3 monopiles. If the measured sound fields continue to exceed the modeled results, additional SFV interim reports must be submitted.
- b) SFV Interim Reports for UXO/MEC Detonation. The Lessee must provide, as soon as they are available but no later than 48 hours after each detonation of a UXO/MEC, the initial results of the SFV measurements in an interim report. If technical or other issues prevent submission within 48 hours, the Lessee must notify BOEM, BSEE, and NMFS within that 48-hour period with the reasons for delay and provide an anticipated schedule for submission of the report. The interim report must include data from all hydrophones identified for interim reporting in the SFV Plan and include a summary of the UXO/MEC detonation activity (location, water depth, sediment type, charge size, detonation time, etc.), description of the noise attenuation system and its effectiveness (including photos and/or videos of the bubble curtain), UXO/MEC location, recorder locations, modeled and measured distances to thresholds, received levels (rms,



peak, and SEL) results from CTD casts/sound velocity profiles, and weather conditions.

- c) SFV Final Reports. The final results of SFV for monopile installations must be submitted as soon as possible, but no later than within 90 days following completion of pile driving of the 3 or more monopiles for which SFV was carried out. The final results of SFV for UXO/MEC detonations must be submitted as soon as possible, but no later than within 90 days following detonation of each device. The final results of SFV monitoring for pile driving and UXO/MEC detonation must include results for all hydrophones.

5.14.5. Weekly Reports (Construction) (Operations) (Decommissioning). The Lessee must compile and submit weekly reports during construction that document pile driving, HRG survey, and detonation activities, including associated PSO, SFV, and noise abatement activities. These weekly reports must be submitted to NMFS GARFO ([nmfs.gar.incidental-take@noaa.gov](mailto:nmfs.gar.incidental-take@noaa.gov)), BOEM ([renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov)), and BSEE ([protectedspecies@bsee.gov](mailto:protectedspecies@bsee.gov)) directly from the PSO providers and may consist of raw data. Weekly reports must be submitted no later than Wednesday for the previous week (Sunday – Saturday). Weekly reports must include:

- a) Summaries of pile driving activities and piles installed, including pile ID, pile diameter, start and stop times of each pile driving event, pile locations, hammer log (number of strikes, max hammer energy, duration of piling) per pile, any changes to noise attenuation systems and/or hammer schedule, details on the deployment of PSOs and PAM operators, including the start and stop time of associated observation periods by the PSOs and PAM Operators, and a record of all observations/detections of marine mammals and sea turtles as detailed in (g) below.
- b) A summary of SFV and NAS implemented during pile driving.
- c) Any UXO/MEC detonation activities.
- d) Which turbines become operational and when (a map must be provided).
- e) Summaries of HRG survey activities.
- f) Vessel operations (including port departures, number of vessels, type of vessel(s), and route).
- g) All protected species detections. This includes species identification, number of animals, time at initial detection, time at final detection, distance to pile/vessel at initial detection, closest point of approach to pile/vessel, animal direction of travel relative to pile/vessel; description of animal behavior and features used to identify species; and for moving vessels include speed (knots), distance and bearing to animal at initial detection, closest point of approach and bearing to animal, distance and bearing to animal at final detection, and animal direction of travel relative to vessel). Sightings/detections during pile driving activities

(clearance, active pile driving, post-pile driving) and all other (transit, opportunistic, etc.) sightings/detection must be reported and identified as such.

h) Vessel strike avoidance measures taken.

5.14.6. Monthly Reports (Construction) (Operations) (Decommissioning). Starting the first month that in-water activities occur on the OCS, the Lessee must compile and submit monthly reports that include a summary of all Project activities carried out in the previous month, including dates and locations of any fisheries surveys, vessel transits (number of transits, name and type of vessel, ports used, and route inclusive of foreign and domestic ports), piles installed (number and ID), HRG surveys conducted, and UXO/MEC detonations, and all observations of ESA-listed whales, sea turtles, and sturgeon inclusive of any mitigation measures taken as a result of those observations. Sightings/detections must include species ID, time, date, initial detection distance, vessel/platform name, vessel activity, vessel speed, bearing to animal, Project activity, and if any, mitigation measures taken. These reports must be submitted to BOEM, BSEE, and NMFS GARFO no later than the 15th of the month for the previous month.

a) Reporting Instructions for Monthly PSO Pile Driving Monitoring Reports. PSOs must collect data consistent with standard reporting forms, software tools, or electronic data forms authorized by BOEM for the particular activity. PSOs must fill out report forms for each vessel with PSOs aboard. Unfilled cells must be left empty and must not contain "NA." The reports must be submitted as provided in Section 5.14.6 in Microsoft Word and Excel formats (not as a PDF). Enter all dates as YYYY-MM-DD. Enter all times in 24 Hour UTC as HH:MM.

Create a new entry on the Effort form each time a pile segment changes, or weather conditions change, and at least once an hour as a minimum. Review and revise all forms for completeness and resolve incomplete data fields before submittal. The file name must follow this format: Lease#\_ProjectName\_PSOData\_YearMonthDay toYearMonthDay.xls. Data fields must be reported in Excel format. Data categories must include Project, Operations, Monitoring Effort, and Detection, as further specified below. All PSO data must be generated through software applications or otherwise recorded electronically by PSOs and provided to BOEM and BSEE in electronic format (CSV files or similar format) and be checked for QA/QC. Applications developed to record PSO data are encouraged if the data fields listed below can be recorded and exported into Excel. Alternatively, BOEM has developed an Excel spreadsheet, with all the necessary data fields, which is available upon request.

Required data fields include:

Project Information:

- Project name
- Lease number
- State coastal zones

- PSO contractors
- Vessel names
- Reporting dates (YYYY-MM-DD)
- Visual monitoring equipment used (e.g., bionics, magnification, IR cameras)
- Distance finding method used
- PSO names (Last, First) and training
- Observation height above sea surface

Operations Information:

- Date (YYYY-MM-DD)
- Hammer type used (make and model)
- Greatest hammer power used for each pile
- Pile identifier and pile number for the day (e.g., pile 2 of 3 for the day)
- Pile diameters
- Pile length
- Total number of strikes used to install each pile
- Total hammer energy used to install each pile
- Pile locations (latitude and longitude)
- Number of vessel transits
- Types of vessels used
- Vessel routes used

Monitoring Effort Information:

- Date (YYYY-MM-DD)
- Noise source (ON=Hammer On; OFF=Hammer Off)
- PSO name(s) (Last, First)
- If visual, how many PSOs on watch at one time?
- Time pre-clearance visual monitoring began in UTC (HH:MM)
- Time pre-clearance monitoring ended in UTC (HH:MM)
- Time pre-clearance PAM monitoring began in UTC (HH:MM)
- Time PAM monitoring ended in UTC (HH:MM)
- Duration of pre-clearance PAM and visual monitoring
- Time power-up or ramp-up began
- Time equipment full power was reached
- Duration of power-up or ramp-up
- Time pile driving began (hammer on)
- Time pile driving activity ended (hammer off)
- Duration of activity
- Duration of visual detection
- Wind speed (knots), from direction
- Swell height (m)
- Water depth (m)
- Visibility (km)
- Glare severity

- Latitude (decimal degrees), longitude (decimal degrees)
- Compass heading of vessel (degrees)
- Beaufort scale
- Precipitation
- Cloud coverage (%)
- Did a shutdown/power-down occur?
- Time shutdown was called for (UTC)
- Time equipment was shut down (UTC)
- Habitat or prey observations
- Marine debris sighted

Detection Information:

- Date (YYYY-MM-DD)
- Sighting ID (V01, V02, or sequential sighting number for that day; multiple sightings of the same animal or group must use the same ID)
- Date and time at first detection in UTC (YY-MM-DDT HH:MM)
- Time at last detection in UTC (YY-MM-DDT HH:MM)
- PSO name(s) (Last, First)
- Effort (ON=Hammer On; OFF=Hammer Off)
- If visual, how many PSOs on watch at one time?
- Start time of observations
- End time of observations
- Duration of visual observation
- Wind speed (knots), from direction
- Swell height (m)
- Water depth (m)
- Visibility (km)
- Glare severity
- Latitude (decimal degrees), longitude (decimal degrees)
- Compass heading of vessel (degrees)
- Beaufort scale
- Precipitation
- Cloud coverage (%)
- Sightings including common name, scientific name, or family
- Percent certainty of identification
- Number of adults
- Number of juveniles
- Total number of animals
- Bearing to animals when first detected (ship heading + clock face)
- Bearing to animals at closest approach (ship heading+ clock face)
- Bearing to animal at final detection (ship heading+ clock face)
- Range from vessel and pile (reticle distance in m)

- Description (include features such as overall size; shape of head; color and pattern; size, shape, and position of dorsal fin; height, direction, and shape of blow, etc.)
- Detection narrative (note behavior, especially changes in relation to activity and distance from service vessel)
- Direction of animal travel in first approach relative to vessel and pile
- Behaviors observed: indicate behaviors and behavioral changes observed in sequential order (use behavioral codes)
- If any bow-riding behavior observed, record total duration during detection (UTC HH:MM)
- Initial heading of animals (degrees)
- Final heading of animals (degrees)
- Shutdown zone size during detection (m)
- Was the animal inside the shutdown zone?
- Closest distance to vessel and pile (reticle distance in m)
- Time at closest approach to vessel and pile (UTC HH:MM)
- Time animal entered shutdown zone (UTC HH:MM)
- Time animal left shutdown zone (UTC HH:MM)
- If observed or detected during ramp-up or power-up: first distance (reticle distance in m), closest distance (reticle distance in m), last distance (reticle distance in m), behavior at final detection
- Did a shutdown/power-down occur?
- Time shutdown was called for (UTC HH:MM)
- Time equipment was shut down (UTC HH:MM)
- Detections with PAM

5.14.7. Annual Reports (Operations) (Decommissioning). Beginning one calendar year after the completion of commissioning activities, the Lessee must compile and submit annual reports that include a summary of all Project activities carried out in the previous year, including vessel transits (number, type of vessel, ports used, and route), repair and maintenance activities, survey activity, and all observations of ESA-listed species. The annual reports must be submitted to BOEM, BSEE, and NMFS GARFO. The Lessee must submit these reports by April 1 of each year for the previous calendar year (i.e., the 2026 report is due by April 1, 2027). Upon mutual agreement of NMFS GARFO, BOEM, and BSEE, the frequency of reports can be changed.

5.14.8. Other Protected Species Conditions (Planning) (Construction) (Operations) (Decommissioning). On July 21, 2023, NMFS issued a BiOp, including an ITS for the Project. The ITS includes reasonable and prudent measures and terms and conditions that NMFS determined were necessary and appropriate to minimize and monitor the amount or extent of incidental take of species listed as endangered or threatened under the ESA and under NMFS jurisdiction. In order for the ESA exemption from prohibited take provided by the NMFS July 21, 2023 BiOp to be valid, the Lessee must carry out the proposed action in compliance with all avoidance and minimization measures incorporated into the proposed action

considered in that consultation and comply with all reasonable and prudent measures and implementing terms and conditions included in the BiOp's ITS that are incorporated by reference in this document.

## **6. CONDITIONS RELATED TO COMMERCIAL FISHERIES, FOR-HIRE AND RECREATIONAL FISHING**

6.1. Fisheries Compensation and Mitigation Funds (Planning) (Construction) (Operations) (Decommissioning). No later than 1 year after the approval of the COP, unless a different schedule is agreed to as a component of a separate agreement between the Lessee and Rhode Island and Massachusetts, the Lessee must establish and implement a direct compensation program to provide monetary compensation to commercial and for-hire fishermen impacted by the Project funded in accordance with Sections 6.1.1 and Section 6.1.2 below. Calculation steps are shown in Section 6.1.3 below.

6.1.1. Direct Compensation Program. The Lessee must ensure that the Direct Compensation Fund includes an amount sufficient to be used to pay claims brought by both commercial and for-hire fishermen and must be based, at a minimum, on the annual average commercial fisheries landings values as stated in FEIS Table 3.9-12 (page 3.9-21) and for-hire fishing revenue (\$43,083; page 3.9-39) from 2008 to 2019 (\$43,083; page 3.9-40), of the Revolution Wind Farm and Revolution Wind Export Cable Project FEIS. The fund amount must be determined by the formula set out below or any agreements with state programs, whichever is greater (see Section 6.1.1(c) below).

- a) The Lessee must have available, at a minimum, 100 percent of annual revenue exposure during the post-COP approval pre-construction and construction period and (pending BSEE's approval of Lessee's decommissioning application) projected decommissioning period, 100 percent of annual revenue exposure for the first year after construction, 80 percent of revenue exposure 2 years after construction, 70 percent of revenue exposure 3 years after construction, 60 percent after 4 years, and 50 percent for the 5th year post-construction. BSEE will evaluate the need for additional compensatory mitigation consistent with the Annual Certification under 30 C.F.R. § 285.633(a).
- b) Except for the calculation of fund amounts for commercial and for-hire fishermen in Rhode Island and Massachusetts where final mitigation agreements have been approved, the compensation calculations described above must be normalized using the gross domestic product (GDP) Implicit Price Deflator (U.S. Bureau of Economic Analysis),<sup>26</sup> once the construction year and 5-year post-construction date are known.
- c) In recognition of agreements between the Lessee and Rhode Island and Massachusetts, the Lessee must establish the following compensation/mitigation

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<sup>26</sup> [Table 1.1.9. Implicit Price Deflators for Gross Domestic Product](#)

funds for compensation of income losses by commercial or for-hire fishermen directly related to the Project. However, if the requirements in an agreement between the Lessee and a state for compensation/mitigation listed in this section exceed the revenue for certain commercial fishermen in a state as described in Table 3.9-12 in the Revolution Wind Farm and Revolution Wind Export Cable Project FEIS, the Lease Area Average Annual Revenue listed in Table 3.9-12 for a state may be omitted from the calculation described in Section 6.1.3.

- i) Rhode Island Federal Waters – includes \$12,000,000 Direct Compensation Fund, \$300,000 Coastal Community Fund, up to \$333,333 for the “Rhode Island Navigational Enhancement and Training Program,” and \$300,000 in funding for an Impacts Study.
- ii) Rhode Island State Waters – includes \$3,050,000 Direct Compensation Fund, taking into account adjustments for days of active installation as described in the Rhode Island agreement for state waters, and \$200,000 Coastal Community Fund, \$200,000 for Trust Operation.
- iii) Massachusetts – \$6,425,000 Direct Compensation Fund, \$400,000 Coastal Community Fund, and up to \$500,000 for the “Navigational Enhancement and Training Funding” to fund claims made through the Navigational Enhancement and Training Program.

6.1.2. Shoreside Support Services. At least 90 days prior to establishment of the Direct Compensation Program described in Section 6.1.1, the Lessee must submit to BOEM a Shoreside Support Services report for a 60-day review and approval. If a state agreement for compensatory mitigation includes shoreside services such as through a community fund, the amount allocated to shoreside services in the state agreement(s) may be removed from this analysis if greater than BOEM’s requirements, as described in Section 6.1.1(c). The report must include a description of the structure of the Direct Compensation Fund and an analysis of the impacts of the Project to shoreside support services (such as seafood processing and vessel repair services) within communities near the following ports:

- Beaufort, NC
- Chilmark/Menemsha, MA
- Fairhaven, MA
- Fall River, MA
- Hampton, VA
- Little Compton, RI
- Montauk, NY
- New Bedford, MA
- New London, CT
- Newport News, VA
- Newport, RI
- Point Judith, RI
- Point Pleasant Beach, NJ

- Stonington, CT
- Tiverton, RI
- Westport, MA

6.1.3. Compensation Calculations. Once the values at Sections 6.1.1 and 6.1.2 are determined, the Lessee must use Table 6.1.3-1 and Table 6.1.3-2 to calculate the total fund required by Section 6.1.1. The amounts of the fund required must be normalized to current real prices from a base year as described in Section 6.1.1(b). The Lessee may use the most recent complete year’s GDP Implicit Price Deflator to estimate Direct Compensation Fund requirements after COP approval if the current year is unavailable ( $n_i$ ).

As described in 6.1.1(a), the Lessee must ensure the reserve amount allows for, at a minimum, 100 percent of annual revenue exposure during the projected construction years and, pending BSEE approval of decommissioning plan, decommissioning years. The Lessee must use the GDP Implicit Price Deflator to adjust the annual average commercial fisheries landings values and for-hire fishing revenue stated in Table 3.9-12 and the annual average revenue across all for-hire fishing operations from 2008 to 2019 (\$43,083; page 3.9-40), respectively, of the Revolution Wind Farm and Revolution Wind Export Cable Project FEIS.

Before rolling forward any unclaimed funds, the total fund reserve requirements for Construction, Decommissioning, and Operating Years 1–5<sup>27</sup> (as shown in Table 6.1.3-2) are calculated using the following formula:

$$k \left( \$126,083.00 \times \frac{n_i}{104.008} \right) (1 + M) + j \left( \$126,083.00 \times \frac{n_i}{104.008} \right) (1 + M) + \left( \$514,136.83 \times \frac{n_i}{104.008} \right) (1 + M).$$

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<sup>27</sup> Rolling forward unclaimed funds from prior years may lower this total value.



**Table 6.1.3-1. Calculation Subcomponents for Construction and Decommissioning**

<b>Project Status</b>	<b>Base Annual Average Fishing Revenue Exposed to the Wind Farm Area<sup>1</sup></b>	<b>Shoreside Support Services Multiplier<sup>2</sup></b>	<b>Exposure Ratio</b>	<b>Adjusted Base Annual Average Fishing Revenue Exposed to the Wind Farm Area</b>	<b>Reserve Requirements</b>
Construction	$\left(\$126,083.00 \times \frac{n_i}{104.008}\right)$	M	1	$\left(\$126,083.00 \times \frac{n_i}{104.008}\right)$	$\left(\$126,083.00 \times \frac{n_i}{104.008}\right) (1 + M)$
Decommissioning <sup>3</sup>	$\left(\$126,083.00 \times \frac{n_i}{104.008}\right)$	M	1	$\left(\$126,083.00 \times \frac{n_i}{104.008}\right)$	$\left(\$126,083.00 \times \frac{n_i}{104.008}\right) (1 + M)$

Notes:

<sup>1</sup> Inflation-adjusted revenues from FEIS Table 3.9-12 and page 3.9-40. The inflation-adjusted base equation is:

$$\text{Average Annual Fishing Revenue} \times \frac{n_i}{104.008}$$

<sup>2</sup> The Lessee’s calculations of the Impacts to Shoreside Businesses Multiplier may use BOEM’s draft *Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 C.F.R. Part 585* or future versions, but BOEM must, in all events, review the calculations.

<sup>3</sup> Decommissioning funds may be required pending BSEE’s approval of Lessee’s decommissioning application. If Construction is expected to last *k* years and Decommissioning *j* years, the Lessee must calculate the reserve requirements as follows:

$$k \left( \$126,083.00 \times \frac{n_i}{104.008} \right) (1 + M) + j \left( \$126,083.00 \times \frac{n_i}{104.008} \right) (1 + M)$$

**Table 6.1.3-2. Calculation Subcomponents by Operating Year**

<b>Project Status</b>	<b>Base Annual Average Fishing Revenue Exposed to the Wind Farm Area<sup>1</sup></b>	<b>Shoreside Support Services Multiplier<sup>2</sup></b>	<b>Exposure Ratio</b>	<b>Adjusted Base Annual Average Fishing Revenue Exposed to the Wind Farm Area</b>	<b>Reserve Requirements</b>
Operating Year 1	$\left( \$126,083.00 \times \frac{n_i}{104.008} \right)$	M	1	$\left( \$126,083.00 \times \frac{n_i}{104.008} \right)$	$\left( \$126,083.00 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Year 2	$\left( \$126,083.00 \times \frac{n_i}{104.008} \right)$	M	0.8	$\left( \$114,252.63 \times \frac{n_i}{104.008} \right)$	$\left( \$114,252.63 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Year 3	$\left( \$126,083.00 \times \frac{n_i}{104.008} \right)$	M	0.7	$\left( \$99,971.05 \times \frac{n_i}{104.008} \right)$	$\left( \$99,971.05 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Year 4	$\left( \$126,083.00 \times \frac{n_i}{104.008} \right)$	M	0.6	$\left( \$85,689.47 \times \frac{n_i}{104.008} \right)$	$\left( \$85,689.47 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Year 5	$\left( \$126,083.00 \times \frac{n_i}{104.008} \right)$	M	0.5	$\left( \$71,407.89 \times \frac{n_i}{104.008} \right)$	$\left( \$71,407.89 \times \frac{n_i}{104.008} \right) (1 + M)$
<i>Operating Total<sup>3</sup></i>	-	-	-	$\left( \$514,136.83 \times \frac{n_i}{104.008} \right)$	$\left( \$514,136.83 \times \frac{n_i}{104.008} \right) (1 + M)$

Notes:

<sup>1</sup> Inflation-adjusted revenues from FEIS Table 3.9-12 and page 3.9-40. The inflation-adjusted base equation is:

$$\left( \text{Average Annual Fishing Revenue} \times \frac{n_i}{104.008} \right)$$

<sup>2</sup> The Lessee's calculations of the Impacts to Shoreside Businesses Multiplier may use BOEM's draft *Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 C.F.R. Part 585* or future versions, but BOEM must, in all events, review the calculations.

<sup>3</sup> Rolling forward unclaimed funds from prior years may lower this total value.

- 6.1.4. Reporting. By January 31 of each year, the Lessee must submit to BOEM and BSEE an annual report demonstrating implementation of the Direct Compensation Program. The report must include the following: the Fund charter, including the governance structure, audit and public reporting procedures; documentation regarding the funding account, including the dollar amount, establishment date, financial institution, and owner of the account; standards for paying compensatory mitigation for direct impacts to commercial and for-hire fishers and related shoreside businesses resulting from all phases of the Project development on the Lease Area (post-ROD pre-construction, construction, operation, and decommissioning); and the number of claims processed, approved and denied. The Lessee must publicly report an annual audit. Where there is a compensation agreement between a state and the Lessee, the Lessee must submit to BOEM and BSEE verification that any agreed-upon compensatory fisheries mitigation fund is established and funded.
- 6.1.5. Notification. The Lessee must notify BOEM and BSEE of any compensation and mitigation fund agreements into which the state and the Lessee have entered. Specifically, the Lessee has entered into Agreements Regarding the Establishment and Funding of the Direct Compensation Program, Coastal Community Fund, and Navigational Enhancement and Training Program with the States of Massachusetts and Rhode Island to provide appropriate compensation measures for fisheries resources and fishing industry uses impacted by the authorized Project. The Lessee must request that the Administrator(s) of the direct compensation program(s) notify BOEM when the direct compensation program(s) has been established and is processing claims. Notification can be accomplished by the Administrator(s) transmitting to BOEM an annual financial statement of the direct compensation program(s). The Administrator(s) must submit the required notification by January 31 of each year, beginning on the second anniversary of the Project's Commercial Operations Date as defined by Addendum "B" of the Lease. The notification must be signed by the Administrator(s).
- 6.2. Fisheries Gear Loss Compensation (Planning) (Construction) (Operations). The Lessee must maintain throughout the life of the Project, a fisheries gear loss claims procedure to implement the financial compensation policy proposed by the Lessee in Appendix EE of the COP, Fisheries Communication and Outreach Plan. The fisheries gear loss claims procedure must be available to all fishermen impacted by Project activities or infrastructure, regardless of homeport.
- 6.3. Federal Survey Mitigation Program (Planning) (Construction) (Operations) (Decommissioning). There are 14 NMFS scientific surveys that overlap with wind energy development in the northeast region. Nine of these surveys overlap with the Project. Consistent with NMFS and BOEM survey mitigation strategy actions 1.3.1, 1.3.2, 2.1.1, and 2.1.2 in the *NOAA Fisheries and BOEM Federal Survey Mitigation Implementation*

*Strategy - Northeast US Region*,<sup>29</sup> within 120 days of COP approval, the Lessee must submit to BOEM a survey mitigation agreement between NMFS and the Lessee. The survey mitigation agreement must describe how the Lessee will mitigate the Project impacts on the 9 NMFS surveys. The Lessee must conduct activities in accordance with such agreement.

If the Lessee and NMFS fail to reach a survey mitigation agreement, then the Lessee must submit a Survey Mitigation Plan to BOEM and NMFS that is consistent with the mitigation activities, actions, and procedures described in Sections 6.3.1 and 6.3.2 below, within 180 days of COP approval. BOEM will review the Survey Mitigation Plan in consultation with NMFS Northeast Fisheries Science Center (NEFSC), and the Lessee must resolve comments to BOEM's satisfaction and must conduct activities in accordance with the plan.

- 6.3.1. As soon as reasonably practicable, but no later than 30 days after the issuance of the Project's COP approval, the Lessee must initiate coordination with NMFS NEFSC to develop the survey mitigation agreement described above. Mitigation activities specified under the agreement must be designed to mitigate the Project impacts on the following NMFS NEFSC surveys: (a) Spring Bottom Trawl survey; (b) Autumn Multi-species Bottom Trawl survey; (c) Ecosystem Monitoring survey; (d) NARW aerial survey; (e) Aerial marine mammal and sea turtle survey; (f) Shipboard marine mammal and sea turtle survey; (g) Atlantic surfclam and ocean quahog survey; (h) Atlantic sea scallop survey; and (i) Seal survey. At a minimum, the survey mitigation agreement must describe actions to address impacts on the affected surveys due to the preclusion of sampling platforms and impacts on statistical designs. NMFS has determined that the Project area is a discrete stratum for surveys that use a random stratified design. This agreement may also consider other anticipated Project impacts on NMFS surveys, such as changes in habitat and increased operational costs due to loss of sampling efficiencies.
- 6.3.2. The survey mitigation agreement must identify activities that will result in the generation of data equivalent to data generated by NMFS's affected surveys for the duration of the Project. The survey mitigation agreement must describe the implementation procedures by which the Lessee will work with NEFSC to generate, share, and manage the data required by NEFSC for each of the surveys impacted by the Project, as mutually agreed upon between the Lessee and NMFS NEFSC. The survey mitigation agreement must also describe the Lessee's participation in the NMFS NEFSC Northeast Survey Mitigation Program to support activities that address regional-level impacts for the surveys listed above.

- 6.4. Environmental Data Sharing with Federally Recognized Tribal Nations (Planning) (Construction) (Operations) (Decommissioning). No later than 90 days after COP approval, the Lessee must make a request to both the BSEE Tribal Liaison Officer and the

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<sup>29</sup> Hare, J.A., Blythe, B.J., Ford, K.H., Godfrey-McKee, S., Hooker, B.R., Jensen, B.M., Lipsky, A., Nachman, C., Pfeiffer, L., Rasser, M. and Renshaw, K., 2022. NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast US Region. NOAA Technical Memorandum 292. Woods Hole, MA. 33 pp.

Eastern Seaboard Tribal Liaison at the same email address, [tribalengagement@bsee.gov](mailto:tribalengagement@bsee.gov) to coordinate with federally recognized Tribal Nations with geographic, cultural, or ancestral ties to the project area (hereinafter “interested Tribal Nation”), including, but not limited to the Delaware Nation, the Delaware Tribe of Indians, the Mashantucket Pequot Indian Tribe (Western), the Mashpee Wampanoag Tribe, the Mohegan Tribe of Indians of Connecticut, the Narragansett Indian Tribe, the Shinnecock Indian Nation, and the Wampanoag Tribe of Gay Head (Aquinnah). The purpose of this coordination is to: (1) solicit Tribal Nation interest in participating as an environmental liaison on board a small passenger vessel dedicated to environmental monitoring during construction and/or maintenance activities so they can safely monitor, and participate in postmortem examinations of mortality events as a result of these activities; and (2) provide open access to the following: reports generated as a result of the Fisheries Research and Monitoring Plan; reports of NARW sightings; injured or dead protected species reporting (sea turtles, NARW, sturgeon); NARW PAM monitoring; PSO reports (e.g., pile driving reports); pile driving schedules and schedule changes; and any interim and final SFV reports, and its associated data. If an interested Tribal Nation expresses interest in participating as an environmental liaison, the Lessee must provide the interested Tribal Nation information regarding training(s), certification(s), and safety measures, required for participation. The Lessee must provide to the interested Tribal Nation, in a manner suitable to the interested Tribal Nation, access to all ESA reports, Post Review Discovery Plans, and other documents listed in this paragraph no later than 30 days after the information becomes available. The Lessee may redact or withhold documents listed in this paragraph when it is information that the Lessee would not generally make publicly available and considers that the disclosure may result contrary to the Lessee's commercial interests. The Lessee must submit a justification for the redaction/withholding in writing to the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at [tribalengagement@bsee.gov](mailto:tribalengagement@bsee.gov).

## **7. VISUAL AND CULTURAL RESOURCES CONDITIONS**

- 7.1. **Reporting (Planning) (Construction) (Operations)**. The Lessee must submit all monitoring, reporting (annual, immediate, or post-discovery), and survey requirements related to cultural resources to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov) and BSEE via TIMSWeb with a notification email sent to [env-compliance-arc@bsee.gov](mailto:env-compliance-arc@bsee.gov).
- 7.2. **Avoidance of Known and Potential Shipwrecks, Debris Fields, and ASLFs (Planning) (Construction) (Operations) (Decommissioning)**. The Lessee must avoid known and potential shipwrecks, potentially significant debris fields, and ASLFs as described below. The Lessee must identify avoidance requirements on proposed anchoring plots, as-placed plats, and drawings associated with seabed disturbances (e.g., relevant FDR/FIR documents for export cables, inter-array cables, WTG, etc.). If the Lessee determines that avoidance is not possible, the Lessee must notify BOEM and BSEE prior to disturbing the seabed in the excluded area. In such instances, BOEM will notify the Lessee of any additional requirements, which may include additional measures to resolve adverse effects. If any vessel conducting work on behalf of the Lessee disturbs the seabed within the avoidance areas noted below, the Lessee must submit an incident report to BOEM and BSEE within 24 hours.

- 7.3. Avoidance of Known Shipwrecks or Sunken Craft Sites and Potentially Significant Debris Fields (Planning) (Construction) (Operations) (Decommissioning). The Lessee must avoid known shipwrecks and potential submerged cultural resources (Target-01 to Target-11 and Target-13 to Target-20 as identified in the Marine Archaeological Resources Assessment (MARA) (COP Appendix M)) by a distance of no less than 50 m from the known extent of the resource for placement of Project structures and when conducting seabed-disturbing activities. The Lessee must identify avoidance stipulations and requirements on proposed anchoring plots, as-placed plats and drawings associated with seafloor disturbances (e.g., relevant FDR/FIR documents for export cables, inter-array cables, WTG, etc.).
- 7.4. Avoidance of Ancient Submerged Landform Features. (Planning) (Construction) (Operations) (Decommissioning). The Lessee must avoid four ASLFs (Targets 27, 31, 32, and 33, as identified in the MARA (COP Appendix M)). No additional avoidance buffer is required for these ASLFs, because avoidance of the ASLFs is based on the defined spatial extent of each ASLF, which has been determined based on the maximum observed presence of the seismic reflector and unique buffer area designed to account for minimal positioning errors or lack of resolution. The Lessee must identify avoidance stipulations and requirements on proposed anchoring plots, as-placed plats, and drawings associated with seafloor disturbances (e.g., relevant FDR and FIR documents for export cables, inter-array cables, WTG, etc.).
- 7.5. Apply Paint Color No Lighter than RAL (Reichs-Ausschuß für Lieferbedingungen und Gütesicherung) 9010 Pure White and No Darker than RAL 7035 Light Grey to the WTGs (Planning) (Construction) (Operations). The Lessee must color the WTGs an off white/grey color (no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey) prior to installation. The Lessee must confirm the planned paint color as part of the FDR and confirm the WTG was painted consistent with this condition as part of the final FIR.
- 7.6. Implementation of Minimization and Mitigation Measures to Resolve Adverse Effects to ASLFs (Planning) (Construction). The Lessee must mitigate adverse effects to nine ASLFs (Targets 21–26 and 28–30 as identified in the MARA (COP Appendix M)) that remain in the Area of Potential Effects (APE) and that cannot be avoided. The Lessee must execute all aspects of this condition, consistent with the Section 106 MOA (Stipulation II.A.1; Stipulation III.A.1; Attachment 5 *Mitigation Funding Amounts Proposed by Signatories and Consulting Parties*; and Attachment 6 *ASLF Historic Property Treatment Plan (HPTP) for the Revolution Wind Farm Ancient Submerged Landform Features, Outer Continental Shelf, Federal and Rhode Island Waters of Rhode Island Sound*). The Annual Certification under condition 7.9 must include reporting associated with Section 106 MOA compliance.
- 7.7. Implementation of Minimization and Mitigation Measures to Resolve Adverse Effects to Mill Creek Swamp #1 and Mill Creek Swamp #2 Sites (Planning) (Construction) (Operations). The Lessee must minimize and mitigate adverse effects to Mill Creek Swamp #1 and Mill Creek Swamp #2 sites—as identified in the Terrestrial Archaeological Resource Assessment (COP Appendix N)—that are in the terrestrial APE and that cannot be avoided. The Lessee must execute all aspects of this condition of COP approval

consistent with the Section 106 MOA (Stipulation II.B; Stipulation III.B; Attachment 5 *Mitigation Funding Amounts Proposed by Signatories and Consulting Parties*; and Attachment 7 *HPTP for the Revolution Wind Farm, the Mill Creek Swamp #1 and #2 Sites, Town of North Kingstown, Washington County, Rhode Island*). The Annual Certification under condition 7.9 must include reporting associated with Section 106 MOA compliance.

7.8. Implementation of Minimization and Mitigation Measures to Resolve Visual Adverse Effects to Historic Properties (Planning) (Construction). The Lessee must fund minimization and mitigation measures to resolve the adverse effects to the following 101 historic properties consistent with the Section 106 MOA:

- 1) Vineyard Sound and Moshup's Bridge Traditional Cultural Property, Aquinnah, Dukes County, MA
- 2) Sakonnet Light Station, Little Compton, Newport, RI
- 3) Warren Point Historic District, Little Compton, Newport, RI
- 4) Abbott Phillips House, Little Compton, Newport, RI
- 5) Flaghole, Chilmark, Dukes County, MA
- 6) Stone House Inn, Little Compton, Newport, RI
- 7) Simon Mayhew House, Chilmark, Dukes County, MA
- 8) 71 Moshup Trail, Aquinnah, Dukes County, MA
- 9) Vanderhoop, Edwin DeVries Homestead, Aquinnah, Dukes County, MA
- 10) Gay Head - Aquinnah Shops Area, Aquinnah, Dukes County, MA
- 11) Flanders, Ernest House, Shop, Barn, Aquinnah, Dukes County, MA
- 12) 3 Windy Hill Drive, Aquinnah, Dukes County, MA
- 13) Gay Head Light, Aquinnah, Dukes County, MA
- 14) Tom Cooper House, Aquinnah, Dukes County, MA
- 15) Leonard Vanderhoop House, Aquinnah, Dukes County, MA
- 16) Theodore Haskins House, Aquinnah, Dukes County, MA
- 17) Gay Head - Aquinnah Coast Guard Station Barracks, Aquinnah, Dukes County, MA
- 18) Gay Head - Aquinnah Town Center Historic District, Aquinnah, Dukes County, MA
- 19) Gooseneck Causeway, Westport, Bristol County, MA
- 20) Gooseberry Neck Observation Towers, Westport, Bristol County, MA
- 21) Spring Street, New Shoreham, Washington County, RI
- 22) Capt. Mark L. Potter House, New Shoreham, Washington County, RI
- 23) Tunipus Goosewing Farm, Little Compton, Newport County, RI
- 24) WWII Lookout Tower – Spring Street, New Shoreham, Washington County, RI
- 25) Westport Harbor, Westport, Bristol County, MA
- 26) Bellevue Avenue Historic District National Historic Landmark (NHL), Newport, Newport County, RI
- 27) Block Island Southeast Lighthouse NHL, New Shoreham, Washington County, RI
- 28) New Shoreham Historic District, New Shoreham, Washington County, RI
- 29) Spring Cottage, New Shoreham, Washington County, RI
- 30) Old Harbor Historic District, New Shoreham, Washington County, RI

- 31) Captain Welcome Dodge Sr., New Shoreham, Washington County, RI
- 32) Caleb W. Dodge Jr. House, New Shoreham, Washington County, RI
- 33) Spring House Hotel, New Shoreham, Washington County, RI
- 34) Pilot Hill Road and Seaweed Lane, New Shoreham, Washington County, RI
- 35) Ocean Drive Historic District NHL, Newport, Newport County, RI
- 36) Marble House NHL, Newport, Newport, RI
- 37) Ochre Point – Cliffs Historic District, Newport, Newport County, RI
- 38) WWII Lookout Tower at Sands Pond, New Shoreham, Washington County, RI
- 39) Sea View Villa, Middletown, Newport County, RI
- 40) Rosecliff/Oelrichs (Hermann) House/Monroe (J. Edgar) House, Newport, Newport County, RI
- 41) The Breakers NHL, Newport, Newport County, RI
- 42) Corn Neck Road, New Shoreham, Washington County, RI
- 43) Clam Shack Restaurant, Westport, Bristol County, MA
- 44) Horseneck Point Lifesaving Station, Westport, Bristol County, MA
- 45) Whetstone, Middletown, Newport County, RI
- 46) The Bluff/John Bancroft Estate, Middletown, Newport County, RI
- 47) Clambake Club of Newport, Middletown, Newport County, RI
- 48) Old Town and Center Roads, New Shoreham, Washington County, RI
- 49) Beach Avenue, New Shoreham, Washington County, RI
- 50) Mitchell Farm, New Shoreham, Washington County, RI
- 51) Indian Head Neck Road, New Shoreham, Washington County, RI
- 52) Westport Pt. Revolutionary War Properties, Westport, Bristol County, MA
- 53) Indian Avenue Historic District, Middletown, Newport County, RI
- 54) St. Georges School, Middletown, Newport County, RI
- 55) Hygeia House, New Shoreham, Washington County, RI
- 56) U.S. Weather Bureau Station, New Shoreham, Washington County, RI
- 57) Miss Abby E. Vaill/1 of 2 Vaill cottages, New Shoreham, Washington County, RI
- 58) Hon. Julius Deming Perkins / “Bayberry Lodge.” New Shoreham, Washington County, RI
- 59) Lakeside Drive and Mitchell Lane, New Shoreham, Washington County, RI
- 60) Land Trust Cottages, Middletown, Newport County, RI
- 61) Russell Hancock House, Chilmark, Dukes County, MA
- 62) Westport Point Historic District (1 of 2), Westport, Bristol County, MA
- 63) Westport Point Historic District (2 of 2), Westport, Bristol County, MA
- 64) Mohegan Cottage/Everett D. Barlow House, New Shoreham, Washington County, RI
- 65) Paradise Rocks Historic District, Middletown, Newport County, RI
- 66) Lewis-Dickens Farm, New Shoreham, Washington County, RI
- 67) Island Cemetery/Old Burial Ground, New Shoreham, Washington County, RI



- 68) Kay St.-Catherine St.-Old Beach Rd. Historic District/The Hill, Newport, Newport County, RI
- 69) Beacon Hill Road, New Shoreham, Washington County, RI
- 70) Nathan Mott Park, New Shoreham, Washington County, RI
- 71) Block Island North Lighthouse New Shoreham, Washington County, RI
- 72) Champlin Farm, New Shoreham, Washington County, RI
- 73) Hippocampus/Boy's Camp/Beane Family, New Shoreham, Washington County, RI
- 74) U.S. Lifesaving Station, New Shoreham, Washington County, RI
- 75) U.S. Coast Guard Brick House, New Shoreham, Washington County, RI
- 76) Peleg Champlin House, New Shoreham, Washington County, RI
- 77) Hancock, Captain Samuel - Mitchell, Captain West House; Chilmark, Dukes County, MA
- 78) Scrubby Neck Schoolhouse, West Tisbury, Dukes County, MA
- 79) Point Judith Lighthouse, Narragansett, Washington County, RI
- 80) Bailey Farm, Middletown, Newport County, RI
- 81) Beavertail Light, Jamestown, Newport County, RI
- 82) Horsehead/Marbella, Jamestown, Newport County, RI
- 83) Ocean Road Historic District, Narragansett, Washington County, RI
- 84) Dunmere, Narragansett, Washington County, RI
- 85) Puncatest Neck Historic District, Tiverton, Newport County, RI
- 86) Fort Varnum/Camp Varnum, Narragansett, Washington County, RI
- 87) Salters Point, Dartmouth, Bristol County, MA
- 88) Dunes Club, Narragansett, Washington County, RI
- 89) Life Saving Station at Narragansett Pier, Narragansett, Washington County, RI
- 90) The Towers Historic District, Narragansett, Washington County, RI
- 91) Narragansett Pier Multiple Resource Area, Narragansett, Washington County, RI
- 92) The Towers/Tower Entrance of Narragansett Casino, Narragansett, Washington County, RI
- 93) Chappaquiddick Island Traditional Cultural Property, Edgartown, Dukes County, MA
- 94) Brownings Beach Historic District, South Kingstown, Washington County, RI
- 95) Tarpaulin Cove Light, Gosnold, Dukes County, MA
- 96) Clark's Point Light, New Bedford, Bristol County, MA
- 97) Fort Rodman Historic District, New Bedford, Bristol County, MA
- 98) Fort Taber Historic District, New Bedford, Bristol County, MA
- 99) Butler Flats Light Station, New Bedford, Bristol County, MA
- 100) 744 Sconticut Neck Road, Fairhaven Bristol County, MA
- 101) Nobska Point Lighthouse, Falmouth, Barnstable County, MA

The Lessee must execute all aspects of this condition of COP approval consistent with the Section 106 MOA (Stipulation II.C; Stipulation III.C.1 – 6; Attachment 5 *Mitigation*)

*Funding Amounts Proposed by Signatories and Consulting Parties; Attachments 9 and 10: The Vineyard Sound & Moshup's Bridge Traditional Cultural Property Dukes County, Massachusetts & Atlantic Outer Continental Shelf for federal Tribal Nations and Consulting Parties; Attachment 11 Historic Property Treatment Plan for the Revolution Wind Farm: Documentation of Twenty-Six Historic Properties in Rhode Island; Attachment 12 Historic Properties Treatment Plan for the Revolution Wind Farm: Nine Historic Properties, Town of Middletown, Newport County, Rhode Island; Attachment 13 Historic Properties Treatment Plan for the Revolution Wind Farm, Nine Historic Properties, Town of Aquinnah, Dukes County, Massachusetts; and Attachment 14 Historic Properties Treatment Plan for the Revolution Wind Farm: The Gay Head Lighthouse, Town of Aquinnah, Dukes County).* The Annual Certification under condition 7.9 must include reporting associated with Section 106 MOA compliance.

- 7.9. Annual Monitoring and Reporting on the Section 106 MOA (Planning) (Construction) (Operations) (Decommissioning). By January 31 of each year, the Lessee must submit for BOEM's review a summary report detailing work undertaken pursuant to the Section 106 MOA during the preceding year. The Lessee must address any BOEM comments and, after BOEM's review and agreement, the Lessee must share the summary report with all participating consulting parties identified in Attachment 4 of the Section 106 MOA. The report must include a description of how the stipulations relating to avoidance and minimization measures (Section 106 MOA Stipulations I and II) were implemented; any scheduling changes proposed; any problems encountered; and any disputes and objections received in the Lessee's efforts to carry out the terms of the Section 106 MOA. The Lessee may satisfy this reporting requirement by providing the relevant portions of the Annual Certification required under 30 C.F.R. § 285.633.
- 7.10. Implementation of Post-Review Discovery Plans (Planning) (Construction) (Operations) (Decommissioning). If properties are discovered that may be historically significant or unanticipated effects on historic properties are found, the Lessee must implement the Post-Review Discovery Plans found in Section 106 MOA Attachment 29 *Revolution Wind Export Cable Onshore Substation and Interconnection Facility, North Kingstown, Rhode Island: Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains*, and Attachment 30 *Unanticipated Discoveries Plan for Submerged Archaeological Sites, Historic Properties, and Cultural Resources Including Human Remains: Revolution Wind Farm for Lease Area OCS A-0486 Constructions and Operations Plan*.
- 7.11. All Post-Review Discoveries (Construction) (Operations) (Decommissioning). In the event of a post-review discovery of a property or unanticipated effects to a historic property prior to or during construction, operation, maintenance, or decommissioning of the Project, the Lessee must implement the following actions:
  - 7.11.1. Immediately halt seabed-disturbing activities within the area of discovery.

- 7.11.2. As soon as practicable and no later than 72 hours after the discovery, notify BOEM (at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov)) and BSEE (at [env-compliance-arch@bsee.gov](mailto:env-compliance-arch@bsee.gov) and via TIMSWeb) with a written report, describing the discovery in detail, including a narrative description of the manner of discovery (e.g., date, time, heading, weather, information from logs); a narrative description of the potential resource, including measurements; images that may have been captured of the potential resource; portions of raw and processed datasets relevant to the discovery area; and any other information considered by the Lessee to be relevant to DOI's understanding of the potential resource. Provide the notification to BOEM and BSEE within 72 hours of its discovery. BOEM and BSEE may request additional information and/or request revisions to the report.
- 7.11.3. Keep the location of the discovery confidential and take no action that may adversely affect the archaeological resource until BOEM has made an evaluation and instructs the Lessee on how to proceed.
- 7.11.4. Conduct any additional investigations and submit documentation as directed by BOEM to determine if the resource is eligible for listing in the National Register of Historic Places (NRHP) (30 C.F.R. § 585.702(b)). The Lessee must satisfy this requirement only if (1) the site has been impacted by the Lessee's Project activities; and/or (2) impacts to the site or to the APE cannot be avoided. If investigations indicate that the resource is potentially eligible for listing in the NRHP, BOEM will instruct the Lessee how to protect the resource or how to mitigate adverse effects.
- 7.11.5. If there is any evidence that the discovery is from a federally recognized Tribal Nation or appears to be a preserved burial site, the Lessee must contact the federally recognized Tribal Nation as identified in the notification lists included in the Post-Review Discovery Plan within 72 hours of the discovery with details of what is known about the discovery and consult with the federally recognized Tribal Nation pursuant to the Post-Review Discovery Plan.
- 7.11.6. If BOEM or BSEE incurs costs in addressing the discovery, under Section 110(g) of the NHPA, BOEM or BSEE may charge the Lessee reasonable costs for carrying out preservation responsibilities under OCSLA (30 C.F.R. § 585.702(c)-(d)).
- 7.12. No Impact Without Approval Emergency Situations (Planning) (Construction) (Operations) (Decommissioning). In the event of an emergency or disaster that is declared by the President or the Governor of Rhode Island, which represents an imminent threat to public health or safety, or creates a hazardous condition due to impacts from the Project's infrastructure damaged during the emergency and affecting historic properties in the APEs, BOEM and BSEE, with the assistance of the Lessee, will notify the consulting federally recognized Tribal Nations, Rhode Island State Historic Preservation Office (SHPO), Massachusetts SHPO, and the Advisory Council on Historic Preservation (ACHP) of the condition that has initiated the situation and the measures taken to respond to the emergency or hazardous condition in accordance with the Section 106 MOA. BOEM and BSEE will make this notification as soon as reasonably possible, but no later than 48 hours from when BOEM and BSEE becomes aware of the emergency or disaster. Should the

consulting federally recognized Tribal Nations, Rhode Island SHPO, Massachusetts SHPO, or ACHP desire to provide technical assistance to BOEM and BSEE, they will submit comments within 7 days from notification if the nature of the emergency or hazardous condition allows for such coordination.

7.12.1. No Impact Without Approval (Planning) (Construction) (Operations) (Decommissioning). The Lessee may not knowingly impact a potential archaeological resource without BOEM's and BSEE's prior concurrence. If a possible impact to a potential archaeological resource occurs, the Lessee must immediately halt operations; report the incident within 24 hours to BOEM and BSEE; and provide a written report within 72 hours to BOEM and BSEE.

7.13. PAM Placement Review (Construction) (Operations) (Decommissioning). The Lessee may only place PAM systems in locations where an analysis of the results of geophysical surveys has been completed. This analysis must include a determination by a Qualified Marine Archaeologist as to whether any potential archaeological resources are present in the area. This activity may have already been performed as part of the Lessee's submission of archaeological resources reports in support of its approved COP. Except as allowed by BOEM under Stipulation 4.2.6 of Addendum C of the Lease and Section 7.12.1 above, the PAM placement activities must avoid potential archaeological resources by a minimum of 164 feet (50 m), and the avoidance distance must be calculated from the maximum discernible extent of the archaeological resource. As-placed PAM system plats must be submitted to BSEE within 90 days of placement.

7.13.1. If PAM placement activities impact potential historic properties, the Lessee must take the actions described in All Post-Review Discoveries in Section 7.11.

7.13.2. If PAM placement activities impact potential historic properties identified in the archaeological surveys without BOEM's prior authorization, the Lessee and the Qualified Marine Archaeologist who prepared the archaeological resources report must provide to BOEM a statement documenting the extent of the impacts. This statement must be made to BOEM and BSEE consistent with Stipulation 4.2.7 of Addendum C of the Lease and Section 7.11 above. BOEM may require the Lessee to implement additional mitigation measures as appropriate based on a review of the results and supporting information.

## **8. CONDITIONS RELATED TO AIR QUALITY CONDITIONS**

8.1. Reporting (Construction) (Operations) (Decommissioning). The Lessee must submit all monitoring, reporting, and survey requirements related to air quality to BOEM at [renewable\\_reporting@boem.gov](mailto:renewable_reporting@boem.gov), BSEE via TIMSWeb, and the Environmental Protection Agency (EPA) at [Timmerman.Timothy@epa.gov](mailto:Timmerman.Timothy@epa.gov). The Lessee must confirm the relevant point of contact prior to reporting and confirmation of reporting receipt.

8.2. Sulfur Hexafluoride (SF<sub>6</sub>) Leak Rate Monitoring and Detection (Construction) (Operations) (Decommissioning). The Lessee must adhere to International Electrotechnical Commission and applicable requirements in EPA's OCS air permits for SF<sub>6</sub> leak detection

and monitoring requirements. The Lessee must also follow manufacturer recommendations for service and repair of the affected breakers and switches and conduct visual inspections of the switchgear and monitoring equipment according to manufacturer recommendations.

- 8.2.1. The Lessee must create alarms based on the pressure readings in the breakers and switches, so leaks can be detected when substantial SF<sub>6</sub> leakage occurs. Upon a detectable pressure drop that is greater than 10 percent of the original pressure (accounting for ambient air conditions), the Lessee must perform maintenance to fix seals within 14 days or within EPA permit requirements (whichever is earlier). If an event requires removal of SF<sub>6</sub>, the affected major component(s) must be replaced with new component(s).
  - 8.2.2. The Lessee must report to BOEM and BSEE any detectible pressure drop that is greater than 10 percent as soon as practicable or as specified in the EPA Title V permit. No later than 72 hours after the discovery, the Lessee must notify BOEM and BSEE and provide an estimated timeframe for maintenance or replacement.
  - 8.2.3. The Lessee must provide a summary in the Lessee's Annual Certification under 30 C.F.R. § 285.633 of observed SF<sub>6</sub> leak rates in the past year and a summary of any leaks greater than 0.5 percent and the associated maintenance or repair actions taken and their timeframe from detection to completion.
- 8.3. Air Quality Impacts and Permitting Requirements (Construction) (Operations). The Lessee is required under Clean Air Act § 328 (42 U.S.C. § 7627) to obtain an OCS air permit for OCS sources and must comply with all applicable regulations and permitting requirements under the OCS permit program at 40 C.F.R. Part 55. If any requirement in Section 8 of these conditions is inconsistent with the terms of EPA's permit, the language in EPA's permit will prevail.

## **ATTACHMENT 1: LIST OF ACRONYMS**

ACHP	Advisory Council on Historic Preservation
ADLS	Aircraft Detection Lighting System
ALARP	as low as reasonably practical
ANSI	American National Standards Institute
APE	Area of Potential Effects
API	American Petroleum Institute
ASLF	Ancient Submerged Landform Features
ASR	Airport Surveillance Radar
BiOp	Biological Opinion
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CBRA	Cable Burial Risk Assessment
CHIRP	compressed high-intensity radiated pulse
CMR	collision minimization report
COP	Construction and Operations Plan
CTD	conductivity, temperature, and depth
CVA	Certified Verification Agent
CZMA	Coastal Zone Management Act
dB	decibel(s)
DGPS	Differential Global Positioning System
DOD	Department of Defense
DOI	Department of the Interior
DON	Department of the Navy
DPS	distinct population segment
DTS	desktop study
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FDR	Facility Design Report
FEIS	Final Environmental Impact Statement
FIR	Fabrication and Installation Report
FSC	Finance Section Chief
GARFO	Greater Atlantic Regional Fisheries Office
GDP	gross domestic product
GIS	geographic information system
GPS	Global Positioning System
HAT	Highest Astronomical Tide

HESD	Habitat and Ecosystem Services Division
HF	high frequency
HPTP	Historic Property Treatment Plan
HRG	high resolution geophysical
IC	Incident Commander
ICS	Incident Command System
IEC	International Electric Code
IFC	issued for construction
IMT	Incident Management Team
IOOS	Integrated Ocean Observing System
IR	infrared
ISO	International Organization for Standardization
ITA	Incidental Take Authorization
ITR	Incidental Take Regulations
ITS	Incidental Take Statement
km	kilometer(s)
LERAR	least expensive radar
LNM	Local Notice to Mariners
LSC	Logistics Section Chief
NMS	Noise mitigation systems
MARA	Marine Archaeological Resources Assessment
MBES	multi-beam echosounder
MEC	munitions and explosives of concern
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
MSA	Magnuson-Stevens Fishery Conservation Act
NARW	North Atlantic right whale
NAS	network attached storage
NCEI	National Centers for Environmental Information
NEFOP	Northeast Fisheries Observer Program
NEFSC	Northeast Fisheries Science Center
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NMS	noise mitigation system
NOAA	National Oceanic and Atmospheric Administration
NORAD	North American Aerospace Defense Command
NRHP	National Register of Historic Places
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act

OEM	Original Equipment Manufacturer
OPR	Office of Protected Resources within NMFS
OSC	Operations Section Chief
OSPD	Oil Spill Preparedness Division
OSRO	Oil Spill Removal Organization
OSRP	Oil Spill Response Plan
OSS	offshore substation
PAM	Passive Acoustic Monitoring or Passive Acoustic Monitor(s)
PATON	Private Aids to Navigation
PIT	passive integrated transponder
POWERON	Partnership for an Offshore Wind Energy Regional Observation Network
PSC	Planning Section Chief
PSO	Protected Species Observer
QA/QC	quality assurance/quality control
QI	Qualified Individual
RAL	Reichs-Ausschuß für Lieferbedingungen und Gütesicherung
RAM	Radar Adverse Impact Management
rms	root mean square
ROD	Record of Decision
RWSC	Regional Wildlife Science Collaborative
SCADA	supervisory control and data acquisition
SF <sub>6</sub>	sulfur hexafluoride
SFV	sound field verification
SHPO	State Historic Preservation Office
SID	Submittal ID
SMS	Safety Management System
SROT	Spill Response Operating Team
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
UTC	Coordinated Universal Time
UXO	unexploded ordnance
VHF	very high frequency
WCD	worst-case discharge
WTG	wind turbine generator



**ATTACHMENT 2: RHODE ISLAND AND MASSACHUSETTS STRUCTURE LABELING PLOT**

AA 01	AA 02	AA 03	AA 04	AA 05	AA 06	AA 07	AA 08	AA 09	AA 10	AA 11	AA 12	AA 13	AA 14	AA 15	AA 16	AA 17	AA 18	AA 19	AA 20	AA 21
AB 01	AB 02	AB 03	AB 04	AB 05	AB 06	AB 07	AB 08	AB 09	AB 10	AB 11	AB 12	AB 13	AB 14	AB 15	AB 16	AB 17	AB 18	AB 19	AB 20	AB 21
AC 01	AC 02	AC 03	AC 04	AC 05	AC 06	AC 07	AC 08	AC 09	AC 10	AC 11	AC 12	AC 13	AC 14	AC 15	AC 16	AC 17	AC 18	AC 19	AC 20	AC 21
AD 01	AD 02	AD 03	AD 04	AD 05	AD 06	AD 07	AD 08	AD 09	AD 10	AD 11	AD 12	AD 13	AD 14	AD 15	AD 16	AD 17	AD 18	AD 19	AD 20	AD 21
AE 01	AE 02	AE 03	AE 04	AE 05	AE 06	AE 07	AE 08	AE 09	AE 10	AE 11	AE 12	AE 13	AE 14	AE 15	AE 16	AE 17	AE 18	AE 19	AE 20	AE 21
AF 01	AF 02	AF 03	AF 04	AF 05	AF 06	AF 07	AF 08	AF 09	AF 10	AF 11	AF 12	AF 13	AF 14	AF 15	AF 16	AF 17	AF 18	AF 19	AF 20	AF 21
AG 01	AG 02	AG 03	AG 04	AG 05	AG 06	AG 07	AG 08	AG 09	AG 10	AG 11	AG 12	AG 13	AG 14	AG 15	AG 16	AG 17	AG 18	AG 19	AG 20	AG 21
AH 01	AH 02	AH 03	AH 04	AH 05	AH 06	AH 07	AH 08	AH 09	AH 10	AH 11	AH 12	AH 13	AH 14	AH 15	AH 16	AH 17	AH 18	AH 19	AH 20	AH 21
AJ 01	AJ 02	AJ 03	AJ 04	AJ 05	AJ 06	AJ 07	AJ 08	AJ 09	AJ 10	AJ 11	AJ 12	AJ 13	AJ 14	AJ 15	AJ 16	AJ 17	AJ 18	AJ 19	AJ 20	AJ 21
AK 01	AK 02	AK 03	AK 04	AK 05	AK 06	AK 07	AK 08	AK 09	AK 10	AK 11	AK 12	AK 13	AK 14	AK 15	AK 16	AK 17	AK 18	AK 19	AK 20	AK 21
AL 01	AL 02	AL 03	AL 04	AL 05	AL 06	AL 07	AL 08	AL 09	AL 10	AL 11	AL 12	AL 13	AL 14	AL 15	AL 16	AL 17	AL 18	AL 19	AL 20	AL 21
AM 01	AM 02	AM 03	AM 04	AM 05	AM 06	AM 07	AM 08	AM 09	AM 10	AM 11	AM 12	AM 13	AM 14	AM 15	AM 16	AM 17	AM 18	AM 19	AM 20	AM 21
AN 01	AN 02	AN 03	AN 04	AN 05	AN 06	AN 07	AN 08	AN 09	AN 10	AN 11	AN 12	AN 13	AN 14	AN 15	AN 16	AN 17	AN 18	AN 19	AN 20	AN 21
AP 01	AP 02	AP 03	AP 04	AP 05	AP 06	AP 07	AP 08	AP 09	AP 10	AP 11	AP 12	AP 13	AP 14	AP 15	AP 16	AP 17	AP 18	AP 19	AP 20	AP 21

**ATTACHMENT 2: RHODE ISLAND AND MASSACHUSETTS STRUCTURE LABELING PLOT (COORDINATES)**

<b>Lease Number</b>	<b>Lessee</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Row</b>	<b>Column</b>
OCS-A 0486	Revolution Wind, LLC	-70.83885451	41.1316397	AL	21
OCS-A 0486	Revolution Wind, LLC	-70.86090789	41.13128546	AL	20
OCS-A 0486	Revolution Wind, LLC	-70.88296087	41.13092699	AL	19
OCS-A 0486	Revolution Wind, LLC	-70.90501345	41.13056431	AL	18
OCS-A 0486	Revolution Wind, LLC	-70.92706563	41.13019741	AL	17
OCS-A 0486	Revolution Wind, LLC	-70.9491174	41.12982629	AL	16
OCS-A 0486	Revolution Wind, LLC	-70.97116875	41.12945095	AL	15
OCS-A 0486	Revolution Wind, LLC	-70.99321968	41.12907139	AL	14
OCS-A 0486	Revolution Wind, LLC	-71.01527019	41.12868762	AL	13
OCS-A 0486	Revolution Wind, LLC	-71.03732027	41.12829963	AL	12
OCS-A 0486	Revolution Wind, LLC	-71.05936992	41.12790742	AL	11
OCS-A 0486	Revolution Wind, LLC	-71.08141913	41.12751099	AL	10
OCS-A 0486	Revolution Wind, LLC	-71.10346789	41.12711035	AL	09
OCS-A 0486	Revolution Wind, LLC	-71.12551621	41.12670549	AL	08
OCS-A 0486	Revolution Wind, LLC	-71.19165844	41.12546562	AL	05
OCS-A 0486	Revolution Wind, LLC	-71.21370493	41.1250439	AL	04
OCS-A 0486	Revolution Wind, LLC	-71.23575094	41.12461796	AL	03
OCS-A 0486	Revolution Wind, LLC	-71.25779648	41.12418781	AL	02
OCS-A 0486	Revolution Wind, LLC	-70.94961123	41.14649947	AK	16
OCS-A 0486	Revolution Wind, LLC	-70.97166816	41.14612391	AK	15
OCS-A 0486	Revolution Wind, LLC	-70.99372467	41.14574414	AK	14
OCS-A 0486	Revolution Wind, LLC	-71.01578075	41.14536014	AK	13
OCS-A 0486	Revolution Wind, LLC	-71.03783641	41.14497192	AK	12
OCS-A 0486	Revolution Wind, LLC	-71.05989163	41.14457948	AK	11
OCS-A 0486	Revolution Wind, LLC	-71.08194642	41.14418283	AK	10
OCS-A 0486	Revolution Wind, LLC	-71.10400076	41.14378195	AK	09
OCS-A 0486	Revolution Wind, LLC	-71.12605466	41.14337685	AK	08
OCS-A 0486	Revolution Wind, LLC	-70.95010547	41.1631726	AJ	16
OCS-A 0486	Revolution Wind, LLC	-70.97216799	41.16279682	AJ	15
OCS-A 0486	Revolution Wind, LLC	-70.99423008	41.16241682	AJ	14
OCS-A 0486	Revolution Wind, LLC	-71.01629175	41.1620326	AJ	13
OCS-A 0486	Revolution Wind, LLC	-71.03835299	41.16164416	AJ	12
OCS-A 0486	Revolution Wind, LLC	-71.06041379	41.16125149	AJ	11
OCS-A 0486	Revolution Wind, LLC	-71.08247416	41.1608546	AJ	10
OCS-A 0486	Revolution Wind, LLC	-71.10453408	41.16045349	AJ	09
OCS-A 0486	Revolution Wind, LLC	-71.12659356	41.16004816	AJ	08
OCS-A 0486	Revolution Wind, LLC	-71.14865258	41.15963861	AJ	07
OCS-A 0486	Revolution Wind, LLC	-71.17071114	41.15922483	AJ	06
OCS-A 0486	Revolution Wind, LLC	-71.19276925	41.15880684	AJ	05
OCS-A 0486	Revolution Wind, LLC	-71.21482688	41.15838462	AJ	04
OCS-A 0486	Revolution Wind, LLC	-71.23688405	41.15795819	AJ	03
OCS-A 0486	Revolution Wind, LLC	-71.25894074	41.15752753	AJ	02
OCS-A 0486	Revolution Wind, LLC	-71.10506785	41.17712498	AH	09

Lease Number	Lessee	Longitude	Latitude	Row	Column
OCS-A 0486	Revolution Wind, LLC	-71.12713291	41.17671941	AH	08
OCS-A 0486	Revolution Wind, LLC	-71.14919751	41.17630962	AH	07
OCS-A 0486	Revolution Wind, LLC	-71.17126166	41.17589561	AH	06
OCS-A 0486	Revolution Wind, LLC	-71.19332535	41.17547737	AH	05
OCS-A 0486	Revolution Wind, LLC	-71.21538857	41.17505491	AH	04
OCS-A 0486	Revolution Wind, LLC	-71.10560206	41.19379641	AG	09
OCS-A 0486	Revolution Wind, LLC	-71.12767271	41.19339061	AG	08
OCS-A 0486	Revolution Wind, LLC	-71.1497429	41.19298058	AG	07
OCS-A 0486	Revolution Wind, LLC	-71.17181264	41.19256632	AG	06
OCS-A 0486	Revolution Wind, LLC	-71.19388192	41.19214784	AG	05
OCS-A 0486	Revolution Wind, LLC	-71.21595072	41.19172513	AG	04
OCS-A 0486	Revolution Wind, LLC	-71.06198289	41.21126719	AF	11
OCS-A 0486	Revolution Wind, LLC	-71.08406003	41.21086961	AF	10
OCS-A 0486	Revolution Wind, LLC	-71.10613672	41.2104678	AF	09
OCS-A 0486	Revolution Wind, LLC	-71.12821296	41.21006175	AF	08
OCS-A 0486	Revolution Wind, LLC	-71.15028875	41.20965148	AF	07
OCS-A 0486	Revolution Wind, LLC	-71.17236408	41.20923699	AF	06
OCS-A 0486	Revolution Wind, LLC	-71.19443895	41.20881826	AF	05
OCS-A 0486	Revolution Wind, LLC	-71.0625068	41.22793898	AE	11
OCS-A 0486	Revolution Wind, LLC	-71.08458954	41.22754117	AE	10
OCS-A 0486	Revolution Wind, LLC	-71.10667183	41.22713912	AE	09
OCS-A 0486	Revolution Wind, LLC	-71.12875367	41.22673284	AE	08
OCS-A 0486	Revolution Wind, LLC	-71.15083506	41.22632233	AE	07
OCS-A 0486	Revolution Wind, LLC	-71.17291599	41.22590759	AE	06
OCS-A 0486	Revolution Wind, LLC	-71.06303116	41.24461072	AD	11
OCS-A 0486	Revolution Wind, LLC	-71.0851195	41.24421268	AD	10
OCS-A 0486	Revolution Wind, LLC	-71.10720739	41.24381039	AD	09
OCS-A 0486	Revolution Wind, LLC	-71.12929484	41.24340388	AD	08
OCS-A 0486	Revolution Wind, LLC	-71.15138183	41.24299313	AD	07
OCS-A 0486	Revolution Wind, LLC	-71.12983646	41.26007486	AC	08
OCS-A 0486	Revolution Wind, LLC	-71.13037853	41.27674579	AB	08
OCS-A 0486	Revolution Wind, LLC	-71.28563801	41.29044734	AA	01
OCS-A 0486	Revolution Wind, LLC	-70.83838897	41.11496541	AM	21
OCS-A 0486	Revolution Wind, LLC	-70.86043677	41.11461137	AM	20
OCS-A 0486	Revolution Wind, LLC	-70.88248418	41.11425312	AM	19
OCS-A 0486	Revolution Wind, LLC	-70.90453119	41.11389064	AM	18
OCS-A 0486	Revolution Wind, LLC	-70.92657779	41.11352396	AM	17
OCS-A 0486	Revolution Wind, LLC	-70.94862398	41.11315305	AM	16
OCS-A 0486	Revolution Wind, LLC	-70.97066976	41.11277793	AM	15
OCS-A 0486	Revolution Wind, LLC	-70.99271512	41.1123986	AM	14
OCS-A 0486	Revolution Wind, LLC	-71.01476005	41.11201505	AM	13
OCS-A 0486	Revolution Wind, LLC	-71.03680456	41.11162728	AM	12
OCS-A 0486	Revolution Wind, LLC	-71.05884864	41.1112353	AM	11
OCS-A 0486	Revolution Wind, LLC	-71.21314466	41.10837345	AM	04
OCS-A 0486	Revolution Wind, LLC	-71.2351851	41.10794776	AM	03
OCS-A 0486	Revolution Wind, LLC	-71.25722508	41.10751786	AM	02
OCS-A 0486	Revolution Wind, LLC	-70.94813098	41.09647976	AN	16

<b>Lease Number</b>	<b>Lessee</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Row</b>	<b>Column</b>
OCS-A 0486	Revolution Wind, LLC	-70.97017119	41.09610486	AN	15
OCS-A 0486	Revolution Wind, LLC	-70.99221098	41.09572575	AN	14
OCS-A 0486	Revolution Wind, LLC	-71.01425035	41.09534242	AN	13
OCS-A 0486	Revolution Wind, LLC	-71.03628929	41.09495489	AN	12
OCS-A 0486	Revolution Wind, LLC	-71.0583278	41.09456313	AN	11
OCS-A 0486	Revolution Wind, LLC	-71.21258486	41.09170295	AN	04
OCS-A 0486	Revolution Wind, LLC	-70.94763839	41.07980642	AP	16
OCS-A 0486	Revolution Wind, LLC	-70.96967303	41.07943174	AP	15
OCS-A 0486	Revolution Wind, LLC	-70.99170726	41.07905285	AP	14
OCS-A 0486	Revolution Wind, LLC	-71.01374107	41.07866975	AP	13
OCS-A 0486	Revolution Wind, LLC	-71.03577444	41.07828243	AP	12
OCS-A 0486	Revolution Wind, LLC	-71.05780739	41.07789091	AP	11
OCS-A 0486	Revolution Wind, LLC	-71.21202553	41.0750324	AP	04