

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

Conditions of Construction and Operations Plan Approval
Lease Number OCS-A 0499
September 30, 2024

Subject to the conditions set forth in this document, the Bureau of Ocean Energy Management (BOEM) approves Atlantic Shores Offshore Wind Project 1, LLC (Lessee or Atlantic Shores) to conduct activities under the Construction and Operations Plan (COP)¹ for the Atlantic Shores South Offshore Wind Project 1 (Project 1) in Lease Area OCS-A 0499 (Lease). 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 are responsible for the implementation of, or the failure to implement, each of these terms and conditions by the Lessee’s contractors, consultants, operators, or designees.

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¹ Atlantic Shores Offshore Wind. May 2024. Construction and Operations Plan, Atlantic Shores Offshore Wind, Volumes I-II.

1 GENERAL PROVISIONS

1.1 **Adherence to the Approved Construction and Operations Plan, Statutes, Regulations, Permits, and Authorizations.** 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 0499, 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 provided 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 136 wind turbine generators (WTGs; between 105 and 136), up to 5 offshore substations (OSSs), up to 1 permanent meteorological (met) tower, interarray and interlink cables, and up to 5 transmission cables within an export cable corridor of up to 86.4 nautical miles (nmi) in length. The total number of WTGs that are allowed to be constructed for the Atlantic Shores Offshore Wind Project 1 (Lease OCS-A 0499) and the Atlantic Shores Offshore Wind Project 2 (Lease OCS-A 0570) combined must not exceed 195. The total number of permanent structures that may be constructed for the Atlantic Shores Offshore Wind Project 1 (Lease OCS-A 0499) and the Atlantic Shores Offshore Wind Project 2 (Lease OCS-A 0570) combined must not exceed 197.

1.1.2 **Limitations to Construct Project 1.** The Lessee must not install on the OCS any facilities (as defined in 30 C.F.R. § 585.113) that are solely part of Project 1 prior to issuance of all necessary federal, state, and local approvals and conveyance of rights necessary for construction of Project 1.

1.1.3 **Limitation to OSSs.** If the Lessee chooses to install a High Voltage Direct Current OSS, the Lessee must use a closed-loop cooling system.

1.2 **Record of Decision.** 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 mitigation measures in the ROD and these terms and conditions, these terms and conditions will prevail.

1.3 **Effectiveness.** This COP approval and these associated terms and conditions become effective on the date BOEM notifies the Lessee that its COP has been approved, and remain effective until the termination of the Lease, which, unless renewed, has an operations term of 25 years from the date of COP approval.

- 1.4 Consistency with Other Agreements and Authorizations. 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 December 18, 2023;² the BiOp issued by the U.S. Fish and Wildlife Service (USFWS) on October 16, 2023;³ the Letters of Authorization (LOAs) issued for the Project under the Marine Mammal Protection Act (MMPA); the Section 106 Memorandum of Agreement (MOA) executed on June 27, 2024, or amendments to any of these documents; the language in the NMFS BiOp, USFWS BiOp, LOAs, Section 106 MOA, or amendments to any of these documents, will prevail. To the extent the Lessee identifies inconsistencies within or between the language in the NMFS BiOp, USFWS BiOp, LOAs, Section 106 MOA, or amendments to any of these documents, it must direct questions regarding potential inconsistencies to BSEE and BOEM. BSEE, in consultation with BOEM, will determine how the Lessee must proceed. Activities authorized by COP approval will be subject to any terms and conditions and reasonable and prudent measures (RPMs) resulting from a 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. The Lessee may submit a written request via email to the BOEM Office of Renewable Energy Programs Deputy Chief for Atlantic Operations and to BSEE through 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 economically practicable or feasible and any alternative actions the Lessee proposes to take. BSEE may require a Certified Verification Agent (CVA) to review and make a recommendation to BSEE and/or BOEM on the technical acceptability and compliance with the COP of the Lessee’s variance request 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 a request for variance if the appropriate Bureau determines that the variance: (1) would not result in a change in the Project impact levels described in the final Environmental Impact Statement (EIS) 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., under the Endangered Species Act (ESA), Coastal Zone Management Act (CZMA), National Historic Preservation Act (NHPA), Magnuson-Stevens Fishery Conservation and Management Act (MSA)); and (3) would not alter

² See BiOp Letter from Michael Petony, Regional Administrator, US Dept of Commerce National Oceanic and Atmospheric Administration NMFS GARFO, to Karen Baker, Chief Office of Renewable Energy Programs, BOEM. National Marine Fisheries Service Endangered Species Act Section 7 Biological Opinion (December 18, 2023), <https://www.boem.gov/renewable-energy/state-activities/nmfs-esa-consultations> [hereinafter NMFS BiOp]. This is inclusive of the avoidance, minimization, and mitigation measures described in the proposed action and included in the BiOp’s ITS.

³ See BiOp Letter from Louis A. Chiarella, Assistant Regional Administrator for Habitat and Ecosystem Services, Fish and Wildlife Serv., to Jessica Stromberg, Chief of Environmental Branch for Renewable Energy, BOEM. (October 16, 2023), <https://www.boem.gov/renewable-energy/state-activities/fws-esa-consultations> [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.

BOEM's determination that the activities associated with the Project would be conducted in accordance with subsection 8(p)(4) of OCSLA. After making a determination regarding a request for a variance, BOEM or BSEE will notify the Lessee in writing whether the appropriate Bureau(s) will allow the proposed variance from the identified requirements set forth in this COP approval. Approvals of variance requests will be made publicly available. This provision applies to the extent it is not inconsistent with more specific provisions for variances or departures in these terms and conditions.

- 1.6 48-Hour Notification Prior to Construction Activities. 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: met tower installation, 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. As provided for in Terms and Conditions Item 11 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 purposes of evaluating the effectiveness and implementation of measures designed to minimize or monitor incidental take.
- 1.8 Project Website. The Lessee must develop and maintain a Project website to provide a means for the public to communicate with the Lessee about the Project, including fisheries communication and outreach. The website must provide a method for the public to register comments or ask questions through either a direct link to a comment form or email, or by providing the contact information (phone and/or email address) of a Lessee representative who 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 10 business days of availability.
 - 1.8.2.1 Locations where 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 2.7.
 - 1.8.2.2 Project-specific information found in the most current Local Notices to Mariners (LNM).
 - 1.8.2.3 The Fisheries Communication Plan, which includes outreach and communication with all mariners. Communications and outreach must cover all project phases from pre-construction to decommissioning.

1.8.2.3.1 Communications must include all mariners, including commercial shipping industry and recreational users.

1.8.3 Geographic information system (GIS) location data must be downloadable from the Project website and packaged in an ESRI-compatible format, preferably an ESRI shapefile. Files must use a NAD83 UTM Zone 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 Submissions. Unless otherwise stated, the Lessee must provide any submissions required under these conditions to the stated agencies through the following:

1.9.1 BOEM⁴ and/or BSEE:

1.9.1.1 For Sections 1 through 4 of this appendix, via email to the Office of Renewable Energy Programs Project Coordinator for submissions to BOEM;

1.9.1.2 For Sections 5 through 9 of this appendix, via email to renewable_reporting@boem.gov for submissions to BOEM; and

1.9.1.3 TIMSWeb for all submissions to BSEE in addition, unless otherwise stated, for Section 5 a notification email to protectedspecies@bsee.gov, Section 7 a notification email to env-compliance-arc@bsee.gov, and Section 8 a notification email to oswsubmittals@bsee.gov.

1.9.2 U.S. Army Corps of Engineers (USACE) Philadelphia District at naregulatory@usace.army.mil. The Lessee must confirm any additional points of contact with USACE prior to submitting.

1.9.3 USFWS New Jersey Field Office at 4 E. Jimmie Leeds Road, Suite 4, Galloway, New Jersey 08205; Eric_Schradling@fws.gov; 609-382-5272. The Lessee must confirm the correct point of contact with the USFWS prior to submitting.

1.9.4 Environmental Protection Agency (EPA) at Jon.Frank@epa.gov. The Lessee must confirm the correct point of contact with the EPA prior to submitting.

1.9.5 United States Coast Guard (USCG) Fifth District. The Lessee must confirm the correct point of contact with the USCG prior to submitting.

1.9.6 NMFS:

1.9.6.1 NMFS Greater Atlantic Regional Fisheries Office Protected Resources Division (GARFO-PRD) at nmfs.gar.incidental-take@noaa.gov,

⁴ BOEM will notify the Lessee in writing if BOEM designates a different process for BOEM submissions.

- 1.9.6.2 NMFS Office of Protected Resources (NMFS-OPR) at PR.ITP.MonitoringReports@noaa.gov,
 - 1.9.6.3 NMFS GARFO Habitat and Ecosystem Services Division (GARFO-HESD) at NMFS.GAR.HESDoffshorewind@noaa.gov, and
 - 1.9.6.4 NMFS Northeast Fisheries Science Center (NEFSC) at nefsc.survey.mitig@noaa.gov.
- 1.10 Calendar Days. Unless otherwise specified in the terms and conditions, the term “days” means “calendar days.”
- 1.11 Reporting Adjustments. If a term and condition requires periodic reporting of certain activities and no such activities transpire within a reporting period, the Lessee may submit a brief statement to the recipient specified in that term and condition in lieu of the submission of a full report.

2 TECHNICAL CONDITIONS

- 2.1 MEC/UXO ALARP Certification. The Lessee must provide to BOEM, BSEE, and the approved CVA, a certification confirming that Munitions and Explosives of Concern/Unexploded Ordnance (MEC/UXO) risks related to the installation and operation of the facility have been reduced to As Low as Reasonably Practical (ALARP) levels. The certification must be made by a qualified third party. ALARP Certification must be made available prior to performing any seabed preparation activities (including activities associated with Pre-Lay Grapple Run Plan (Section 2.20), Sand Bedform Removal Plan (Section 5.4.2), and Boulder Identification and Relocation Plan (Section 5.4.5)), and prior to commencing installation activities with the submission of the relevant Fabrication and Installation Report (FIR).
- 2.2 MEC/UXO Discovery Notification. In the event of a confirmed MEC/UXO, the Lessee must coordinate with the USCG to ensure that the MEC/UXO discovery is published in the next version of the LNM for the specified area and must provide BOEM and BSEE with 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, renops@bsee.gov, and env-compliance-arc@bsee.gov), and relevant agency representatives within 24 hours of any such discovery made during activities such as seabed clearance, construction, and operations:
- 2.2.1 A narrative describing activities that resulted in the identification of confirmed MEC/UXO;
 - 2.2.2 A description of the activity at the time of discovery (e.g., survey, seabed clearance, cable installation);
 - 2.2.3 A description of the location (latitude, longitude);
 - 2.2.4 The water depth (meters (m)) of the confirmed MEC/UXO;

- 2.2.5 A description of the MEC/UXO type, dimensions, and weight; and
 - 2.2.6 The MEC/UXO vertical position (description of exposure or estimated depth of burial).
- 2.3 Safety Management System. Pursuant to 30 C.F.R. § 285.810, any 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 (hereinafter the “Lease Area’s Primary SMS”).
- 2.3.1 The Lessee will submit all SMS related documentation to BSEE via TIMSWeb.
 - 2.3.2 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 in Section 2.3.3 and verify that the submissions are acceptable.
 - 2.3.3 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.
 - 2.3.4 Pursuant to 30 C.F.R. § 285.812, the Lease Area’s Primary SMS must be fully functional when the Lessee begins activities described in the approved COP. The Lessee must conduct all activities described in its approved COP in accordance with the SMS. 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 prior to the scheduled beginning of the relevant activities described in the COP.
 - 2.3.5 The Lessee must conduct periodic Lease Area Primary SMS audits and provide BSEE with a report summarizing the results of the most recent audit at least once every 3 years, and upon BSEE’s request. The report must include any corrective actions implemented or being implemented as a result of that audit, and an updated description of the Lease Area’s Primary SMS highlighting changes that were made since the last such submission to BSEE. Following BSEE’s review of the report, the Lessee must engage with and respond to BSEE until any questions or concerns that BSEE has are resolved and BSEE is satisfied that the Lease Area Primary SMS is effective and functional.
 - 2.3.6 In addition to maintaining an acceptable Lease Area’s Primary SMS, the Lessee, designated operator, contractor, and subcontractor(s) constructing, operating, or decommissioning renewable energy facilities on the OCS must follow the policies and procedures of any other SMS(s) applicable to their contracted activities and

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

2.4 Emergency Response Procedure. Prior to the 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 to the procedure once every 3 years and upon BSEE's request, consistent with Section 2.3.5. The Emergency Response Procedure must address the following:

2.4.1 Standard Operating Procedures. The Lessee must describe the procedures and systems that will be used at Project facilities in the case of emergencies, accidents, or non-routine conditions, regardless of whether man-made or natural. The Lessee must include, as a part of the standard operating procedures for non-routine conditions, mass marine debris events, descriptions of high-consequence and low-probability events (i.e. mass marine debris, fires, vessel allisions) and methods to address those events, including methods for (1) establishing and testing WTG rotor shutdown, braking, and locking; (2) lighting control; (3) notifying the USCG of mariners in distress or potential/actual search and rescue incidents; (4) notifying BSEE and the USCG of any events or incidents that may impact maritime safety or security; (5) notifying Tribes and federal, state, and local officials of an emergency response event; and (6) providing the USCG with environmental data, imagery, communications, and other information pertinent to search and rescue or marine pollution response.

2.4.2 Communications. The Lessee must describe the capabilities the control center will maintain in order to communicate with the USCG.

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

2.5 Oil Spill Response Plan. Pursuant to 30 C.F.R. § 585.627(c), the Lessee must submit an Oil Spill Response Plan (OSRP) to the BSEE Oil Spill Preparedness Division (OSPD) at BSEEOSPD_ATL_OSRLPs@bsee.gov for review and approval prior to the installation of any component that may handle or store oil on the OCS. The Lessee should not include confidential or proprietary information in the OSRP. 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 consistently with the OSRP approved by BSEE. The Lessee's OSRP, including any regional OSRP, must contain the following information:

- 2.5.1 Bookmarks. Appropriately labeled bookmarks that are linked to their corresponding sections of the OSRP.
- 2.5.2 Table of Contents.
- 2.5.3 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.
- 2.5.4 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:
 - 2.5.4.1 List the latitude and longitude, water depth, and distance to the nearest shoreline for each facility that may handle and/or store oil.
 - 2.5.4.2 List the oil(s) by product/brand name and corresponding volume(s) on each type of facility covered under the Lessee’s OSRP.
 - 2.5.4.3 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.
- 2.5.5 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.
- 2.5.6 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.
 - 2.5.6.1 “Qualified Individual” means an English-speaking representative of the Lessee who is located in the United States, available on a 24-hour basis, and given full authority to obligate funds, carry out removal actions, and communicate with the appropriate federal officials and the persons providing personnel and equipment in removal operations.
 - 2.5.6.2 “Incident Management Team” means the group of personnel identified within the Lessee’s organizational structure who manage the overall response to an incident in accordance with the Lessee’s OSRP. The IMT consists of the 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 as the IC, Planning Section Chief, Operations Section Chief, Logistics Section Chief, and Finance Section Chief. If a contract has been established with a third-party IMT, the Lessee must provide evidence of such a contract in the OSRP.

- 2.5.7 Notification Procedures. The OSRP must describe the procedures for spill notification. Notification procedures must include the 24-hour contact information for:
- 2.5.7.1 The QI and an alternate, including phone numbers and email addresses;
 - 2.5.7.2 IMT members, including phone numbers and email addresses;
 - 2.5.7.3 Tribes and federal, state, and local regulatory agencies that must be notified when a spill occurs, including, but not limited to, the National Response Center at 1-800-424-8802;
 - 2.5.7.4 The Oil Spill Removal Organizations (OSRO) and Spill Response Operating Teams (SROT) that are available to respond; and
 - 2.5.7.5 Other response organizations and subject matter experts that the Lessee will rely on for the Lessee's response, including nongovernmental wildlife response and rehabilitation services.
- 2.5.8 Spill Mitigation Procedures. The OSRP must describe the different discharge scenarios that could occur from the Lessee's facilities and the mitigation procedures 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:
- 2.5.8.1 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).
 - 2.5.8.2 General procedures for ensuring that the source of a discharge is controlled as soon as possible after a spill occurs.
 - 2.5.8.3 Procedures to remove oil and oiled debris from the water surface and along shorelines.
 - 2.5.8.4 Procedures to store, transfer, and dispose of recovered oil and oil-contaminated materials and to ensure that all disposal is in accordance with federal, state, and local requirements.

- 2.5.9 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).
- 2.5.10 OSRO(s) and SROT(s). The OSRO is an entity contracted by the Lessee to provide spill response equipment and/or manpower in the event of an oil spill. The SROT is the group of 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 and/or membership agreements must be provided in the OSRP.
- 2.5.11 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.
- 2.5.11.1 The Lessee must ensure that the oil spill response equipment is maintained in proper operating condition.
- 2.5.11.2 The Lessee must ensure that all oil spill response equipment maintenance, modification, and repair records are kept for a minimum of 3 years.
- 2.5.11.3 The Lessee must provide oil spill response equipment maintenance, modification, and repair records to BSEE OSPD upon request.
- 2.5.11.4 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.
- 2.5.11.5 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.
- 2.5.12 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 position-specific 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 provide the training records to BSEE upon request.

2.5.13 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.

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

2.5.13.2 The WCD facility must be identified on the facility map consistent with the “Facility and Oil Information” Section 2.5.4.

2.5.13.3 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.

2.5.14 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:

2.5.14.1 Be based on the WCD volume.

2.5.14.2 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.

2.5.14.3 Identify the probabilities for oiling on the water’s surface and on shorelines and the 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. The stochastic analysis must incorporate a minimum of 100 different trajectory simulations using random start dates selected over a multi-year period.

2.5.15 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.

- 2.5.15.1 The triennial exercise plan must include annual scenario-based notification exercises, at least one functional IMT exercise, and annual scenario-based IMT tabletop exercises in the 2 years when a functional exercise does not occur. The Lessee must conduct an annual oil spill response equipment deployment exercise.
- 2.5.15.2 The Lessee must notify BSEE OSPD at least 30 days in advance of any exercise it intends to conduct for compliance with this condition.
- 2.5.15.3 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.
- 2.5.15.4 BSEE may evaluate the results of the exercises and advise the Lessee of any needed changes in response equipment, procedures, tactics, or strategies.
- 2.5.15.5 BSEE may periodically initiate unannounced exercises to test the Lessee's spill preparedness and response capabilities.
- 2.5.15.6 The Lessee must maintain and retain exercise records for at least 3 years and must provide the exercise records to BSEE upon request.
- 2.5.16 OSRP Review and Update. The Lessee must review and update the OSRP at least once every 3 years and more frequently as needed, starting from the date the OSRP was initially approved. The Lessee must send a written notification to BSEE OSPD upon completion of this review and submit any updates for concurrence. BSEE OSPD may require the Lessee to make changes to the OSRP at any time if it is determined to be outdated or to contain significant inadequacies as discovered through a review of the Lessee's OSRP, information obtained during exercises or actual spill responses, or other relevant information obtained by BSEE OSPD.
- 2.5.17 OSRP Maintenance. The Lessee must submit a revised OSRP to BSEE OSPD within 15 days if any of the following conditions occur:
 - 2.5.17.1 The Lessee experiences a change that would significantly reduce their oil spill response capabilities.
 - 2.5.17.2 The calculated WCD volume has significantly increased.
 - 2.5.17.3 The Lessee removes a contracted IMT, OSRO, or SROT from the Lessee's plan.
 - 2.5.17.4 There has been a significant change to the applicable area contingency plan(s).

- 2.6 Cable Routings. 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 with the relevant Facility Design Report (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.
- 2.7 Cable Burial. The Lessee must install the export, interconnector, and inter-array cables using jetting, control flow excavation, trenching, or plowing, as described in Section 4.5.4 of the approved COP. For the approved COP, BOEM has determined the proper burial depth to be a minimum of 4.9 feet (ft) (1.5 m) below the seabed for federal sections of the export, interconnector, and inter-array cables. This depth is consistent with the approved COP and the cable burial performance assessment provided in COP Appendix II-A5. 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 90 percent of the inter-array cable length, excluding cable crossings and approaches to foundations. The Lessee must demonstrate proper burial depth by providing cable monitoring reports (Section 2.10) and final, as-built information (Section 2.17).
- 2.8 Cable Protection Measures. In areas where the final cable burial depth is less than 4.9 ft (1.5 m) below seabed, excluding cable crossings and within the vicinity of WTG/OSS foundations where cables are enclosed within a cable protection system, the Lessee must install secondary protection such as concrete mattresses, rock bags, or rock placement and must adhere to the scour and cable protection measures in Section 5.4.8.
- 2.8.1 The use of cable protection measures must not exceed 10 percent of the total export, interconnector, or inter-array cable length, excluding cable crossings and approaches to foundations. The Lessee must employ cable protection measures when proper burial depth, as defined in Section 2.7, 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. The Lessee must also provide BSEE with detailed drawings/ information of the actual burial depths and locations where protective measures were used in accordance with timeframes in Section 2.17. The Lessee must post on the project website (Section 1.8, Project Website) a notice of the locations where target burial depths were not achieved and where cable protection measures were used, including an accessible graphic/geo-referenced repository.
- 2.8.2 If the Lessee requests a variance under Section 1.5, the Lessee must include with the request a CVA verification of the proposed alternative.

- 2.9 Crossing Agreements. The Lessee must provide final cable crossing agreements for each active, in-service submarine cable or other types of in-use infrastructure which occur within 500 m of such infrastructure, such as pipelines, to BOEM at least 60 business days before seabed preparation activities, including boulder clearance. The Lessee must also provide information on cable crossing agreements that have not been finalized, including draft agreements and communication logs between owners or operators. The Lessee must make the agreements and crossing designs available to the CVA for review, unless otherwise determined by BOEM.
- 2.9.1 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 business days before any seabed preparation activities occur within 500 m of the in-use infrastructure, 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.
- 2.10 Post-Installation Cable Monitoring. The Lessee must conduct an inspection of each interconnector, inter-array, and export cable to determine cable location, burial depths, and site conditions, and to assess the state of the cables. Inspections must occur within 6 months following installation of the export, interconnector, and inter-array cables, and additional inspections within 1 year following completion of the initial post-installation inspection and every 3 years thereafter. These inspections must also be conducted within 180 days of a storm event (as defined in the Post-Storm Event Monitoring Plan, described in Section 2.14). The Lessee must provide BSEE and BOEM with a cable monitoring report within 90 days following each inspection. Inspections of the cable location and burial 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, to be included in the cable monitoring report. The cable monitoring report must also include summary records from monitoring systems used to assess the state of the cables, such as distributed temperature sensing or other condition assessment techniques. Additionally, the Lessee must notify BSEE within 30 days if monitoring systems detect changes that exceed thresholds of the cable design associated with the chosen monitoring technique.
- 2.10.1 If BSEE determines that the condition of the cable or 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.
- 2.10.2 If BSEE determines that conditions along the cable corridor or the state of the cable 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 and/or cable integrity analysis, a remedial action plan, and a schedule for completing remedial actions. All remedial actions must be consistent with the approved COP. BSEE will review the plan and schedule and provide any comments within 60 days of receiving the plan. The Lessee must resolve all comments to BSEE's satisfaction.

2.10.3 If the Lessee determines that conditions along the cable corridor or the state of the cable 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 and/or cable integrity analysis, a plan for remedial actions, and a schedule for the proposed work. All remedial actions must be consistent with those described in the approved COP. BSEE will review the plan and schedule and provide comments within 60 days, if applicable. The Lessee must resolve all comments to BSEE's satisfaction.

2.11 WTG and OSS Foundation Depths. The Lessee must include geotechnical investigations at all approved foundation locations along with associated geotechnical design parameters and recommendations pursuant to BOEM's March 9, 2023, departure approval⁵ with the FDR under 30 C.F.R. § 285.701(a)(10). The geotechnical investigations at each OSS must include, at a minimum, one deep boring located within the footprint of each OSS. One deep boring is also required at the proposed met tower location.

2.12 Structural Integrity Monitoring. In accordance with 30 C.F.R. § 285.824 (Annual Self-Inspection Plan), the Lessee must submit the inspection plan covering the design life of the facility to BSEE for concurrence with the FDR.

2.12.1 Underwater Inspection: The Lessee must conduct a baseline underwater inspection to establish the as-installed platform condition. The baseline underwater inspection must be conducted prior to implementation of a risk-based inspection plan for the platform. The minimum scope of work must include the following, unless the information is available from the installation records: a) a visual survey of the platform for structural damage, from the mudline to waterline, including coating integrity through the splash zone; b) a visual survey to verify the presence and condition of the anodes; c) a visual survey to confirm the presence and condition of installed appurtenances; d) measurement of the as-installed mean water surface elevation, with appropriate correction for tide and sea state conditions; e) record the as-installed platform orientation; and f) measurement of the as-installed platform elevation from the mean lower low water (MLLW) datum.

2.12.2 Above-water Inspection: The Lessee must conduct annual above-water inspections to ensure structural integrity is maintained. The Lessee must inspect the condition

⁵ BOEM March 9, 2023, Departure Request Approval to Atlantic Shores Offshore Wind, LLC, https://www.boem.gov/sites/default/files/documents/renewable-energy/OCS-A0499%20FINAL_Departure%20Request%20Approval%20ASOW.pdf.

of cathodic protection system(s), deteriorating coating systems, excessive corrosion, indications of obvious overloading, and bent, missing, or damaged members of the structure in the splash zone and above the water line. The Lessee must provide a summary of the findings in the Annual Self-Inspection Report pursuant to 30 C.F.R. § 285.824(b). See Section 2.14 for post-storm structural integrity monitoring.

- 2.13 Foundation Scour Protection Monitoring. The Lessee must inspect scour protection performance. The Lessee must submit an Inspection Plan to BSEE for review and concurrence with the relevant FDR submittal.
- 2.13.1 The Lessee must carry out an initial foundation scour inspection within 6 months of completing the 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 2.14).
- 2.13.2 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.
- 2.13.3 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.
- 2.14 Post-Storm Event Monitoring Plan. The Lessee must provide a plan for post-storm event monitoring of the facility infrastructure, foundation scour protection, and cables to BSEE with the relevant FDR. 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, initial post-storm event inspections must be conducted for each OSS, met tower, and 10 percent of the WTGs, including associated scour protection, following each storm where any condition(s) 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 that exceeds 25-year environmental conditions. Cables must be inspected in accordance with Section 2.10. To change the post-storm event environmental condition threshold the Lessee must submit a revised plan with supporting documentation for BSEE review and concurrence. BSEE reserves the right to require post-storm mitigations and additional inspections to address conditions that could result in safety risks and/or impacts to the environment.

2.15 High-Frequency Radar Interference Analysis and Mitigation. The Lessee’s 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 the 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 Lessee’s Project is within the measurement range of eight oceanographic HF radar systems listed in Table 2-1 below:

Table 2.15-1: Identified IOOS HF Radar Systems

Radar Name	Radar Operator
Seaside Park, NJ SeaSonde (SPRK)	Rutgers University
Brant Beach, NJ SeaSonde (BRNT)	Rutgers University
Strathmere, NJ SeaSonde (RATH)	Rutgers University
North Wildwood, NJ SeaSonde (WOOD)	Rutgers University
Hempstead, NY SeaSonde (HEMP)	Rutgers University
Loveladies, NJ SeaSonde (LOVE)	Rutgers University
Brigantine, NJ SeaSonde (BRMR)	Rutgers University
Wildwood, NJ SeaSonde (WILD)	Rutgers University

2.15.1 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. The Lessee must mitigate interference before commissioning the first WTG or before blades start spinning, whichever is earlier, 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.

2.15.2 Mitigation Review. The Lessee must submit documentation to BOEM demonstrating how it will mitigate unacceptable interference with IOOS HF radar systems in accordance with Section 2.15.1. The Lessee must submit this documentation to BOEM at least 120 days prior to commissioning the first WTG or the start of blades spinning, whichever is earlier. If, after consultation with the NOAA IOOS Office, BOEM deems the mitigation acceptable, the Lessee must conduct activities in accordance with the proposed mitigations. If, after consultation with the NOAA IOOS Office, BOEM deems the mitigation unacceptable, the Lessee must resolve all comments on the documentation to BOEM’s satisfaction.

- 2.15.3 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. A Lessee may satisfy its obligations under Section 2.15.1 by providing BOEM with an executed Mitigation Agreement between the Lessee and NOAA IOOS. If there is any discrepancy between Section 2.15.1 and the terms of a Mitigation Agreement, the terms of the Mitigation Agreement will prevail.
- 2.15.4 Mitigation Data Requirements. Mitigation required under Section 2.15.1 must address the following:
- 2.15.4.1 Before commissioning the first WTG or before blades start spinning, whichever is earlier, 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.
- 2.15.4.2 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.
- 2.15.5 Additional Notification and Mitigation
- 2.15.5.1 If at any time the NOAA IOOS Office or an HF radar operator informs the Lessee that the Project will unacceptably interfere with an HF radar system, the Lessee must notify BOEM of the determination and propose new or modified mitigation pursuant to Section 2.15.5.2 as soon as possible and no later than 30 days from the date on which the determination was communicated.
- 2.15.5.2 If a mitigation measure other than that identified in Section 2.15.1 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, prior to implementation of the mitigation.

- 2.16 Critical Safety Systems and Equipment. The Lessee must provide to BSEE a qualified third-party verification of (1) the identification, (2) proper installation, and (3) commissioning of all critical safety systems and equipment designed to prevent or ameliorate fires, spillages, or other major accidents that could result in harm to health, safety, or the environment (hereinafter “critical safety systems”). The documentation provided to BSEE must demonstrate that the qualified third party verified that the critical safety systems were identified 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 2.16.5.
- 2.16.1 Qualified Third Party. A qualified third party must be 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.
- 2.16.2 Critical Safety Systems. Critical safety systems include but are not limited to equipment, devices, engineering controls, or system components that are designed to prevent, detect, or mitigate impacts from fires, spillages, or other major accidents that could result in harm to health, safety, or the environment, including systems that facilitate the escape and survival of personnel.
- 2.16.3 Identification of Critical Safety Systems Risk Assessment(s). The Lessee must conduct a risk assessment(s) to identify hazards and the critical safety systems used within its facilities, including WTG(s) and tower(s), and each OSS, to prevent or mitigate identified risks. The Lessee must submit a description of each risk, for which a Critical Safety System acts as a control, to BSEE and the qualified third party for review in a single document, no later than submission of the FDR. The submission must include a description of the specific hazard, along with the determined likelihood and consequence. The Lessee must arrange with the qualified third party, and provide the necessary information to the qualified third party, to make a recommendation to BSEE on the acceptability of the identified risks, and any associated conclusions regarding identified hazards and implemented or changed critical safety systems and equipment. The Lessee must resolve BSEE’s comments to BSEE’s satisfaction before BSEE completes its review of the associated FDR under 30 C.F.R. § 285.700.
- 2.16.4 Installation and Commissioning Surveillance Requirements. The Lessee must ensure the proper installation and commissioning of the critical safety systems. The Lessee must arrange for a qualified third party to evaluate whether the installation and commissioning of the critical safety systems 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 must (1) examine the commissioning records of the critical safety systems and equipment for every WTG and OSS, and (2) witness the

commissioning of the critical safety systems and equipment of 5 percent of the WTGs, 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:

2.16.4.1 The installation procedures and/or commissioning instructions supplied by the manufacturer and identified in the Project's functional requirements are adequate.

2.16.4.2 During commissioning, that the Lessee is following the instructions supplied by the manufacturer and that are identified in the Project's functional requirements.

2.16.4.3 The systems and equipment function as designed.

2.16.4.4 The completion of the final commissioning records.

2.16.5 Surveillance Reporting. The Lessee must submit surveillance records to BSEE, including for the examination of commissioning records and witnessing (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 2.16.2. Surveillance records for each OSS must be submitted within one month of verification by the qualified third party. After the commissioning of the critical safety systems has been completed for the first WTG, the Lessee must, on a monthly basis, submit the surveillance records or Conformity Statement and supporting summary documentation for all WTGs that have been verified by a qualified third party within the previous month. 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, the Lessee may presume concurrence and continue operating. If the surveillance records or Conformity Statement and supporting documentation are not submitted within a month of qualified third-party verification of the commissioning of the safety systems or if BSEE objects to the submission, BSEE may require the facility to which the surveillance records or Conformity Statement pertains to cease operations.

2.17 Engineering Drawings. The Lessee must compile, retain, and submit to BSEE the drawings and documents specified in Table 2.17-1.

Table 2.17-1: Engineering Drawings

Drawing Type	Time Frame to Submit “Issued for Construction” (IFC) Drawings	Deadline to Submit Final, As-Built Drawings
Complete set of structural drawing(s), including major structural components ⁶	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit no later than March 31st of each calendar year, for all structures installed the prior year and submitted annually until completion of installation.
Front, side, and plan view drawings ⁷	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer. Include a table and show the relationship between: (1) vertical datum planes including HAT, MLLW, MSL, and others as applicable, (2) 1000-year wave crest elevation, and (3) elevation to the underside of the deck.	N/A
Location plat for all Project facilities ⁸	With FDR submittal. Drawings must be reviewed and stamped by a registered professional land surveyor.	Submit no later than March 31st of each calendar year, for all facilities installed the prior year and updated annually until completion of installation. Drawings must be reviewed and stamped by a registered professional land surveyor.
Complete set of cable drawing(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit preliminary as-built reports quarterly for all facilities installed in the previous quarter. Submit final as-built reports within 6 months following installation of the export and inter-array cables.
Proposed Anchoring Plat as required by Section 5.4.3	120 days before 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
As-placed Anchor Plats for all anchoring activities	N/A	Submit 90 days after completion of an activity or construction of a major facility component.
Piping and instrumentation diagram(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit quarterly for all facilities installed in the previous quarter.

⁶ As required by 30 C.F.R. § 285.701(a)(4). This is applicable to the WTGs and OSSs.

⁷ As required by 30 C.F.R. § 285.701(a)(3). This is applicable to the WTGs and OSSs.

⁸ As required by 30 C.F.R. § 285(a)(2). This is applicable for all installed assets on the OCS, including scour protection, cables, WTGs, and OSSs.

Table 2.17-1: Engineering Drawings

Drawing Type	Time Frame to Submit “Issued for Construction” (IFC) Drawings	Deadline to Submit Final, As-Built Drawings
Safety diagram(s) ⁹	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer. Drawings must show the locations of all lifesaving equipment and egress routes.	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.	Submit quarterly for all facilities installed in the previous quarter.
Cause and Effect Chart	With FDR submittal.	N/A
Schematics of fire and gas-detection system(s)	With FDR submittal. Drawings must be reviewed and stamped by a registered professional engineer.	Submit quarterly for all facilities installed in the previous quarter.
Area classification diagrams	With FDR submittal.	Submit quarterly for all facilities installed in the previous quarter.

Notes: HAT = highest astronomical tide MSL = mean sea level

2.17.1 Engineering drawings, as outlined in Table 2.17-1, and the associated engineering report(s) must include the lease number, “OCS-A 0499,” on all drawings and reports and, where applicable, the Area Name, Block Number, and Structure Designation on all drawings and reports. Also, these drawings and reports must be reviewed and stamped by a licensed professional engineer or a professional land surveyor. Pursuant to 30 C.F.R § 285.705, any changes to the approved design must be evaluated by BSEE to determine if the Lessee is required to use a CVA for any project modifications under 30 C.F.R § 285.703(c). This applies beginning on the submission date of the FDR and FIR through construction, commissioning, and operations, and includes structural, mechanical, electrical, and safety systems. For modified systems, only the modifications are required to be 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. The Lessee must ensure that the engineer of record submits a stamped report showing that the as-built design documents have been reviewed, any changes that result in material changes from the IFC drawings have been analyzed and are acceptable, and

⁹ 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.

accurately represent the as-installed facility. The Lessee must also ensure that the engineer of record documents any differences between the IFC drawings and the as-built drawings in the stamped report and submits the report with the as-built drawings.

2.17.2 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, inter-array cables, etc.) or decommissioning to demonstrate that seafloor-disturbing activities complied with avoidance requirements for seafloor features and hazards, archaeological resources, and/or anomalies. As-placed anchor plats must show 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. The Lessee must submit the plats to BSEE.

2.18 Construction Status. Every two weeks during months in which installation activities are ongoing, the Lessee must provide BSEE, BOEM, and the USCG with a construction status update and any changes to the schedule or process described in the plan required by Section 3.2.1 (Installation Schedule). The Lessee must also include a list of all vessels being used and a comprehensive list and shapefile of As-Built locations of all installed infrastructure (met tower, WTG, OSS, cables) with the construction status update.

2.18.1 For met tower, WTG, and OSS facilities, the As-Built locations must include the following:

2.18.1.1 Area and block;

2.18.1.2 USCG approved, unique alpha-numeric identification;

2.18.1.3 Latitude and longitude (expressed in decimal degrees relative to the western hemisphere (negative longitude) and Easting and Northing);

2.18.1.4 Water depth (in ft and m, referenced to MLLW); and

2.18.1.5 Installation date for each major structural component, as applicable (i.e., foundation, transition piece, tower, RNA, blades, topsides (OSS)).

2.18.2 For cables, the As-Built locations must include the following:

2.18.2.1 Unique cable segment identifier (ideally, expressive of the facilities or joints at cable terminations),

2.18.2.2 String number, and

2.18.2.3 Latitude and longitude at 0.001 kilometer post intervals (expressed in decimal degrees relative to the western hemisphere (negative longitude) and Easting and Northing).

2.19 Maintenance Schedule. On a quarterly basis, the Lessee must provide BSEE with its maintenance schedule for any planned met tower, WTG, or OSS maintenance.

2.20 Pre-lay Grapnel Run Plan. The Lessee must submit a Pre-lay Grapnel Run Plan for BSEE review and concurrence. The Plan must be submitted at least 120 days prior to pre-lay grapnel run activities. BSEE will review the Plan and provide comments, if applicable, within 60 business days of submittal. The Lessee must resolve BSEE's comments to BSEE's satisfaction. If BSEE does not provide comments on the Plan within 60 business days of its submittal, then the Lessee may presume BSEE's concurrence with the Plan. The Plan must be consistent with and meet the conditions of the SMS in Section 2.3.

2.20.1 The Plan must include the following:

2.20.1.1 Figures of the location of pre-lay grapnel run activities.

2.20.1.2 A description of pre-lay grapnel run methods, including expected grapnel penetration depth, vessel specifications, metocean limits on operation, etc.

2.20.1.3 A description of removal and disposal methods of debris collected by grapnel run and applicable environmental regulations for disposal.

2.20.1.4 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 2.9).

2.20.1.5 A description of the environmental footprint of disturbance activities and the measures taken to avoid further adverse impacts to archaeological resources, seafloor hazards, complex habitat, and fishing operations.

2.20.1.6 A description of MEC/UXO ALARP certified areas, which must be consistent with MEC/UXO ALARP Certification (Section 2.1).

2.20.1.7 A summary of any consultation and outreach with resource agencies and the fishing industry in the development of the Plan (e.g., notifications to mariners).

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

3 NAVIGATIONAL AND AVIATION SAFETY CONDITIONS

3.1 Design Conditions

- 3.1.1 Placement of Permanent Structures. The Lessee must not place or microsite permanent structures in a way that narrows any linear rows or columns to fewer than 0.6 nmi (1.1 kilometers (km)) by 1.0 nmi (1.9 km), or in a layout that eliminates two distinct lines of orientation in a grid pattern, with the exception of WTGs AZ08, BA09, BC07, BE10, BE12, BE14, BE15, BE16, BF14, BF15, and BG13, which may be relocated to the positions shown in Attachment 2. The Lessee must submit the final as-built structure locations as part of the as-built documentation outlined in Section 2.17.
- 3.1.1.1 Permanent Structure Prohibition. The Lessee must not place permanent structures in positions AX01, BB05, and BC06 as shown in Attachment 2.
- 3.1.2 Marking. The Lessee must mark each WTG, OSS, and met tower with “OCS-A 0499” in addition to the USCG Private Aids to Navigation (PATON). No sooner than 180 days, and no less than 60 days before foundation installation, the Lessee must file an application (form CG-2554, or CG-4143, as appropriate), with the Commander of the Fifth Coast Guard District to establish PATON, as provided in 33 C.F.R. Part 66. USCG acceptance 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:
- 3.1.2.1 Provide a lighting, marking, and signaling plan, at least 120 days before foundation installation, for a 60 business day review by BOEM, BSEE, and the USCG. The Lessee must obtain concurrence by BOEM and BSEE prior to foundation installation. 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).
- 3.1.2.2 Clearly and visibly mark each individual WTG, OSS, and met tower with “OCS-A 0499” and the unique, alpha-numeric identification characters as identified in the lighting, marking, and signaling plan. “OCS-A 0499” must be inscribed directly above or below the alpha-numeric identification characters on each met tower, WTG, and OSS. The Lessee must additionally display “OCS-A 0499” and the alpha-numeric identification character as identified in the lighting, marking, and signaling plan on each WTG nacelle and on the OSS’s heli-hoist and/or heli-pad area, visible from above.
- 3.1.2.3 For each WTG, install red obstruction lighting that is consistent with the Federal Aviation Administration (FAA) Advisory Circular [AC] 70/7460-1M, (Nov. 2020).

- 3.1.2.4 Provide signage that is visible to mariners in a 360-degree arc around the structures to inform vessels of the vertical blade-tip clearance (also referred to as Air Gap), as determined at the HAT.
 - 3.1.2.5 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 3.1.2.1 through 3.1.2.4.
 - 3.1.2.6 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 the USCG within 14 days of identifying the discrepancy).
- 3.1.3 Blade/Nacelle Control. The Lessee must equip all WTG rotors (blade assemblies) with control mechanisms constantly operable from the Lessee's control center.
- 3.1.3.1 Control mechanisms must enable the Lessee to immediately initiate the shutdown of any WTG upon emergency order from the Department of Defense (DoD) or the USCG. The Lessee must initiate braking and shutdown of each requested WTG immediately after the shutdown order. The Lessee may resume operations only upon notification from the entity (DoD or USCG) that initiated the shutdown.
 - 3.1.3.2 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 Lease Area at least annually. The Lessee must submit the results of testing to BSEE with the Project's annual inspection results.
 - 3.1.3.3 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.
 - 3.1.3.4 The Lessee must notify the USCG and BSEE in advance of trainings and exercises to test and refine notification and shutdown procedures, allow the USCG and BSEE to participate in these trainings and exercises, and provide search and rescue training opportunities for USCG Command Centers, vessels, and aircraft.

3.2 Installation Conditions

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

- 3.2.2 Cable Burial. The Lessee must submit a detailed cable burial plan, containing the proposed locations and burial depths, to the USCG no later than the relevant FIR submittal. In accordance with Section 2.17, the Lessee must submit to BOEM and the USCG 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 and array routes).
- 3.2.3 Nautical Charts/Navigation Aids. The Lessee must submit as-built cable burial reports (containing precise locations and burial depths), OSS locations, WTG, and met tower locations to the USCG and NOAA, consistent with Section 2.17, to facilitate government-produced and commercially available nautical charts; and aid USCG cross-reference structures and navigation aids.

3.3 Reporting Conditions

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

- 3.4 Meeting Attendance. 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. 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 Communication Protocol for Construction and Operations. The Lessee must establish a point-of-contact through the DoD Clearinghouse (osd.dod-siting-clearinghouse@mail.mil) to coordinate with the Eastern Air Defense Sector and the Fleet Area Control and Surveillance Facilities for the following conditions:
 - 4.2.1 The Lessee must communicate and coordinate the planned construction and operations schedule with appropriate military department commands to deconflict planned construction and operations activities to the extent practicable.
 - 4.2.2 The Lessee and military department commands must mutually determine an appropriate meeting frequency to facilitate communication.
 - 4.2.3 This protocol will serve as a forum to communicate the project schedule and identify potential military mission compatibility concerns or conflicts experienced due to construction activities. The Lessee must resolve conflicts to the maximum extent practicable or provide justification to the DoD stating why resolution is infeasible.
- 4.3 North American Aerospace Defense Command (NORAD) Operations. The Lessee must enter into a mitigation agreement with the DoD/NORAD for purposes of implementing this section. If there is any discrepancy between this section 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 and BSEE with a copy of the executed mitigation agreement. The DoD point-of-contact for the development of the agreement is osd.dod-siting-clearinghouse@mail.mil. 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 at osd.dod-siting-clearinghouse@mail.mil. Within 45 days of completing the requirements in this section, the Lessee must provide BOEM with evidence of compliance with those requirements.

4.3.1 Radar Adverse Impact Management (RAM) Scheduling. To mitigate impacts on the NORAD of the Gibbsboro New Jersey Air Route Surveillance Radar (ARSR-4) and Wrightstown-McGuire AFB New Jersey Airport Surveillance Radar System (ASR-11), the Lessee must complete the following:

4.3.1.1 NORAD Notification. At least 30, but no more than 60, days prior to the completion of commissioning of the last WTG (i.e., that date by which every WTG in the Project is installed with potential for blade rotation), the Lessee must notify NORAD for RAM scheduling. The Lessee must again notify NORAD when the commissioning of the last WTG is complete.

4.3.1.2 Funding for RAM Execution. At least 30, but no more than 60, days prior to the completion of commissioning of the last WTG (i.e., that date by which every WTG in the Project is installed with potential for blade rotation), the Lessee must contribute funds in the amount of \$160,000 to NORAD toward the execution of the RAM. If the time gap between the commissioning of the first and last WTG is anticipated to be 3 years or greater, the Lessee must contribute additional funds in the amount of \$80,000 per affected radar to NORAD toward the execution of the RAM when 50 percent of the WTGs are commissioned, and an additional \$80,000 per affected radar 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.

4.4 Department of the Navy Operations. To mitigate potential impacts on the Department of the Navy's (DON) operations, the Lessee must coordinate with the DON for purposes of implementing this section. Within 45 days of completing the requirements in Section 4.4.1 through 4.4.3, 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 at osd.dod-siting-clearinghouse@mail.mil.

4.4.1 Distributed Optical Fiber Sensing Technology and Acoustic Monitoring Devices. At least 240 days prior to deployment, the Lessee must provide to osd.dod-siting-clearinghouse@mail.mil and matthew.c.senska.civ@us.navy.mil all information necessary for the DON's evaluation of the potential submarine power cables, data cables, and acoustic monitoring devices to be used in the Project for a 180-day review. If the DON requests additional information, the Lessee must provide it to osd.dod-siting-clearinghouse@mail.mil and matthew.c.senska.civ@us.navy.mil within 15 days of the request. The following information must be provided:

- Sensor deployment dates and duration;
- Siting routes and locations of acoustic monitoring devices;

- Shore station location;
- Distributed Optical Fiber Sensing (DOFS) and acoustic monitoring capabilities;
- Make and model of integrated (or planned integration/deployment of) and standalone scientific sensors;
- Manufacturers and vendors;
- Plans for data storage;
- Transmission and usage; and
- Associated physical and cybersecurity protocols.

4.4.1.1 The Lessee must provide the DON with notice of the intent to change this information at least 30 days prior to any change.

4.4.1.2 If the DON determines through the evaluation in Section 4.4.1 that the use of DOFS or other acoustic monitoring devices presents risk to national security or military operations, the Lessee must work with the DON to implement mitigation measures to address the risk (Section 4.4.3). The Lessee must implement such measures within 30 days of notification from the DON, or according to a schedule agreed to by the Lessee and the DON.

4.4.1.3 As-Builts. The Lessee must provide the DON with as-built schematics and diagrams showing the exact makes and models of all DOFS equipment and acoustic monitoring devices used at commissioning. The Lessee must provide notification to the DON of any changes to the as-built schematics within 10 business days of any change. The Lessee must provide to the DON the updated as-built schematics and diagrams thereafter according to a schedule agreed to by the Lessee and the DON.

4.4.2 National Security Review

4.4.2.1 Initial Screening. Within 45 days following approval of the COP, the Lessee must provide the DON with the names of each entity and person having beneficial ownership or control of 5 percent or more of the Lessee and the project operator, all material vendors and manufacturers who will regularly visit the project on the OCS, who supply or manufacture equipment used on the OCS, control equipment used on the OCS, or have access to associated data systems. In addition, such information must be provided for each director and the top five executives of the Lessee and the project operator. The Lessee must provide the following information for each identified person: full legal name, date of birth, country of citizenship, and permanent address.

- 4.4.2.2 Supplementary Screenings. The Lessee and the DON must establish a process to review additional entities not previously reviewed during the initial screening based on when the information will be available during the project planning process. This process will include Lessee's provision to DoD of information regarding any foreign entities and persons allowed to access the wind turbine structures and associated data systems.
- 4.4.2.3 The DON will screen the names of the entities and persons identified. Once submitted for screening, the DON will identify to the Lessee, no later than 60 days after the receipt, of the name of any entity and person posing a security concern.
- 4.4.2.4 The Lessee must provide written notice to the DON at least 45 days in advance of the intended use of any material vendor not previously screened pursuant to this section. The Lessee must allow the DON 45 days following such notice to conduct a security review and assess any security concern. Notwithstanding the foregoing, the Lessee need not wait 45 days if an unexpected situation arises for which employing services or vendors immediately is prudent for the safe operation of the Project.
- 4.4.2.5 In any case in which the DON identifies any entity and any person screened in accordance with this section as posing national security risk, the Lessee agrees to enter into negotiations with the DON to mitigate the risk to national security that arises as a result of the proximity of any entity and person posing a national security concern to military activities. Except in unexpected situations, as previously described, the Lessee must resolve the threat to national security to the satisfaction of the DON prior to allowing access to the site or its associated data systems by representatives of any entity and person posing a national security concern or the use of wind turbines or other permanent on-site equipment or associated data systems manufactured by any entity and person posing a national security concern. In any case in which an entity and person is identified as posing a national security concern following an unexpected situation, the Lessee must resolve the threat to national security to the satisfaction of the DON at the earliest opportunity.
- 4.4.3 Mitigation Measures. Following the analyses conducted pursuant to Sections 4.4.1 and 4.4.2, the DON and Lessee will coordinate to implement mitigation necessary to address national security risk. If the DON so determines, the Lessee must enter into an additional mitigation agreement to document the measures resulting from the coordination. Mitigation measures may include, but are not limited to, the following:
- 4.4.3.1 Lessee appointment of a DON-approved Security Officer, subject to citizenry and other requirements, to monitor compliance with mitigation measures.

- 4.4.3.2 Restrictions on DOFS, multi-phenomenological sensing, or acoustic monitoring equipment operating modes, parameters, locations, and/or capabilities; these may include programmed modes to avoid distributed sensing on specified portions of a cable when required by the DON.
- 4.4.3.3 Equipment and component restrictions and requirements that include prohibitions on the usage, the installation, or the connection of equipment or components manufactured in specified foreign countries; no equipment may be used on the Project if banned by any agency of the United States.
- 4.4.3.4 Physical and cybersecurity protections at, and Government inspections of, locations where the Lessee's DOFS and/or acoustic monitoring equipment and components are installed and monitored.
- 4.4.3.5 Temporary or permanent shutdown or data diversion of cable distributed sensing, multi-phenomenological sensing, or acoustic monitoring devices in sensitive locations, as determined and required by the DON.
- 4.4.3.6 Reporting requirements for the Lessee and subcontractor reporting requirements concerning business and ownership relationships with foreign entities and use of non-citizens for installation and maintenance work.

5 PROTECTED SPECIES¹⁰ AND HABITAT CONDITIONS

5.1 General Environmental Conditions

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 once the system is commissioned. 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 Debris¹¹ Awareness and Elimination

5.1.2.1 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 5.1.2.2 through

¹⁰ 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.

¹¹ 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.

5.1.2.10 to BSEE via TIMSWeb with a notification email sent to marinedebris@bsee.gov.

- 5.1.2.2 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 prior to engaging in offshore activities and annually thereafter, pursuant to the approved COP. 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:
- Training through viewing of either a marine debris 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; and
 - Documented certification that all personnel listed above have completed their initial and annual training. The Lessee must make this certification available for inspection by BSEE upon request.
- 5.1.2.3 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.
- 5.1.2.4 Marking. Any materials, equipment, tools, containers, and other items that are used in OCS activities and that are of such a shape or configuration that make them likely to snag or damage fishing devices or be lost or discarded overboard, must be clearly marked with the vessel or facility identification number and must be properly secured to prevent loss overboard. All markings must clearly identify the owner and must be able to resist the effects of the environmental conditions to which they may be exposed.
- 5.1.2.5 Recovery and Prevention. Discarding trash or debris in the marine environment is prohibited. Debris accidentally released by the Lessee into the marine environment while performing any activities associated with the Project must be recovered within 24 hours when the marine debris is likely to (1) cause undue harm or damage to natural resources (e.g., entanglement or ingestion by protected species); or (2) interfere with OCS uses (e.g., snagging or damaging fishing equipment, or presenting a hazard to navigation). If the marine debris was lost within the boundaries of an archaeological resource/avoidance area, or a sensitive ecological/benthic resource area, the Lessee must contact BSEE for concurrence before conducting any recovery efforts. The Lessee must take steps to prevent

similar releases of marine debris and must submit a description of these preventative actions to BSEE within 30 days from the date on which the release of marine debris occurred.

- 5.1.2.6 Notification. The Lessee must notify BSEE within 24 hours of any releases of marine debris and indicate whether the released marine debris was immediately recovered. If the marine debris was not recovered, the Lessee must provide its rationale for not recovering the marine debris (e.g., marine debris is located within the boundaries of a sensitive area, recovery was not possible because conditions were unsafe, or recovery was not practicable and warranted because the released marine debris is not likely to result in items (1) or (2) listed in Section 5.1.2.5).
- 5.1.2.7 Remedial Recovery. After reviewing the notification and rationale for any decision by the Lessee to forgo recovery as described in Section 5.1.2.5, 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.
 - 5.1.2.7.1 Recovery Plan. If BSEE requires the Lessee to recover the marine debris, the Lessee must identify and locate the marine debris. The Lessee must then submit a Recovery Plan to BSEE within 10 days after receiving BSEE's order. BSEE may order you to submit additional or updated Recovery Plans if there is an ongoing loss of marine debris. 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.
 - 5.1.2.7.2 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.
- 5.1.2.8 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 monthly report must include the following:

- 5.1.2.8.1 Project identification and contact information for the Lessee and for any operators or contractors involved;
 - 5.1.2.8.2 The date and time of the incident;
 - 5.1.2.8.3 The lease number, OCS area and block, and coordinates of the object's location (latitude and longitude in decimal degrees);
 - 5.1.2.8.4 A detailed description of the dropped object, including dimensions (approximate length, width, height, and weight), composition (e.g., plastic, aluminum, steel, wood, or paper), and buoyancy (floats or sinks);
 - 5.1.2.8.5 Pictures, data imagery, data streams, and/or a schematic or illustration of the object, if available;
 - 5.1.2.8.6 An indication of whether the lost or discarded item could be detected as a magnetic anomaly of greater than 50 nanoteslas, 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;
 - 5.1.2.8.7 An explanation of how the object was lost; and
 - 5.1.2.8.8 A description of immediate recovery efforts and results, including photos.
- 5.1.2.9 Annual Surveying and Reporting, Periodic Underwater Surveys, Reporting of Monofilament and Other Fishing Gear Around WTG Foundations. The Lessee must conduct a survey around at least 5 WTG foundations for lost fishing gear annually for the first 3 years following COP approval and every 5 years thereafter. The Lessee may conduct surveys by remotely operated vehicles, divers, or other means to determine the quantity 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. The Lessee must submit annual reports in both Microsoft Word and Adobe PDF format. The Lessee must provide photographic and videographic materials (TIFF or Motion JPEG 2000) in TIMSWeb with the submittal of the annual report. The Lessee may also submit photographic and videographic files to marinedebris@bsee.gov if the files cannot be uploaded in TIMSWeb. The Lessee may modify survey design and effort (i.e., the number of WTGs and frequency of reporting) only upon review and concurrence by BOEM and BSEE.
- 5.1.2.9.1 Annual reports must include a summary of the survey reports including 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).

5.1.2.10 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

5.2.1 The Lessee must submit all required documents related to avian and bat protection conditions in Sections 5.2.2 through Section 5.2.7 to BOEM; to BSEE via TIMSWeb and with a notification email to protectedspecies@bsee.gov; and to USFWS at (wendy_walsh@fws.gov). The Lessee must confirm the relevant point of contact before submitting the required documents and must also confirm that the agencies have received the documents.

5.2.2 Bird-Deterrent Devices and Plan. To minimize the attraction of birds that are prone to perching, the Lessee must, where safety permits, install bird perching deterrent device(s) on offshore structures consistent with the Bird Perching Deterrent Plan. The Lessee must submit for BOEM and BSEE approval a Plan to deter perching on offshore infrastructure by roseate terns and other marine birds. BOEM, BSEE, and USFWS will review the Bird Perching Deterrent Plan and provide any comments on the Plan to the Lessee within 60 business days of its submittal. The Lessee must resolve all comments on the Bird Perching Deterrent Plan to BOEM'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 include a timeline for installation. The Lessee must base the Plan 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 the Lessee based on Best Management Practices applicable to the appropriate operation and safe installation of the devices. The Lessee must include the bird perching deterrents from the Plan with the appropriate FDR. The Bird Perching Deterrent Plan must be approved before the Lessee may commence with 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.

5.2.3 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 the USCG to establish PATONs (Section 3.1.2).

5.2.4 Avian and Bat Monitoring Program. The Lessee must develop and implement an Avian and Bat Post-Construction Monitoring Plan (ABPCMP) based on the Atlantic Shores South Bird and Bat Monitoring Framework (Appendix G of the final EIS) in coordination with the USFWS, New Jersey Department of Environmental Protection (NJDEP), and other relevant regulatory agencies. BOEM and BSEE will use annual monitoring reports to determine the need for adjustments to monitoring approaches and to consider new monitoring technologies, and/or additional periods of monitoring. Prior to or concurrent with offshore construction activities, including seabed preparation activities, the Lessee must submit an ABPCMP for BOEM, BSEE, and USFWS review. BOEM, BSEE, and the USFWS will review the ABPCMP and provide any comments on the Plan to the Lessee within 60 business days of its submittal. The Lessee must resolve all comments on the ABPCMP to BOEM's and BSEE's satisfaction before implementing the Plan and before commissioning the first WTG.

5.2.4.1 Monitoring. The Lessee must conduct monitoring, as outlined in the Appendix G Atlantic Shores South Bird and Bat Monitoring Framework, that will include acoustic monitoring of bat presence radio tags to monitor movement of listed birds in the vicinity of the projects (BA Table 2-7, Measure 3.a). The ABPCMP will allow for changing methods over time (see Conservation Measure 5.d, USFWS BiOp) in order to regularly update and refine collision estimates for listed birds. The Plan must include an initial monitoring phase involving deployment of Motus Wildlife Tracking System (Motus) radio tags on listed birds in conjunction with installation and operation of Motus receiving stations on turbines in the Lease Area following offshore Motus recommendations. The initial phase may also include deployment of satellite-based tracking technologies (e.g., Global Positioning System (GPS) or Argos tags).

5.2.4.2 Annual Monitoring Reports. The Lessee must submit a comprehensive report after each full year of post-construction monitoring within 12 months of completion of the survey season (see addresses in Section 5.2.1). The report must include all data, analyses, and summaries regarding ESA-listed and non-ESA-listed birds and bats. In addition, the Lessee must report observations of injured or dead piping plovers, rufa red knots, and roseate terns; any listed species perching on Project infrastructure (including offshore substations); implementation and effectiveness of avoidance and minimization measures; and any other relevant activity and information related to the proposed action and potential impacts to listed species.

5.2.4.3 Post-Construction Quarterly Progress Reports. During the first 12 months that the Project is fully operational and commissioned (all installed WTGs producing power), the Lessee must submit quarterly progress reports

concerning the implementation of the ABPCMP to BOEM, BSEE, and the USFWS by the 15th day of the first month following the end of each quarter (see addresses in Section 5.2.1). The Lessee must include a summary of all work performed, an explanation of overall progress, and any technical problems encountered.

5.2.4.4 Monitoring Plan Revisions. Within 30 business days of submitting the annual monitoring report, the Lessee must meet with BOEM, BSEE, and the USFWS to discuss the 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, following that meeting, BOEM and BSEE, in consultation with USFWS, determine that revisions to the ABPCMP are necessary, the Lessee must modify the ABPCMP. If the reported monitoring results deviate substantially from the impact analysis included in the final EIS,¹² the Lessee must transmit to BOEM, BSEE, and USFWS recommendations for new mitigation measures and/or monitoring methods. In consultation with the USFWS, BOEM, and BSEE, the Lessee may adjust the frequency, duration, and methods for various monitoring efforts in future revisions of the ABPCMP based on current technology (including its cost), and the evolving weight of evidence regarding the likely levels of collision mortality for each listed bird species (See Conservation Measure 5. Monitoring and Data Collection, USFWS BiOp).

5.2.4.5 Operational Reporting. Upon commissioning of the first WTG, the Lessee must submit to BOEM and BSEE an annual report, due by January 31, summarizing monthly operational data from the preceding year, calculated from 10-minute supervisory control and data acquisition data, for all WTGs together in tabular format, including the proportion of time the WTGs were spinning each month, the average rotor speed (monthly revolutions per minute) of spinning WTGs plus 1 standard deviation, and the average pitch angle of blades (degrees relative to rotor plane) plus 1 standard deviation. Any data considered by the Lessee to be privileged or confidential must be clearly marked as confidential business information and will be handled by BOEM and BSEE in a manner consistent with 30 C.F.R. § 585.114.

5.2.5 Raw Data. The Lessee must store the raw data from all avian and bat surveys and monitoring activities using accepted archiving practices, including data collected during COP preparation. Such data must be accessible to BOEM, BSEE, and the USFWS upon request for the duration of the Lease. The Lessee must work with BOEM to ensure the data are publicly available. All avian tracking data (i.e., from radio and satellite transmitters) must be stored, managed, and made available to

¹² <https://www.boem.gov/renewable-energy/state-activities/atlantic-shores-offshore-wind-south-final-environmental-impact>

BOEM and the USFWS following the protocols and procedures outlined in the USFWS document entitled, *Guidance for Coordination of Data from Avian Tracking Studies* effective at time of COP approval.

5.2.6 Annual Bird/Bat Mortality Reporting. The Lessee must provide an annual report to 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 United States Geological Survey Bird Band Laboratory, available at www.pwrc.usgs.gov/BBL/bblretrv/. The Lessee must also submit to BOEM, BSEE, and the USFWS an annual report covering each calendar year, due by January 31, documenting the implementation of any collision-prevention measures during the preceding year. Additionally, annual reporting of injured or dead listed species will be recorded in the Injury & Mortality Reporting system (<https://ecos.fws.gov/imr/welcome>).

5.2.6.1 Immediate Reporting. Any occurrence of a dead or injured ESA-listed bird or bat in or within 1 mile of the Lease Area must be reported to BOEM, BSEE, and the USFWS (Senior Resident Agent, Division of Law Enforcement, Sea Land Building, 2nd Floor, 1210 Corbin Street, Elizabeth, New Jersey 07201, (973) 645-5910 and New Jersey Field Office, 4 E. Jimmie Leeds Road, Suite 4, Galloway, New Jersey 08205, (609) 646-9310) as soon as practicable (taking into account crew and vessel safety), 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. BOEM will coordinate with the USFWS on procedures and required permits for processing and handling specimens.

5.2.7 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 Term and Condition 1b of the USFWS BiOp. Within 60 business days of BOEM's issuance of the final Collision Minimization Report, the Lessee must participate in a meeting to discuss the report with BOEM, BSEE, USFWS, and appropriate state agencies.

5.3 Compensatory Mitigation for Piping Plover, Red Knot, and Roseate Tern. At least 180 days prior to the start of commissioning of the first WTG, the Lessee must distribute a Compensatory Mitigation Plan for Piping Plover, Red Knot, and Roseate Tern to BOEM, BSEE, and the USFWS for review and comment. BOEM, BSEE, and the 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 this

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, Red Knot, and Roseate Tern by the fifth year of WTG operation. The Compensatory Mitigation Plan must include a) a detailed description of the mitigation measures; b) the specific location for each mitigation action; c) a timeline for completion of the mitigation actions; d) itemized costs for implementing the mitigation actions; e) details of the mitigation mechanisms (e.g., mitigation agreement, applicant-proposed mitigation); and f) monitoring to ensure the effectiveness of the mitigation actions in offsetting take.

5.4 Pre-Seabed Disturbance Conditions

5.4.1 The Lessee must submit all required documents related to pre-seabed disturbance conditions in Sections 5.4.2 through 5.4.8 (e.g., sand bedform removal plan, anchoring plans, as-placed anchor plats, boulder identification and relocation, micrositing plan, and scour and cable protection) to BOEM, BSEE, and NMFS GARFO-HESD.

5.4.2 Sand Bedform Removal Plan. The Lessee must prepare and implement a Sand Bedform Removal Plan. The Lessee must submit the Plan to BOEM and BSEE for the agencies' 60 business day review (in coordination with NMFS GARFO-HESD), at least 120 days prior to sand bedform removal activities within the scope of the Plan. The Lessee must resolve all comments on the Sand Bedform Removal Plan to BOEM's and BSEE's satisfaction prior to implementation of the Plan. If BOEM or BSEE do not provide comments on the Plan within 60 business days of its submittal, then the Lessee may presume concurrence with the Plan.

5.4.2.1 The Plan must include the following:

- 5.4.2.1.1 Figures of the location of sand bedform removal activities, including Lessee proposed safety zones associated with third-party assets;
- 5.4.2.1.2 Consistent with Section 4.5.3.2 of the COP, a description of sand bedform removal methods, including expected penetration depth, vessel specifications, equipment specifications, and metocean limits on operation;
- 5.4.2.1.3 A description of how dredged material will be handled and disposed;
- 5.4.2.1.4 A description of safety distances or zones to limit sand bedform removal activities near third-party assets;
- 5.4.2.1.5 A description of the environmental footprint of disturbance activities and measures taken to avoid further adverse impacts to archaeological resources, seafloor hazards, complex habitat, and fishing operations; and

- 5.4.2.1.6 A summary of consultation and outreach with resource agencies and the fishing industry in development of the Plan to include LNM.
- 5.4.2.1.7 A demonstration that sand bedform removal is limited to the extent required to achieve adequate cable burial depth and must not exceed more than 20 percent of the export and inter-link cable routes length and 10 percent of the inter-array cable routes length, as consistent with the COP.

5.4.2.2 Sand Bedform Removal Report. The Lessee must provide to BSEE and BOEM, and make available to the approved CVA, a Sand Bedform Removal Report. The report must be submitted within 60 days of completion of the Sand Bedform Removal activities and prior to or with the relevant FIR. The report must include a summary of the activities performed and outline any deviations from the Sand Bedform Removal Plan. The Lessee must also provide to BOEM and BSEE a comprehensive list and shapefile of sand bedform removal activities and sediment relocation (latitude, longitude).

5.4.3 Anchoring Plans/Plats. The Lessee must prepare and implement an Anchoring Plan(s) for all areas where anchoring or buoy placement occurs and jack-up barges are used during construction and operations/maintenance within 1,640 ft (500 m) of habitats, resources, and submerged infrastructure that are sensitive, including sensitive benthic habitats; boulders greater than or equal to 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). Avoidance buffers must be consistent with the following: exclusion zones for potential and confirmed UXOs consistent with risks identified in the MEC/UXO Desktop Study (Section 2.1) and relative to risks of planned activities; avoidance of cultural resources and shipwrecks and ASLFs will be consistent with Section 7.1.2 and 7.1.4.

The Lessee must provide to all construction and support vessels the locations where anchoring or buoy placement must be avoided to the extent technically and/or economically practicable or feasible, including sensitive benthic habitats, boulders greater than or equal to 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). If avoidance and minimization is determined to be infeasible, the plans must describe in detail the rationale for such infeasibility. 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 practical or feasible; or (2) an 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 list, including complex habitat sub-types (using NMFS complexity categories), prioritized from highest to lowest priority: (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,¹³ as technically practicable or feasible. 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. In the event of any misalignment in avoidance buffers described above with any other permits or authorizations, please refer to Section 1.4.

5.4.3.1 The Lessee must provide the proposed Anchoring Plan to BOEM and BSEE for the agencies' 60-day review (in coordination with NMFS GARFO-HESD), at least 120 days before anchoring activities or at least 120 days before construction begins for export and inter-array cables, whichever is earlier. The Lessee must resolve all comments on the Anchoring Plan to BOEM's and BSEE's satisfaction before conducting any OCS seabed-disturbing activities that require anchoring. If there are fewer than 120 days between anchoring activities and this COP approval, the Lessee must submit the Plan as soon as practicable and no later than 60 days prior to commencing activities. The Lessee must provide the final version of each Anchoring Plan to BOEM, BSEE, NMFS GARFO-HESD, and the USACE. Additionally, the Lessee should provide the Plan and maps depicting locations/extents of sensitive benthic habitats to vessel operators so that avoidance and minimization measures can occur in real time.

5.4.4 Micrositing Plan(s). The Lessee must prepare and implement a Micrositing Plan(s) that describes how inter-array cables, export cable routes, WTGs, and OSSs will be microsited to avoid or minimize impacts (as technically and/or economically practicable or feasible) to archaeological resources (Sections 7.1.2 and 7.1.4), sensitive benthic habitats, boulders greater than or equal to 0.5 m in diameter, and potential and confirmed MEC/UXO. The Plan(s) must describe MEC/UXO ALARP

¹³ 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.

Certified areas, which should be consistent with MEC/UXO ALARP Certification (Section 2.1). 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, Cable Routings (Section 2.6) and the Boulder Identification and Relocation Plan(s) (Section 5.4.5).

- 5.4.4.1 The Micrositing Plan(s) must include a figure for each microsited cable segment, including benthic habitat delineations showing sensitive benthic habitat (NOAA Complexity Categories) and locations of boulders greater than or equal to 0.5 m. The Plan(s) must include a figure encompassing the Lease Area, depicting large boulder locations, benthic habitat delineations, and the proposed microsited locations for cables, WTGs, and OSSs. Benthic habitat (NOAA complexity categories) and benthic feature/habitat type maps in conjunction with multibeam backscatter, bathymetry, and boulder layers should be used to inform the Micrositing Plan.
- 5.4.4.2 For cables, OSSs, and/or WTGs that cannot be microsited to avoid impacts to sensitive benthic habitat or boulders greater than or equal to 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: (i) complex habitats; (ii) heterogeneous complex habitats; (iii) biogenic habitat (i.e., clam beds); and (iv) areas with benthic features (e.g., sand waves) or bathymetric features (e.g., ridge crest, ridge flank, swale/trough/depression).
- 5.4.4.3 The Lessee must submit the Micrositing Plan(s) to BOEM and BSEE for a 60-day review (in coordination with NMFS GARFO-HESD), 120 days prior to site preparation activities for cables, WTGs, and OSS(s) 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(s). If there are fewer than 120 days between site preparation activities and this COP approval, the Lessee must submit the Plan as soon as practicable and no later than 60 days prior to commencing activities. The Lessee must provide the final version of each Micrositing Plan to BOEM, BSEE, NMFS, and USACE. Additionally, the Plan must describe how information regarding sensitive benthic habitats is shared with vessel operators.

5.4.4.4 Post-Installation Micrositing Report. The Lessee must provide a post-installation Micrositing Report to BOEM and BSEE for coordination with NMFS GARFO-HESD. The report must include a summary of the micrositing activities for WTGs, inter-array cables, and the export cables and demonstrate (i.e., figures of as-built locations overlaid on multibeam echosounder backscatter survey data) how impacts to complex habitats and benthic features were avoided and/or minimized within the Lease Area and export cable corridors. The report must also identify and depict (i.e., figures) areas in which WTGs or cables could not be microsited to avoid complex habitats with a description of the complex habitat sub-types impacted (see prioritized list of complex habitat sub-types listed under the Micrositing Plan Section 5.4.4) and include documentation of technical feasibility issues encountered. The Lessee must submit the report within 60 days of completion of all WTG and cable installations. The Lessee must also provide BOEM, BSEE, and NMFS GARFO-HESD a shapefile of as-built WTGs, inter-array cables, and the export cables, as well as best-available multibeam echosounder backscatter survey data (i.e., as a raster file for use in ArcGIS).

5.4.5 Boulder Identification and Relocation Plan(s). The Lessee must submit a Boulder Identification and Relocation Plan(s) to BOEM and BSEE for the agencies' 60-day review (in coordination with NMFS GARFO-HESD), 120 days prior to boulder relocation activities within the scope of the Plan. The Lessee must resolve all comments on the Boulder Identification and Relocation Plan to BOEM's and BSEE's satisfaction prior to implementation of the Plan. If BOEM or BSEE do not provide comments on the Plan within 60 days of its submittal, then the Lessee may presume concurrence with the Plan. BSEE will determine concurrence with the Plan. After concurrence of the Plan, the Lessee must provide USCG, NOAA, 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. The Plan(s) must detail how the Lessee will avoid or minimize impacts to sensitive benthic habitats and fishing operations.¹⁴ The Plan(s) must provide for relocation of boulders as closely as practicable to the original location, in areas of soft bottom that are immediately adjacent to existing similar habitat from which the boulder originated and placed in a manner that minimizes risk to navigation and commercial fishing (based on data depicting fishing locations such as a vessel monitoring system). The Plan(s) must include multibeam backscatter data and boulder (greater than or equal to 0.5 m in diameter) data layers to inform the siting of boulders and areas for relocation. The Plan(s) must include sufficient scope to mitigate boulders for facility installation

¹⁴ Sensitive benthic habitats include complex habitat, benthic features, and bathymetric features. Complex habitat is defined as coarse unconsolidated mineral substrates (i.e., substrates containing 5% or greater gravels), rock substrates (e.g., bedrock), and shell substrates (e.g., mussel reef) consistent with CMECS definitions, as well as vegetated habitats (e.g., SAV). 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.

and operational risks. The Plan(s) must be consistent with and meet the conditions of the SMS in Section 2.3. If avoidance and minimization was not feasible, the Plan(s) should describe in detail the rationale for this infeasibility. The Lessee should provide all plans and maps depicting locations/extents of sensitive benthic habitats to vessel operators so that avoidance and minimization measures can be taken in real time. The Plan must include the following for boulders that are proposed to be relocated:

- 5.4.5.1 A summary and detailed description of locations along the cable routes and wind turbine areas where surface and subsurface boulders greater than 0.5 m in diameter have been found;
- 5.4.5.2 A detailed summary of methodologies used in boulder identification, including geological and geophysical survey results;
- 5.4.5.3 Figures of the location of boulder relocation activities specified by activity type (e.g., pick or plow, removal, or placement). Separate submissions of these depictions overlaid on multibeam bathymetry and backscatter data and fishing activity data must also be submitted;
- 5.4.5.4 A description of boulder removal and/or relocation methods for each type of boulder relocation activity and technical feasibility constraints, including, but not limited to, the capacity of the crane used in grab systems, vessel specifications and metocean limits on operations;
- 5.4.5.5 A description of the areal extent of the environmental footprint of disturbance activities by habitat type and specific measures taken to avoid further adverse impacts to archaeological resources, complex habitat and fishing activity, and a description of how information regarding these resources is shared with vessel operators;
- 5.4.5.6 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) fishing (latitude, longitude), areas where boulders greater than 2 m in diameter are anticipated to occur (latitude, longitude), and identification of approximate areas to which boulders would be relocated (latitude, longitude);
- 5.4.5.7 A description of the specific strategies and measures taken to minimize the impacts to complex habitats and quantity of seafloor obstructions from relocated boulders in areas of active fishing, as technically and/or economically feasible;
- 5.4.5.8 A description of safety distances or zones to limit boulder relocation activities near third-party assets;
- 5.4.5.9 A description of MEC/UXO ALARP Certified areas, which should be consistent with MEC/UXO ALARP Certification (Section 2.1);

- 5.4.5.10 A summary of any consultation and outreach with resource agencies and the fishing industry in the development of the Plan (e.g., notifications to mariners); and
- 5.4.5.11 A statement of consistency with the Micrositing Plan (Section 5.4.4).
- 5.4.6 Boulder Relocation. The Lessee must implement methods identified in the approved COP and described in the Boulder Identification and Relocation Plan (Section 5.4.5) 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 closely as practicable to the original location, in areas of soft bottom immediately adjacent to existing similar habitat. The relocation of boulders must be consistent with the Project easement.
- 5.4.7 Boulder Relocation Report. The Lessee must provide a Boulder Relocation Report to BSEE, BOEM, NMFS GARFO-HESD, and the approved CVA. 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 Lessee must submit the report within 60 days of completion of the boulder relocation activities and prior to or with the relevant FIR. The Lessee must also provide BOEM and BSEE with 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) fishing (i.e., as a raster file for use in ArcGIS).
- 5.4.8 Scour and Cable Protection Plan. The Lessee must prepare and implement a Scour and Cable Protection Plan(s) that includes descriptions and specifications for all scour and cable protection materials. The Plan(s) must include a depiction of the location and extent of scour and cable protection, the habitat delineations for the areas of scour and cable protection measures, and detailed information on the proposed scour or cable protection materials for each area and habitat type. The Scour and Cable Protection Plan(s) must demonstrate consistency with the Micrositing Plan(s), as appropriate.
- 5.4.8.1 The Lessee must avoid the use of engineered stone or concrete mattresses in complex habitat, as practicable and/or feasible. The Lessee must ensure that all materials used for scour and cable protection measures consist of natural or engineered stone that does not inhibit epibenthic growth and provides three-dimensional complexity in height and in interstitial spaces, as practicable and feasible. 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.

- 5.4.8.2 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.
- 5.4.8.3 The Lessee must submit the Scour and Cable Protection Plan(s) to BOEM and BSEE for a 60-day review (in coordination with NMFS GARFO-HESD), at least 120 days prior to placement of scour and cable protection within the area covered by the scope of the Plan(s). BOEM and BSEE must concur with the Scour and Cable Protection Plan(s) prior to BSEE issuing a no-objection to an FDR covering the scour and/or cable protection materials.
- 5.4.8.4 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 Lessee must provide the final version of the Scour and Cable Protection Plan(s) to BSEE, NMFS, and the USACE.

5.5 Benthic Habitat and Fisheries Monitoring Conditions

- 5.5.1 Atlantic City Artificial Reef Site. The Lessee must remove the single turbine position from the Project layout that is located approximately 150-200 ft (45.8-61 m) from the observed Fish Haven (Atlantic City Artificial Reef Site).
- 5.5.2 Berm Survey and Report. Where plows, jets, grapnel runs, or other similar methods are used, post-construction geophysical surveys required as part of the Post-Installation Cable Monitoring must be capable of detecting bathymetry changes of 0.5 m or less and must be completed to determine the height and width of any created berms. The Lessee must capture bathymetry changes greater than 3 ft during the first and second post-installation surveys along the cable routes (as described in Section 2.10). If there are bathymetric changes in berm height greater than 1 m above grade after the second survey, 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 for a 60-day review (in coordination with NMFS) within 90 days of completion of the post-construction survey where the change was detected. The Lessee must resolve all comments on the Berm Remediation Plan to BOEM's and BSEE's satisfaction prior to initiating restoration activities. The Lessee must provide the final version of the Berm Remediation Plan to BOEM, BSEE, NMFS, and USACE.
- 5.5.3 Benthic and Fisheries Monitoring Plans. The Lessee must submit the most current Benthic and Fisheries Habitat Monitoring Plan to BOEM and NMFS within 120 days of COP approval for a 60-day review. The Monitoring Plans must address

Agency comments received on the Plans. The Lessee must conduct benthic and fisheries monitoring consistent with the Lessee's Benthic Monitoring Plan (Appendix II-H of the COP) and Fisheries Monitoring Plan (Appendix II-K of the COP) as revised to assess benthic habitat and fisheries in the Project area pre-, during, and post-construction. The Lessee must submit any revisions to the Plans to BOEM, to BSEE with status updates of submittals in the Annual Certification, and to NMFS GARFO-HESD. The Lessee should also submit the Benthic and Fisheries monitoring plan reports and resulting data to NMFS GARFO-HESD.

5.5.4 Sacrificial Anodes. To the extent it is technically and economically 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 Non-Avian Protected Species Mitigation and Monitoring Plan Conditions¹⁵

5.6.1 The Lessee must submit all required documents related to protected species in accordance with all the Terms and Conditions of the December 18, 2023, NMFS BiOp (e.g., Marine Mammal and Sea Turtle Monitoring Plan, Reduced Visibility Monitoring Plan/Nighttime Pile-Driving Monitoring Plan, Passive Acoustic Monitoring (PAM), Sound Field Verification (SFV), and Vessel Strike Avoidance Plan). The Lessee must submit all documents to BOEM, BSEE via TIMSWeb with a notification email sent to BSEE at protectedspecies@bsee.gov, NMFS GARFO-PRD, NMFS-OPR, and the USACE. Once Plan compliance with the BiOp is reached, BOEM will provide concurrence on all applicable plans to the Lessee. The Lessee must follow final plans.

5.6.2 If BOEM and BSEE inform the Lessee that the plan is inconsistent with the Incidental Take Statement (ITS) and NMFS BiOp, the Lessee must submit a modified plan that addresses the identified issues within 30 business days of the receipt of the comments but at least 15 business days before the start of the associated activities for which a plan is required. BOEM, BSEE, NMFS GARFO-PRD, and NMFS-OPR will review the modified plan within the Lessee's proposed schedule to the maximum extent practicable. The Lessee must obtain BOEM's and BSEE's concurrence with the plan(s) prior to the start of any specified activity.

5.7 Endangered and Threatened Species Conditions for Fishery Monitoring

5.7.1 The Lessee must submit all required documents related to endangered and threatened species conditions for fishery monitoring in Sections 5.14.2 through 5.14.9 to BOEM, BSEE via TIMSWeb with a notification email sent to

¹⁵ The requirements in this section set forth BOEM's conditions pursuant to the reasonable and prudent measures and the implementing terms and conditions of the NMFS Biological Opinion. See Reasonable and Prudent Measure 5 and Term and Condition 11, in the Incidental Take Statement. BOEM intends to implement its conditions of approval, including those in this section, consistently with the Terms and Conditions in the Biological Opinion. See, Condition 1.4, above.

protectedspecies@bsee.gov or marinedebris@bsee.gov (if related to marine debris/lost gear), and NMFS GARFO-PRD.

- 5.7.1.1 The Lessee must ensure that any lost survey gear is reported and recovered according to the Marine Debris Awareness and Elimination conditions in Section 5.1.2. The Lessee must also report all lost gear to NMFS GARFO-PRD, NMFS-OPR, 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.
- 5.7.1.2 The Lessee must complete marine mammal monitoring prior to, during, and after haul-back of gear used for fisheries monitoring surveys. If a marine mammal is determined by survey staff to be at risk of interaction with the deployed gear, all gear must be immediately removed.
- 5.7.1.3 If marine mammals are sighted in the area within 15 minutes before deploying gear and are considered by survey staff to be at risk of interaction with the research gear, then the sampling station must be either moved or canceled, or the activity must be suspended, until there are no marine mammal sightings within 1 nmi (1,852 m) of sampling location for 15 minutes. If this occurs, this information must be included in Protected Species Observer (PSO) reporting.
- 5.7.1.4 The Lessee must ensure that 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” (2019).

5.7.2 Conditions for Trawl Surveys

- 5.7.2.1 The Lessee must ensure that all vessels have at least one survey team member onboard each trawl survey who has completed Northeast Fisheries Observer Program (NEFOP) observer training, or equivalent training (i.e., another training in protected species identification and safe handling, inclusive of taking genetic samples from Atlantic sturgeon), within the last 5 years or other training in protected species identified and safe handling (inclusive of taking genetic samples from Atlantic sturgeon). Reference materials for identification, disentanglement, safe handling, and genetic sampling procedures must be available on board each survey vessel. This requirement applies to any trips where gear is set or hauled. The Lessee must provide documentation of training to NMFS and BSEE at least 15 days prior to the start of the trawl surveys, for which a non-NEFOP trained observer will be deployed, and at any later time that a different observer is deployed on the survey. If the Lessee will deploy

non-NEFOP trained observers, the Lessee must submit a training plan to BOEM and NMFS GARFO-PRD describing the training that will be provided to the survey observers. The Lessee must submit the PSO Training Plan for Trawl Surveys no later than 7 days prior to the start of trawl surveys. This plan must include a description of the elements of the training (i.e., curriculum, virtual or hands-on, etc.) and identify who will carry out the training and their qualifications. Once the training is complete, confirmation of the training and a list of trained survey staff must be submitted to NMFS GARFO-PRD; this list must be updated if additional staff are trained for future surveys. The Lessee must submit a list of trained survey staff to NMFS GARFO-PRD at least one business day prior to the beginning of the survey. The Lessee must obtain BOEM's and BSEE's concurrence (in consultation with NMFS) with this plan before starting any trawl surveys.

- 5.7.2.1.1 The Lessee must ensure that any sea turtles or Atlantic sturgeon incidentally caught and/or collected in any fisheries survey gear are identified to species or species group and reported to BOEM, BSEE, and NMFS GARFO-PRD, and then properly documented using appropriate equipment and the NMFS data collection form.¹⁶ Biological data, samples, and tagging must occur as outlined below. The Lessee must follow the Sturgeon and Sea Turtle Take Standard Operating Procedures.¹⁷
- 5.7.2.1.2 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 take reporting form¹⁸ and reported to BOEM, BSEE, and NMFS GARFO-PRD.
- 5.7.2.1.3 The Lessee must take genetic samples from all captured Atlantic sturgeon (alive or dead) to allow for identification of the distinct population segment (DPS) of origin of captured individuals and the tracking of the amount of incidental take. This sample collection must be done consistent with the Procedures for Obtaining Sturgeon Fin Clips.¹⁹ Fin clip

¹⁶ <https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null>

¹⁷ <https://media.fisheries.noaa.gov/2021-11/Sturgeon-Sea-Turtle-Take-SOPs-external-11032021.pdf>

¹⁸ <https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null>

¹⁹ Procedure located under the “Sturgeon Genetics Sampling” heading, <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic>.

samples are required in all cases except when additional handling of the sturgeon may result in an imminent risk of injury to the fish or the PSO.

- 5.7.2.1.4 The Lessee must send fin clips to a NMFS GARFO-PRD-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.
- 5.7.2.1.5 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.²⁰
- 5.7.2.2 The Lessee must ensure that 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 who are handling and resuscitating the animal(s).
 - 5.7.2.2.1 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.
 - 5.7.2.2.2 All survey vessels must be equipped with copies of the sea turtle handling and resuscitation requirements found at 50 C.F.R. § 223.206(d)(1) prior to the commencement of any on-water activity.²¹ 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.

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

²¹ https://media.fisheries.noaa.gov/dam-migration/sea_turtle_handling_and_resuscitation_measures.pdf

- 5.7.2.2.3 For sea turtles that appear injured, sick, distressed, or dead (including stranded or entangled individuals), survey staff must immediately contact the Greater Atlantic Region Marine Animal Hotline at 866-755-6622 for further instructions and guidance on handling, retention, and/or disposal of the animal. If survey staff are unable to contact the hotline (e.g., due to distance from shore or lack of ability to communicate via phone), then survey staff must contact the USCG via very high frequency (VHF) marine radio on Channel 16. If required, hard-shelled sea turtles (i.e., non-leatherbacks) may be held on board for up to 24 hours, provided conditions during holding are authorized by the NMFS GARFO-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.
- 5.7.2.2.4 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.²²
- 5.7.2.2.5 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.
- 5.7.2.3 The captain and/or a member of the scientific crew must conduct marine mammal monitoring before, during, and after haul back.
- 5.7.2.3.1 The Lessee must commence trawl operations as soon as possible once the vessel arrives on station; the target tow time must be limited to 20 minutes.

²² <https://media.fisheries.noaa.gov/dam-migration-miss/Resuscitation-Cards-120513.pdf>. The Lessee shall comply with the version effective at the time of COP approval.

- 5.7.2.3.2 The Lessee must initiate marine mammal watches (visual observation) within 1 nmi (1,852 m) of the site 15 minutes prior to sampling.
 - 5.7.2.3.3 If a marine mammal is sighted within 1 nmi (1,852 m) of the planned sampling station in the 15 minutes before gear deployment, the Lessee must delay setting the trawl until marine mammals have not been sighted for 15 minutes, or the Lessee may move the vessel away from the marine mammal to a different section of the sampling area. If, after moving on, marine mammals are still visible from the vessel, the Lessee may decide to move again or to skip the sampling station.
 - 5.7.2.3.4 The Lessee must maintain visual monitoring effort during the entire period of time that trawl gear is in the water (i.e., throughout gear deployment, fishing, and retrieval). If marine mammals are sighted before the gear is fully removed from the water, (i.e., prior to haul back) the vessel must slow its speed and steer away from the sighted animal in order to minimize potential interactions.
 - 5.7.2.3.5 The Lessee must open the codend of the net close to the deck/sorting area to avoid damage to animals that may be caught in gear.
 - 5.7.2.3.6 The Lessee must empty gear as close as possible to the deck/sorting area and as quickly as possible after retrieval.
 - 5.7.2.3.7 The Lessee must fully clean and repair trawl nets (if damaged) before setting again.
 - 5.7.2.3.8 In the case of a marine mammal interaction, the Lessee must contact the Marine Mammal Stranding Hotline immediately at 866-755-6622 and report the incident to NMFS-OPR, and, for ESA-listed marine mammals, NMFS GARFO-PRD.
- 5.7.3 **Notification Report.** The Lessee must notify BOEM, BSEE, and NMFS GARFO-PRD via email within 24 hours of any interaction with a sea turtle or sturgeon and include the NMFS take reporting form.²³ The report must include, at a minimum, the following: (1) survey name and applicable information (e.g., vessel name, station number); (2) GPS coordinates describing the location of the interaction (in decimal degrees); (3) gear type involved (e.g., bottom trawl, gillnet, longline); (4) soak time, gear configuration and any other pertinent gear information; (5) time and

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

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.

5.7.4 Annual Report. The Lessee must submit an annual report by February 15 each year for the previous year (i.e., the report for 2024 activities is due by February 15, 2025) to BOEM, BSEE, 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. Before beginning any in-water activities involving vessel use (transit), cable installation, 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, vessel operators, and all staff to explain responsibilities, communication procedures, and protected species mitigation, monitoring, and reporting requirements.

5.8.1 The Lessee must submit all required documents and reports related to protected species training and coordination to BOEM, BSEE, and NMFS-OPR.

5.8.2 Vessel Crew and Protected Species Observer Training Requirements. The Lessee must provide Project-specific training to all vessel crew members, PSOs, PAM Operators, and Trained Lookouts on the identification of sea turtles and marine mammals, vessel strike avoidance and reporting protocols, how and when to communicate with the vessel operator, the authority of the PSOs, PAM Operator teams, and the associated regulations for avoiding vessel collisions with protected species prior to the start of in-water construction activities. The Lessee must make available aboard all Project vessels reference materials for identifying sea turtles and marine mammals, copies of the Marine Mammal and Sea Turtle Monitoring Plan (Section 5.6.1) and Vessel Strike Avoidance Plan (Section 5.9). 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, BSEE, and NMFS-OPR upon request. The Lessee must communicate to all crew members its expectation that the crew report sightings of sea turtles and marine mammals (including live, entangled, and dead individuals) to the designated vessel contact. The Lessee must post the reporting instructions, including communication channels, in highly visible locations aboard all Project vessels.

5.8.3 PSO and PAM Operator Requirements. The Lessee must use independent, dedicated, qualified PSOs and PAM Operators provided by a third party. The PSOs' and PAM Operators' sole Project-related duty must be to observe, collect and report

data, and communicate with and instruct relevant vessel crew regarding the presence of protected species and mitigation requirements (including brief alerts regarding maritime hazards). PSOs or PAM operators serving as PSOs must have completed a commercial PSO or PAM Operator training program (as applicable) for the Atlantic with an overall examination score of 80 percent or greater.²⁴ The Lessee must use NMFS-approved PSOs and PAM operators. The Lessee must provide training certificates for individual PSOs and PAM Operators 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 and/or PAM Operators for construction activities can be found in NMFS-OPR's LOA. PSOs and PAM operators must be on watch for no more than a maximum of 4 consecutive hours, followed by a break of at least 2 hours between watches.

5.9 Vessel Strike Avoidance Conditions and Plan Conditions

- 5.9.1 The Lessee must submit any required documents related to vessel strike avoidance consistent with the December 18, 2023, NMFS BiOp to BOEM, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, and NMFS GARFO-PRD.
- 5.9.2 Regardless of vessel size, vessel operators must reduce vessel speed to 10 knots (kts) (18.5 mph) or less while operating in any Seasonal Management Area and Dynamic Management Area (DMA) or Slow Zone or North Atlantic right whales (NARW), unless the vessel is operating in a designated DMA or Slow Zone where right whales have not been detected and it is not reasonable to expect the presence of NARW (e.g., Long Island Sound, shallow harbors).
- 5.9.3 The vessel captain and crew must maintain a vigilant watch for all protected species and reduce speed, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid striking any listed species. The presence of a single individual at the surface may indicate the presence of submerged animals in the vicinity; therefore, precautionary measures should always be exercised. If pinnipeds or small delphinids of *Delphinus*, *Lagenorhynchus*, *Stenella*, or *Tursiops* are visually detected approaching the vessel (i.e., to bow-ride) or towed equipment, vessel speed reduction, course alteration, and shutdown are not required.
- 5.9.4 If a vessel is underway, a PSO must monitor a protected species separation distance of 100 m for sea turtles and 500 m or greater for NARW and ESA-listed marine mammals (as well as any unidentified large whales), 100 m or greater for non-ESA listed large whales, and 50 m or greater from all dolphins, cetaceans and pinnipeds (with the exception from Section 5.9.3 noted for those genus who are known to bow-ride), to ensure detection of that animal in time to take necessary measures to

²⁴ <https://repository.library.noaa.gov/view/noaa/15851>

avoid striking the animal. If the vessel does not require a PSO for the type of activity being conducted, the vessel may use crew as a Trained Lookout to meet this requirement.

- 5.9.5 Vessels must maintain a separation distance of 500 m from any sighted NARW or unidentified large marine mammals, greater than 100 m from all other whales; and greater than 50 m from dolphins, porpoises, and seals.
- 5.9.6 If a large whale (inclusive of ESA-listed species and any species that is not identifiable to the species-level) is identified within 500 m of the forward path of any vessel, the vessel operator must steer a course away from the whale at 10 kts (18.5 km/hr) or less until the 500-m minimum separation distance has been established. Vessels may also shift to neutral.
- 5.9.7 If a large whale (inclusive of ESA-listed species and any species that is not identifiable to the species-level) is sighted within 200 m of the forward path of a vessel, the vessel operator must reduce speed to 10 kts and shift the engine to neutral. Engines must not be engaged until the whale has moved outside of the vessel's path and beyond 500 m. If stationary, the vessel must not engage engines until the large whale has moved beyond 500 m. The appropriate measures must also be undertaken for species other than ESA-listed large whales, per the final MMPA LOA, if issued.
- 5.9.8 If a sea turtle or manta ray is sighted at any distance within the operating vessel's forward path, the vessel operator must slow down to 4 kts and steer away (unless unsafe to do so). The vessel operator may resume normal vessel operations once the vessel has passed the turtle or ray.
- 5.9.9 Visual 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, consistent with identified requirements.
 - 5.9.9.1 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 such as a NARW, other whale (defined in this context as sperm whales or baleen whales other than NARW), or other marine mammal, as well as identify sea turtles. Crew members serving as visual observers must not have other duties while observing for marine mammals while the vessel is operating over 10 kts.

5.9.10 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 operators, or both.

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

5.9.10.2 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 operators to increase situational awareness.

5.9.11 Vessel Strike Avoidance of Sea Turtles

5.9.11.1 On 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 vessel operator so that the requirements below can be implemented.

5.9.11.2 On 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.

5.9.11.3 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 maintain watch for whales and sea turtles.

5.9.11.4 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.

5.9.11.5 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 sea turtle species. Alternative monitoring technology (e.g., night vision, thermal cameras, etc.) must be available and used by the lookout to ensure effective watch at night and in

any other low visibility conditions. If the trained lookout is a vessel crew member, this 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.

5.9.11.6 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 kts (unless 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 when the sea turtle is no longer in the forward path of the vessel. The vessel may resume normal operations after it has passed 100 m from the turtle.

5.9.11.7 Vessel operators must avoid transiting through areas of visible jellyfish aggregations or floating sargassum lines or mats. If operational safety prevents avoidance of such areas, vessels must slow to 4 kts while transiting through such areas.

5.9.11.8 All vessel crew members must be briefed in the identification of sea turtles 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.

5.9.11.9 The only exception to the requirements regarding vessel speed and avoiding jellyfish, sargassum, and/or sea turtles is when the safety of the vessel or crew during an emergency necessitates deviation from these requirements. If any such incidents occur, they must be reported to BSEE and NMFS GARFO-PRD within 24 hours.

5.9.11.9.1 Vessel transits to and from the Project area that require PSOs must maintain a speed commensurate with weather conditions and effectively detecting sea turtles.

5.10 Passive Acoustic Monitoring During Construction. Consistent with the requirements outlined in the MMPA LOA and December 18, 2023, NMFS BiOp, the Lessee must conduct PAM to supplement visual monitoring of marine mammals before, during, and after all monopile and jacket foundation installations.

5.11 Clearance and Shutdown Zones During Construction. Pile-driving will not proceed unless the visual PSOs can effectively monitor the full extent of the minimum visibility zones and identified clearance zones for marine mammals and sea turtles as described in the MMPA LOA and the December 18, 2023, NMFS BiOp. The Lessee will not proceed with pile-driving unless the visual PSOs can effectively monitor the full extent of the minimum visibility zones. Detection of an animal within the clearance zone triggers a delay of initiation of pile-driving and detection of an animal in the shutdown zone triggers the identified shutdown requirements. The following clearance and shutdown zones must be established and monitored for the specified activity, unless otherwise approved by BOEM and BSEE (in consultation with NMFS).

Table 5.11-1. Clearance and Shutdown Zones

Species	Clearance Zone (m)	Shutdown Zone (m)
Impact Pile-Driving for WTG, OSS, and Met Tower Foundation Installation:		
1,900 m minimum visibility zone from each PSO platform (pile driving vessel and at least two PSO vessels), PAM monitoring out to 10,000 m		
NARW (visual and PAM monitoring)	At any distance (minimum visibility zone (1,900 m) plus any additional distance observable by the visual PSOs on all PSO platforms); at any distance within the 10,000-m monitoring zone monitored by PAM.	At any distance (minimum visibility zone (1,900 m) plus any additional distance observable by the visual PSOs on all PSO platforms); at any distance within the 10,000-m monitoring zone monitored by PAM.
Fin, Sei, and Sperm Whales (visual and PAM monitoring)	2,300 m	1,900 m
Sea Turtles (visual detection)	250 m	250 m
Vibratory Pile-Driving for Cable Landfall Activities – Visual PSOs		
NARW, Fin, Sei, and Sperm Whales	100 m	100 m
Sea Turtles	50 m	50 m
HRG Surveys – Visual PSOs		
NARW	500 m	500 m
Fin, Sei, and Sperm Whales	500 m	100 m
Sea Turtles	100 m	100 m

Note: These are the clearance and shutdown zones incorporated into the proposed action; the zones for marine mammals reflect the proposed conditions of the MMPA ITA, as modified during the consultation period, and the zones for sea turtles reflect the zone sizes identified in BOEM’s BA as modified for UXOs by this ITS. Further modification may be included in the final MMPA ITA.

NA = not applicable; *On any day that concurrent pile driving is planned, we expect the “concurrent” zone sizes will be in effect.

5.11.1 Noise Abatement Systems. Consistent with the requirements of the MMPA LOA and December 18, 2023, NMFS BiOp, the Lessee must employ noise abatement systems during all foundation pile-driving in a manner that achieves maximum noise attenuation levels practicable, but, at minimum, results in noise levels equal to or less than those modeled assuming 10 decibels (dB) attenuation.

- 5.11.2 The Lessee must follow pre-clearance, soft start, shutdown, and restart procedures consistent with the measures incorporated into NMFS' December 18, 2023, BiOp (Appendix A), the BiOp's ITS, and the final MMPA LOA, if issued.
- 5.11.3 Adaptive Monitoring Conditions. The purpose of the SFV plan (see Section 5.6.1) is to ensure that the Lessee does not exceed the distances to the auditory injury (i.e., harm) or behavioral harassment threshold (Level A and Level B harassment, respectively) for marine mammals, the harm or behavioral harassment thresholds for sea turtles, or the harm or behavioral disturbance thresholds for Atlantic sturgeon that are identified in the December 18, 2023, NMFS BiOp. The Lessee must monitor through SFV and the required reporting, adaptive attenuation measures, and monitoring measures consistent with the MMPA LOA and the December 18, 2023, NMFS BiOp. The Lessee must send all raw SFV PAM data to the National Centers for Environmental Information (NCEI) Passive Acoustic Data archive within 12 months following the completion of WTG/OSS/met tower foundation installation and the Lessee must follow NCEI guidance for packaging the data and metadata unless such submission conflicts with conditions in Section 4, in which case the language in Section 4 will govern the submission of PAM data.
- 5.11.4 Long-term PAM. The Lessee must conduct long-term monitoring of ambient noise, and baleen whale and commercially important fish vocalizations, in the Lease Area before, during, and following construction. The Lessee must conduct continuous²⁵ recording at least 1 year before the start of pile installation, through pile installation, initial operation, and for at least 3 but no more than 10 full calendar years of operations²⁶ to monitor for potential impacts. The Lessee must meet with BOEM and BSEE at least 60 days prior to conclusion of the third full calendar year of operation monitoring (and at least 60 days prior to the conclusion of each subsequent year until monitoring is concluded) to discuss: 1) monitoring conducted to-date, 2) the need for continued monitoring, which need will be determined by BOEM, and 3) if monitoring is continued, whether adjustments to the monitoring are warranted. The monitoring instrument(s) must be configured to ensure that the specific locations (with confidence intervals) of vocalizing NARW anywhere within the Lease Area can be identified, assuming a 10-km detection range for their calls. The Lessee may satisfy this condition through either of the options set forth more fully below but must notify BOEM of its choice at least 120 days before pile driving is scheduled to begin. PAM deployment and data submission requirements of this Section must be consistent with Section 4. In the case where there is a conflict, the Lessee must follow the language in Section 4.

²⁵ 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.

²⁶ For the purposes of this condition, operation initiates with the commissioning of the first WTG.

5.11.4.1 Option 1 - Lessee Conducts Long-term PAM. If the Lessee chooses to comply with Section 5.11.4 using this option, the Lessee must conduct PAM, including data processing and archiving following the Regional Wildlife Science Collaborative (RWSC) best practices²⁷ to ensure data comparability and transparency. PAM instrumentation must be deployed to allow for identification of any NARW that vocalize anywhere within the Lease Area, as well as Atlantic cod.

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

The Lessee must follow the best practices outlined in the RWSC best practices document,²⁸ 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 7.1.1 and the Section 106 MOA.

The Lessee must document the occurrence of mysticete vocalizations (as well as odontocete clicks, as available based on sample rate) using automatic or manual detection methods. In addition, data must be processed with either manual or automatic detection software to detect vocalizations of spawning cod. The Lessee must submit a log of these detections as well as the detection methodology to BOEM, BSEE (at TIMSWeb), and NMFS (at nmfs.pacmdata@noaa.gov) within 120 days following each recorder retrieval. All raw data must be sent to the NCEI Passive Acoustic Data archive on an annual basis and the Lessee must follow NCEI guidance for packaging the data.

5.11.4.1.1 Long-term Passive Acoustic Monitoring Plan. The Lessee must prepare and implement a Long-term PAM Plan under this option. No later than 120 days prior to instrument deployment

²⁷ <https://rWSC.org/wp-content/uploads/2022/12/RWSC-PAM-Data-Management-Storage-Best-Practices.pdf>.

²⁸ <https://rWSC.org/wp-content/uploads/2022/12/RWSC-PAM-Data-Management-Storage-Best-Practices.pdf>.

and before any construction begins, the Lessee must submit to BOEM and BSEE (renewable_reporting@boem.gov; renewableenergyoperations@bsee.gov and TIMSWeb) the Long-term PAM Plan that describes all proposed equipment (including number and configuration of instruments), deployment locations, mooring design, detection review methodology, and other procedures and protocols related to the required use of PAM. If there are fewer than 120 days between the commencement of any construction activity and this COP approval, the Lessee must submit the Plan as soon as practicable and no later than 60 days prior to commencing activities. As the Lessee prepares the Long-term PAM Plan, it must coordinate with the RWSC.

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. If BOEM does not provide comments on the Long-term PAM Plan within 45 days of its submittal, the Lessee may conclusively presume BOEM's concurrence with the Long-term PAM Plan.

5.11.4.2 Option 2 – Financial and Other Contributions to BOEM's Environmental Studies Program.²⁹ As an alternative to conducting long-term PAM in the Lease Area, the Lessee may make a financial contribution to BOEM's Environmental Studies Partnership for an Offshore Wind Energy Regional Observation Network (POWERON) initiative on an annual basis and cooperate with the POWERON team to allow the team's access to the Lease Area for deployment, regular servicing, and retrieval of instruments. In the event the Lessee selects this Option, BOEM and the Lessee will enter into a separate agreement. The Lessee's financial contribution must provide for all activities necessary to conduct PAM within and adjacent to the Lease Area, such as vessel and staff time for regular servicing of instruments, QA/QC on data, data processing to obtain vocalizations of sound-producing species and ambient noise metrics, as well as long-term archiving of data at NCEI. At the Lessee's request, BOEM will provide an estimate of the necessary amount of the financial contribution. BOEM will also invite the Lessee to contribute to discussions about the scientific approach of the POWERON initiative via the RWSC. The Lessee may

²⁹ The Lessee may elect Option 2 initially or during any subsequent calendar year of monitoring, subject to agreement with BOEM and BSEE.

request temporary withholding of the public release (i.e., the placement into the NCEI public data archive) of raw acoustic data collected within the Lease Area for up to 180 days after collection of that data. During this temporary hold, BOEM may elect to provide the Lessee with a copy of the raw PAM data collected under this option after the DON has cleared the data for national security concerns.

- 5.12 WTG, OSS, and Met Tower Foundation Installation Conditions. Monopiles must be no larger than 15 m in diameter. For all monopiles, the minimum amount of hammer energy necessary to effectively and safely install and maintain the integrity of the piles must be used. Hammer energies must not exceed 4,400 kilojoules. Pin piles must be no larger than 5 m in diameter. Hammer energies must not exceed 2,500 kJ for pin pile installation.
- 5.12.1 The Lessee must submit all required documents related to WTG, OSS, and met tower foundation installation conditions in Sections 5.12.2 through 5.12.3 to BOEM, BSEE via TIMSWeb with a notification email sent to protectedspecies@bsee.gov, and NMFS GARFO-PRD.
- 5.12.2 Seasonal and Daily Restrictions. No foundation impact pile driving activities are allowed to occur January 1 through April 30. No more than three foundation monopiles and four 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 Reduced Visibility Monitoring Plan/Nighttime Pile Driving Monitoring Plan (see Section 5.6.1).
- 5.12.3 Use of PSOs and PAM Operators for Pile-Driving. Consistent with the requirements in the MMPA LOA and December 18, 2023, NMFS BiOp, the Lessee must use NMFS-approved PSOs and PAM operators to monitor the identified clearance and shutdown zones (see Section 5.11) before, during, and after all foundation installation activities. At minimum, 9 visual PSOs must be actively observing for marine mammals and sea turtles before, during, and after pile driving. At least 3 visual PSOs must be stationed on the pile driving vessel and at least 3 visual PSOs must be stationed on each of the 2 secondary, PSO-dedicated vessels. The dedicated PSO vessels must be positioned in locations that maximize ability to monitor the full extent of the minimum visibility, clearance, and shutdown zones. The Lessee must adjust this distance as required based upon 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 (per the final MMPA LOA, if issued). These PSOs must maintain watch at all times when impact pile driving 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.

5.12.3.1 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 5.11) 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 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 5.6.1). Determinations during construction must be based on review of the weekly reports and other information, as appropriate.

5.12.3.2 The Lessee must ensure that, if the clearance and/or shutdown zones are expanded due to the verification of sound fields from Project activities, PSO coverage is sufficient to reliably monitor the expanded clearance and/or shutdown zones. Additional observers must be deployed on additional platforms for every 1,500 m that a clearance or shutdown zone is expanded beyond the initial clearance and shutdown zones (Table 5.11-1; Section 5.11). In the event that the clearance or shutdown zone for protected species needs to be expanded, the Lessee must submit a proposed monitoring plan for the expanded zones to BOEM and BSEE, who will coordinate with NMFS-OPR and NMFS-GARFO-PRD prior to granting approval. Expansion of the zones will be reconsidered after additional sound attenuation measures are in place that reduce distances to at or below those modeled assuming 10 dB, as verified by SFV.

5.13 Project Design Criteria and Best Management Practices for Protected Species. The Lessee must comply with all applicable Project Design Criteria and Best Management Practices for Protected Species, found at <https://media.fisheries.noaa.gov/2021-12/OSW-surveys-NLAA-programmatic-rev-1-2021-09-30-508-.pdf>, that implement the integrated requirements for threatened and endangered species in the June 29, 2021, programmatic consultation under the ESA. The Lessee must submit Survey Plans to BOEM and BSEE (via TIMSWeb with a notification email at protectedspecies@bsee.gov) for review and concurrence at least 90 days prior to the planned start of geophysical and geotechnical surveys. If HRG surveys are necessary during periods of low visibility (e.g., darkness, rain, fog, etc.), the Lessee must submit an Alternative Monitoring Plan (AMP) to BOEM and BSEE detailing the monitoring methodology that will be used during nighttime and low-visibility conditions and an explanation of how it will be effective at ensuring that the shutdown zone(s) can be maintained during nighttime and low-visibility survey operations. The Lessee must submit the AMP 60 days before survey operations are set to begin.

5.14 Reporting for Protected Species. The Lessee must implement the reporting requirements necessary to document the amount of and extent of authorized incidental take exempted through the December 18, 2023, NMFS BiOp consistent with RPM 3 and according to

Terms and Conditions 4 and 5 of the NMFS BiOp, and any reporting requirements included as specified in the final MMPA LOA, and as specified in the following conditions. Unless otherwise specified, the Lessee must submit all reports to NMFS GARFO-PRD, NMFS-OPR, and BSEE (see Section 5.7.1 above).

- 5.14.1 The Lessee must report to BOEM and BSEE within 24 hours of confirmation any incidental take of an endangered or threatened species.
- 5.14.2 The Lessee must report all NARW sightings by PSOs or Project personnel on or in the vicinity of any project vessel, and during vessel transit, consistent with the Term and Condition 5.b. of the December 18, 2023, NMFS BiOp.
- 5.14.3 Reporting of ESA Listed Species within Shutdown Zone During Active Pile-Driving. The Lessee must report any threatened or endangered species that is observed within the identified shutdown zone during active pile driving (vibratory or impact). The Lessee must file a report with BOEM, BSEE, and NMFS GARFO-PRD within 48 hours of the incident and include the following: description of the activity (i.e., vibratory or impact pile driving) and duration of pile driving prior to the detection of the animal(s), location of PSOs and any factors that impaired visibility or detection ability, time of first and last detection of the animal(s), distance of animal at first detection, closest point of approach of animal to pile, behavioral observations of the animal(s), time the PSO called for shutdown, hammer log (number of strikes, hammer energy), time the pile driving began and stopped, and any measures implemented (e.g., reduced hammer energy) prior to shutdown. 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).
- 5.14.4 Detected or Impacted Protected Species Reporting. The Lessee must report within 48 hours all observations or collections of injured or dead whales, sea turtles, or sturgeon to BSEE, NMFS-OPR, and NMFS GARFO-PRD, including observations and interactions during the fisheries surveys. The Lessee must ensure its reports reference the Project and include the Take Report Form available on NMFS' webpage (<https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null>). The Lessee must ensure that 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 except when additional handling of the sturgeon may result in an imminent risk of injury to the fish or the PSO. Incidents falling within the exception are expected to be limited to capture and handling of sturgeon in extreme weather. Instructions for fin clips and associated metadata are available at <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic> under the "Sturgeon Genetics Sampling" heading.

The Lessee must report any suspected or confirmed vessel strike of a sea turtle or sturgeon by any Project vessel in any location, including observation of any injured sea turtle or sturgeon, or sea turtle or sturgeon parts, to BOEM, BSEE, NMFS

GARFO-PRD, and to appropriate NOAA stranding hotline (for marine mammals between Maine and Virginia, report to 866-755-6622, and from North Carolina to Florida to 877-942-5343 and for sea turtles from Maine to Virginia, report to 866-755-6622, and from North Carolina to Florida to 844-732-8785) as soon as feasible. The Lessee must include in the report the following information: (1) the time, date, and location (latitude/longitude in decimal degrees) of the incident; (2) a species identification (if known) or description of the animal(s) involved; (3) the vessel's speed during and leading up to the incident; (4) the vessel's course and heading, and what operations were being conducted (if applicable); (5) the status of all sound sources in use; (6) a description of avoidance measures and requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike; (7) the environmental conditions (e.g., wind speed and direction, Beaufort scale, cloud cover, visibility) immediately preceding the strike; (8) the estimated size and length of animal that was struck; (9) a description of the behavior of the animal immediately preceding and following the strike; (10) the estimated fate of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and (11) photographs or video footage of the animal(s), to the extent practicable.

In the event that an injured or dead marine mammal or sea turtle is sighted, the Lessee must report the incident to BOEM, BSEE, NMFS-OPR, and NMFS-GARFO-PRD, 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) the time, date, and location (latitude/longitude in decimal degrees) of the first discovery (and updated location information if known and applicable); (2) a species identification (if known) or description of the animal(s) involved; (3) the condition of the animal(s) (including carcass condition if the animal is dead); (4) the observed behaviors of the animal(s), if alive; (5) photographs or video footage of the animal(s), if available; and (6) the 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.

- 5.14.5 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 via email at renewable_reporting@boem.gov 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. In the email, the Lessee must confirm the relevant point of contact for questions regarding the report and confirm with BOEM and BSEE that the report was received.
- 5.14.6 SFV Reports. 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, and NMFS-OPR.

5.14.6.1 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 3 monopiles and all piles driven for each of 3 jacket foundations, the initial results of the SFV measurements in an interim report. If technical or other issues prevent submission within 48 hours, the Lessee must notify NMFS-OPR and NMFS-GARFO-PRD 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 3 monopiles and all piles driven for each of 3 jacket foundations installed and any additional piles for which SFV is required. The interim report must include data from hydrophones identified for interim reporting in the SFV Plan and include a summary of pile installation activities (pile diameter, pile weight, pile length, water depth, sediment type, hammer type, total strikes, total installation time [start time, end time], duration of pile driving, max single strike energy, Noise Attenuation System (NAS) deployments), pile location, recorder locations, modeled and measured distances to thresholds, received levels (root mean square, peak, and sound exposure levels) results from Conductivity, Temperature, and Depth casts/sound velocity profiles, signal and kurtosis rise times, pile driving plots, activity logs, and weather conditions. If additional SFV is required after the first 3 monopiles are installed (see Section 5.11.4) the Lessee must submit additional SFV interim reports to BOEM, BSEE, and NMFS GARFO for the next 3 monopiles and for the next 3 jacket foundations where all pin piles for a given foundation have been installed. If the measured sound fields continue to exceed the modeled results, the Lessee must submit additional SFV interim reports.

5.14.6.2 SFV Final Reports. The Lessee must submit the final results of SFV for monopile and pile driven jacket foundation installations as soon as possible, but no later than 90 days following completion of pile driving of the 3 or more monopiles for which SFV was carried out.

5.14.7 Weekly Reports. The Lessee must compile and submit weekly reports during construction that document pile driving and HRG survey activities, including associated PSO, SFV, and noise abatement activities. These weekly reports must include the information required by the December 18, 2023, NMFS BiOp Terms and Conditions 2 and 9e, and the Lessee must submit the reports to NMFS-OPR, NMFS GARFO-PRD, BOEM, and BSEE (protectedspecies@bsee.gov). The Lessee may submit the reports directly from the PSO providers and the reports may consist of raw data. The Lessee must submit weekly reports no later than Wednesday for the previous week (Sunday – Saturday). Weekly reports must include:

5.14.7.1 Summaries of pile driving activities and piles installed, including pile ID, type of pile, pile diameter, start and finish time of each pile driving event, hammer log (number of strikes, max hammer energy, duration of piling) per pile, any changes to noise attenuation systems and/or hammer schedule, details on the deployment of PSOs and PAM Operators,

including the start and stop time of associated observation periods by the PSOs and PAM Operators, and a record of all observations/detections of marine mammals and sea turtles as detailed in Section 5.14.8.1 below;

5.14.7.2 A summary of SFV, including the results of abbreviated SFV monitoring conducted and NAS implemented during pile driving;

5.14.7.3 Identification of the turbines that have become operational and when they became operational (a map must be provided);

5.14.7.4 Summaries of HRG survey activities;

5.14.7.5 A description of vessel operations (including port departures and destinations, number of vessels, type of vessel(s), and route);

5.14.7.6 A description of all protected species detections. This includes: species identification, number of animals, time at initial detection, time at final detection, distance to pile/vessel at initial detection, closest point of approach to pile/vessel, and animal direction of travel relative to pile/vessel; description of animal behavior, features used to identify species, and for moving vessels: speed (kts), distance and bearing to animal at initial detection, closest point of approach and bearing to animal, distance and bearing to animal at final detection, and animal direction of travel relative to vessel. Sightings/detections during pile driving activities (clearance, active pile driving, post-pile driving) and all other (transit, opportunistic, etc.) sightings/detection must be reported and identified as such; and

5.14.7.7 A description of vessel strike avoidance measures taken.

5.14.8 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, vessel transits (number of transits, name and type of vessel, ports used, and route inclusive of foreign and domestic ports), piles installed (number and ID), HRG surveys conducted, and 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 include the information identified in the December 18, 2023, NMFS BiOp Terms and Conditions 3a and 5f, and the Lessee must submit the reports to BOEM, BSEE, and NMFS-OPR, and NMFS-GARFO-PRD no later than the 15th of the month for the previous month.

5.14.8.1 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 Lessee must submit the reports in Microsoft Word and Excel formats (not as a PDF). Enter all dates as YYYY-MM-DD. Enter all times in 24 Hour Coordinated Universal Time (UTC) as HH:MM.

- 5.14.8.2 The PSO must create a new entry on the Effort form each time a pile segment changes, or weather conditions change, and at least once an hour as a minimum. The PSO must 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 to YearMonthDay.xls. Data fields must be reported in Excel format. Data categories must include Project, Operations, Monitoring Effort, and Detection, as further specified below. The Lessee must generate all PSO data through software applications or otherwise recorded electronically by PSOs and provide it to BOEM and BSEE in electronic format (CSV files or similar format) to 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 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, infrared cameras)
- Distance finding method used
- PSO names (Last, First) and training
- Observation height above sea surface

Operations Information:

- Date (YYYY-MM-DD)
- Hammer type used (make and model)
- Greatest hammer power used for each pile
- Pile identifier and pile number for the day (e.g., pile 2 of 3 for the day)
- Pile diameters

- Pile length
- Total number of strikes used to install each pile
- Total hammer energy used to install each pile
- Pile locations (latitude and longitude)
- Number of vessel transits
- Types of vessels used
- Vessel routes used

Monitoring Effort Information:

- Date (YYYY-MM-DD)
- Noise source (ON=Hammer On; OFF=Hammer Off)
- PSO name(s) (Last, First)
- If visual, how many PSOs on watch at one time?
- Time pre-clearance visual monitoring began in UTC (HH:MM)
- Time pre-clearance monitoring ended in UTC (HH:MM)
- Time pre-clearance PAM monitoring began in UTC (HH:MM)
- Time PAM monitoring ended in UTC (HH:MM)
- Duration of pre-clearance PAM and visual monitoring
- Time power-up or ramp-up began
- Time equipment full power was reached
- Duration of power-up or ramp-up
- Time pile driving began (hammer on)
- Time pile driving activity ended (hammer off)
- Duration of activity
- Duration of visual detection
- Wind speed (kts), from direction
- Swell height (m)
- Water depth (m)
- Visibility (km)
- Glare severity
- Latitude (decimal degrees), longitude (decimal degrees)
- Compass heading of vessel (degrees)
- Beaufort scale
- Precipitation
- Cloud coverage (%)
- Did a shutdown/power-down occur?
- Time shutdown was called for (UTC)
- Time equipment was shut down (UTC)
- Habitat or prey observations
- Marine debris sighted

Detection Information:

- Date (YYYY-MM-DD)
- Sighting ID (V01, V02, or sequential sighting number for that day; multiple sightings of the same animal or group must use the same ID)
- Date and time at first detection in UTC (YY-MM- DDT HH:MM)
- Time at last detection in UTC (YY-MM-DDT HH:MM)
- PSO name(s) (Last, First)
- Effort (ON=Hammer On; OFF=Hammer Off)
- If visual, how many PSOs on watch at one time?
- Start time of observations
- End time of observations
- Duration of visual observation
- Wind speed (kts), from direction
- Swell height (m)
- Water depth (m)
- Visibility (km)
- Glare severity
- Latitude (decimal degrees), longitude (decimal degrees)
- Compass heading of vessel (degrees)
- Beaufort scale
- Precipitation
- Cloud coverage (%)
- Sightings including common name, scientific name, or family
- Percent certainty of identification
- Number of adults
- Number of juveniles
- Total number of animals
- Bearing to animals when first detected (ship heading + clock face)
- Bearing to animals at closest approach (ship heading + clock face)
- Bearing to animal at final detection (ship heading + clock face)
- Range from vessel and pile (reticle distance in m)
- Description (include features such as overall size; shape of head; color and pattern; size, shape, and position of dorsal fin; height, direction, and shape of blow, etc.)
- Detection narrative (note behavior, especially changes in relation to activity and distance from service vessel)
- Direction of animal travel in first approach relative to vessel and pile
- Behaviors observed: indicate behaviors and behavioral changes observed in sequential order (use behavioral codes)
- If any bow-riding behavior observed, record total duration during detection (UTC HH:MM)
- Initial heading of animals (degrees)
- Final heading of animals (degrees)

- Shutdown zone size during detection (m)
- Was the animal inside the shutdown zone?
- Closest distance to vessel and pile (reticle distance in m)
- Time at closest approach to vessel and pile (UTC HH:MM)
- Time animal entered shutdown zone (UTC HH:MM)
- Time animal left shutdown zone (UTC HH:MM)
- If observed or detected during ramp-up or power-up: first distance (reticle distance in m), closest distance (reticle distance in m), last distance (reticle distance in m), behavior at final detection
- Did a shutdown/power-down occur?
- Time shutdown was called for (UTC HH:MM)
- Time equipment was shut down (UTC HH:MM)
- Detections with PAM

5.14.9 Annual Reports. Beginning one calendar year after the commissioning of the first WTG, 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 Lessee must submit the annual reports to BOEM, BSEE, NMFS-OPR, and NMFS GARFO-PRD. 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). BOEM and BSEE (in consultation with NMFS) may approve changes to the frequency and timing of reports.

5.15 Other Protected Species Conditions. On December 18, 2023, NMFS issued a BiOp, including an ITS for the Project. The ITS includes RPMs 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. The Lessee must execute the proposed action in compliance with all avoidance, minimization, and monitoring measures described in the NMFS BiOp and comply with all conditions in Appendix A as well as the RPMs and implementing terms and conditions included in the NMFS BiOp's ITS. Those RPMs and terms and conditions are incorporated by reference in this document. This includes all measures specified in the NMFS BiOp including measures from the final MMPA LOA to minimize effects of foundation installation, and other activities on marine mammals.

6 CONDITIONS RELATED TO COMMERCIAL FISHERIES AND FOR-HIRE RECREATIONAL FISHING

6.1 Fisheries Compensation and Mitigation Funds. No later than 120 days prior to offshore construction activities, the Lessee must establish and implement a direct compensation program to provide monetary compensation to commercial and for-hire fishermen and shoreside support services impacted by the Project and funded in accordance with Section 6.1.1 and 6.1.2 below. Calculation steps are shown in Section 6.1.3 below.

Project to shoreside support services (such as seafood processing and vessel repair services) within communities near the ports listed below.

- Atlantic City, NJ
- Cape May, NJ
- Newport News, VA
- New Bedford, MA
- Barnegat, NJ
- Hampton, VA
- Beaufort, NC
- Point Pleasant, NJ
- North Kingstown, RI
- Davisville, RI
- Ocean City, MD
- Point Judith, RI
- Sea Isle City, NJ
- Wanchese, NC
- Long Beach, NJ
- Wildwood, NJ
- Chincoteague, VA
- Oriental, NC
- Montauk, NY
- Shinnecock, NY
- Barnegat Light, NJ
- Hobucken, NC
- Belford, NJ

6.1.3 Compensation Calculations. Once the values at Sections 6.1.1 and 6.1.2 are determined, the Lessee must use Table 6.1.3-1 and Table 6.1.3-2 to calculate the total fund required by Section 6.1.1. The amounts of the fund required must be normalized to current real prices from a base year as described in Section 6.1.1.2. The Lessee may use the most recent complete year's GDP Implicit Price Deflator to estimate Direct Compensation Fund requirements after COP approval if the current year is unavailable (n_i).

As described in Section 6.1.1, the Lessee must ensure that the reserve amount allows for, at a minimum, 100 percent of annual revenue exposure during the projected post-COP approval pre-construction and construction years and, pending BSEE approval of the decommissioning plan, decommissioning years. The Lessee must use the GDP Implicit Price Deflator to adjust the annual average commercial fisheries landings values and for-hire fishing revenue stated in Tables 3.6.1-17 (page 3-521) and 3.6.1-32 (page 3-536), respectively, of the Project final EIS. If the Lessee opts to construct the Project using a phased approach, the Lessee may phase the fund 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 1–5³¹ (as shown in Table 6.1.3-2) is calculated using the formula below. After two years, unclaimed funds may be rolled forward.

³¹ Rolling forward unclaimed funds from prior years may lower this total value.

$$\begin{aligned}
& \mathbf{k} \left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right) (\mathbf{1} + \mathbf{M}) + \mathbf{j} \left(\$779,580 \times \right. \\
& \quad \left. \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right) (\mathbf{1} + \mathbf{M}) + \left(\$2,806,488 \times \frac{n_i}{117.973} + \right. \\
& \quad \left. \$75,600 \times \frac{n_i}{104.008} \right) (\mathbf{1} + \mathbf{M}).
\end{aligned}$$

Table 6.1.3-1. Calculation Subcomponents for Construction and Decommissioning

Project Status	Base Annual Average Fishing Revenue Exposed to the Wind Farm Area ¹	Shoreside Support Services Multiplier ²	Exposure Ratio	Adjusted Base Annual Average Fishing Revenue Exposed to the Wind Farm Area	Reserve Requirements
Construction	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	M	1	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right) (1 + M)$
Decommissioning ³	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	M	1	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right) (1 + M)$

Notes:

- ¹ Inflation-adjusted revenues are derived from Tables 3.6.1-17 and 3.6.1-32 of the Atlantic Shores South final EIS. The inflation-adjusted base equation is:

$$\text{Annual Average Commercial Fishing Revenues} \times \frac{n_i}{117.973} + \text{Annual Average Recreational Fishing Revenues} \times$$

- 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:

$$k \left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right) (1 + M) + j \left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right) (1 + M).$$

Table 6.1.3-2. Calculation Subcomponents by Operating Year

Project Status	Base Annual Average Fishing Revenue Exposed to the Wind Farm Area ¹	Exposure Ratio	Adjusted Base Annual Average Fishing Revenue Exposed to the Wind Farm Area	Shoreside Support Services Multiplier ²	Reserve Requirements
Operating Year 1	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	1	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	M	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Year 2	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	0.8	$\left(\$623,664 \times \frac{n_i}{117.973} + \$16,800 \times \frac{n_i}{104.008} \right)$	M	$\left(\$623,664 \times \frac{n_i}{117.973} + \$16,800 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Year 3	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	0.7	$\left(\$545,706 \times \frac{n_i}{117.973} + \$14,700 \times \frac{n_i}{104.008} \right)$	M	$\left(\$545,706 \times \frac{n_i}{117.973} + \$14,700 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Year 4	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	0.6	$\left(\$467,748 \times \frac{n_i}{117.973} + \$12,600 \times \frac{n_i}{104.008} \right)$	M	$\left(\$467,748 \times \frac{n_i}{117.973} + \$12,600 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Year 5	$\left(\$779,580 \times \frac{n_i}{117.973} + \$21,000 \times \frac{n_i}{104.008} \right)$	0.5	$\left(\$389,790 \times \frac{n_i}{117.973} + \$10,500 \times \frac{n_i}{104.008} \right)$	M	$\left(\$389,790 \times \frac{n_i}{117.973} + \$10,500 \times \frac{n_i}{104.008} \right) (1 + M)$
Operating Total ³	-	-	$\left(\$2,806,488 \times \frac{n_i}{117.973} + \$75,600 \times \frac{n_i}{104.008} \right)$	-	$\left(\$2,806,488 \times \frac{n_i}{117.973} + \$75,600 \times \frac{n_i}{104.008} \right) (1 + M)$

Notes:

- 1 Inflation-adjusted revenues are derived from Tables 3.6.1-17 and 3.6.1-32 of the Atlantic Shores South final EIS. The inflation-adjusted base equation is:

$$\text{Annual Average Commercial Fishing Revenues} \times \frac{n_i}{117.973} + \text{Annual Average Recreational Fishing Revenues} \times \frac{n_i}{104.008}.$$
- 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.

- 6.1.4 Reporting. By January 31 of each year, the Lessee must submit to BOEM and BSEE an annual report demonstrating implementation of the Direct Compensation Program. The report must include the following: the Fund charter, including the governance structure, audit and public reporting procedures; documentation regarding the funding account, including the dollar amount, establishment date, financial institution, and owner of the account; standards for paying compensatory mitigation for direct impacts to commercial and for-hire fishers and related shoreside businesses resulting from all phases of the Project development on the Lease Area (post-COP pre-construction, construction, operation, and decommissioning); and the number of claims processed, approved and denied. The Lessee must publicly report an annual audit.
- 6.1.5 Notification. The Lessee must notify BOEM and BSEE of any compensation and mitigation fund agreements into which the state and the Lessee have entered. 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. The Lessee must maintain throughout the life of the Project, a fisheries gear loss claims procedure as described in in Appendix II-R of the COP, Fisheries Communication Plan. The fisheries gear loss and damage claims procedure must be available to all fishermen impacted by Project activities or infrastructure, regardless of homeport.
- 6.3 Federal Survey Mitigation Program. There are 14 NMFS scientific surveys that overlap with wind energy development in the northeast region. Eleven 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*,³² within one year plus 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 11 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

³² 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.

activities, actions, and procedures described in Sections 6.3.1 and 6.3.2 below, within one year plus 180 days of COP approval. BOEM will review the survey mitigation plan in consultation with NMFS NEFSC. The Lessee must resolve comments to BOEM's satisfaction and must conduct activities in accordance with the plan.

6.3.1 As soon as reasonably practicable, but no later than 30 days after the issuance of the Project's COP approval, the Lessee must initiate coordination with NMFS NEFSC to develop the survey mitigation agreement described above. Mitigation activities specified under the agreement must be designed to mitigate the Project impacts on the following NMFS NEFSC surveys: (a) Spring Bottom Trawl survey; (b) Autumn Multi-species Bottom Trawl survey; (c) Ecosystem Monitoring survey; (d) Aerial marine mammal and sea turtle survey; (e) Shipboard marine mammal and sea turtle survey; (f) Atlantic surfclam survey; (g) Coastal shark bottom longline survey; (h) Cooperative shark tagging program; (i) Atlantic Sea scallop survey; (j) Spring Multi-species Bottom Trawl survey; (k) Autumn Multi-species Bottom Trawl survey; (l) Ocean quahog survey; (m) Seal survey; (n) NARW survey; and (o) Sea Turtle Ecology survey. At a minimum, the survey mitigation agreement must describe actions to address impacts on the affected surveys due to the preclusion of sampling platforms and impacts on statistical designs. NMFS has determined that the Project area is a discrete stratum for surveys that use a random stratified design. This agreement may also consider other anticipated Project impacts on NMFS surveys, such as changes in habitat and increased operational costs due to loss of sampling efficiencies.

6.3.2 The survey mitigation agreement must identify activities that will result in the generation of data equivalent to data generated by NMFS' affected surveys for the duration of the Project. The survey mitigation agreement must describe the implementation procedures by which the Lessee will work with NEFSC to generate, share, and manage the data required by NEFSC for each of the surveys impacted by the Project, as mutually agreed upon between the Lessee and NMFS NEFSC. The survey mitigation agreement must also describe the Lessee's participation in the NMFS NEFSC Northeast Survey Mitigation Program to support activities that address regional-level impacts for the surveys listed above.

7 VISUAL AND CULTURAL RESOURCES CONDITIONS

7.1 Section 106 MOA Conditions

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

7.1.2 **Avoidance of Known and Potential Shipwrecks, Debris Fields, and Ancient Submerged Landform Features.** The Lessee must avoid known and potential shipwrecks and potentially significant debris fields, and ASLFs as described below. The Lessee must identify avoidance requirements on proposed anchoring plats, as-

placed plats, and drawings associated with seabed disturbances (e.g., relevant FDR/FIR documents for export cables, inter-array cables, WTGs, 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 consultation with consulting parties under Section 106 of the NHPA and additional measures to resolve adverse effects. If any vessel conducting work on behalf of the Lessee or any other activity associated with 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.

7.1.2.1 Avoidance of Marine Archaeological Resources. The Lessee must comply with protective buffers recommended by the Qualified Marine Archaeologist (QMA) for all 22 identified marine archaeological resources such that protective buffers are provided for:

7.1.2.1.1 Twenty-two (22) marine archaeological resources (i.e., Targets 01–21 and 232) measuring a distance of no less than 164 ft (50 m) from the outer edge of magnetic anomalies or acoustic contacts for each of the resources.

7.1.2.2 Avoidance of ASLFs. The Lessee must avoid 21 identified ASLFs (ASLFs 41, 205, 207, 212–226, and 229–231) to the defined spatial extent of each ASLF. No additional avoidance buffer is required for these ASLFs given 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.

7.1.3 To demonstrate avoidance of marine archaeological resources and historic properties, the Lessee will provide as-placed and as-laid maps with both the horizontal and vertical extent of all seafloor impacts. These seafloor impacts may include anchoring activities (location of all anchors, anchor chains, cables, and wire ropes on the seafloor, including sweep but excluding the vertical extent of anchor penetration of the seafloor), cable installation (including trenching depths and seafloor footprint of the installation vessel), and WTG installation (anchoring and spudding/jack-up vessel placement). The as-built or as-laid position plats must be submitted at a scale of 1 inch = 1,000 ft, with DGPS accuracy demonstrating that these seafloor disturbing activities complied with the avoidance criteria applied to the archaeological sites or historic properties established in the Section 106 MOA. The Lessee must submit these documents and maps to BOEM and BSEE no later than 90 days after completion of the seafloor disturbing/construction activities.

7.1.4 Implementation of Mitigation Measures to Resolve Adverse Effects to ASLFs. The Lessee must implement mitigation measures to resolve adverse effects to 38 ASLFs (i.e., ASLFs 22–40, 42–46, 48, 50–52, 54, 57, 204, 206, 208–211, 227, and 228) as identified in the MARA (COP, Volume II, Appendix II-Q) that are located in the

Area of Potential Effects (APE) and cannot be avoided. The Lessee must coordinate with Tribal Nations to provide them an opportunity to participate as monitors during the implementation of the mitigation measures and provide compensation for participation in the implementation of the measures. The Lessee must execute all aspects of the Section 106 MOA to resolve adverse effects to 38 ASLFs (Stipulation III.B; Attachment 6, Mitigation Funding Amounts; and Attachment 7, Historic Property Treatment Plan for Ancient Submerged Landform Features).

- 7.1.5 Implementation of Minimization Measures in the Terrestrial Area of Potential Effects. The Lessee must conduct archaeological monitoring during onshore construction in areas identified as having high or moderate archaeological sensitivity (including “medium-high” or “medium” archaeological sensitivity as described in the Section MOA Attachment 3: Cultural Resources Avoidance, Minimization, and Mitigation Plan, and including undisturbed, paved areas within 1,000 ft of a previously identified archaeological site, consistent with the protocol described in the Terrestrial Archaeology Monitoring and Post-Review Discovery Plan (Section 106 MOA Attachment 5)). If archaeological resources or human remains are identified during construction, operations, or decommissioning of the Project, the onsite construction supervisor must stop work immediately and follow the protocols outlined in the Terrestrial Archaeology Monitoring and Post-Review Discovery Plan. The Lessee must coordinate with Tribal Nations to provide them with an opportunity to participate as monitors during onshore ground disturbing activities in areas identified for monitoring and provide reasonable compensation for participation in the implementation of the monitoring. The Lessee must execute all aspects of the Section 106 MOA (Stipulation III.B and Attachment 5, Terrestrial Archaeology Monitoring and Post-Review Discovery Plan).
- 7.1.6 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. The Lessee must paint the WTGs using a color that is 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.
- 7.1.7 Implementation of Minimization Measures in the Visual APE. The Lessee must use uniform WTG design, height, and rotor diameter to reduce visual contrast and decrease visual clutter.
- 7.1.8 Lighting and Marking of Structures. The Lessee must use ADLS or related means (e.g., dimming or shielding) to limit visual impact, pursuant to approval by the FAA and BOEM and commercial and technical feasibility at the time of FDR/FIR approval. The WTGs, meteorological towers, and OSS must be lit and marked in accordance with FAA and USCG lighting standards and will be consistent with BOEM’s Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development (April 28, 2021) to reduce light intrusion.

7.1.9 Implementation of Mitigation Measures to Resolve Visual Adverse Effects to Historic Properties. The Lessee must fund and implement mitigation measures consistent with the Section 106 MOA, Stipulation III.C to resolve visual adverse effects to 29 historic properties. The Lessee must execute all aspects of Stipulation III.C of the Section 106 MOA; Attachment 6, Mitigation Funding Amounts; Attachment 8, Historic Property Treatment Plan for Atlantic City Convention Hall (Jim Whelan Boardwalk Hall); Attachment 9, Historic Property Treatment Plan for Lucy the Margate Elephant; Attachment 10, Historic Property Treatment Plan for Barnegat Lighthouse, Forked River Coast Guard Station No. 112, Island Beach State Park Historic District, and Absecon Lighthouse; Attachment 11, Historic Property Treatment Plan for Atlantic City Boardwalk Historic District; Attachment 12, Historic Property Treatment Plan for Great Egg Coast Guard Station; Attachment 13, Historic Property Treatment Plan for Missouri Avenue Beach (Chicken Bone Beach); and Attachment 14, Historic Property Treatment Plan for Saint Leonard's Tract Historic District. The 29 adversely affected historic properties in the visual APE in New Jersey are:

In Atlantic County:

- Atlantic City:
 - Absecon Lighthouse;
 - Atlantic City Boardwalk Historic District;
 - Atlantic City Convention Hall (Jim Whelan Boardwalk Hall; NHL);
 - Central Pier;
 - Haddon Hall (Resorts Casino Hotel);
 - Missouri Avenue Beach (Chicken Bone Beach);
 - Ritz Carlton Hotel;
 - Riviera Apartments;
 - U.S. Coast Guard Station;
 - 120 Atlantic Avenue;
- Brigantine City:
 - Brigantine Hotel;
- Galloway Township:
 - Seaview Golf Club, Clarence Geist Pavilion;
- Longport Borough:
 - Great Egg Coast Guard Station;
- Margate City:
 - Lucy, The Margate Elephant (NHL);
 - Margate Fishing Pier;
 - 108 South Gladstone Avenue;
 - 114 South Osborne Avenue;
- Ventnor City:
 - John Stafford Historic District;

- Saint Leonard's Tract Historic District;
- Vassar Square Condominiums;
- Ventnor City Fishing Pier;
- 114 South Harvard Avenue.

In Cape May County:

- Ocean City:
 - The Flanders Hotel;
 - Music Pier;
 - Ocean City Boardwalk;

In Ocean County:

- Barnegat Light:
 - Barnegat Lighthouse;
- Berkeley Township:
 - Forked River Coast Guard Station No. 112;
 - Island Beach State Park Historic District;
- Little Egg Harbor:
 - Little Egg Harbor U.S. Life Saving Station #23.

7.1.10 Annual Monitoring and Reporting on the Section 106 MOA. 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, minimization, and mitigation measures (Section 106 MOA Stipulations I, II, and III) were implemented; any scheduling changes proposed; any project modifications; any changes to the attachments of the MOA; any amendments to the MOA; 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.

7.1.11 Phased Identification. The Lessee must conduct phased identification of historic properties, assess effects, and resolve adverse effects within limited areas of the terrestrial APE in New Jersey. The phased identification and evaluation of historic properties will occur after publication of the final EIS and ROD, consistent with the Section 106 MOA, Stipulation IV and Attachment 15, Terrestrial Archaeology Phased Identification Plan. The Lessee must implement phased identification to ensure potential historic properties are identified, effects assessed, and adverse effects are resolved prior to initiation of onshore construction at the locations

subject to phased identification as specified in the Section 106 MOA Attachment 15, Terrestrial Archaeology Phased Identification Plan.

- 7.1.12 Implementation of Post-Review Discovery Plans. 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 the Section 106 MOA Attachment 4, Marine Archaeology Monitoring and Post-Review Discovery Plan and Attachment 5, Terrestrial Archaeology Monitoring and Post-Review Discovery Plan.
- 7.1.13 Post-Review Discoveries. In the event of a post-review discovery of a historic 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:
- 7.1.13.1 Immediately halt all ground- or seabed-disturbing activities within the area of discovery while considering whether stabilization and further protections are warranted to keep the discovered resource from further degradation and impact.
- 7.1.13.2 As soon as practicable and no later than 72 hours after the discovery, notify BOEM and 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 BOEM's or BSEE's understanding of the potential resource. BOEM and/or BSEE may request additional information and/or request revisions to the report.
- 7.1.13.3 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.
- 7.1.13.4 Conduct any additional investigations and submit documentation as directed by BOEM to determine if the resource is eligible for listing in the National Register of Historic Places (NRHP) (30 C.F.R. § 585.702(b)). The Lessee must satisfy this requirement only if (1) the site has been impacted by the Lessee's Project activities; and/or (2) impacts to the site or to the APE cannot be avoided. If investigations indicate that the resource is potentially eligible for listing in the NRHP, BOEM, with the assistance of the Lessee, will work with the other relevant signatories and consulting parties to the Section 106 MOA who have a demonstrated interest in the affected historic property on the further avoidance, minimization, or mitigation of adverse effects.

7.1.13.5 If there is any evidence that the discovery appears to contain materials or artifacts associated with a federally recognized Tribal Nation or appears to be a preserved burial site, the Lessee must contact the federally recognized Tribal Nation as identified in the notification lists included in the Post-Review Discovery Plan within 72 hours of the discovery with details of what is known about the discovery and consult with the federally recognized Tribal Nation pursuant to the Post-Review Discovery Plan.

7.1.13.6 If BOEM or BSEE incurs costs in addressing the discovery, under Section 110(g) of the NHPA, BOEM or BSEE may charge the Lessee reasonable costs for carrying out preservation responsibilities pursuant to 30 C.F.R. § 585.702(c)-(d).

7.1.14 Emergency Situations and Section 106 Consultation. In the event of an emergency or disaster that is declared by the President or the Governor of 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, the Lessee must notify BOEM and BSEE. BOEM and/or BSEE, with the assistance of the Lessee, will notify the consulting federally recognized Tribal Nations, State Historic Preservation Officers (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 consistent with the Section 106 MOA. BOEM and/or BSEE will make this notification as soon as reasonably possible, but no later than 48 hours from when the Bureau(s) becomes aware of the emergency or disaster. If the consulting federally recognized Tribal Nations, SHPOs, or the ACHP would like to provide technical assistance to BOEM and/or BSEE, they will submit comments within 7 days from notification if the nature of the emergency or hazardous condition allows for such coordination.

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

7.2 Visual Conditions

7.2.1 Scenic and Visual Impact Monitoring Plan. 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 operations and maintenance (daytime and nighttime) to the findings in the COP Visual Impact Assessment and verifies the accuracy of the visual simulations (photo and video). Consistent with the NJDEP-issued federal consistency certification, the monitoring plan must include monitoring and documenting the meteorological influences on actual WTG visibility over an agreed duration of time from selected onshore key observation points, as determined by BOEM and the Lessee. In

addition, the Lessee must include monitoring of 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. The Lessee must include details for monitoring and reporting procedures in the plan.

7.2.2 Onshore Visual Mitigation. To reduce the visual impacts, the Lessee must incorporate the following design measures into the onshore substation/converter station locations (Lane Pond Road, Brook Road, and Randolph Road sites) near the existing Larrabee substation point of interconnection (POI) located in Howell Township, NJ and the Fire Road Substation/Converter Station near the Cardiff POI in Egg Harbor Township, NJ:

7.2.2.1 Screening. The Lessee must install vegetative screening at the substation and converter station sites to minimize views into the sites from nearby residential, commercial, and industrial districts.

7.2.2.2 Color Treatment. The Lessee must select neutral colors, treatments, or coatings of materials used for buildings, and specular steel structures throughout the Substation/Converter Station to reduce visual contrast. Other elements that require galvanized steel must be dulled during the manufacturing process to minimize glare resulting from these materials.

7.2.2.3 Non-specular electrical conductors. Where applicable and practicable, the Lessee must use non-specular conductors and galvanized materials that will use a dulling technique during the manufacturing process.

7.2.2.4 Lighting. The Lessee must design and install lighting at the Substation/Converter Station using sustainable outdoor lighting specifications in accordance with local and state regulations to minimize impact to natural night skies and minimize offsite light trespass in accordance with the National Park Service Sustainable Outdoor Lighting best practices and the Bureau of Land Management's (BLM) Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Lands (<https://www.blm.gov/noc/blm-library/night-sky-and-dark-environments-best-management-practices-artificial-light-night>).

7.2.2.5 Maintenance. The Lessee must maintain the Substation/Converter Station components and site to ensure a clean and orderly appearance.

7.2.3 Wind Turbine Generator Height Restriction of Project 1. The WTGs in Project 1 may not exceed a hub height of 522 ft (159 m) above mean sea level (AMSL) and maximum blade tip height of 932 ft (284 m) AMSL. The Lessee must submit the final as-built structure dimensions as part of the as-built documentation outlined in Section 2.17.

7.3 Other Conditions.

- 7.3.1 PAM Placement Review. 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 QMA as to whether any potential archaeological resources are present in the area. This activity may have already been performed as part of the Lessee's submission of archaeological resources reports in support of its approved COP. Except as allowed by BOEM under Stipulation 4.3.6 of Addendum C of the Lease and Section 7.1.2 above, the PAM placement activities must avoid potential archaeological resources by a minimum of 50 m from the outer edge of magnetic anomalies or acoustic contacts for each of the resources, and the avoidance distance must be calculated from the maximum discernible extent of the archaeological resource. The Lessee must submit as-placed PAM system plats to BSEE within 90 days of placement.
- 7.3.1.1 If PAM placement activities impact potential historic properties, the Lessee must take the actions described in Post-Review Discoveries (Section 7.1.13).
- 7.3.1.2 If PAM placement activities impact potential historic properties identified in the archaeological surveys without BOEM's prior authorization, the Lessee and the QMA who prepared the archaeological resources report must provide to BOEM and BSEE a statement documenting the extent of these impacts. This statement must be made to BOEM and BSEE consistent with Stipulation 4.3.7 of Addendum C of the Lease and Section 7.1.3, above. BOEM may require the Lessee to implement additional mitigation measures as appropriate based on a review of the results and supporting information.

8 AIR QUALITY CONDITIONS

- 8.1 Reporting. The Lessee must submit all monitoring, reporting, and survey requirements related to air quality that are included in the OCS air permit to BOEM, BSEE via TIMSWeb with a notification email sent to oswsubmittals@bsee.gov, USFWS at jaron_ming@fws.gov and AQ_BOEM@fws.gov, in addition to being submitted to the appropriate EPA regional contact(s). The Lessee must confirm the relevant point of contact prior to reporting and confirmation of reporting receipt.
- 8.2 Brigantine Wilderness Area Air Quality Related Values (AQRV) Mitigation Framework. The Lessee must develop a framework for the mitigation of AQRV impacts at Brigantine Wilderness Area, to be executed by Lessee if air quality modeling shows that AQRV are being impacted at the Class I area. The Lessee must submit the framework (if required) to BOEM, and to the Federal Land Manager or National Park Service representative for the impacted Class I area within 180 days of COP approval, or on a schedule agreed to by the Lessee, BOEM, and the applicable Federal Land Manager or National Park Service representative for the impacted Class I areas. The framework must include:
- 8.2.1 A description of existing conditions and monitoring objectives;

- 8.2.2 A description of preventative and any voluntary offsetting mitigation measures;
 - 8.2.3 Identification of the avoidance or offset value for each measure;
 - 8.2.4 The mechanism for the transfer of any funding from the Lessee to USFWS; and
 - 8.2.5 Reporting to demonstrate completion of implementation.
- 8.3 OCS Air Permit Incorporation by Reference. Pursuant to Clean Air Act Section 328, the Lessee must obtain an OCS air permit for OCS sources. When required, the Lessee must demonstrate that the air quality impacts from emissions attendant to both the construction and operation and maintenance phases will not interfere with attainment and maintenance of any applicable federal or state ambient air quality standard and Prevention of Significant Deterioration of Air Quality Increments. The Lessee must comply with the anticipated OCS air permit issued by the EPA or the delegated state/local permitting authority. The terms and conditions for Air Quality incorporate by reference the entirety of the expected EPA OCS Permit, and the air quality mitigation measures found in COP Volume II, Section 3.1.2.7 and in Appendix G, Table G-1, under AQ-01 through AQ-05 of the final EIS. The EPA is the enforcement authority for ensuring compliance with the air quality conditions listed in the OCS Air Permit.

9 FEDERALLY RECOGNIZED TRIBAL NATIONS CONDITIONS

- 9.1 Environmental Data Sharing with Federally Recognized Tribal Nations. No later than 90 days after COP approval, or on a schedule agreed to by the Lessee and BSEE, the Lessee must make a request to both the BSEE Tribal Liaison Officer and the Eastern Seaboard Tribal Liaison at the same email address, tribalengagement@bsee.gov, to coordinate with federally recognized Tribal Nations with geographic, cultural, or ancestral ties to the project area (hereinafter “interested Tribal Nation”), including, but not limited to: the Delaware Nation, the Delaware Tribe of Indians, the Eastern Shawnee Tribe of Oklahoma, the Mashantucket (Western) Pequot Tribal Nation, the Mashpee Wampanoag Tribe, the Narragansett Indian Tribe, the Shawnee Tribe, the Shinnecock Indian Nation, the Stockbridge-Munsee Community Band of Mohican Indians, 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 a document(s) listed in this paragraph when it includes information that the Lessee would not generally make publicly available and the disclosure of which the Lessee considers to be 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 from BSEE of such request, may the document be redacted/withheld.

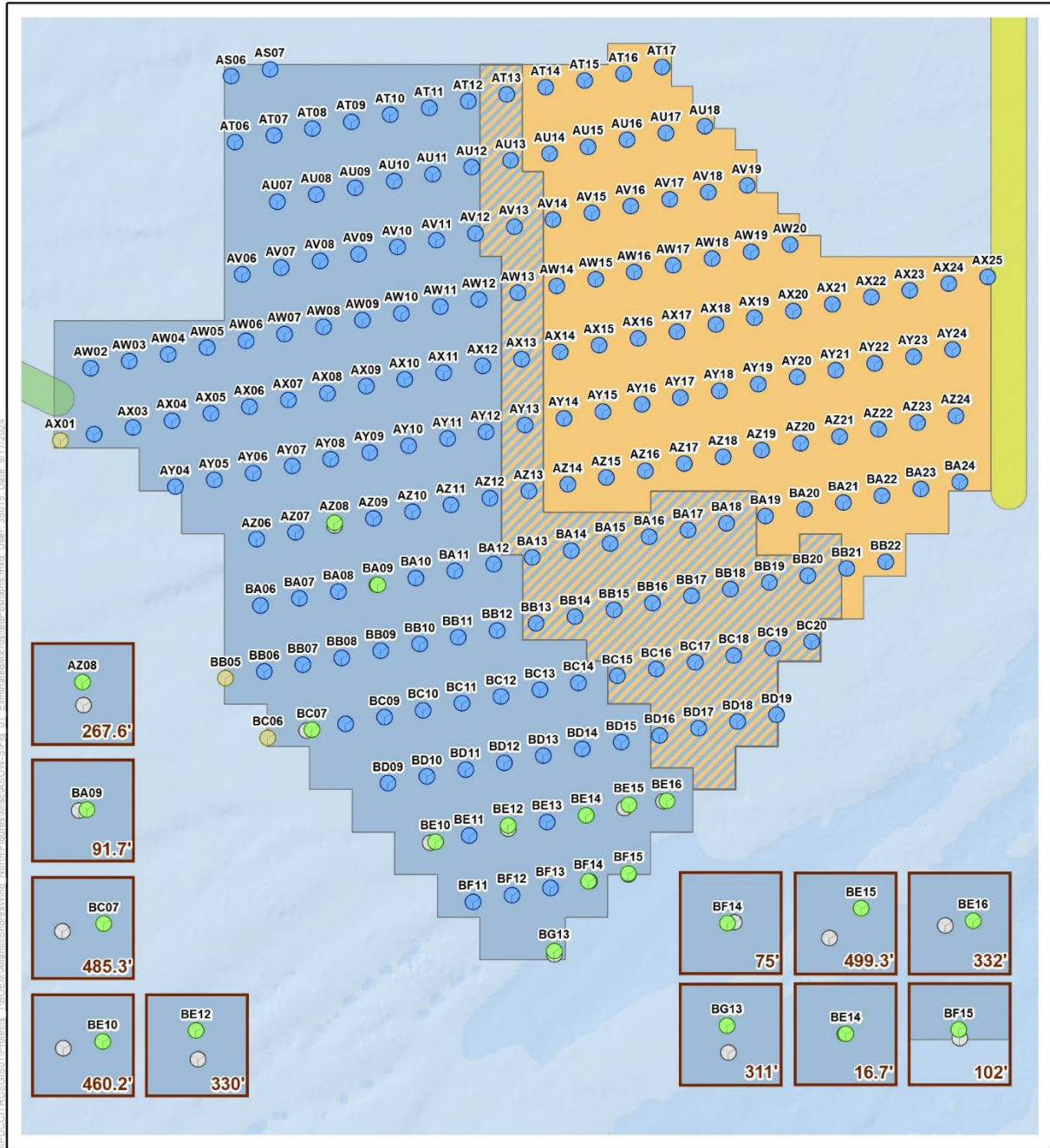
ATTACHMENT 1: LIST OF ACRONYMS

ABPCMP	Avian and Bat Post-Construction Monitoring Plan
AC	Advisory Circular
ACHP	Advisory Council on Historic Preservation
ADLS	Aircraft Detection Lighting System
ALARP	As Low as Reasonably Practical
AMP	Alternative Monitoring Plan
AMSL	above mean sea level
APE	Area of Potential Effects
AQRV	Air Quality Related Values
ASLF	Ancient Submerged Landform Feature
ASR	Airport Surveillance Radar
BiOp	Biological Opinion
BLM	Bureau of Land Management
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
COP	Construction and Operations Plan
CVA	Certified Verification Agents
CZMA	Coastal Zone Management Act
dB	decibels
DGPS	Differential Global Positioning System
DMA	Dynamic Management Area
DoD	Department of Defense
DOFS	Distributed Optical Fiber Sensing
DOI	Department of the Interior
DON	Department of the Navy
DPS	distinct population segment
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FDR	Facility Design Report
FIR	Fabrication and Installation Report
ft	feet
GARFO	Greater Atlantic Regional Fisheries Office
GDP	Gross Domestic Product
GIS	Geographic Information System
GPS	Global Positioning System

HAT	Highest Astronomical Tide
HESD	Habitat and Ecosystem Division
HF	high frequency
HRG	high resolution geophysical
IC	Incident Commander
ICS	Incident Command System
IFC	issued for construction
IMT	Incident Management Team
IOOS	U.S. Integrated Ocean Observing System
ITA	Incidental Take Authorization(s)
ITS	Incidental Take Statement
kJ	kilojoules
km	kilometer(s)
kts	knots
Lease	commercial lease OCS-A 0499
Lessee	Atlantic Shores Offshore Wind Project 1, LLC
LNM	Local Notice to Mariners
LOA	Letter of Authorization
m	meter(s)
MEC	Munitions and Explosives of Concern
met	meteorological
MLLW	mean lower low water
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
Motus	Motus Wildlife Tracking System
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSL	mean sea level
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
NHPA	National Historic Preservation Act
NJDEP	New Jersey Department of Environmental Protection
nmi	nautical miles
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NORAD	North American Aerospace Defense Command
NRHP	National Register of Historic Places
OCS	Outer Continental Shelf

OCSLA	Outer Continental Shelf Lands Act
OEM	Original Equipment Manufacturer
OPR	Office of Protected Resources
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
POI	point of interconnection
POWERON	Partnership for an Offshore Wind Energy Regional Observation Network
PRD	Protected Resources Division
Project	Atlantic Shores Offshore Wind South Commercial Project
Project 1	Atlantic Shores South Offshore Wind Project 1 (Lease OCS-A 0499)
Project 2	Atlantic Shores South Offshore Wind Project 2 (Lease OCS-A 0570)
PSO	Protected Species Observer
QA/QC	quality assurance/quality control
QI	Qualified Individual
QMA	Qualified Marine Archaeologist
RAL	Reichs-Ausschuß für Lieferbedingungen und Gütesicherung
RAM	Radar Adverse Impact Management
ROD	Record of Decision
RPMs	reasonable and prudent measures
RWSC	Regional Wildlife Science Collaborative
SFV	Sound Field Verification
SHPO	State Historic Preservation Officer
SMS	Safety Management System
SROT	Spill Response Operating Team
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
UTC	Coordinated Universal Time
UXO	unexploded ordnance
VHF	Very High Frequency
WCD	worst-case discharge
WTG	wind turbine generator

ATTACHMENT 2: ELIMINATED AND MICROSITABLE POSITIONS FIGURE



Atlantic Shores South Turbine Layout

- Unaltered Turbine (186)
- Micro-sited Turbine (11)
- Eliminated Turbine (3)
- Previous Location (11)

- Project 1 Area
- Project 2 Area
- Overlap Area (Project 1 or 2)
- Atlantic Export Cable Corridor
- Monmouth Export Cable Corridor
- XXX'** Distance between the previously proposed turbine location and the micro-sited turbine location

Source: Atlantic Shores 2024.

