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

Conditions of Construction and Operations Plan Approval
Lease Number OCS-A 0512
February 21, 2024

Subject to the conditions set forth in this document, the Bureau of Ocean Energy Management (BOEM) approves Empire Wind Offshore LLC (Lessee or Empire Wind) to conduct activities under the Construction and Operations Plan (COP)[1] for the Empire Wind Farm. This project consists of two wind farms: Empire Wind 1 (EW1) and Empire Wind 2 (EW2) in Lease Area OCS-A 0512, and the Empire Wind Export Cable (Project). 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.

Contents:

1 Empire Offshore Wind LLC. 2023. Construction and Operations Plan, Empire Wind Project (EW1 and EW2). Volumes I–II.

1 GENERAL PROVISIONS

1.1 Adherence to the Approved Construction and Operations Plan, Statutes, Regulations, Permits, and Authorizations (Planning) (Construction) (Operations) (Decommissioning).[2] The Lessee must conduct all activities as proposed in its approved COP for the Project, as stated in these terms and conditions, and as described in any final plans with which the 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 0512 (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 Code of Federal Regulations (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 indicated in the COP and modified by the selected Alternative in the Record of Decision (ROD), the Lessee may construct and install on the Outer Continental Shelf (OCS) up to 138 wind turbine generators (WTGs), up to two offshore substations (OSSs), inter-array cables linking the individual WTGs to the OSS, substation interconnector cables linking the OSSs, and up to two offshore export cables on the OCS.

1.1.2 The Lessee must not install on the OCS any facilities (as defined in 30 C.F.R. § 585.113) that are solely part of EW2, nor conduct any activities for EW2 that could lead to discharges into navigable waters not covered by a state Water Quality Certification prior to: (1) issuance of all necessary state and local approvals and conveyance of rights necessary for construction of the in-state portions of the EW2 export cable; (2) receipt of a Water Quality Certification pursuant to § 401 of the Clean Water Act and any needed concurrence from a state agency under the Coastal Zone Management Act for EW2.

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 these terms and conditions, the language in the latter will prevail.

1.3 Effectiveness (Construction) (Operations). This COP approval and these associated terms and conditions are effective on the date BOEM notifies the Lessee that its COP

2 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. The identification of the primary development phase(s) does not limit BOEM's and BSEE's enforcement of these conditions to the identified phase(s).

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's (NOAA) National Marine Fisheries Service (NMFS) on September 8, 2023;[3] the BiOp issued by U.S. Fish and Wildlife Service (USFWS) on June 22, 2023;[4] Letters of Authorization (LOAs) issued for the Project under the Marine Mammal Protection Act (MMPA); the Section 106 Memorandum of Agreement (MOA) executed on November 20, 2023, or amendments thereto; the language in the NMFS BiOp, USFWS BiOp, LOAs, Section 106 MOA or amendments thereto, will prevail. If the Lessee identifies inconsistencies within or between the language in the NMFS BiOp, USFWS BiOp, LOAs, Section 106 MOA, or amendments thereto, it must direct questions in writing regarding potential inconsistencies to BSEE via TIMSWeb and via email to the BSEE Renewable Energy Operations Director and BOEM via email to the BOEM Office of Renewable Energy Programs Chief. BSEE, in consultation with BOEM, will determine how the Lessee must proceed. Activities authorized by the 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). If needed, the Lessee may submit a written request via email to the BOEM Office of Renewable Energy Programs Chief or to BSEE via TIMSWeb (https://timsweb.bsee.gov/), requesting a variance from the 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 and any alternative actions the Lessee proposes to take. 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(s) 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 re-initiate or perform additional consultations (e.g., Endangered Species Act (ESA), Coastal Zone Management Act (CZMA), National Historic Preservation

3 *See* BiOp 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: Endangered Species Act Section 7 Consultation (September 8, 2023), [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.

4 *See* BiOp Letter from Ian Drew, Field Supervisor Long Island Field Office, Fish and Wildlife Serv., to Brandi Sangunett, BOEM. (June 22, 2023), hereinafter USFWS BiOp]. This is inclusive of the avoidance, minimization, and mitigation measures described in the proposed action and included in the BiOp's ITS.

Act (NHPA), or 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. The Bureau that grants an approval of a variance will make approval publicly available. This provision applies to the extent it is consistent 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 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) As provided for in Terms and Conditions Item 10 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.

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 representative of the Lessee who will, as practicable, 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.

- Locations where cable target burial depths were not achieved, locations of cable protection measures, and locations where cable burial conditions have deteriorated or changed significantly as identified in Section 2.15.
- Project-specific information found in the most current Local Notices to Mariners (LNM).

- The Fisheries Communication Plan.
- The Project Mitigation Report identified in Section 1.9. The Project Mitigation Plan must be submitted to BOEM (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 and packaged in an ESRI-compatible format, preferably an ESRI shapefile. Files must utilize a NAD83 UTM Zone 18 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 Temporary Placement of Equipment on the OCS Outside of the Lease Area (Construction) (Operations) (Decommissioning). To the maximum extent possible, the Lessee must place all equipment, including jack-up legs, within the Lease Area (including the project easements). Subject to BSEE's concurrence and the following conditions, the Lessee may temporarily place equipment outside of the Lease Area, but in no case may the Lessee conduct activity on the OCS that is not described in the COP or place equipment on the OCS in an area for which the Lessee has not provided all required information in the COP under 30 C.F.R. § 585.626:

1.10.1 Notification of Activities Outside of the Lease Area. If the Lessee anticipates temporarily (i.e., a few days or hours) placing any equipment on the OCS outside the Lease Area, the Lessee must submit a notification to BSEE via TIMSWeb 30 days prior to such activities. The Lessee must also clearly identify and include said activities in their Construction Status submissions under Section 2.24 or their Maintenance Schedule submissions under Section 2.25. The activities will be reviewed by BSEE in coordination

with BOEM to confirm that the equipment does not unreasonably interfere with other uses of the OCS. All such actions must be conducted in accordance with these terms and conditions of COP approval and all applicable requirements in the Lease, statutes, regulations, consultations, and permits and authorizations issued by federal, state, and local agencies for the Project. This requirement does not apply to anchors that have already been disclosed in an anchoring plan submitted, reviewed, and made final under condition.

1.10.2 Installation, Repair and Maintenance on the OCS Outside of the Lease Area on an Adjoining Lease. To the extent that equipment, including anchors, cannot be located within the Lease Area, and full enjoyment of the Lease requires the temporary placement of equipment in an adjoining lease, the Lessee must execute a long-term agreement with the adjoining leaseholder that describes the scope and timing of, and the manner in which the Lessee will perform, activities in the adjoining lease ("Installation, Repair and Maintenance Agreement"). If the Lessee and the adjoining leaseholder do not execute the Installation, Repair and Maintenance Agreement, then BOEM, in coordination with BSEE, may evaluate the scenario to determine if the proposed activities would result in unreasonable interference with the rights granted to the adjoining leaseholder and/or to ensure compliance with any other requirement in applicable law, and may impose any conditions deemed necessary.

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

- Via email to the Office of Renewable Energy Programs Project Coordinator for submissions to BOEM for Sections 1 through 4,
- Via email to renewable_reporting@boem.gov for submissions to BOEM for Sections 5 through 8, and
- Via TIMSWeb for submissions to BSEE.

2 TECHNICAL CONDITIONS

2.1 Geologic and Geophysical Data (Planning) (Construction) (Operations) (Decommissioning). The Lessee must retain all data from geological, geophysical, and geotechnical surveys that it used to assess shallow hazards, geologic conditions, and geotechnical characteristics, as well as archaeological, biological and benthic assessments, and overall site investigation results (pursuant to 30 C.F.R. § 585.626). Any data and information obtained from site characterization activities must be accessible to BOEM and BSEE upon request for the duration of the Lease.

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

2.2 Munitions and Explosives of Concern/Unexploded Ordnance Investigation (Planning). As described in the COP, the Lessee must investigate the areas of potential disturbance, for the presence of Munitions and Explosives of Concern (MEC)/Unexploded Ordnance (UXO) and evaluate the risk consistent with the As Low as Reasonably Practical (ALARP) risk mitigation principle. The ALARP risk mitigation principle requires (1) a desktop study (DTS); (2) an investigation survey to determine the presence of objects and report of findings; (3) an identification survey to determine the nature of the identified objects and report of findings; (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, the DTS, and the subsequent survey report(s) following the resolution of all comments provided by BOEM and/or BSEE. In the event archaeological discoveries are made during the MEC/UXO Investigation, the Lessee must notify BOEM within 24 hours of discovery (pursuant to 30 C.F.R. § 585.702 and Lease Stipulation 4.3.7). As part of the Fabrication and Installation Report (FIR), and prior to commencing seabed preparation activities such as pre-lay grapnel run and boulder relocation and installation activities, the Lessee must make available for review to the approved Certified Verification Agent (CVA), BOEM, and BSEE 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 mitigation measure(s), and/or construction re-routing.

2.3 MEC/UXO Identification Survey Report (Planning). The Lessee must submit an Identification Survey Report to BOEM and BSEE for each Bureau's review and concurrence prior to the installation of facilities in the areas of potential disturbance. The report must include the following:

- A detailed discussion of methodologies.
- A summary and detailed description of the findings and information on planned mitigations necessary for MEC/UXO risks to reach ALARP levels, such as: detailed information on MEC/UXO relocation activities, micrositing of facilities, changes to installation or operational activities, and cable re-routings.
- A separate list of findings that identify conditions different from those anticipated and discussed in the DTS.
- A statement attesting that the installation methods and MEC/UXO mitigation strategies discussed in the FIR, DTS, and/or Investigation Survey Report are consistent with the results of the Identification Survey Report, accepted engineering practices, and applicable best management practices. Alternatively, the Lessee may submit a detailed discussion of alternative installation methods and/or MEC/UXO mitigation strategies that the Lessee has determined to be appropriate given the results of the Identification Survey, accepted engineering practices, and applicable best management practices.

2.4 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 by a qualified third party. ALARP Certification must be made available prior to or with seabed preparation activities such as Pre-Lay Grapnel Run (Section 2.26) and Boulder Relocation, and prior to commencing installation activities with the submission of the FIR.

2.5 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), BSEE (via TIMSWeb and env-compliance-arc@bsee.gov), and relevant agency representatives within 24 hours of discovery made during post-COP activities, such as seabed clearance construction and operations:

- A narrative describing activities that resulted in the identification of confirmed MEC/UXO,
- A description of the activity taking place at the time of discovery (e.g., survey, seabed clearance, cable installation),
- A description of the location (latitude [DDD°MM.MMM'], longitude [DDD°MM.MMM]), lease area, and block) of the discovery
- The water depth (meters (m)) of the confirmed MEC/UXO,
- A description of the MEC/UXO type, dimensions, and weight, and
- The MEC/UXO vertical position (description of exposure or estimated depth of burial).

2.6 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 Report Implementation (as referenced in Section 2.3) 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., WTGs, 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:

- A description of the 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;
- A hazard analysis of the response activities;

- A description of the type and designation of work vessels, remotely operated vehicles, unmanned surface vehicles, or craft planned to be used in proximity to the MEC/UXO;
- The contact information of the identified munitions response contractor
- The contractor qualifications and competencies to safely carry out the response work;
- A proposed timeline of response activities;
- The position of confirmed MEC/UXO and, if applicable, planned relocation position (latitude [DDD°MM.MMM'], longitude [DDD°MM.MMM]);
- A description of the potential impact of weather and sea state on munitions response operations;
- A description of the potential for human exposure;
- A medical emergency procedures plan;
- A description of the protective measures to be implemented to reduce risk and/or monitor effects to protected species and habitats or other ocean users; and
- A plan for accidental detonation.

2.7 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:

2.7.1 A narrative describing the activities that were undertaken by the Lessee, including the following:

- The As Found Location and, if applicable, As Left Location (latitude [DDD°MM.MMM'], longitude [DDD°MM.MMM]), lease area, and block;
- The water depth (m) of munitions response activities;
- The weather and sea state at the time of munitions response;
- The number and detailed characteristics (e.g., type, size, classification) of the MEC items that were subject to response efforts; and
- The duration of the munitions response activities, including start and stop times.

2.7.2 A summary describing how the Lessee followed its Munitions Response Plan and any deviations from the plan;

2.7.3 A description of safety measures used, including but not limited to the presence of a 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;

2.7.4 The results of the munitions response;

2.7.5 A description of any threats and effects to health, safety, or the marine environment;

2.7.6 A description of any effects on protected species and marine mammals and measures implemented to reduce risk and monitor effects;

2.7.7 The details and results of any geophysical surveys conducted after the completion of the munitions response activities; and

2.7.8 If applicable, a description of anticipated future munitions response activities.

2.8 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 2.8.1 through 2.8.4) and verify whether it is acceptable.

2.8.1 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.

2.8.2 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[6] prior to beginning the relevant activities described in the COP.

2.8.3 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

6 Unless otherwise specified in the terms and conditions, the term "days" means "calendar days."

BSEE. Following BSEE's review of the report, the Lessee must engage with and respond to BSEE until any questions or concerns that BSEE has have been resolved to BSEE's satisfaction.

2.8.4 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, must 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.

2.9 Emergency Response Procedure (Planning) (Construction) (Operations) (Decommissioning). Prior to construction of the Project, the Lessee must submit an Emergency Response Procedure to address non-routine events for review and concurrence by BSEE. The Lessee must submit any revisions of the Emergency Response Procedure once every 3 years and upon BSEE's request, consistent with Section 2.9. The Emergency Response Procedure must address the following:

2.9.1 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 of non-routine conditions, descriptions of high-consequence and low probability events including methods to address those events, including for: (1) stabilizing the situation; (2) sheltering in place, rescuing, or evacuating facility personnel; (3) establishing and testing WTG rotor shutdown, braking and locking; (4) lighting control; (5) notifying the USCG of mariners in distress or potential/actual search and rescue incidents; (6) notifying BSEE and the USCG of any events or incidents that may impact maritime safety or security; and (7) providing the USCG with environmental data, imagery, communications, and other information pertinent to search and rescue or marine pollution response.

2.9.2 Communications. The Lessee must describe the control center's capabilities to communicate with the USCG and the Lessee or contractor personnel working on the offshore lease.

2.9.3 Monitoring. The Lessee must ensure that the control center maintains the capability to monitor the Lessee's installation and operations in real time, including at night and in periods of poor visibility.

2.10 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_OSRPs@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, Regional 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:

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

2.10.2 Table of Contents.

2.10.3 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.

2.10.4 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:

- List the latitude and longitude, water depth, and distance to the nearest shoreline for each facility that may handle and/or store oil.
- List the oil(s) by product/brand name and corresponding volume(s) on each type of facility covered under the Lessee's OSRP.
- 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.

2.10.5 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.

2.10.6 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.

2.10.6.1 "Qualified Individual" (QI) 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.

2.10.6.2 "Incident Management Team" (IMT) 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 Incident Commander (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 for the 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 that such a contract is provided in the Lessee's OSRP.

2.10.7 Notification Procedures. The OSRP must describe the procedures for spill notification. Notification procedures must include the 24-hour contact information for:

- The QI and an alternate, including phone numbers and email addresses;
- IMT members, including phone numbers and email addresses;
- Federal, state, and local regulatory agencies that must be notified when a spill occurs, including, but not limited to, the National Response Center;
- The Oil Spill Removal Organizations (OSRO) and Spill Response Operating Teams (SROT) that are available to respond; and
- Other response organizations and subject matter experts that the Lessee will rely on for the Lessee's response.

2.10.8 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:

- 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).
- General procedures for ensuring that the source of a discharge is controlled as soon as possible after a spill occurs.
- Procedures to remove oil and oiled debris from shallow waters and along shorelines.
- Procedures to store, transfer, and dispose of recovered oil and oil-contaminated materials and to ensure that all disposal is consistent with federal, state, and local requirements.

2.10.9 Resources at Risk. 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 Plan(s).

2.10.10 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" is 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.

2.10.11 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.

2.10.11.1 The Lessee must ensure that the oil spill response equipment is maintained in proper operating condition.

2.10.11.2 The Lessee must ensure that all oil spill response equipment maintenance, modification, and repair records are kept for a minimum of 3 years.

2.10.11.3 The Lessee must provide oil spill response equipment maintenance, modification, and repair records to BSEE OSPD upon request.

2.10.11.4 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.

2.10.11.5 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.

2.10.12 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 training records for 3 years and must be provide the training records to BSEE upon request.

2.10.13 Worst-Case Discharge 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.

2.10.13.1 If multiple candidate WCD facilities contain the same cumulative volume of oil(s), the WCD facility is the one closest to shore.

2.10.13.2 The WCD facility must be identified on the facility map consistent with the "Facility and Oil Information" section of these Terms & Conditions.

2.10.13.3 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.

2.10.14 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:

- Be based on the WCD volume.

- 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.
- 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 (m^2). Stochastic analysis must incorporate a minimum of 100 different trajectory simulations using random start dates selected over a multi-year period.

2.10.15 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.

2.10.15.1 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.

2.10.15.2 The Lessee must conduct an annual oil spill response equipment deployment exercise.

2.10.15.3 The Lessee must notify BSEE OSPD at least 30 days in advance of any exercise it intends to conduct for compliance with this condition.

2.10.15.4 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.

2.10.15.5 BSEE may evaluate the results of the exercises and advise the Lessee of any needed changes in response equipment, procedures, tactics, or strategies.

2.10.15.6 BSEE may periodically initiate unannounced exercises to test the Lessee's spill preparedness and response capabilities.

2.10.15.7 The Lessee must maintain and retain exercise records for at least 3 years and must provide the exercise records to BSEE upon request.

2.10.16 OSRP Review and Update. The Lessee must review and update the entire 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.

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

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

2.11 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 stable 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.

2.12 Cable Burial (Planning) (Construction) (Operations). The Lessee must install the export and inter-array cables using jetting, vertical injection, control flow excavation, trenching, or plowing, as described in Section 3.3.1.4 and 3.3.1.5 of the approved COP. For the approved COP, BOEM has determined the proper burial depth to be a minimum of 1.8 m (6 feet (ft)) below stable seabed along federal sections of the export and inter-array cables. This depth is consistent with the approved COP. 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. In the event cable burial is not achieved for at most 10 percent of the total export cable length on the OCS and at most 10 percent of the inter-array cable routing, the Lessee must comply with Cable Protection Measures (Section 2.13). The Lessee must demonstrate proper burial depth by providing cable monitoring reports (Section 2.15) and final, as-built information (Section 2.22).

2.13 Cable Protection Measures (Planning) (Construction) (Operations) (Decommissioning) The export and inter-array cables must be installed using jetting, vertical injection, control flow excavation, trenching, or plowing as described in Section 3.3.1.4 and 3.3.1.5 of the approved COP. In areas where final cable burial depth is less than 1.8 m below stable seabed, excluding within the vicinity of WTG/OSS foundations where cables are enclosed within a cable protection system, the Lessee must install secondary protection only to include concrete mattresses, rock bags, or rock placement and must adhere to the scour and cable protection measures in Section 5.5.4.

2.13.1 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 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 2.12, is not achieved. The Lessee must include design information and drawings as part of the relevant FDR and must include installation information as a part of the relevant FIR prior to installing cable protection. 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 ensure notice of locations where target burial depths were not achieved and where cable protection measures were used, including accessible graphic/geo-referenced repository for this information, is made available on the Project website (Section 1.8. Project Website).

2.13.2 If the Lessee cannot comply with the requirements in Section 2.13.1, 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.

2.14 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, begin for the applicable cable route(s). The

Lessee must make the agreements and crossing designs available to the CVA for review unless otherwise determined by BOEM.

2.14.1 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.

2.15 Post-Installation Cable Monitoring (Construction) (Operations). The Lessee must conduct an inspection of each inter-array and export cable to determine cable location, burial depths, the state of the cable, and site conditions within 6 months following installation of the export and inter-array cables, and additional inspections within 1 year following completion of the initial post-installation inspection, and every 3 years thereafter (e.g., years 5, 8, 11, 14, 17, 20, and 23 after commissioning). These surveys must also be conducted within 180 days of a storm event (as defined in the Post-Storm Event Monitoring Plan, described in Section 2.19). 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.

2.15.1 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.

2.15.2 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 BSEE comments to BSEE's satisfaction.

2.15.3 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 BSEE comments to BSEE's satisfaction.

2.16 WTG and OSS Foundation Depths (Planning). In a letter dated January 10, 2020, BOEM granted a departure from 30 C.F.R. § 585.626(a)(4)(ii), 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). The geotechnical investigations at each OSS must include at a minimum, one deep boring located within the footprint of each OSS. The FDR must also show pile drivability, including in areas with glauconitic sands of each foundation based on site-specific geotechnical data.

2.17 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 submit an In-Service Inspection Plan (ISIP) to BSEE with the relevant FDR/FIR. 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 2.19 for post-storm structural integrity monitoring.

2.18 Foundation Scour Protection Monitoring (Construction) (Operations) (Decommissioning). The Lessee must minimize the footprint of scour protection measures at the WTG and OSS 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 BSEE 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.

2.18.1 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 2.19).

2.18.2 The Lessee must provide BOEM and 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.

2.18.3 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.

2.19 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.

2.20 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 eight IOOS HF radar systems listed in the table below.

Table 2.20-1. Identified IOOS HF-radar Systems

Radar Name	Radar Operator
Amagansett SeaSonde Oceanographic HF-radar (AMAG)	Rutgers University
Bradley Beach SeaSonde Oceanographic HF-radar (BRAD)	Rutgers University
Hempstead SeaSonde Oceanographic HF-radar (HEMP)	Rutgers University
Sandy Hook SeaSonde Oceanographic HF-radar (HOOK)	Rutgers University
Loveladies SeaSonde Oceanographic HF-radar (LOVE)	Rutgers University
Moriches SeaSonde Oceanographic HF-radar (MRCH)	Rutgers University
Sea Bright SeaSonde Oceanographic HF-radar (SEAB)	Rutgers University
Seaside Park SeaSonde Oceanographic HF-radar (SPRK)	Rutgers University

2.20.1 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 interference mitigation must continue throughout operations and decommissioning until the point of decommissioning where all rotor blades are removed. Interference is considered unacceptable if, as determined by BOEM in consultation with NOAA's IOOS Office, 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.

2.20.2 Mitigation Review. The Lessee must submit to BOEM documentation demonstrating how it will mitigate unacceptable interference with IOOS HF-radar systems in accordance with Section 2.20.1. 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 the NOAA IOOS Office, deems the mitigation acceptable, the Lessee must conduct activities in accordance with the proposed mitigation.

2.20.3 Mitigation Agreement. The Lessee is encouraged to enter into an agreement with the NOAA IOOS Office 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 the development of a Mitigation Agreement with the NOAA IOOS Office 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 2.20.2 by providing BOEM with an executed Mitigation

Agreement between the Lessee and NOAA IOOS. If there is any discrepancy between Section 2.20.2 and the terms of a Mitigation Agreement, the terms of the Mitigation Agreement will prevail.

2.20.4 Mitigation Data Requirements. Mitigation required under Section 2.20.2 must address the following:

2.20.4.1 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 the NOAA IOOS Office.

2.20.4.2 If requested by the NOAA IOOS Office, 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.

2.20.5 Additional Notification and Mitigation.

2.20.5.1 If at any time the NOAA IOOS Office or an HF-radar operator informs the Lessee that the Project will cause unacceptable interference to an HF-radar system, the Lessee must notify BOEM of the determination as soon as possible (and no later than 30 days from the date on which the determination was communicated), and propose new or modified mitigation pursuant to this section.

2.20.5.2 If a mitigation measure other than that identified in Section 2.20.2 is proposed, then the Lessee must submit information on the proposed mitigation measure to BOEM for its review and concurrence. If, after consultation with the NOAA IOOS Office, 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 mitigation.

2.21 Critical Safety Systems (Planning) (Construction) (Decommissioning). 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. The documentation provided to BSEE must demonstrate that the qualified third party verified that the critical safety systems and equipment were identified

using appropriate methodologies as defined by the operator's risk management standards, 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 2.21.5.

2.21.1 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.

2.21.2 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 results in harm to health, safety, or the environment including systems that facilitate the escape and survival of personnel (hereinafter "critical safety systems").

2.21.3 Identification of Critical Safety Systems and Equipment Risk Assessment. The Lessee must conduct a risk assessment to identify the critical safety systems and equipment within its facilities, including the WTG, tower, and each OSS. 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 necessary information for a qualified third party to make a recommendation to BSEE on the acceptability of the risk assessment and its associated conclusions. The Lessee must resolve BSEE's comments to BSEE's satisfaction before BSEE will complete its review of the associated FDR under 30 C.F.R. § 285.700.

2.21.4 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, and (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:

- The installation procedures and/or commissioning instructions supplied by the manufacturer and identified in the Project's functional requirements are adequate.
- During commissioning, that the Lessee is following the instructions supplied by the manufacturer and identified in the Project's functional requirements are followed.
- The systems and equipment function as designed.
- The final commissioning records are complete.

2.21.5 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, 2018]) for the critical safety systems identified in Section 2.21.2. 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 5 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 2 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 cease commercial operations.

2.22 Engineering Drawings (Construction) (Operations) (Decommissioning). The Lessee must compile, retain, and make available to BSEE the drawings and documents specified in Table 2.22-1.

Table 2.22-1 Engineering Drawings and Documents

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
Complete set of structural drawing(s) including major structural components and evacuation routes[7]	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A	Submit no later than March 31 of each calendar year, for all structures installed the prior year and submitted annually until completion of installation.
Front, side, and plan view drawings[8]	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	N/A	N/A
Location plat for all Project facilities[9]	With FDR submittal. Drawings must be reviewed and stamped by a registered professional land surveyor.	N/A	Submit no later than March 31 of each calendar year, for all facilities installed the prior year and updated annually until project completion. 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)[10]	Submit quarterly for all facilities installed in the previous quarter.
Proposed Anchoring Plat as required by Section 5.5.1 and 7.4	120 days before commencing anchoring activities. If there are fewer 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 2.23 and 5.5.1)	N/A	N/A	Submit 90 days after completion of an activity or construction of a major facility component(s).
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.

7 As required by 30 C.F.R. § 285.701(a)(4). This is applicable to the WTGs and OSSs.
8 As required by 30 C.F.R. § 285.701(a)(3). This is applicable to the WTGs and OSSs.
9 As required by 30 C.F.R. § 285(a)(2). This is applicable for all installed assets on the OCS including scour protection, cables, WTG, OSS
10 As-installed location must be submitted with the final FIR.

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
Safety diagram(s)[11]	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
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 facilities installed in the previous quarter.
Area classification diagrams	With FDR submittal.	N/A	Submit quarterly for all facilities installed in the previous quarter.

2.22.1 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 2.22-1. If a report or drawing required a PE stamp, any modification to that system will require a PE stamp. 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.

2.22.2 The Lessee must certify, in a letter accompanying the as-built drawings, that the as-built design documents have been reviewed for compliance with the applicable FDR/FIR, do not make material changes from the sealed issued for construction (IFC) drawings, and accurately represent the as installed facility. The drawings must be clearly marked "as-built."

2.22.3 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.

11 Safety diagrams should 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 should include, but not be limited to, escape routes, station bill, fire/gas detectors, firefighting equipment, etc.

2.23 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 or OSSs, and inter array cables) or decommissioning to demonstrate that seabed-disturbing activities complied with avoidance requirements for seafloor features and hazards, sensitive benthic habitat,[12] archaeological resources, and/or anomalies. As-placed anchor 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 seafloor for all seabed disturbing activities. The plats must be at a scale of 1 inch = 1,000 ft (300 m) with Differential Global Positioning System (DGPS) accuracy.

2.24 Construction Status. 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 3.4.1 (Installation Schedule).

2.25 Maintenance Schedule. On a quarterly basis, the Lessee must provide BSEE and BOEM with its maintenance schedule for any planned WTG or OSS maintenance.

2.26 Pre-lay Grapnel Run Plan(s) (Planning) (Construction) The Lessee must submit Pre-lay Grapnel Run Plan(s) for BSEE's review and concurrence. Each plan must be submitted at least 60 days prior to beginning the pre-lay grapnel run activities within the scope of the plan. BSEE will review and provide comments on each plan within 60 days of submittal. The Lessee must resolve BSEE's comments to BSEE's satisfaction prior to starting activities described in the plan. If BSEE does not provide comments on the plan within 60 days of its submittal, then the Lessee may presume BSEE concurs with the plan. The plan must be consistent and meet the conditions of the SMS in Section 2.8.

2.26.1 The Pre-Lay Grapnel Run Plan(s) must include the following:

- A clear depiction (i.e., figures) of the location of pre-lay grapnel run activities;
- A description of pre-lay grapnel run methods, including expected grapnel penetration depth, vessel specifications, and metocean limits on operation, etc.
- A description of debris removal and disposal methods and applicable environmental regulations;

12 Sensitive benthic habitat encompasses: benthic features (sand waves, megaripples, and ripples) and complex habitats (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 The Coastal and Marine Ecological Classification Standard (CMECS) definitions as well as vegetated habitats [e.g. submerged aquatic vegetation (SAV)]), bathymetric features (such as lumps, banks, and scarps) and other areas of high habitat heterogeneity (diversity of structural elements) and complexity.

- A description of safety distances or zones to limit pre-lay grapnel activities near third party assets. Descriptions should be consistent with Cable Crossing Agreements (Section 2.14);
- A description of MEC/UXO ALARP Certified areas, which must be consistent with MEC/UXO ALARP Certification (Section 2.4);
- The environmental footprint of disturbance activities and measures taken to avoid or minimize further adverse impacts to sensitive benthic habitats and fishing operations;
- A summary of any consultation and outreach with resource agencies and the fishing industry in development of the plan (e.g., notifications to mariners).

2.26.2 The Lessee must submit a letter to BSEE outlining any deviations from their Pre-lay Grapnel Run Plan(s) within 90 days following the completion of pre-lay grapnel run activities within the scope of each plan.

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. No sooner than 60 days and no fewer than 30 days before foundation installation, the Lessee must file an application (form CG-2554, or CG-4143), with the Commander of the First Coast Guard District to establish Private Aids to Navigation (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:

3.1.1.1 Provide a lighting, marking, and signaling plan for review by BOEM, BSEE, and USCG, and concurrence by BOEM and BSEE at least 120 days before foundation installation may commence. 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 (Ed. 1.1, Dec. 2021)*; and BOEM's Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development (April 28, 2021).

3.1.1.2 Mark each individual WTG and OSS with clearly visible, unique, alpha-numeric identification characters as agreed to by BOEM, BSEE, and USCG. The Lessee must additionally display this label on each WTG nacelle, visible from above. If the Lessee's

OSS includes helicopter landing platforms, the Lessee must also display this label on the platforms visible from above.

3.1.1.3 For each WTG, install red obstruction lighting that is consistent with the Federal Aviation Administration (FAA) Advisory Circular 70/7460-lM (Nov. 2020).

3.1.1.4 Provide signage that is visible to mariners in a 360-degree arc around the structures to inform vessels of the vertical blade-tip clearance as determined at Highest Astronomical Tide.

3.1.1.5 Submit documentation to BSEE, no later than January 31 of each calendar year for all facilities installed within the preceding calendar year, of the Lessee's compliance with Sections 3.1.1.1 through 3.1.1.6.

3.1.1.6 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).

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

3.2.1 Control mechanisms must enable the Lessee to immediately initiate the shutdown of any WTGs upon emergency order from the Department of Defense (DoD) or the USCG. The Lessee must initiate braking and shut down of each WTG after the shutdown order. The Lessee may resume operations only upon notification from the entity (DoD or USCG) that initiated the shutdown.

3.2.2 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 with the Project's annual inspection results to BSEE.

3.2.3 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.

3.2.4 The Lessee must notify USCG and BSEE in advance of trainings and exercises to test and refine notification and shutdown procedures, allow USCG and BSEE to participate in these trainings and exercises, and provide search and rescue training opportunities for USCG Command Centers, vessels, and aircraft.

3.3 Structure Micrositing. The Lessee must not adjust approved structure locations in a way that narrows the columns oriented north-south and the rows predominantly

oriented southeast to northwest, to less than 0.65 nautical miles (nmi), except for gridded position G16 and H16, which must not be less than 0.57 nmi apart. The Lessee must submit the final as-built structure locations as part of the as-built documentation outlined in Section 2.22.

3.4 Installation Conditions (Planning) (Construction).

3.4.1 Installation Schedule. Not less than 60 days prior to commencing offshore construction activities, the Lessee must provide USCG with a plan that describes the schedule and process for seabed preparation, export and inter-array cable installation, and installing the WTGs and OSS, including 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.

3.4.2 Design Modifications. Any changes or modifications 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.

3.4.3 Cable Burial. A detailed cable burial plan, containing the proposed locations and burial depths, must be submitted to USCG no later than the relevant FIR submittal. In accordance with Section 2.22, the Lessee must submit to BOEM a copy of the final as-built cable burial report containing a positioning list that depicts the precise location and burial depths of the entire cable system (export, interconnector, and array lines).

3.4.4 Nautical Charts/Navigation Aids. The Lessee must submit as-built cable burial reports (containing precise locations and burial depths), OSS locations and WTG locations to USCG and NOAA, consistent with Section 2.22, to facilitate government-produced and commercially available nautical charts and navigation aids.

3.5 Reporting Conditions (Planning) (Construction) (Operations) (Decommissioning).

3.5.1 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.

3.5.2 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.

3.6 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) (Operation). 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 Riverhead NY Air Route Surveillance Radar (ARSR-4) (Construction) (Operations). To mitigate impacts on the North American Aerospace Defense Command's (NORAD's) operation of the Riverhead, NY, Air Route Surveillance Radar-4 (ARSR-4), the Lessee must complete the following:

4.2.1 Mitigation Agreement. The Lessee must enter into a mitigation agreement with the DoD/NORAD 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 the development of the agreement is John Rowe: 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 days, 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 days, 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. If the time gap between commissioning of the first and last WTG is anticipated to be 3 years or greater, the Lessee must contribute funds in the amount of $80,000 to NORAD toward the execution of the RAM when 50 percent of the WTG are commissioned and an additional $80,000 to NORAD toward the execution of additional RAM when the last WTG is commissioned, if commissioning of the last WTG occurs later than 3 years from commissioning of the first WTG. This allows NORAD to manage radar adverse impacts over an extended period of construction.

4.3 Coordination with Department of the Navy (DON) (Planning) (Construction) (Operations) (Decommissioning). The Lessee must enter a coordination agreement with the DoD/Department of the Navy (DON) for purposes of implementing Sections 4.3.1 and 4.3.2 below. If there is any discrepancy between Sections 4.3.1 and 4.3.2 and the terms of the coordination agreement, the terms of the coordination agreement will prevail. Within 45 days of completing the requirements in Sections 4.3.1 and 4.3.2, the Lessee must provide BOEM with evidence of compliance with those requirements. The DON point of contact for coordination is Matthew Senska: matthew.senska@navy.mil; 571-970-8400. If the DON point of contact is no longer active, the Lessee must identify a point of contact through the DOD Clearinghouse.

4.3.1 Risk Assessment of Foreign Investment and Material Vendors. The Lessee must provide the DoD and the DON with the opportunity to assess risks related to foreign investment and foreign material vendors to protect defense capabilities from compromise and exploitation by foreign actors.

4.3.2 Distributed Fiber-Optic Sensing Technology and Acoustic Monitoring Devices. To mitigate potential impacts on the DON's operations, the Lessee must coordinate with the DON on any proposal to use distributed fiber-optic sensing technology as part of the Project or associated transmission cables.

4.4 Electromagnetic Emissions. (Planning) (Construction) (Operation). Before entering any designated defense operating area, warning area, or water test area for the purpose of carrying out any survey activities in support of plan submittals (plans are those included in the approved COP and required per these Conditions of COP Approval), 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[13] AND HABITAT CONDITIONS

5.1 General Environmental Conditions (Planning) (Construction) (Operations) (Decommissioning).

5.1.1 Aircraft Detection Lighting System. 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[14] Awareness and Elimination. 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 Sections 5.1.2 through 5.1.11 to BSEE via TIMSWeb with a notification email sent to marinedebris@bsee.gov.

5.1.3 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 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:

13 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.

14 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.

- Viewing a marine debris training video or training slide pack posted on the BSEE website (https://www.bsee.gov/debris) or by contacting BSEE;
- Receiving an explanation from management personnel that emphasizes their commitment to the requirements;
- Record of attendance (initial and annual); and
- Recordkeeping and the availability of records for inspection by BSEE.

5.1.4 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 previous calendar year.

5.1.5 Marking. Any materials, equipment, tools, containers, and other items used in OCS activities, which are of such 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 durable enough to resist the effects of the environmental conditions to which they may be exposed.

5.1.6 Recovery and Prevention. Discarding debris in the marine environment is prohibited. Debris accidentally released by the Lessee into the marine environment while performing any activities associated with the lease or 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.

5.1.7 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 5.1.6.

5.1.8 Remedial Recovery. After reviewing the notification and rationale for any decision by the Lessee to forgo recovery as described in Section 5.1.6, 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.

5.1.8.1 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.

5.1.8.2 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.

5.1.9 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, including, if applicable, information related to the 24-Hour Reporting and Recovery Plan and the referenced TIMSWeb Submittal ID. The Lessee is not required to submit a report for those months in which no marine debris was lost or discarded. The report must include the following:

- Project identification and contact information for the Lessee and for any operators or contractors involved;
- The date and time of the incident;
- The lease number, OCS area and block, and coordinates of the object's location (latitude and longitude in decimal degrees);
- A detailed description of the dropped object, including dimensions (approximate length, width, height, and weight) and composition (e.g., plastic, aluminum, steel, wood, paper, hazardous substances, or defined pollutants);
- Pictures, data imagery, data streams, and/or a schematic/illustration of the object, if available;
- An indication of whether the lost or discarded item could be detected as a magnetic anomaly of greater than 50 nanotesla, a seafloor target of greater than 0.5 m (1.6 ft), or a sub-bottom anomaly of greater than 0.5

m (1.6 ft) when operating a magnetometer or gradiometer, side scan sonar, or sub-bottom profiler in accordance with DOI's most recent, applicable guidance;

- An explanation of the how the object was lost; and
- A description of immediate recovery efforts and results, including photos.

5.1.10 Annual Surveying and Reporting, Periodic Underwater Surveys, Reporting of Monofilament and Other Fishing Gear Around WTG Foundations. 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 located closest to shore in the Lease Area. Survey design and effort (i.e., the number of WTGs and frequency of reporting) may be modified only upon concurrence by BOEM and BSEE. 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 if the files cannot be uploaded in TIMSWeb. 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.

5.1.11 Site Clearance and Decommissioning. The Lessee must include and address information on unrecovered marine debris in the description of the site clearance activities provided in the decommissioning application required under 30 C.F.R. 285.906.

5.2 Avian and Bat Protection Conditions. The Lessee must submit all required documents related to avian and bat protection conditions in Section 5.2 to BOEM; to BSEE via TIMSWeb and with a notification email to protectedspecies@bsee.gov; and to USFWS Long Island Ecological Services Field Office at FW5ES_NYFO@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.

5.2.1 Bird-Deterrent Devices and Plan. To minimize attracting birds to operating WTGs, the Lessee must, where safety permits, 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. 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 OSSs. The Bird Perching Deterrent Plan must include the type(s) and locations of bird perching-deterrent devices, include a maintenance plan for the life of the Project, allow for modifications and updates as new information and technology become available, track the efficacy of the deterrents, and a timeline for installation. The plan will be based on best available science regarding the efficacy of perching deterrent devices on avoiding and minimizing collision risk. The location of bird-deterrent devices must be proposed by Empire Wind 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 FIR. The Bird Perching Deterrent Plan must be approved before the Lessee may commence installation of any WTGs or OSSs. The Lessee must also provide the location and type of bird-deterrent devices as part of the as-built submittals to BSEE.

5.2.2 Incidental Mortality Reporting. The Lessee must provide an annual report to the BOEM, BSEE, and the USFWS documenting any dead (or injured) birds or bats found on vessels and structures during construction, operations, and decommissioning. The report must contain the following information: the name of the species, date found, location, a picture to confirm species identity (if possible), and any other relevant information. Carcasses with federal or research bands must be reported to the USGS Bird Band Laboratory, available at https://www.pwrc.usgs.gov/BBL/bblretrv/. Incidental observations are extremely unlikely to document any fatalities of listed birds that may occur due to WTG collision. While this Conservation Measure appropriately requires documentation and reporting of any fatalities observed incidental to Operations and Maintenance (O&M) activities, the Avian and Bat Post-Construction Monitoring Plan (ABPCMP) will make clear that lack of documented fatalities in no way suggests that fatalities are not occurring. Likewise, the agencies will not presume that any documented fatalities were caused by colliding with a WTG unless there is evidence to support this conclusion. 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-prevention measures during the preceding year.

5.2.2.1 Immediate Reporting. Any occurrence of a dead or injured ESA-listed bird or bat must be reported to the BOEM, BSEE, and USFWS as soon as practicable (taking into account crew and vessel safety), but no later than 72 hours after the sighting, and, if practicable, the dead specimen will be carefully collected and preserved in the best possible state. The BOEM will coordinate with the USFWS on procedures and required permits for processing and handling specimens.

5.2.3 Collision Minimization. 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 Monitoring and Reporting Requirement 2 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, and USFWS.

5.2.4 Navigation Lighting Upward Illumination Minimization. Nothing in this condition supersedes or is intended to conflict with lighting, marking, and signaling requirements of FAA, USCG, or BOEM. The Lessee must use lighting technology that minimizes impacts on avian species to the extent practicable including lighting designed to minimize upward illumination. The Lessee must provide USFWS with a courtesy copy of the final Lighting, Marking, and Signaling plan, and the Lessee's approved application to USCG to establish PATONs.

5.2.5 Avian and Bat Post-Construction Monitoring Plan. The Lessee must develop and implement an ABPCMP based on Lessee's *Empire Offshore Wind Projects (EW 1 and EW 2): Proposed Bird and Bat Monitoring Framework* (dated September 16, 2022) as required by the USFWS Biological Opinion, in coordination with BSEE, the USFWS, appropriate state agencies, 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, the Lessee must submit an ABPCMP for the BOEM, BSEE, and USFWS review. The BOEM, BSEE, and USFWS will review the ABPCMP and provide any comments on the plan within 60 days of its submittal. The Lessee must resolve all comments on the ABPCMP to the satisfaction of BOEM and BSEE before implementing the plan and prior to the

commissioning of WTG operations. The goals of the ABPCMP will be to: (1) advance understanding of how the target species utilize the offshore airspace and do (or do not) interact with the wind farm; (2) improve the collision estimates from the Stochastic Collision Risk Assessment for Movement model (SCRAM) (or its successor) for listed bird species; and (3) inform any efforts aimed at minimizing collisions or other project effects on target species.

5.2.6 Monitoring. The Lessee must conduct monitoring as outlined in the ABPCMP, which must include use of radio-tags to monitor movement of ESA-listed birds in the vicinity of the project. The ABPCMP will allow for changing methods over time in order to regularly update and refine collision estimates for listed birds. Specific to this purpose, the plan must include an initial monitoring phase involving deployment of Motus radio tags on listed birds in conjunction with the installation and operation of Motus receiving stations on WTGs in the Lease Area following offshore Motus recommendations (https://motus.org/groups/atlantic-offshore-wind/). The initial phase may also include deployment of satellite-based tracking technologies (e.g., Global Positioning System (GPS) or Argos tags). The monitoring must also include digital aerial surveys to monitor avoidance behavior and densities.

5.2.6.1 Annual Monitoring Reports. The Lessee must submit to BOEM, USFWS, and BSEE (via TIMSWeb and at protectedspecies@bsee.gov) a comprehensive report after each full year of monitoring (pre- and post-construction) within 6 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. The BOEM, BSEE, and the USFWS will use the annual monitoring reports to assess the need for reasonable revisions (based on subject matter expert analysis) to the ABPCMP. The BOEM, BSEE, and the USFWS reserve the right to require reasonable revisions to the ABPCMP and may require new technologies as deemed demonstrated, reasonable, and prudent.

5.2.6.2 Post-Construction Quarterly Progress Reports. The Lessee must submit quarterly progress reports during the implementation of the ABPCMP to the BOEM, BSEE, and the USFWS by the 15th day of the month following the end of each quarter during the first 12 months that the project is operational. The progress reports must include a summary of all work performed, an explanation of overall progress, and any technical problems encountered.

5.2.6.3 Monitoring Plan Revisions. Within 30 days of submitting the annual monitoring report, the Lessee must meet with the BOEM,

BSEE, USFWS, and appropriate state agencies to discuss the following: monitoring results; the potential need for revisions to the ABPCMP, including technical refinements or additional monitoring; and the potential need for any additional efforts to reduce impacts. If, based on this annual review meeting, BOEM and the Service jointly determine that revisions to the ABPCMP are necessary, the Lessee must modify the ABPCMP. If the projected collision levels, as informed by monitoring results, deviate substantially from the effects analysis included in the BiOp, Empire Wind must transmit to the BOEM recommendations for new mitigation measures and/or monitoring methods. The frequency, duration, and methods for various monitoring efforts in future revisions of the ABPCMP will be determined adaptively based on current technology and the evolving weight of evidence regarding the likely levels of collision mortality for each listed bird species. The effectiveness and cost of various technologies/ methods will be key considerations when revising the plan. Grounds for revising the ABPCMP include, but are not limited to: (1) greater than expected levels of collision of listed birds; (2) evolving data input needs for SCRAM (or its successor); (3) changing technologies for tracking or otherwise monitoring listed birds in the offshore environment that are relevant to assessing collision risk; (4) new information or understanding of how listed birds utilize the offshore environment and/or interact with wind farms; and (5) coordination and alignment of tracking, monitoring, and other data collection efforts for listed birds across multiple wind farms/ leases on the OCS. The Lessee must continue implementation of appropriate monitoring activities for listed birds (under the current and future versions of the ABPCMP) until one of the following occurs: (A) the EW1 and EW2 WTGs cease operation; (B) the Service concurs that a robust weight of evidence has demonstrated that collision risks to all two listed birds from EW1 and EW2 WTG operations are negligible (i.e., the risk of take from WTG operation is discountable); or (C) the USFWS concurs that further data collection is unlikely to improve the accuracy or robustness of collision mortality estimates and is unlikely to improve the ability of the BOEM and the Lessee to reduce or offset collision mortality.

5.2.6.4 Operational Reporting. The Lessee must submit to the BOEM and BSEE (via TIMSWeb and at protectedspecies@bsee.gov) an annual report summarizing monthly operational data calculated from 10-minute supervisory control and data acquisition data for all WTGs together in tabular format; the proportion of time the WTGs were operational (spinning) each month; the average rotor speed (rpm) of spinning WTGs plus 1 standard deviation; and the

average pitch angle of blades (degrees relative to rotor plane) plus 1 standard deviation. Any operational 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.

5.2.6.5 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 remain accessible to the BOEM, BSEE, and USFWS, upon request for the duration of the lease. The Lessee must work with the 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 the BOEM, BSEE, and the USFWS following the protocols and procedures outlined in the agency document entitled *Guidance for Coordination of Data from Avian Tracking Studies*.

5.2.7 Compensatory Mitigation for Piping Plover and Red Knot. At least 180 days prior to the start of 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 measures; 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.

5.2.8 Bat Surveys. The Lessee must conduct acoustic bat surveys before the end of 2024 in accordance with the Service's Range-Wide Indiana Bat & Northern Long-eared Bat Survey Guidelines (USFWS 2023a) and submit survey data to the North American Bat Monitoring Program. A negative presence survey must be submitted to the Service, the BOEM, and BSEE to avoid additional conservation measures for tree and vegetation clearing.

5.3 Benthic Habitat and Fisheries Monitoring Conditions (Planning) (Construction) (Operations). The Lessee must submit the Fisheries and Benthic Monitoring Plan to BOEM for additional revisions, to BSEE 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.

5.3.1 Fisheries and Benthic Monitoring Plan. The Lessee must conduct fisheries and benthic monitoring according to the *Empire Wind Fisheries and Benthic Monitoring Plan* (Plan) to assess fisheries and benthic habitat status in the Project area pre-, during, and post-construction. The Lessee must resolve all comments on the Plan to BOEM's and BSEE's satisfaction prior to implementation of the revised Plan. The Lessee must submit an annual report to BOEM and BSEE within 90 days of the completion of each year of sampling. The Lessee must share data consistent with its data sharing plan and upon BOEM's or BSEE's request.

5.3.2 The Lessee must submit an annual report to BOEM, BSEE, and NMFS GARFO's Protected Resources Division (PRD) (nmfs.gar.incidental-take@noaa.gov) for benthic habitat and fisheries monitoring activities in the preceding calendar year by March 30th (i.e., the report of 2023 activities is due by March 30, 2024). The report must include a summary of all activities conducted, the dates and locations of all fisheries surveys, number of tows and duration for all trawl surveys summarized by month, number of vessel transits (port of origin and destination), 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.

5.4 Protected Species Monitoring Plan Conditions (Planning) (Construction) (Operations) (Decommissioning). The Lessee must submit all required documents related to protected species in Sections 5.4.1 through 5.4.5 (e.g., passive acoustic monitoring (PAM), pile driving monitoring plans, sound field verification (SFV), and vessel strike) to BOEM; BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov; NMFS GARFO PRD at nmfs.gar.incidental-take@noaa.gov; NMFS's Office of Protected Resources (OPR) at pr.itp.monitoringreports@noaa.gov; and United States Army Corps of Engineers (USACE) at cenae-r-@usace.army.mil.

5.4.1 Passive Acoustic Monitoring During Construction. The Lessee must conduct PAM to supplement visual monitoring of marine mammals before, during, and after all monopile installations, consistent with the requirements of the final MMPA LOA.

5.4.2 Pile Driving PAM Plan. The Lessee must prepare and implement a Pile Driving PAM Plan for foundation installation. The Lessee must submit this plan to BOEM, BSEE, USACE, NMFS GARFO PRD, and NMFS OPR at least 180 days before impact pile driving of foundations is planned. BOEM, BSEE, and NMFS will review the plan and will provide comments within

45 days of receipt of the plan. NMFS will comment to BOEM, BSEE, and the Lessee about whether the plan is consistent with the requirements outlined in the BiOp and its Incidental Take Statement (ITS), and MMPA LOA. If NMFS determines that the plan is inconsistent with those requirements, the Lessee must resubmit a modified plan that addresses the identified issues 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. 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. This information includes deployment locations, procedures, detection review methodology, and protocols; 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 vessel calling for delay/shutdowns; and a full description of all proposed software, call detectors and their performance metrics, and filters. The plan must also incorporate the requirements relative to NARW reporting in Section 5.11.1.

The Lessee must submit, as provided on the website below, full detection data, metadata, and location of recorders (or 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. Archiving requirements at https://www.ncei.noaa.gov/products/passive-acoustic-data#tab-3561 must be followed. Confirmation of both submittals must be sent to BOEM and NMFS GARFO PRD.

5.4.3 Sound Field Verification Plan. The Lessee must submit, prepare, and implement a SFV Plan prior to foundation pile driving. The Lessee must submit a SFV Plan to BOEM, BSEE, USACE, NMFS OPR, and NMFS

GARFO PRD at least 180 days before impact pile driving is planned to begin. The SFV Plan must include all requirements outlined in the NMFS BiOp and ITS Term and Condition 2a-2c and 8d, including the procedures and timelines associated with modifying construction activities and identifying and implementing additional, modified, and/or alternative noise attenuation measures to reduce sound levels, should the modeled distances (assuming 10-decibel (dB) attenuation) be exceeded. BOEM, BSEE, NMFS GARFO PRD, and NMFS OPR will review the plan and provide comments within 45 days of receipt of the plan. NMFS'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 MMPA LOA and BiOp and its ITS. If the plan is determined to be inconsistent with these requirements, the Lessee must resubmit a modified plan that addresses the identified issues at least 15 days before the start of the associated activity; at that time, 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. The Lessee must obtain BOEM's and BSEE's concurrence with this Plan prior to the start of piledriving activities.

5.4.4 Long-term PAM. The Lessee must conduct long-term monitoring of ambient noise, baleen whale, and commercially important fish vocalizations in the Lease Area before, during, and following construction. The Lessee must conduct continuous[15] recording at least 1 year before installation of offshore foundations, during construction of the WTGs and OSSs, initial operation, and for at least 3 but no more than 10 full calendar years of operation to monitor for potential noise 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 instrument(s) must be configured to ensure that the specific locations of vocalizing NARW anywhere within the lease area could be identified, based on the assumption of a 10-kilometer detection range for their calls. The lessee may execute the implementation of this condition through Option 1 or Option 2, as below. The timing requirement (i.e., monitoring for at least 3 but no more than 10 full calendar years of operation) will be re-evaluated by BOEM and BSEE at the end of the third year and each year subsequently thereafter at the request of the Lessee (at a maximum frequency of requests of once per year).

15 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.

5.4.4.1 Option 1 – Lessee Conducts Long-term PAM. The Lessee 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.

The sampling rate (minimum 10 kilohertz (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,[16] 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 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 7.16 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 fish. The Lessee must submit a log of these detections as well as the detection methodology to BOEM, BSEE, (at protectedspecies@bsee.gov) and NMFS (at nmfs.nec.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.

5.4.4.1.1 Long-term PAM Plan. The Lessee must prepare and implement a Long-term PAM Plan under this option.

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

No later than 120 days prior to instrument deployment and before any construction begins, the Lessee must submit to BOEM and BSEE (via TIMSWeb with a notification email to protectedspecies@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. As the Lessee prepares the Long-term PAM Plan, it must coordinate with the RWSC.

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.

5.4.4.2 Option 2 – Financial and Other Contributions to BOEM's Environmental Studies Program.[17] As an alternative to conducting long-term PAM in the Lease Area, the Lessee may opt to enter into an agreement with BOEM to make an 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 access to the Lease Area for deployment, regular servicing, and retrieval of instruments. The Lessee's financial contribution will provide for all activities necessary to conduct PAM within 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, the amount of the financial contribution will be estimated by BOEM's Environmental Studies Program. The Lessee will also be invited to contribute to discussions about the scientific approach of the

17 The Lessee may elect Option 2 initially or during any subsequent calendar year of monitoring, subject to agreement with BOEM and BSEE.

POWERON initiative via the RWSC. The Lessee may request temporary withholding of the public release (placement into the NCEI public data archive) of raw acoustic data collected within the Lease Area or up to 180 days after it is collected. During this temporary hold, the Lessee may be provided a copy of the raw PAM data that was collected in the Lease Area or ROW after it has been cleared for any national security concerns under the RWSC best practices document.

5.4.5 Vessel Strike Avoidance Plan. The Lessee must submit the Vessel Strike Avoidance Plan for protected species to BOEM, BSEE, NMFS GARFO PRD, and NMFS OPR at least 90 days prior to the commencement of vessel use, with the exception of vessels deployed for the fisheries surveys. BOEM, BSEE, NMFS GARFO PRD, and NMFS OPR will review the plan and provide comments within 45 days of receipt of the plan. NMFS'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 final rule/LOA and the BiOp (including Appendix A of the BiOp). If the plan is inconsistent with these requirements, the Lessee must resubmit a modified plan that addresses the identified issues at least 15 days before the start of the associated activity. At that time, BOEM, BSEE and NMFS will discuss a timeline for review and approval of the modified plan, and BOEM will notify the Lessee of this timeline. The plan must provide details on all relevant mitigation and monitoring measures for listed and protected species, minimum separation distances, vessel transit protocols from all planned ports, vessel speeds, vessel strike avoidance protocols, vessel-based observer protocols for transiting vessels, communication and reporting plans, alternative monitoring and equipment to maintain effective 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 the Alternative Plan for vessel strike avoidance in transit lane(s), the plan must describe how PAM, in combination with visual observations, will be conducted to ensure the transit corridor is clear of NARWs. Consistent with the requirements of the MMPA Final Rule/LOA and the BiOp, unless and until the Plan is approved by NMFS OPR and NMFS GARFO PRD, all vessels transiting between the operations and maintenance facility and the Lease Area, year-round, must comply with the 10-knot speed restriction. Vessel restrictions apply to vessels operating within the US Exclusive Economic Zone (EEZ).

5.4.6 Marine Mammal and Sea Turtle Monitoring Plan for Pile Driving. The Lessee must submit a Marine Mammal and Sea Turtle Monitoring Plan for Pile-Driving to BOEM, BSEE, USACE, NMFS GARFO PRD, and NMFS OPR at least 180 days before any foundation pile driving is planned. BOEM, BSEE, NMFS GARFO PRD, and NMFS OPR will review the plan and provide comments within 45 days of receipt of the plan. NMFS'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 BiOp and its ITS. If NMFS determines the plan to be inconsistent with these requirements, the Lessee must resubmit a modified plan that addresses the identified issues at least 15 days before the start of the associated activity; at that time, BOEM, BSEE, NMFS GARFO PRD, and NMFS OPR will discuss a timeline for review and approval 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 the Marine Mammal and Sea Turtle Monitoring Plan before starting any pile driving. The plan(s) must include: a description of how all relevant mitigation and monitoring requirements contained in the NMFS BiOp ITS will be implemented, a pile driving installation summary and sequence of events, a description of all training protocols for all project personnel (PSOs, PAM Operators, trained crew lookouts, etc.), 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), communications and reporting details, and 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. 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, BOEM, and BSEE for review. The Lessee must resolve BOEM's and BSEE's comments to the proposed monitoring plan to their satisfaction and must conduct activities in accordance with the plan.

5.4.7 Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan. The Lessee must submit the Reduced Visibility Monitoring (RVMP)/ Nighttime Pile Driving Monitoring Plan (or plans if separate plans are submitted) to BOEM, BSEE, USACE, and NMFS GARFO PRD at least 180 days before impact pile driving is planned to begin unless specified differently under the LOA. BOEM, BSEE, and NMFS will review the RVMP/Nighttime Pile Driving Monitoring Plan and provide comments

within 45 days of receipt of the plan. NMFS GARFO PRD'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 BiOp and its ITS. The Lessee must obtain BOEM's and BSEE's concurrence with the RVMP/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 (1,500 m for marine mammals, 500 m for sea turtles) 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. 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 concurrence on this plan, no pile driving may be initiated later than 1.5 hours prior to civil sunset.

5.5 Pre-Seabed Disturbance Conditions (Planning) (Construction) (Operations) (Decommissioning). The Lessee must submit all required documents related to pre-seabed disturbance and specified in Sections 5.5.1 to 5.5.6 to BOEM, BSEE, and NMFS GARFO HESD at NMFS.GAR.HESDoffshorewind@noaa. Where USACE submissions are required in Section 5.5, such submissions must be sent to CENAN-R-Permit_App@usace.army.mil.

5.5.1 Anchoring Plan(s). The Lessee must prepare and implement an Anchoring Plan(s) for all areas where anchoring occurs and jack-up barges are used during construction and operations/maintenance within 500 m (1,640 ft) of habitats, resources, and submerged infrastructure that are sensitive, including sensitive benthic habitats, boulders ≥0.5 m, ancient submerged landform features (ASLFs), known and potential shipwrecks, potentially significant debris fields, potential hazards, third-party infrastructure, and any related facility installation activities (such as cable, WTG, and OSS installation). The Lessee must provide to all construction and support vessels the locations where anchoring and jack-up barges must be avoided to the extent technically and/or economically practicable or feasible, including sensitive benthic habitats; boulders ≥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). Dynamic positioning systems should be used in these areas instead of anchoring, as practicable. 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 sensitive benthic 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 practicable or feasible; or (2) a different alternative is as safe and provides the same or greater environmental protection. If placement of jack-up barge spud cans is necessary in sensitive benthic habitats, locations for the spud cans must be selected to avoid or minimize impacts according to the following prioritized list, including complex habitat sub-types (using NMFS complexity categories): (i) complex habitats with boulders; (ii) complex habitats absent boulders; (iii) heterogeneous complex habitats; (iv) biogenic habitat (i.e., clam beds); and (v) areas with benthic or bathymetric features,[18] as technically practicable or feasible. Any instances where the Lessee believes there is technical infeasibility must be supported by a technical feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE. Benthic habitat (NOAA complexity categories) and Benthic Feature/Habitat Type maps in conjunction with backscatter, bathymetry, and boulder layers should be used to inform the anchoring plan.

5.5.1.1 The Lessee must provide proposed Anchoring Plan(s) 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. The Lessee must resolve all comments on the Anchoring Plan(s) to BOEM's and BSEE's satisfaction before conducting any OCS seabed-disturbing activities that require anchoring. The final version of each Anchoring Plan must be provided to NMFS and USACE.

5.5.2 Boulder Identification and Relocation Plan(s). The Lessee must submit Boulder Identification and Relocation Plan(s) to BSEE and BOEM for review and concurrence. The plan(s) must be submitted to BOEM and BSEE to coordinate with NMFS GARFO HESD for a 60-day review, 120 days prior to boulder relocation activities within the scope of the plan. The Lessee must resolve all of BOEM's and BSEE's comments on the Boulder Identification and Relocation Plan(s) to their satisfaction prior to implementation of each plan. If BOEM or BSEE do not provide comments

18 Benthic features are defined as sand waves, megaripples, and ripples; Bathymetric features are defined as topographic features of the seafloor such as lumps, scarps, ledges, and banks.

on a plan within 60 days of its submittal, then the Lessee may presume concurrence with the plan. A copy of the final plan(s) must be provided prior to construction to USACE and NMFS GARFO HESD at NMFS.GAR.HESDoffshorewind@noaa.gov.

5.5.2.1 The plan(s) must detail how the Lessee will avoid or minimize impacts to sensitive benthic habitats and relocate boulders as close as practicable to the original location, in areas of soft bottom but immediately adjacent to similar habitat. The plan should use benthic habitat (NOAA complexity categories) and benthic feature/ habitat type maps in conjunction with backscatter and boulder layers to inform the siting of boulders. The plan(s) 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 2.8. The plan(s) must include the following for boulders that are proposed to be relocated:

- A summary and detailed description of surface and subsurface boulders greater than 0.5 m in diameter, and locations along the cable routes and WTG areas where such boulders have been found.
- A detailed summary of methodologies to be used in boulder identification, including geological and geophysical survey results.
- A clear depiction (i.e., figures) of the location of boulder relocation activities specified by activity type (e.g., pick or plow, removal, or placement) and overlaid on multibeam backscatter data.
- 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.
- The environmental footprint of disturbance activities by habitat type and measures taken to avoid further adverse impacts to archaeological resources, sensitive benthic habitats and fishing operations.
- A comprehensive list and shapefile of locations of boulders that would be relocated (latitude, longitude), boulder dimensions (m), buffer radius (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).

- The measures taken to minimize the quantity of seafloor obstructions from relocated boulders in areas of active bottom trawl fishing, as technically and/or economically feasible.
- A description of safety distances or zones to limit boulder relocation near third party assets.
- A description of MEC/UXO ALARP Certified areas, which should be consistent with MEC/UXO ALARP Certification (Section 2.4).
- A summary of any consultation and outreach with resource agencies and the fishing industry in development of the plan (e.g., notifications to mariners).
- A statement of consistency with the Micrositing Plan (Section 5.5.5).

5.5.2.2 The Lessee must provide USCG, NOAA, USACE, and the local harbormaster with a comprehensive list and shapefile of positions and areas to which boulders greater than 2 m would be relocated (latitude, longitude) at least 60 days prior to boulder relocation activities.

5.5.2.3 Boulder Relocation. The Lessee must implement methods identified in the approved COP and described in the Boulder Identification and Relocation Plan (Section 5.5.2) 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.

5.5.2.4 Boulder Relocation Report. The Lessee must provide to BSEE and BOEM 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 Boulder Relocation. 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).

5.5.3 Micrositing Plan(s). The Lessee must prepare and implement Micrositing Plan(s) that describes how inter-array cables and export cable routes will be microsited to avoid or minimize impacts to sensitive benthic habitats (defined above), potential MEC/UXO and confirmed MEC/UXO. The plan(s) must specifically describe how inter-array and export cable routes will be microsited to avoid or minimize impacts to sensitive benthic habitats, including boulders ≥0.5 m, as technically and/or economically practicable or feasible. The plan(s) must describe MEC/UXO ALARP Certified areas, which should be consistent with MEC/UXO ALARP Certification (Section 2.4). To the extent practicable, cables should cross sensitive benthic habitat areas perpendicularly at the narrowest points; cables unable to avoid benthic features such as sand waves should be sited along natural benthic contours within troughs/lows, to maximize cable burial while minimizing disturbance to local submarine topography. 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(s) must be consistent with MEC/UXO ALARP Certification (Section 2.4), Cable Routings (Section 2.11) and the Boulder Identification and Relocation Plan(s) (Section 5.5.2). The Micrositing Plan(s) must include a figure for each microsited cable segment, including benthic habitat delineations showing sensitive benthic habitat and locations of boulders ≥0.5 m. The plans must include a figure depicting large boulder locations, multibeam backscatter returns, and the proposed microsited locations for cables. Any instances where the Lessee believes there is technical or economic infeasibility must be supported by a technical or economic feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE.

5.5.3.1 For cables that cannot be microsited to avoid impacts to sensitive benthic habitat or boulders ≥0.5 m, the micrositing plan must identify technically and/or economically practicable or feasible impact minimization measures and use the following prioritized list, including complex habitat sub-types (using NMFS complexity categories), to avoid during micrositing:

- Complex habitats with boulders;
- Complex habitats absent boulders;
- Heterogeneous complex habitats;
- Biogenic habitats (i.e., clam beds); and

- Areas with benthic or bathymetric features.

5.5.3.2 The Micrositing Plan(s) 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 within the scope of the plan. The Lessee must resolve all comments on the Micrositing Plan(s) to BOEM's and BSEE's satisfaction prior to implementation of each plan. The final version of each Micrositing Plans must be provided to NMFS and USACE.

5.5.4 Scour and Cable Protection Plan(s). The Lessee must prepare and implement Scour and Cable Protection Plan(s) that include descriptions and specifications for all scour and cable protection materials. The plan(s) must facilitate the avoidance and minimization of impacts to sensitive benthic habitats (defined above), including sensitive benthic habitats and boulders ≥0.5 m. Each plan must include a depiction of the location and extent of proposed scour or cable protection, the habitat delineations (NOAA complexity categories map) for the areas of proposed scour and cable protection, and detailed information on the proposed scour or cable protection materials for each area and habitat type. Benthic habitat (NOAA complexity categories) and benthic feature/habitat type project maps in conjunction with backscatter, bathymetry, and boulder layers should be used to inform the plan(s).

5.5.4.1 The Lessee must avoid the use of engineered stone or concrete mattresses in complex habitat,[19] as practicable. The Lessee must ensure that any materials used for scour and cable protection measures consisting of natural or engineered stone does not inhibit epibenthic growth and provides three-dimensional complexity in height and in interstitial spaces, as practicable. If concrete mattresses are necessary, bioactive concrete (i.e., with bio-enhancing admixtures) must be used as practicable as the primary scour protection (e.g., concrete mattresses) or veneer to support biotic growth. The Lessee must minimize the use of scour protection to the minimum amount necessary to accomplish the purpose.

5.5.4.2 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.

19 Complex habitat is a subset of sensitive benthic habitat and 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 CMECS definitions as well as vegetated habitats [e.g. SAV].

5.5.4.3 Any instances where the Lessee believes there is technical infeasibility must be supported by a technical feasibility analysis, as appropriate, for review and concurrence by BOEM and BSEE.

5.5.4.4 The Scour and Cable Protection Plan(s) must be submitted to BOEM and BSEE with notification to NMFS GARFO HESD for a 60-day review, at least 120 days prior to placement of scour and cable protection within the area covered by the scope of the Plan. The Lessee must resolve all comments on each Plan to BOEM's and BSEE's satisfaction before placement of the scour and cable protection materials. The final version of the Scour and Cable Protection Plan(s) must be provided to BSEE, NMFS, and USACE.

5.5.5 WTG Position Prioritization (Planning). If, prior to BSEE's review of the applicable FDR or FIR, the Lessee determines that fewer than 54 WTGs will be constructed from the EW1 Project layout, the Lessee must prioritize removal from the following positions in order: B01, C01, B02, D02, B03, D03 and then any other WTG positions. The Lessee must describe how it prioritizes the removal of the 6 listed WTG positions in the FDR/FIR.

5.5.6 Avoid Zinc Anodes. To the extent it is technically and/or economically practicable or feasible, the Lessee must avoid using Zinc sacrificial anodes on external components of WTG and OSS foundations to reduce the release of metal contaminants in the water column.

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

5.6.1 Berm Survey and Report. Where plows, jets, grapnel runs, or other similar methods are used, post-construction surveys capable of detecting bathymetry changes of 0.5 m or less must be completed to determine the height and width of any created berms. If there are bathymetric changes in berm height greater than 1 m above grade, the Lessee must develop and implement a Berm Remediation Plan to restore created berms to match adjacent natural bathymetric contours (isobaths), as technically and/or economically practical or feasible. 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 post-construction survey where the change was detected. 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. The final version of the Berm Remediation Plan must be provided to BOEM, BSEE, NMFS, and USACE.

5.7 Endangered and Threatened Species Conditions for Fishery Monitoring (Planning) (Construction) (Operations). The Lessee must submit all required documents related to endangered and threatened species conditions for fishery monitoring in Sections 5.7.2 through 5.7.8 (e.g., marine debris, visual and PSOs, take, and annual reporting) to BOEM and BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov or marinedebris@bsee.gov (if related to marine debris/lost gear), USACE at CENAN-R-Permit-App@usace.army.mil, and NMFS GARFO PRD at nmfs.gar.incidental-take@noaa.gov.

5.7.1 The Lessee must ensure that any lost survey gear is reported and recovered according to the Marine Debris Awareness and Elimination conditions in 5.1.2. All lost gear must also be reported to NMFS GARFO PRD and BSEE within 24 hours 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.

5.7.2 All vessels must comply with applicable vessel speed restrictions.

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

5.7.4 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 sightings of any marine mammal for 15 minutes within 1 nmi (1,852 m) of sampling location. This information must be included in PSO reporting.

5.7.5 The Lessee must ensure all vessels deploying fixed gear 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."

5.7.6 Conditions for Trawl Surveys. The Lessee must ensure all vessels operating within the US EEZ have at least one survey team member onboard each trawl survey who has completed Northeast Fisheries Observer Program (NEFOP) observer training (or another training in protected species identification and safe handling, inclusive of taking genetic samples from Atlantic sturgeon), or equivalent training, 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. Documentation of training must be provided to BOEM and BSEE within 48 hours upon request. If the Lessee will deploy non-NEFOP trained observers, the Lessee

must submit a plan to BOEM, 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 as soon as possible after issuance of the Project's BiOp but no later than 15 days prior to the start of trawl surveys for which a non-NEFOP trained observer will be deployed. The Lessee must inform BOEM and BSEE of any response it receives from NMFS GARFO on this plan before starting any trawl surveys where the non-NEFOP trained observer will be deployed. 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. In all cases, a list of trained survey staff must be submitted to NMFS at least one business day prior to the beginning of the survey.

5.7.6.1 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.[20] Biological data, samples, and tagging must occur as outlined below. The Lessee must follow the Sturgeon and Sea Turtle Take Standard Operating Procedures.[21]

5.7.6.1.1 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[22] and reported to BOEM, BSEE, and NMFS GARFO PRD.

5.7.6.1.2 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

20 https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null
21 https://media.fisheries.noaa.gov/2021-11/Sturgeon-Sea-Turtle-Take-SOPs-external-11032021.pdf
22 https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null

collection must be done consistent with the Procedures for Obtaining Sturgeon Fin Clips.[23]

5.7.6.1.3 The Lessee must send fin clips to a BOEM-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 PRD within 6 months of the sample collection.

5.7.6.1.4 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.[24]

5.7.6.2 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).

5.7.6.3 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.

5.7.6.3.1 All survey vessels must have copies of the sea turtle handling and resuscitation requirements found at 50 C.F.R. § 223.206(d)(1) prior to the commencement of any on-water activity.[25] 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.

5.7.6.3.2 For sea turtles that appear injured, sick, distressed, or dead (including stranded or entangled individuals),

23 https://media.fisheries.noaa.gov/dam-migration/sturgeon_genetics_sampling_revised_june_2019.pdf
24 https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic
25 https://media.fisheries.noaa.gov/dam-migration/sea_turtle_handling_and_resuscitation_measures.pdf

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 PRD 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.

5.7.6.3.3 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.[26]

5.7.6.3.4 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 PRD, 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.

5.7.7 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.[27] The report must include, at a minimum, the following: (1) survey name and applicable

26 https://media.fisheries.noaa.gov/dam-migration-miss/Resuscitation-Cards-120513.pdf
27 https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null

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.

5.7.8 Annual Report. The Lessee must submit an annual report within 90 days of the completion of each survey season to BOEM, BSEE, USACE, and NMFS GARFO PRD. 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 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, and HRG surveys, and when new personnel join the work, the Lessee must conduct briefings for construction supervisors and crews, PSO and PAM teams when required, 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, HRG and fisheries resources surveys, and when any new personnel are involved in any of these work activities.

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, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, NMFS's OPR at pr.itp.monitoringreports@noaa.gov, and NMFS GARFO PRD at nmfs.gar.incidental-take@noaa.gov.

5.8.2 Vessel Crew and Protected Species Observer Training Requirements. 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 captain, 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 reference materials for identifying sea turtles and marine mammals available aboard all Project vessels. Copies of the Marine

Mammal and Sea Turtle Monitoring Plan (see 5.4.6) and Vessel Strike Avoidance Plan (see 5.4.5) must be available aboard all Project vessels. 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 the process for reporting 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. The Lessee must use independent, dedicated, qualified PSOs when required, provided by a third party. PSOs must have no Project-related tasks other than 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. 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.

5.8.4 Vessel Strike Avoidance Conditions. The Lessee must submit any required documents related to vessel strike avoidance plans or reporting as a result of the NMFS BiOp to BOEM, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, and NMFS GARFO PRD at nmfs.gar.incidental-take@noaa.gov. Vessel restrictions apply to vessels operating within the US EEZ.

5.8.4.1 Protected Species Observer Requirements. 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.

5.8.4.2 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 duties other than observing for marine mammals while the vessel is operating over 10 knots.

5.8.5 Vessel Communication of Threatened and Endangered Species Sightings. 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 captains, or both.

5.8.5.1 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 than every 12 hours. If a vessel operator is alerted to a NARW detection within the Project area, they must immediately convey this information to the PSO and PAM teams.

5.8.5.2 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 captains to increase situational awareness.

5.8.6 Vessel Strike Avoidance of Sea Turtles. For all vessels operating north of the Virginia/North Carolina border between June 1 and November 30, the Lessee must have a trained lookout posted 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 captain so that the requirements below can be implemented.

5.8.6.1 For all vessels operating south of the Virginia/North Carolina border, year-round, the Lessee must have a trained lookout posted 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 captain so that the requirements below can be implemented. This requirement is in place year-round for any vessels transiting south of Virginia, as sea turtles are present year-round in those waters.

5.8.6.2 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 transit to all vessel operators/captains and lookouts on duty that day.

5.8.6.3 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 captain, and reporting requirements.

5.8.6.4 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 (kts) (unless it is unsafe to do so) and then proceed away from the turtle at a speed of 4 kts 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 safe to do so and then proceed away from the turtle at a speed of 4 kts. The vessel may resume normal operations after it has passed 100 m from the turtle.

5.8.6.5 Vessel captains and 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 kts while transiting through such areas.

5.8.6.6 All vessel crew members must be briefed in the identification of sea turtles and in 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 captain), as well as a communication channel and process for crew members to do so.

5.8.6.7 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 necessitates deviation from these requirements. If any such incidents occur, they must be reported to BSEE and NMFS GARFO PRD within 24 hours.

5.8.6.8 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.

5.8.6.9 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.

5.9 WTG and OSS Foundation Installation Conditions (Construction) (Operations). Monopiles must be no larger than 11 m in diameter and pin piles must be no larger than 2.5-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. Nominal impact hammer energies must not exceed 5,500 kilojoules (kJ) for monopile installation and 3,200 kJ for pin pile installations.

5.9.1 The Lessee must submit all required documents related to WTG and OSS foundation installation conditions in Sections 5.9.2 through 5.9.6 to BOEM, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, USACE at CENAN-R-Permit-App@usace.army.mil, and NMFS GARFO PRD at nmfs.gar.incidental-take@noaa.gov.

5.9.2 Seasonal and Daily Restrictions. No foundation impact pile driving activities are allowed to occur January 1 through April 30. No more than two foundation monopiles or up to three pin piles 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 approved Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan (as required by the terms of the NMFS BiOp; see Appendix A Section 5.4.9). The Lessee must limit pile driving to daylight hours, only extending into night if the Lessee starts installing the pile 1.5 hours prior to civil sunset, unless the Lessee has received concurrence from NMFS, BOEM, and BSEE on the Reduced

Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan (see Section 5.4.7).

5.9.3 Noise Abatement Systems. The Lessee must employ noise abatement systems, also known as noise mitigation systems (NMS) or noise attenuation systems (NAS), during all impact pile driving, consistent with the requirements of NMFS BiOp and the MMPA Final Rule/LOA to reduce the sound pressure levels that are transmitted through the water 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 single bubble curtain paired with another noise abatement device during these activities. The noise abatement method used is required to attenuate pile driving noise such that measured ranges to isopleth distances of concern are consistent with those modeled based on 10 dB attenuation during impact pile driving of foundation piles. The Lessee must also adjust operational protocols to minimize noise levels.

5.9.3.1 The bubble curtain(s) must distribute air bubbles using an airflow rate of at least 0.5 m^3/(minutes*meter). 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.

5.9.3.2 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.

5.9.3.3 No parts of the ring or other objects may prevent full seabed contact.

5.9.3.4 The Lessee must use qualified and experienced staff to train personnel in the proper balancing of airflow to the ring. Corrections to the bubble ring(s) to meet the performance standards must occur prior to impact pile driving of monopiles. The Lessee must maintain similar quality control measures as described here for the noise mitigation device used in addition to the double bubble curtain.

5.9.3.5 The Lessee must inspect and carry out appropriate maintenance on the noise attenuation system prior to every pile driving event and prepare and submit an NAS inspection/performance report. For piles for which full SFV is carried out, this report must be submitted as soon as it is available, but no later than when the

interim SFV report is submitted for the respective pile. Performance reports for all subsequent piles must be submitted with the weekly pile driving reports.

5.9.4 Performance reports. All reports must be submitted by email to BOEM, BSEE, and NMFS. Performance reports for each bubble curtain deployed must include water depth, current speed and direction, wind speed and direction, bubble curtain deployment/ retrieval date and time, bubble curtain hose length, bubble curtain radius (distance from pile), diameter of holes and hole spacing, air supply hose length, compressor type (including rated cubic feet per minute (cfm) and model number), number of operational compressors, performance data from each compressor (including revolutions per minute (rpm), pressure, start times, and stop times), free air delivery (m^3/min), total hose air volume (m^3/(min m)), schematic of GPS waypoints during hose laying, maintenance procedures performed (pressure tests, inspections, flushing, re-drilling, and any other hose or system maintenance) before and after installation and timing of those tests, and the length of time the bubble curtain was on the seafloor prior to foundation installation. Additionally, the report must include any important observations regarding performance (before, during, and after pile installation), such as any observed weak areas of low pressure. The report may also include any relevant video and/or photographs of the bubble curtain(s) operating during all pile driving.

5.9.4.1 The Lessee must report any important observations regarding performance (before, during, and after installation), such as observed weak areas of low pressure supported by any relevant video and/or photographs of the bubble curtain(s) operating during all pile driving with the weekly reports specified in Section 5.11.5. For piles for which full SFV is carried out, the performance report must be submitted with the respective SFV report for the pile that the test was conducted. Performance reports for all subsequent piles must be submitted with the weekly pile driving reports.

5.9.5 Use of PSOs and PAM Operators. The Lessee must use NMFS-approved PSOs and PAM operators before, during, and after all foundation installation activities. At minimum, 4 visual PSOs must be actively observing for marine mammals and sea turtles before, during, and after pile driving. At least 2 visual PSOs must be stationed on the pile driving vessel and at least 2 visual PSOs must be stationed on a secondary, PSO-dedicated vessel. The dedicated PSO vessel must be positioned near the outer edge of the modeled large whale clearance zone (2 km year-round) to maximize detectability for monitoring and must adjust this distance as needed based upon on SFV results. At least 1 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 1 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.

5.9.5.1 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 5.9.6) 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 (Section 5.4.6). Determinations during construction must be based on review of the weekly reports and other information, as appropriate.

5.9.5.2 The Lessee must ensure that, if the clearance and/or shutdown zones are expanded due to the verification of sound fields from pile driving, 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 marine mammal clearance or shutdown zone is expanded beyond the initial clearance and shutdown zones (Table 5.9-1, Section 5.9.6). 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 approval.

5.9.6 Clearance and Shutdown Zones. 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 are defined in the table below. The clearance procedures cannot begin until the lead PSO has determined that there is minimum visibility as required in the MMPA LOA.

Table 5.9-1 Clearance and Shutdown Zones for Impact Pile Driving of Foundation Piles

Species	Clearance Zone (m)	Shutdown Zone (m)
North Atlantic right whale (visual detection)	Any visual distance the species is observed.	Any visual distance the species is observed.
North Atlantic right whale (PAM detection)	5,000	1,500
All non-NARW mysticetes and sperm whales (visual and PAM detection)	2,000	1,500
Harbor porpoise (visual and PAM detection)	400	400
Dolphins and pilot whales (visual and PAM detection)	200	200
Seals (visual detection)	200	200
Sea Turtles (visual detection)	500	500

Note: The required minimum visibility zone for protected species monitoring to occur for all WTG and OSS foundation is 1,500 m.

5.9.6.1 Clearance or Shutdown Zone Adjustment After Sound Field Verification. The Lessee must conduct SFV consistent with an approved SFV Plan. If any of the SFV measurements indicate that the distances to level A thresholds for ESA listed whales or permanent threshold shift peak or cumulative thresholds for sea turtles are larger than the modeled distances (assuming 10 dB attenuation, per thresholds in the September 8, 2023, BiOp for the project in Tables 7.1.12, 7.13, 7.1.14, 7.1.22, 7.1.23. 7.1.28), the clearance and shutdown zones (Table 5.9-1) 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). As noted in NMFS' BiOp, when these tables reference exposure ranges, SFV results will be compared to the appropriate corresponding distances calculated for acoustic ranges as reported in the Project's acoustic modeling report (Küsel et al. 2022). BOEM and BSEE, after consultation with NMFS OPR and NMFS GARFO PRD, may approve the Lessee's request for reductions in the clearance and shutdown zones based upon SFV of a minimum of 3 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.

5.9.6.2 If any interim SFV report submitted for the first 3 monopiles, as required in 5.11.4, 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 required additional sound attenuation measures

and adjustments to clearance and shutdown zones as described in Sections 5.9.3 and in 5.9.6 above, respectively.

5.9.6.3 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 (Table 5.9-1) 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.), as determined by the lead PSO, 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. Clearance zones extending beyond the minimum visibility zone may be cleared using either visual or acoustic methods. 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.

5.9.6.4 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 or risk of damage to a vessel that creates risk of injury or loss of life for individuals. In this situation, reduced hammer

energy must be implemented instead, as determined to be practicable.

5.9.6.5 The Lessee must file a report with BSEE and NMFS GARFO in the event that any ESA-listed species is observed within the identified shutdown zone during active pile driving. This report must be filed 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 detection of the animal, time the PSO called for shutdown, time the pile driving was stopped, and any measures implemented (e.g., reduced hammer energy) prior to shutdown. The report must also include 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 report must include an explanation for that determination and the measures that were implemented (e.g., reduced hammer energy).

5.9.6.6 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.

5.9.6.7 Soft Start for Pile Driving. 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).

5.10 HRG Survey Conditions for Marine Mammals and Sea Turtles (Planning) (Construction) (Operations) (Decommissioning). The Lessee must submit all required documents related to HRG survey conditions in 5.10.1 through 5.10.8 to BOEM, to BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, and to NMFS GARFO PRD at nmfs.gar.incidental-take@noaa.gov.

5.10.1 Use of PSOs. The Lessee must employ qualified NMFS-approved PSOs during HRG surveys related to the Project. One PSO must monitor during daylight hours and 2 must monitor during nighttime hours, per vessel. 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.

5.10.2 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 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 Incidental Take Authorization must be followed for all marine mammals. The clearance zone and shutdown zone for all sea turtles is 100 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.

5.10.3 During periods of low visibility (e.g., darkness, rain, fog, etc.), PSOs must use alternative technology (i.e., IR/thermal camera) to monitor the clearance and shutdown zones.

5.10.4 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, 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-m zone for the NARW or a 100-m 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.

5.10.5 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.

5.10.5.1 The Lessee must not initiate ramp-up until the clearance process has been completed (see Section 5.10.2). 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).

5.10.5.2 HRG Restart Procedures. 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.

5.10.6 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.

5.10.7 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.

5.10.8 The Lessee must comply with all the Project Design Criteria and Best Management Practices for Protected Species at https://www.boem.gov/sites/default/files/documents/PDCs&DesignCriteria.pdf and the June 29, 2021, programmatic consultation under the ESA, revised September 22, 2021.

5.10.8.1 The lessee must comply with Project Design Criteria (PDC) 6: Minimize Risk During Buoy Deployment, Operations, and Retrieval for any surface expressing buoys that may be deployed by the project, including surface marking and anchor retrieval buoys.

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

5.11.1 Reporting of All NARW Detections. If a NARW is observed at any time by PSOs or personnel on any project vessels or during any project-related activity (including during vessel transit), the Lessee must immediately report sighting information to BOEM, BSEE, the NMFS hotline.

5.11.1.1 If in the Greater Atlantic Region (ME to VA/NC border), call (866-755-6622).

5.11.1.2 If in the Southeast Region (NC to FL), call (877-WHALE-HELP or 877-942-5343).

5.11.1.3 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/).

5.11.1.4 The Lessee must include in its report the time, date, location, and number of animals sighted, animal description/certainty of species identification, animal behavior, animal closest point of approach, project activities at time of detection, vessel speed, and any mitigation measures implemented. The Lessee must report the PSO/personnel name, PSO provider (if applicable), and reporter's contact information. Any collected photos and/or videos must be submitted.

5.11.1.5 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.

5.11.1.6 The Lessee must send a summary report within 24 hours to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) and NMFS OPR (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, activity the vessel/platform was engaged in at time of sighting/ detection, project construction and/or survey activity ongoing at time of sighting/detection (e.g., pile driving, cable installation, HRG survey), distance from vessel/platform to animal at time of initial sighting/detection, closest point of approach of whale to vessel/ platform, vessel speed, and any mitigation actions taken in response to the sighting.

5.11.2 Reporting of ESA-Listed Species within Shutdown Zone During Active Pile Driving. 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 the pile, time the PSO called for shutdown, hammer log, time the pile driving began and 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).

5.11.3 Detected or Impacted Protected Species Reporting. The Lessee must report within 24 hours all observations or collections of injured or dead whales, sea turtles, or sturgeon to BSEE and NMFS GARFO. 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 any protected species 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 the 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 (coordinates) of the incident; (2) Species identification (if known) or description of the animal(s) involved (i.e., identifiable features including animal color, presence of dorsal fin, body shape and size); (3) Vessel strike reporter information (name, affiliation, email for person completing the report); (4) Vessel strike witness (if different than reporter) information (name, affiliation, phone number, platform for person witnessing the event);

(5) Vessel name and/or Maritime Mobile Service Identity number; (6) Vessel size and motor configuration (inboard, outboard, jet propulsion); (7) Vessel's speed leading up to and during the incident; (8) Vessel's course/heading and what operations were being conducted (if applicable); (9) Part of vessel that struck whale (if known); (10) Vessel damage notes; (11) Status of all sound sources in use; (12) If animal was seen before strike event; (13) behavior of animal before strike event; (14) Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike; (15) Environmental conditions (e.g., wind speed and direction, Beaufort scale sea state, cloud cover, visibility) immediately preceding the strike; (16) Estimated (or actual, if known) size and length of animal that was struck; (Q) Description of the behavior of the marine mammal immediately preceding and following the strike; (17) If available, description of the presence and behavior of any other marine mammals immediately preceding the strike; (18) Other animal details if known (e.g., length, sex, age class); (19) Behavior or estimated fate of the animal post-strike (e.g., dead, injured but alive, injured and moving, external visible wounds (linear wounds, propeller wounds, non-cutting blunt-force trauma wounds), blood or tissue observed in the water, status unknown, disappeared); (20) To the extent practicable, photographs or video footage of the animal(s); and (21) Any additional notes the witness may have from the interaction, 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) 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.

5.11.3.1 Detected or Impacted Dead Non-ESA-Listed Fish. The Lessee must report any occurrence of at least 10 dead non-ESA-listed fish within established shutdown or monitoring zones to BOEM and to BSEE via email to 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 HESD via NMFS.GAR.HESDoffshorewind@noaa.gov. The Lessee must confirm the relevant point of contact prior to reporting and confirm the reporting was received.

5.11.4 SFV Reporting. The Lessee must submit all SFV reports to BOEM; BSEE via TIMSWeb with a notification email sent to BSEE at protectedspecies@bsee.gov; NMFS GARFO PRD at nmfs.gar.incidental-take@noaa.gov; and NMFS's OPR at pr.itp.monitoringreports@noaa.gov.

5.11.4.1 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 and after the installation of the first full pin pile OSS foundation, the initial results of the SFV measurements 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, the first pin pile OSS foundation, 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, NAS deployments), pile location, recorder locations, modeled and measured distances to thresholds, received levels (rms, peak, and SEL) results from conductivity, temperature, and depth casts/sound speed profiles, signal and kurtosis rise times, pile driving plots, activity logs, and weather conditions. Additionally, any important sound attenuation device malfunctions (suspected or definite) must be summarized and substantiated with data (e.g. photos, positions, environmental data, directions, etc.) and observations. Such malfunctions include gaps in the bubble curtain, significant drifting of the bubble curtain, and any other issues which may indicate sub-optimal mitigation performance or are used by Empire Wind to explain performance issues.

5.11.4.2 SFV Final Reports. The final results of SFV for monopile installations must be submitted as soon as possible, but no later than 90 days following completion of pile driving of the three or more monopiles for which SFV was carried out. The final results of SFV monitoring for pile driving must include results for all hydrophones.

5.11.5 Weekly Reports. The Lessee must compile and submit weekly reports during pile driving that document the start and stop of all pile driving, HRG survey, including associated PSO, SFV, and noise abatement activities. These weekly reports must be submitted to NMFS GARFO PRD (nmfs.gar.incidental-take@noaa.gov), NMFS OPR

(PR.ITP.MonitoringReports@noaa.gov), BOEM, and BSEE (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:

5.11.5.1 Summaries of pile driving activities and piles installed, including:

- pile ID
- type of pile
- pile diameter
- start and stop times for 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
- a record of all observations/detections of marine mammals and sea turtles including time Coordinated Universal Time (UTC) of sighting/detection, species ID, behavior, distance (m) from vessel to animal at time of sighting/detection (m), animal distance (m) from pile installation vessel, vessel/ project activity at time of sighting/ detection, platform/vessel name, and mitigation measures taken (if any) and reason.
- 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.

5.11.5.2 A summary of SFV and NAS implemented with pile driving.

5.11.5.3 Summaries of HRG survey activities.

5.11.5.4 Vessel operations (including port departures, number of vessels, type of vessel(s), and route).

5.11.5.5 All protected species detections (including species identification, number of animals, time at initial detection, time at final detection, distance to pile at initial detection, closest point of

approach to pile, animal direction of travel relative to pile; description of animal behavior, features used to identify species, and for moving vessels: 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).

5.11.5.6 Vessel strike avoidance measures taken.

5.11.5.7 Any equipment shutdowns or takes that may have occurred.

5.11.6 Monthly Reports. 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 carried out, vessel transits (name, type of vessel, number of transits, vessel activity, and route (origin and destination inclusive of all ports, foreign and domestic)), number of piles installed and pile IDs, HRG surveys conducted, 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, NMFS GARFO, and NMFS OPR no later than the 15th of the month for the previous month.

5.11.6.1 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 5.11.6 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 for Monitoring Effort Information (described below) 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, that 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
- 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 (kts), from direction
- Swell height (m)
- Water depth (m)
- Visibility (kilometers)
- 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 (kts), from direction
- Swell height (m)

- Water depth (m)
- Visibility (kilometers)
- 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 meters)
- 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

5.11.7 Annual Reports. 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, USACE, 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.

5.11.8 Other Protected Species Conditions. On September 8, 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 September 8, 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, the Lessee must implement their direct compensation program as determined in Section 6.1.1 below and augment the program to include reserve funding for shoreside support service revenue loss directly related to the Project, as determined in Section 6.1.2 below. Calculation steps are shown in Section 6.1.5 below.

6.1.1 The Lessee must, in accordance with the Letter of Intent executed between the Lessee and New York State Department of State for the Project under the CZMA, establish a compensation/mitigation fund (Fund) to compensate commercial and for-hire recreational fishermen for loss of income due to unrecovered economic activity resulting from displacement from fishing grounds due to project construction and operations and to shoreside businesses for losses indirectly related to the Project. For losses to commercial and for-hire recreational fishermen, the Fund must be based on

the revenue exposure for fisheries based out of ports listed in the Empire Wind FEIS, Table 3.9-10 (Annual Average Commercial Fishing Landings and Revenue by Fishing Port in the EW1 WEA, EW2 WEA, and Lease Area, 2008 – 2021). For losses to shoreside businesses, the Lessee must analyze the impacts to shoreside seafood businesses adjacent to ports listed in FEIS Table 3.9-10. Shoreside business impacts may include (but are not limited to): 1) Fishing gear suppliers and repair services; 2) Vessel fuel and maintenance services; 3) Ice and bait suppliers; 4) Seafood processors and dealers; and 5) Wholesale distributors.

6.1.2 The Lessee is required to provide BOEM their analysis (including any model outputs, such as an IMPLAN model or other economic report) verifying the exposed impacts to shoreside businesses and services. The Lessee must submit to BOEM a report that includes (1) a description of the structure of the Fund, and (2) an analysis of the impacts of the Project on shoreside businesses, for a 45-day review and comment period at least 90 days prior to establishment of the Fund. The Lessee must resolve all comments on the report to BOEM's satisfaction before implementation of the Fund. The Lessee must then submit to BOEM evidence of the implementation of the Fund, including: 1) A description of any implementation details not covered in the report to BOEM regarding the mechanism established to compensate for losses to commercial and for-hire recreational fishermen and related shoreside businesses resulting from all phases of the project development on the Lease Area (pre-construction, construction, operation, and decommissioning); 2) the Fund charter, including the governance structure, audit and public reporting procedures, and standards for paying compensatory mitigation for impacts to fishers and related shoreside businesses from lease area development; and 3) Documentation regarding the funding account, including the dollar amount, establishment date, financial institution, and owner of the account. The Lessee must make publicly available on an annual basis the number of claims and number of settlements pursuant to this measure and for gear loss claims.

6.1.3 Direct Compensation Program. The Lessee must ensure that the Direct Compensation Fund includes a reserve amount 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 and for-hire fishing revenue stated in Tables 3.9-12 and 3.9-20, respectively, of the Empire Offshore Wind FEIS. The Lessee's reserve amount must be determined, at a minimum, by the formula set out below.

6.1.3.1 The Lessee must have available, at a minimum, 100 percent of annual revenue exposure during the 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).

The compensation calculations described above must be normalized using the gross domestic product (GDP) Implicit Price Deflator (U.S. Bureau of Economic Analysis,[28] "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product") once the construction year and 5 years post-construction are known.

6.1.4 Shoreside Support Services. At least 90 days prior to establishment of the Direct Compensation Program described in Section 6.1.3, the Lessee must submit to BOEM a Shoreside Support Services report for a 60-day review and approval. The report must include a description of the structure of the 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 ports listed below:

- Atlantic City, NJ
- Barnegat, NJ
- Beaufort, NC
- Belford, NJ
- Belmar, NJ
- Brooklyn, NY
- Cape May, NJ
- Chincoteague, VA
- Davisville, RI
- Fairhaven, MA
- Fall River, MA
- Freeport, NY
- Hampton Bays, NY
- Hampton, VA
- Islip, NY
- Long Beach, NJ
- Montauk, NY
- Morehead City, NC
- Neptune, NJ
- New Bedford, MA
- New London, CT
- Newport News, VA
- Newport, RI
- North Kingston, RI
- Ocean City, MD
- Oriental, NC
- Other Nassau, NY
- Other Suffolk, NY
- Point Judith, RI
- Point Lookout, NY
- Point Pleasant, NJ
- Shark River, NJ
- Shinnecock, NY
- Stonington, CT
- Wanchese, NC
- Wildwood, NJ

28 https://apps.bea.gov/iTable/?reqid=19&step=3&isuri=1&1921=survey&1903=11#eyJhcHBpZCI6MTksInN0ZXBzIjpbMSwyLDMsM10sImRhdGEiOltbIk5JUEFfVGFibGVfTGlzdCIsIjEzIl0sWyJDYXRlZ29yaWVzIiwiU3VydmV5Il0sWyJGaXJzdF9ZZWFyIiwiMjAyMCJdLFsiTGFzdF9ZZWFyIiwiMjAyMyJdLFsiU2NhbGUiLCIwIl0sWyJTZXJpZXMiLCJBIl1dfQ==

6.1.5 Compensation Calculations. Once the values in Sections 6.1.3 and 6.1.4 are determined, the Lessee must use Table 6.1-1 and Table 6.1-2 to calculate the total reserve fund requirements. The amounts of the reserve fund requirements must be normalized to current real prices from a base year. The Lessee may use the prior year's GDP Implicit Price Deflator to estimate Compensation and Mitigation Fund requirements after COP approval if the current year is unavailable. As described in Section 6.1.3.1, 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 ($\boldsymbol{n_i}$) to adjust the annual average commercial fisheries landings values and for-hire fishing revenue stated in Tables 3.9-12 and 3.9-20, respectively, of the Empire Offshore Wind FEIS. If the Lessee opts to construct the project in a phased approach, the fund may also be phased to reflect the phased construction, as long as the appropriate amount of funding for each phase is available at the time of construction of that phase. Before rolling forward any unclaimed funds, the total fund reserve requirements for Construction, Decommissioning, and Operating Years 1–5[29] of both projects (as shown in Table 6.1-2) are calculated using the following formula:

$$\boldsymbol{k}\left(\$2{,}143{,}622 \times \frac{\boldsymbol{n_i}}{110.213} + \$76{,}000 \times \frac{\boldsymbol{n_i}}{104.008}\right)(\mathbf{1}+\mathbf{M}) + \boldsymbol{j}\left(\$2{,}143{,}622 \times \frac{\boldsymbol{n_i}}{110.213} + \$76{,}000 \times \frac{\boldsymbol{n_i}}{104.008}\right)(\mathbf{1}+\mathbf{M}) + \left(\$10{,}718{,}310 \times \frac{\boldsymbol{n_i}}{110.213} + \$380{,}000 \times \frac{\boldsymbol{n_i}}{104.008}\right)(\mathbf{1}+\mathbf{M}).$$

6.1.6 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 and eligibility criteria used for reviewing claims and paying compensatory mitigation for impacts to fishers and related shoreside businesses resulting from all phases of the project development on the Lease Area (pre-construction, construction, operation, and decommissioning).

29 Rolling forward unclaimed funds from prior years may lower this total value.

Table 6.1-1 Calculation Subcomponents for Construction and Decommissioning

Project Status	Base Annual Average Fishing Revenue Exposed to the Wind Farm Area[1]	Exposure Ratio	Shoreside Support Services Multiplier[2]	Adjusted Base Annual Average Fishing Revenue Exposed to the Wind Farm Area	Reserve Requirements
Construction	$\left(\$2{,}143{,}622 \times \frac{n_i}{110.213} + \$76{,}000 \times \frac{n_i}{104.008}\right)$	1	M	$\left(\$2{,}143{,}622 \times \frac{n_i}{110.213} + \$76{,}000 \times \frac{n_i}{104.008}\right)$	$\left(\$2{,}143{,}622 \times \frac{n_i}{110.213} + \$76{,}000 \times \frac{n_i}{104.008}\right)(1 + M)$
Decommissioning[3]	$\left(\$2{,}143{,}622 \times \frac{n_i}{110.213} + \$76{,}000 \times \frac{n_i}{104.008}\right)$	1	M	$\left(\$2{,}143{,}622 \times \frac{n_i}{110.213} + \$76{,}000 \times \frac{n_i}{104.008}\right)$	$\left(\$2{,}143{,}622 \times \frac{n_i}{110.213} + \$76{,}000 \times \frac{n_i}{104.008}\right)(1 + M)$

Notes:

[1] Inflation-adjusted revenues from FEIS Tables 3.9-12 and 3.9-20. The inflation-adjusted base equation is:

$$\left(\boldsymbol{Average\ Annual\ Commercial\ Fishing\ Revenue} \times \frac{\boldsymbol{n_i}}{\boldsymbol{110.213}} + \boldsymbol{Average\ Annual\ Recreational\ Fishing\ Revenue} \times \frac{\boldsymbol{n_i}}{\boldsymbol{104.008}}\right)$$

[2] 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.

[3] 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:

$$\boldsymbol{k}\left(\boldsymbol{\$2{,}143{,}622} \times \frac{\boldsymbol{n_i}}{\boldsymbol{110.213}} + \boldsymbol{\$76{,}000} \times \frac{\boldsymbol{n_i}}{\boldsymbol{104.008}}\right)(\boldsymbol{1} + \boldsymbol{M}) + \boldsymbol{j}\left(\boldsymbol{\$2{,}143{,}622} \times \frac{\boldsymbol{n_i}}{\boldsymbol{110.213}} + \boldsymbol{\$76{,}000} \times \frac{\boldsymbol{n_i}}{\boldsymbol{104.008}}\right)(\boldsymbol{1} + \boldsymbol{M})$$

Table 6.1-2 Calculation Subcomponents by Operating Year

Project Status	Base Annual Average Fishing Revenue Exposed to the Wind Farm Area[1]	Exposure Ratio	Shoreside Support Services Multiplier[2]	Adjusted Base Annual Average Fishing Revenue Exposed to the Wind Farm Area	Reserve Requirements
Operating Year 1	$\left(\$2,143,622 \times \frac{n_i}{110.213} + \$76,000 \times \frac{n_i}{104.008}\right)$	1	M	$\left(\$2,143,622 \times \frac{n_i}{110.213} + \$76,000 \times \frac{n_i}{104.008}\right)$	$\left(\$2,143,622 \times \frac{n_i}{110.213} + \$76,000 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Year 2	$\left(\$2,143,622 \times \frac{n_i}{110.213} + \$76,000 \times \frac{n_i}{104.008}\right)$	0.8	M	$\left(\$1,714,929 \times \frac{n_i}{110.213} + \$60,800 \times \frac{n_i}{104.008}\right)$	$\left(\$1,714,929 \times \frac{n_i}{110.213} + \$60,800 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Year 3	$\left(\$2,143,622 \times \frac{n_i}{110.213} + \$76,000 \times \frac{n_i}{104.008}\right)$	0.7	M	$\left(\$1,500,563.40 \times \frac{n_i}{110.213} + \$53,200 \times \frac{n_i}{104.008}\right)$	$\left(\$1,500,563.40 \times \frac{n_i}{110.213} + \$53,200 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Year 4	$\left(\$2,143,622 \times \frac{n_i}{110.213} + \$76,000 \times \frac{n_i}{104.008}\right)$	0.6	M	$\left(\$1,286,197.20 \times \frac{n_i}{110.213} + \$45,600 \times \frac{n_i}{104.008}\right)$	$\left(\$1,286,197.20 \times \frac{n_i}{110.213} + \$45,600 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Year 5	$\left(\$2,143,622 \times \frac{n_i}{110.213} + \$76,000 \times \frac{n_i}{104.008}\right)$	0.5	M	$\left(\$1,071,831 \times \frac{n_i}{110.213} + \$38,000 \times \frac{n_i}{104.008}\right)$	$\left(\$1,071,831 \times \frac{n_i}{110.213} + \$38,000 \times \frac{n_i}{104.008}\right)(1 + \mathrm{M})$
Operating Total[3]	-	-	-	$\left(\$10,718,310 \times \frac{n_i}{110.213} + \$380,000 \times \frac{n_i}{104.008}\right)$	$\left(\$10,718,310 \times \frac{n_i}{110.213} + \$380,000 \times \frac{n_i}{104.008}\right)(1 + M)$

Notes:

[1] Inflation-adjusted revenues from FEIS Tables 3.9-12 and 3.9-20. The inflation-adjusted base equation is:

$$\left(\textbf{\textit{Average Annual Commercial Fishing Revenue}} \times \frac{n_i}{110.213} + \textbf{\textit{Average Annual Recreational Fishing Revenue}} \times \frac{n_i}{104.008}\right)$$

[2] 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.

[3] Rolling forward unclaimed funds from prior years may lower this total value.

6.1.7 Notification. The Lessee must notify BOEM and BSEE of the establishment of any compensation and mitigation funds under the terms above. 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, in accordance with the Letter of Intent executed between the Lessee and New York State Department of State for the Project under the CZMA, maintain throughout the life of the Project, a fisheries gear loss claims procedure. The fisheries gear loss claims procedure must be available to all fishermen impacted by Project activities or infrastructure, regardless of homeport.

6.3 Navigational Enhancement Training Program (NETP). The Lessee must establish a NETP for New York State commercial and for-hire fishermen in accordance with the Letter of Intent executed between the Lessee and New York State Department of State for the Project under the CZMA in an amount equivalent of up to $13,000 per commercial vessel or inspected charter/party vessel and up to $8,000 per uninspected charter/party vessel. These amounts consist of: (1) up to $10,000 for navigation equipment per commercial vessel or inspected charter/ party vessel and up to $5,000 for navigation equipment per uninspected charter/party vessel; and (2) up to $1,000 per person for training or experiential learning opportunities, with a maximum of three people per vessel. Vessels that receive funding under another state or project NETP will become ineligible for this program.

6.4 HRG Survey Conditions for Fisheries (Planning) (Construction). The Lessee must, in accordance with the Letter of Intent executed between the Lessee and New York State Department of State for the Project under the CZMA, follow its Fisheries Communication Plan to provide advanced notice of HRG survey plans to the commercial fishing industry in the region and must schedule surveys that, to the extent practicable, avoid peak longfin squid fishing activity in the survey area. The Lessee must avoid the use of boomers and sparkers in HRG surveys in the 29 aliquots in the most northwestern portion of the Lease Area[30] from April 1 through July 31 of any year, as practicable.

6.5 Federal Survey Mitigation Program (Planning) (Construction) (Operations) (Decommissioning). There are 14 NMFS scientific surveys that overlap with wind

30 Lease OCS-A 0512, block 6655, aliquot P; block 6656, aliquots I, J, K, L,M,N,O,P; block 6657, aliquots M,N,O,P; block 6706, aliquots B,C,D,H; block 6707, aliquots A,B,C,D,E,F,G,H,J,K,L,P.

energy development in the northeast region. Eight 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[31] 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 eight 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 6.1.5 and 6.5.2 below, within 180 days of COP approval. BOEM will review the Survey Mitigation Plan in consultation with NMFS Northeast Fisheries Science Center (NEFSC). The Lessee must resolve comments to BOEM's satisfaction and must conduct activities in accordance with the plan.

6.5.1 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 at nefsc.survey.mitig@noaa.gov 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 Multi-species Bottom Trawl survey; (b) Autumn Multi-species Bottom Trawl survey; (c) Ecosystem Monitoring survey; (d) Aerial marine mammal and sea turtle survey; (e) Shipboard marine mammal and sea turtle survey; (f) Atlantic surfclam and ocean quahog survey; (g) Atlantic sea scallop survey; and (h) Seal survey. At a minimum, the survey mitigation agreement must describe actions and the means 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.

6.5.2 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

31 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.

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. The agreement must include provisions that provide criteria for changing mitigation activities over time, or timeframes for review and reconsideration of the agreement based on updated information, or both.

6.6 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 Eastern Seaboard Tribal Liaison at 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 Absentee-Shawnee Tribe of Indians of Oklahoma, the Cayuga Nation, the Delaware Nation, the Oklahoma, the Delaware Tribe of Indians, the Eastern Shawnee Tribe of Oklahoma, the Mashantucket Pequot Indian Tribe, the Mashpee Wampanoag Tribe, the Mohegan Tribe of Indians of Connecticut, the Narragansett Indian Tribe, the Oneida Indian Nation, the Oneida Nation, the Onondaga Nation, the Saint Regis the Mohawk Tribe, the Seneca-Cayuga Nation, the Seneca Nation of Indians, the Shawnee Tribe, the Shinnecock Indian Nation, the Stockbridge Munsee Community, the Tonawanda Band of Seneca, the Tuscarora 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 during construction and/or maintenance activities, so the environmental liaison 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. Environmental liaisons must be invited to monitor/participate from a safe platform, such as a vessel. The Lessee must provide to the interested Tribal Nation, in a manner suitable to the 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 request to redact/withhold in writing to the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at tribalengagement@bsee.gov. Only upon approval of such request may the document be redacted/withheld.

7 CULTURAL AND VISUAL RESOURCE CONDITIONS

7.1 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 an 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 to BSEE via TIMSWeb with a notification email sent to env-compliance-arc@bsee.gov.

7.2 Scenic and Visual Impact Monitoring Plan (Construction) (Operations). In coordination with BOEM, the Lessee must prepare and implement a scenic and visual resource monitoring plan that monitors and compares the visual effects of the wind farm during construction and O&M (daytime and nighttime) to the findings in the COP Visual Impact Assessment and verifies the accuracy of the visual simulations (photo and video). The monitoring plan must include monitoring and documenting the meteorological influences on actual WTG visibility over a duration of time from selected onshore key observation points, as determined by BOEM and the Lessee. In addition, the Lessee must include monitoring the operation of ADLS in the monitoring plan. The Lessee shall monitor the frequency that the ADLS is operative, documenting when (dates and time) the aviation warning lights are in the ON position, and the duration of each event. Details for monitoring and reporting procedures must be included in the plan.

7.3 Reporting (Planning) (Construction) (Operations). The Lessee must submit all monitoring, reporting (annual, immediate, or post-discovery), and survey requirements related to cultural resources when complete to BOEM and to BSEE via TIMSWeb with a notification email sent to env-compliance-arc@bsee.gov.

7.4 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 – or any other activity associated with the planning, construction, operation, or decommissioning – disturbs the seabed within the avoidance areas noted below, the Lessee must submit an incident report to BOEM and BSEE within 24 hours.

7.5 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, Targets 01–21, 23–26, and 28–30, as identified in the MARA (COP Appendix X) 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. In addition, the Lessee must avoid Targets 22 and 27 by a minimum distance of 30 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.).

7.6 Avoidance of Ancient Submerged Landform Features (Planning) (Construction) (Operations) (Decommissioning). The Lessee identified 22 ASLFs in the project Area of Potential Effects (APE) (COP Volume 3, Appendix X; Empire 2023). The Lessee must avoid 9 of the 22 ASLFs (i.e., Targets 32, 34, 37, 38, 40, 43, 44, 46, and 50). 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.). The remaining 13 ASLFs within the Lease Area (Targets 31, 33, 35, 36, 39, 41, 42, 45, 47, 48, 49, 51, and 52) cannot be avoided and would be affected by the Proposed Action.

7.6.1 Implementation of Mitigation Measures to Resolve Adverse Effects to ASLFs. The Lessee must mitigate adverse effects to 13 ASLFs (Targets 31, 33, 35, 36, 39, 41, 42, 45, 47, 48, 49, 51, and 52 as identified in the MARA [COP Appendix X]) that remain in the APE and that cannot be avoided. These mitigation measures include the Post-Construction Geoarchaeological Assessment, Open-Source GIS and Story Maps development, and the ASLF Post-Constriction Seafloor Impact Inspection (including its various components). The Lessee must also work with Tribal Nations to provide them an opportunity to participate as monitors during the investigation. The Lessee must execute all aspects of this condition, consistent with the Section 106 MOA. The Annual Certification under Condition 7.3 must include reporting associated with Section 106 MOA compliance.

7.7 Avoidance Measures within the Terrestrial Area of Potential Effects (Planning) (Construction) (Operations). The Lessee must have an archaeological monitor present when the Projects' ground disturbing activities intersect with the "Archaeological Monitoring Area" (Figure Y-2-12, Attachment Y-2, COP Appendix Y). In addition, the Lessee will work with Tribal Nations to provide them an opportunity to participate as monitors during ongoing ground disturbing activities in the area depicted in Figure Y-2-12 (Attachment Y-2, COP Appendix Y). The Lessee must execute all aspects of this condition of COP approval consistent with the Section 106 MOA (Stipulation I.B).

7.8 Scenic and Visual Impact Monitoring Plan (Construction) (Operations). In coordination with BOEM, the lessee must prepare and implement a scenic and visual resource monitoring plan that monitors and compares the visual effects of the wind farm during construction and O&M (daytime and nighttime) to the findings in the COP Visual Impact Assessment and verifies the accuracy of the visual simulations (photo and video). The monitoring plan must include monitoring and documenting the meteorological influences on actual WTG visibility over a duration of time from selected onshore key observation points, as determined by BOEM and the Lessee. In addition, the Lessee must include monitoring the operation of ADLS in the monitoring plan. The Lessee must monitor the frequency that the ADLS is operative, documenting when (dates and time) the aviation warning lights are in the ON position, and the duration of each event. Details for monitoring and reporting procedures must be included in the plan.

7.9 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.

7.10 Implementation of Minimization and Mitigation Measures to Resolve Adverse Effects to ASLFs (Planning) (Construction). The Lessee must mitigate adverse effects to 13 ASLFs (Targets 21–26 and 28–30 as identified in the MARA [COP Appendix X]) that remain in the APE and that cannot be avoided. The Lessee must execute all aspects of this condition, consistent with the Section 106 MOA (Stipulation III.A.1; Stipulation III.A.1; Attachment 8 *Mitigation Funding Amounts Proposed by Signatories and Consulting Parties;* and Attachment 3 *Marine Archaeological Resources Treatment Plan for the Empire Offshore Wind: Empire Wind Project (EW1 and EW2).* The Annual Certification under Condition 7.3 must include reporting associated with Section 106 MOA compliance.

7.11 Additional Minimization Measures. The Lessee will use consistent spacing and use spacing that is as far apart as possible, with maximum spacing in the dominant trawl tow direction where feasible, to decrease visual clutter, aligning WTGs to allow for safe transit corridors. Minimum WTG spacing of 0.65 nm with the exception that two WTGs near the southeastern boundary of EW1 would be spaced 0.57 nmi apart.

7.12 Implementation of Minimization and Mitigation Measures to Resolve Adverse Effects to Terrestrial Archaeological Sites (Planning) (Construction) (Operations). The Lessee must ensure that an archaeological monitor will be present where the Projects' ground disturbing activities intersect the "Archaeological Monitoring Area" depicted on Figure Y-2-12 in Attachment Y-2 of the COP Appendix Y. Archaeological monitoring would reduce potential impacts on undiscovered archaeological resources to a minor level by preventing further physical impacts on the archaeological resources encountered during construction. If archaeological

resources or human remains are identified during Project construction, operations, or decommissioning, the onsite construction supervisor would stop work immediately and follow the protocols outlined in the Empire Wind Terrestrial Post-Review Discovery Plan (Section 106 MOA Attachment 7). The Annual Certification under Condition 7.3 must include reporting associated with Section 106 MOA compliance.

7.13 Implementation of Minimization and Mitigation Measures to Resolve Visual Adverse Effects to Historic Properties (Planning) (Construction). The Lessee must fund mitigation measures to resolve the adverse effects to the following 23 historic properties consistent with the Section 106 MOA:

- West Bank Light Station, Staten Island, NY
- Breezy Point Surf Club Historic District, Rockaway, NY
- Fort Tilden Historic District, Rockaway, NY
- Silver Gull Beach Club Historic District, Rockaway, NY
- Jacob Riis Park Historic District, Rockaway, NY
- Jones Beach State Park, Parkway and Causeway System, Hempstead/ Oyster Bay, NY
- Gilgo State Park, Babylon, NY
- Robert Moses State Park, Babylon, NY
- Fire Island Lighthouse, Fire Island National Seashore, Islip, NY
- Fire Island Light Station Historic District, Fire Island National Seashore, Islip, NY
- Carrington House, Fire Island National Seashore, Brook Haven, NY
- Point O'Woods Historic District, Islip, NY
- Romer Shoal Light, Lower New York Bay, NY
- Sandy Hook Light, Middletown, NJ
- Fort Hancock and Sandy Hook Proving Ground Historic District, Middletown, NJ
- Fort Hancock U.S. Life Saving Station, Highlands, NJ
- Navesink Light Station (Twin Lights), Middletown, NJ
- Allenhurst Residential District, Allenhurst, NJ
- Berkeley-Carteret Hotel, Asbury Park, NJ
- Asbury Park Convention Hall, Asbury Park, NJ
- Asbury Park Casino and Carousel, Asbury Park, NJ
- Ocean Grove Camp Meeting Association District, Ocean Grove, NJ
- Water Witch (Monmouth Hills) Historic District

7.14 The Lessee must execute all aspects of this condition of COP approval consistent with the Section 106 MOA (Stipulation III.B; Stipulation III.B.4; Attachment 8 *Mitigation Funding Amounts*; Attachment 4, *Treatment Plan for Above-Ground*

Historic Properties Subject to Adverse Visual Effect). The Annual Certification under Condition 7.3 must include reporting associated with Section 106 MOA compliance.

7.15 The Lessee must conduct phased identification to identify and evaluate historic properties within the visual APE. The phased identification and evaluation of historic properties in New Jersey, including cumulative visual effects, will occur after publication of the Final EIS, but before the initiation of construction on the OCS lease consistent with Stipulation IV and Attachment 5 of the Section 106 MOA. BOEM will use the Memorandum of Agreement to ensure potential historic properties are identified, effects assessed, and adverse effects resolved prior to construction on the OCS lease; reviewing the sufficiency of these report updates as phased identification and evaluation of historic properties; and consulting on the post-ROD finding of effects.

7.16 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 2 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 BOEM'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.

7.17 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 6 *Empire Wind Unanticipated Discoveries Plan for Submerged Archaeological Sites, Historic Properties, and Cultural Resources Including Human Remains*, and Attachment 7 *Empire Wind Monitoring and Unanticipated Discoveries Plan for Terrestrial Archaeological Resources.*

7.17.1 All Post-Review Discoveries. 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:

7.17.1.1 Immediately halt all ground- or seabed-disturbing activities within the area of discovery while taking into account whether stabilization and further protections are warranted to keep the discovered resource from further degradation and impact.

7.17.1.2 As soon as practicable and no later than 24 hours after the discovery, notify BOEM and notify BSEE (at env-compliance-arc@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.

7.17.1.3 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.

7.17.1.4 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. § 585.7027702(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 – with the assistance of the Lessee – will determine how to protect the resource or how to mitigate adverse effects. BOEM will work with the other relevant signatories, invited signatories, and consulting parties who have a demonstrated interest in the affected historic property on the further avoidance, minimization, or mitigation of adverse effects.

7.17.1.5 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 BOEM as identified in the notification lists included in the Post-Review Discovery Plan within 24 hours of the discovery. BOEM, with the assistance of the Lessee, will then share details of what is known about the discovery and consult with the federally recognized Tribal Nation pursuant to the Post-Review Discovery Plan.

7.17.1.6 If BOEM incurs costs in addressing the discovery, under Section 110(g) of the NHPA, BOEM may charge the Lessee reasonable

costs for carrying out preservation responsibilities under OCSLA (30 C.F.R. § 585.702 (c)-(d)).

7.18 Emergency Situations and Section 106 Consultation (Planning) (Construction) (Operations) (Decommissioning). In the event of an emergency or disaster that is declared by the President or the Governors of New York or New Jersey, 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, New York State Historic Preservation Office (SHPO), New Jersey 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 becomes aware of the emergency or disaster. If the consulting federally recognized Tribal Nations, New York SHPO, New Jersey SHPO, or the ACHP would like 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.

7.18.1 No Impact Without Approval. The Lessee may not knowingly impact a potential archaeological resource without BOEM's and BSEE's prior concurrence. If an impact to a potential archaeological resource occurs, the Lessee must immediately halt operations; report the incident with 24 hours to BOEM and BSEE; and provide a written report to within 72 hours to BOEM and BSEE.

7.19 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 been performed already 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 7.16 above, the PAM placement activities must avoid potential archaeological resources by a minimum of 100 m (328 ft), 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.

7.19.1 If the placement area was not previously reviewed and certified by a Qualified Marine Archaeologist in support of the Lessee's approved COP, a Qualified Marine Archaeologist must certify in an annual letter to BOEM that the Lessee's PAM placement activities did not impact potential historic properties identified as a result of the Qualified Marine Archaeologist's determination.

7.19.2 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 and BSEE 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 7.16 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

8.1 Reporting (Construction) (Operations) (Decommissioning). The Lessee must submit all monitoring, reporting, and survey requirements related to air quality to BOEM, BSEE via TIMSWeb with a notification email sent to oswsubmittals@bsee.gov, and the Environmental Protection Agency (EPA) at chan.suilin@epa.gov. The Lessee must confirm the relevant point of contact prior to reporting and confirmation of reporting receipt.

8.2 Sulfur Hexafluoride (SF_6) 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_6 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 use enclosed-pressure SF_6 circuit breakers (or switches) and create alarms based on the pressure readings in the breakers and switches, so leaks can be detected when substantial SF_6 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 implement a plan of action within 30 days of the leakage event detailing the corrective measures required to fix the compliance deficiency if completion of repairs within 30 days or within EPA permit requirements (whichever is earlier) is not possible. If an event requires removal of SF_6, the affected major component(s) must be replaced with new component(s).

8.2.2 The Lessee must report any detectible pressure drop that is greater than 10 percent as soon as practicable or as specified in the EPA OCS air 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_6 leak rates in the past year, and a summary of any leaks greater than 0.1 percent by weight (for the 13.8 kV switches) and 0.5 percent by weight (for all other switches), 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

ABPCMP .....Avian and Bat Post-Construction Monitoring Plan
ACHP.....Advisory Council on Historic Preservation
ADLS .....Aircraft Detection Lighting System
ALARP .....as low as reasonably practical
APE.....Area of Potential Effects
ASLF.....Ancient Submerged Landform Features
BiOp.....Biological Opinion
BOEM.....Bureau of Ocean Energy Management
BSEE.....Bureau of Safety and Environmental Enforcement
CBRA.....Cable Burial Risk Assessment
C.F.R.....Code of Federal Regulations
cfm .....cubic feet per minute
CHIRP.....compressed high-intensity radiated pulse
CMECS .....The Coastal and Marine Ecological Classification Standard
COP.....Construction and Operations Plan
CVA .....Certified Verification Agent
CZMA .....Coastal Zone Management Act
dB.....decibel
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
EEZ .....Exclusive Economic Zone
EPA.....Environmental Protection Agency
EW1 .....Empire Wind 1
EW2 .....Empire Wind 2
ESA.....Endangered Species Act
FAA.....Federal Aviation Administration
FDR.....Facility Design Report
FEIS .....Final Environmental Impact Statement
FIR .....Fabrication and Installation Report
FSC .....Financial Section Chief
ft.....feet
GARFO .....Greater Atlantic Regional Fisheries Office
GDP.....gross domestic product
GIS .....geographic information system
GPS .....Global Positioning System

HESD .....Habitat and Ecosystem Services Division
HF .....high frequency
HRG .....high resolution geophysical
IC.....Incident Commander
ICS .....Incident Command System
IFC .....issued for construction
IMT .....Incident Management Team
IOOS .....Integrated Ocean Observing System
IR.....infrared
ISIP .....In-Service Inspection Plan
ITS.....Incidental Take Statement
kJ .....kilojoules
kHz.....kilohertz
kts.....knots
LERA .....least expensive radar
LOA .....Letter of Authorization
LOI.....Letter of Intent
LNM.....Local Notice to Mariners
LSC .....Logistics Section Chief
m .....meters
MARA.....Marine Archaeological Resources Assessment
MEC.....munitions and explosives of concern
MMPA .....Marine Mammal Protection Act
MOA .....Memorandum of Agreement
MSA.....Magnuson-Stevens Fishery Conservation and Management Act
NARW .....North Atlantic right whale
NAS.....Noise Attenuation System
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
nmi .....nautical miles
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

O&M .....Operations and Maintenance
OPR.....Office of Protected Resources within NMFS
OSC.....Operations Sectoin 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
PRD.....Protected Resources Division
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
ROD .....Record of Decision
rpm .....revolutions per minute
RVMP .....Reduced Visibility Monitoring Plan
RWSC .....Regional Wildlife Science Collaborative
SAV.....submerged aquatic vegetation
SCRAM.....Stochastic Collision Risk Assessment for Movement
SF6 .....sulfur hexafluoride
SFV .....sound field verification
SHPO .....State Historic Preservation Office
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