Proposed Technical, and Navigational and Aviation Safety Conditions for the Vineyard Wind 1 Offshore Wind Energy Project Construction and Operations Plan[1]

Abbreviations

AC	Advisory Circular
ANSI	American National Standards Institute
ALARP	As low as reasonably practical
ASR	Airport Surveillance Radar
ASSE	American Society of Safety Engineers
CBRA	Cable Burial Risk Assessment
COP	Construction and Operations Plan
CPT	Cone Penetration Testing
DoD	Department of Defense
DOI	Department of the Interior
CVA	Certified Verification Agent
DMM	Discarded Military Munitions
DTS	Desktop study
ESP	Electrical service platform
FDR	Facility Design Repot
FIR	Fabrication and Installation Report
HF	High Frequency
IALA	International Association of Marine Aids to Navigations and Lighthouse Authorities
IEC	International Electric Code
IMT	Incident Management Team
ISO	International Organization for Standardization
LOI	Letter of Intent
LOS	Line of Sight
OCS	Outer Continental Shelf
OECC	Offshore Export Cable Corridor

[1] These proposed conditions will be incorporated with other conditions of approval (derived from the mitigation measures identified in the Record of Decision) if BOEM approves the Construction and Operations Plan (COP) for the Vineyard Wind 1 Offshore Wind Energy Project.

OEM	Original Equipment Manufacturer
OSRP	Oil Spill Response Plan
OSRO	Oil Spill Response Organization
QI	Qualified individual
SDS	Safety Data Sheet
SMS	Safety Management System
SROT	Spill Response Operating Team
UXO	Unexploded ordnance
VHF	Very high frequency
WCD	Worst-case discharge
WTG	Wind turbine generator

2 TECHNICAL CONDITIONS

2.1 Unexploded Ordnance (UXO) and/or Discarded Military Munitions (DMM) Investigation (Planning). The Lessee must investigate the areas of potential disturbance for the presence of UXO/DMM and evaluate the risk according to the As Low as Reasonably Practical (ALARP) risk mitigation principle. The ALARP risk mitigation principle consists of up to six phases: (i) Desktop study (DTS), (ii) investigation surveys to determine presence of objects, (iii) identification surveys to determine the nature of the identified objects, (iv) UXO removal, (v) UXO relocation and/or construction re-routing, and (vi) installation.

2.1.1 UXO/DMM DTS (Planning). The Lessee must submit a DTS to DOI for review and concurrence no later than the date the Fabrication and Installation Report (FIR) is submitted to DOI, and must include an evaluation of installation risk based on: the proposed construction methodologies, entire project footprint, areas of potential disturbance (anchorage areas, turbine and scour protection, cable route, etc.), probability of UXO/DMM presence, and mobility of sediments and UXO/DMM. The DTS must also identify the specific types of UXO/DMM that qualify as munitions of concern and potential mitigation strategies such as removal and re-routing. Finally, the DTS must provide specific recommendations for the Investigation Survey, as appropriate, including:

2.1.1.1 Areas to be surveyed

2.1.1.2 Survey line spacing and sensor heights

2.1.1.3 Width of the survey corridor,

2.1.1.4 Minimum iron content for targets,

2.1.1.5 Details about the testing and proofing of survey methods, and

2.1.1.6 A request for a waiver of the requirements included in 2.1.2 through 2.1.5, if the Lessee, by itself or through its Designated Operator, does not believe further UXO/DMM study is necessary to ensure safe construction and installation activities.

2.1.2 UXO/DMM Investigation Survey Plan (Planning). Unless a waiver request is approved pursuant to Section 2.1.1.6, the Lessee must submit an Investigation Survey Plan to DOI for review and concurrence prior to the installation of facilities in the Investigation Survey area. The Investigation Survey Plan must describe the areas that need further investigation as discussed in the approved DTS. The Investigation Survey Plan must include information on the proposed survey vessel, equipment, methodologies, and schedule for the Investigation Survey of the areas identified and must provide the anticipated date of

submittal of its UXO/DMM Investigation Survey Report to DOI as described in 2.1.3 below.

If the Investigation Survey Plan is not consistent with the recommendations included in the DTS, the Investigation Survey Plan must discuss in detail the deviations and the rationale behind them.

2.1.3 UXO/DMM Investigation Survey Report (Planning). Unless a waiver request is approved pursuant to Section 2.1.1.6, the Lessee must submit an Investigation Survey Report for DOI review and concurrence prior to the installation of facilities in the Investigation Survey area. This report must include the following:

2.1.3.1 A detailed discussion of utilized methodologies;

2.1.3.2 A summary and detailed description of the findings;

2.1.3.3 A separate list of those findings that identify any conditions different from those anticipated and discussed in the DTS;

2.1.3.4 Recommendations for the Identification Survey methods and equipment, if appropriate;

2.1.3.5 A statement attesting that the installation methods and UXO/DMM mitigation strategies discussed in the FIR and the DTS are suitable given the results of the Investigation Survey Alternatively, the Lessee, by itself or through its Designated Operator, may submit a detailed discussion of alternative installation methods and/or UXO/DMM mitigation strategies that have been determined to be appropriate given the results of the Investigation Survey; and

2.1.3.6 A request for a waiver of the requirements included in 2.1.4 through 2.1.5, if the Lessee, by itself or through its Designated Operator, does not believe further UXO/DMM study is necessary to ensure safe construction and installation activities in the Investigation Survey area.

2.1.4 UXO/DMM Identification Survey Plan (Planning). Unless a waiver request is approved pursuant to 2.1.1.6 or 2.1.3.6, the Lessee must submit an Identification Survey Plan to DOI for review and concurrence prior to the installation of facilities in the Identification Survey area. The Identification Survey Plan must describe the areas that need further investigation as discussed in the DTS and the Investigation Survey Report. The Identification Survey Plan must include information on the proposed survey vessel, equipment, methodologies, and schedule for the Identification Survey of the areas identified; and must provide the anticipated date of submittal of its UXO/DMM Identification Survey Report to DOI. As described in Section

2.1.5, the Identification Survey Report must be submitted to DOI prior to commencing installation activities in the survey areas. If the Identification Survey Plan is not consistent with the recommendations included in the DTS and Investigation Survey Report, the Identification Survey Plan must discuss in detail the deviations and the rationale behind them.

2.1.5 UXO/DMM Identification Survey Report (Planning). Unless a waiver request is approved pursuant to 2.1.1.6 or 2.1.3.6, the Lessee must submit an Identification Survey Report for DOI review and concurrence prior to the installation of facilities in the Identification Survey area. This report must include the following:

2.1.5.1 A detailed discussion of utilized methodologies;

2.1.5.2 A summary and detailed description of the findings;

2.1.5.3 A separate list of findings that identify conditions different from those anticipated and discussed in the DTS and the Investigation Survey Report; and

2.1.5.4 A statement attesting that the installation methods and UXO/DMM mitigation strategies discussed in the FIR, DTS, and/or Investigation Survey Report are suitable given the results of the Identification Survey. Alternatively, the Lessee, by itself or through its designated operator, may submit a detailed discussion of alternative installation methods and/or UXO/DMM mitigation strategies that have been determined to be appropriate given the results of the Identification Survey.

2.1.6 UXO/DMM Survey Results Implementation (Construction). The Lessee must implement the mitigation methods identified in the approved Construction and Operations Plan (COP), DTS, and the subsequent Survey Report(s) following the resolution of all comments. Information on implementation and installation activities associated with Technical Condition 2.1 must be available to the approved project Certified Verification Agents (CVA) and DOI for review as part of the FIR and prior to commencing commercial activities.

2.2 Safety Management System (SMS) (Planning) (Construction) (Operations) (Decommissioning). Pursuant to 30 CFR 585.810, a Lessee, Designated Operator, contractor, or subcontractor constructing, operating or decommissioning renewable energy facilities on the Outer Continental Shelf (OCS) must have a SMS. The Lessee, or its Designated Operator, must provide a description of the SMS that will guide all activities described in the COP, and, as required by the 30 C.F.R. part 585 regulations, (heretofore the Lease Area's Primary SMS) to the Bureau of Safety and Environmental Enforcement (BSEE). BSEE will engage

with the Lessee or its Designated Operator for clarifications on the Lease Area's Primary SMS content and process until the Lease Area's Primary SMS is deemed acceptable by DOI.

2.2.1 The Lease Area's Primary SMS must include a diving safety program or reference how it will ensure a contractor has a diving safety program that is in accordance with the U.S. Coast Guard (Coast Guard) regulations for Commercial Diving Operations at 46 CFR Part 197, Subpart B, or updated standards as appropriate and after consultation with the Coast Guard.

2.2.2 The Lease Area's Primary SMS must also include a fall protection program and reference how it will ensure contractors working at height will also have a fall protection program that complies with ANSI/ASSE Z-359.2, Minimum Requirements for a Comprehensive Managed Fall Protection Program, or an updated version of this standard.

2.2.3 The Lease Area's Primary SMS must identify and assess risks to health, safety, and the environment associated with the offshore wind farm structures and operations, and must include an overview of the physical and procedural barrier(s) that will be used and maintained to mitigate the identified risks. The annual SMS reports (see 2.2.5) must discuss the operability and physical condition of the identified barriers and any changes made to the barrier systems.

2.2.4 Pursuant to 30 CFR 585.811, each SMS is required to be fully functional prior to beginning activities described in the approved COP. The Lessee or its Designated Operator must demonstrate, to DOI's satisfaction, the functionality of the Lease Area's Primary SMS no later than 30 days prior to beginning activities described in the approved COP. The Lessee or its Designated Operator can demonstrate the Lease Area's Primary SMS functionality through various means. The following list provides examples, neither exhaustive nor prescriptive, of ways the Lease Area's Primary SMS functionality can be demonstrated.

2.2.4.1 If the Lessee or its Designated Operator has a similar SMS that is functioning elsewhere, functioning of the SMS can be demonstrated by sharing certifications of that SMS from a recognized accreditation organization (e.g., ISO/IEC 450001, ANSI Z10, API RP 75 4th edition), by sharing reports of third-party or internal SMS audits conducted, as well as an explanation of how the Lessee or Designated Operator have adapted the audited SMS to become the Lease Area's Primary SMS.

2.2.4.2 If the Lessee or Designated Operator does not have a similar SMS that is functioning elsewhere, demonstration of functionality should involve one or more of the following activities:

- A desktop exercise in which the Lessee evaluates how the Lease Area's Primary SMS functions in response to different scenarios, including an evaluation of the strengths and weaknesses of company preparedness to control various risks;

- A description of which personnel have been trained on the Lease Area's Primary SMS, an overview of the training content, and a description of controls the Lessee has put in place to ensure trained personnel's understanding of and adherence to the Lease Area's Primary SMS; or

- A detailed description of how the Lessee intends to monitor whether the implementation of the Lease Area's Primary SMS is achieving the desired goals, and an overview of how the SMS will be adjusted as necessary to control identified risks.

2.2.5 The Lessee or its Designated Operator is also required to provide BSEE with annual reports, by the anniversary date of DOI's initial concurrence with the Lease Area's Primary SMS, highlighting (1) changes that have been made to the Lease Area's Primary SMS, (2) successes and challenges regarding the implementation of the Lease Area's Primary SMS, and (3) evidence of the functionality of the Lease Area's Primary SMS, specifically how it has driven continual improvement in safety and environmental performance. If DOI determines that changes to the Lessee's SMS were significant, DOI will review the changes and determine whether they are acceptable, e.g. if they address known risks and are likely to improve risk management. The Lessee must revise and resubmit its SMS description if DOI determines the changes are not acceptable.

2.2.6 In addition to maintaining an acceptable and functional Lease Area's Primary SMS, the Lessee, Designated Operator, contractor, or subcontractor constructing or operating renewable energy facilities on the Outer Continental Shelf (OCS) are required to follow the policies and procedures of the SMS that are guiding their activities and to take corrective action whenever there is failure to follow the SMS or a failure of the SMS to ensure safety.

2.3 Oil Spill Response Plan (OSRP) (Planning). Pursuant to 30 CFR 585.627(c), the Lessee or the Designated Operator must submit an OSRP meeting the requirements below to BSEE. The Lessee's OSRP must be reviewed and accepted by BSEE before the installation of any component of the Lessee's facilities that may handle or store oil on the OCS and before the activities described in the Lessee's non-objected to Facilities Design Report (FDR)/FIR may commence. The Lessee's OSRP must be consistent with the National Contingency Plan and appropriate Area Contingency Plan(s), as defined in 30

CFR § 254.6. In order to continue operating, the Lessee, operator, contractors, and subcontractors must operate in accordance with the Lessee's OSRP.

The Lessee's OSRP must contain the following information:

2.3.1 Facility Information. A description of the type and amounts of oil on the facilities covered under the Lessee's OSRP and design parameters intended to monitor for oil spills.

2.3.2 Copies of Safety Data Sheets (SDS) for any oils present on any facility within the Lessee's facility in quantities equal to or greater than 100 gallons.

2.3.3 The worst-case discharge (WCD) volume for each type of facility covered in the plan.

2.3.3.1 Calculating the Lessee's WCD volume(s):

- For all facilities (e.g. wind turbine generator (WTG) or other support structures) other than electrical service platforms (ESPs) and transmission lines, the Lessee should calculate the WCD by determining the highest total volume of oil and oil-based substances contained onboard or within the facility including all cables containing oil that are connected to the facility except transmission lines.

- For an ESP, the Lessee should calculate the WCD by determining the highest total volume of oil and oil-based substances contained within the facility including all cables containing oil that are connected to the facility except for transmission lines.

- For transmission lines that contain oil, the WCD is the maximum volume of oil and oil-based substances that can be contained within the transmission line with the highest oil storage capacity and any storage tanks that may supply oil to the cable.

2.3.3.2 "Oil," as defined by Clean Water Act at 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. It does not include animal fats, oils, and greases, and fish and marine mammal oils, or oils of vegetable origin, including oils from seeds, nuts, or kernels. Dielectric fluids, as an example, meets this definition of oil. "Facility," for the purposes of the Lessee's OSRP, is a facility as defined in 30 CFR 585.112 that contains or stores oil.

2.3.3.3 "Worst Case Discharge" or "WCD" is the highest cumulative volume of oil and all other oil-based substances contained on a single facility such as an ESP or WTG.

2.3.4 Response Organization. Identification of a trained Qualified Individual (QI) and an alternate, who has full authority to implement removal actions and ensure immediate notification of appropriate federal officials and response personnel and provide their 24-hour contact information, including phone numbers and e-mail addresses. If the Lessee's OSRP covers an ESP, the Lessee must also designate trained members of the Lessee's Incident Management Team (IMT), and provide their 24-hour contact information, including phone numbers and e-mail addresses. If a contract has been established with an IMT, evidence of such a contract must be provided in the Lessee's OSRP.

2.3.4.1 "Qualified Individual" means an English-speaking representative of the Lessee or the Designated Operator located in the United States, available on a 24 hour basis with 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.

2.3.4.2 "Incident Management Team" or "IMT" means the group of personnel identified to staff the organizational structure to manage the overall response to an incident in accordance with the Lessee's OSRP. The IMT consists of the Incident Commander, Command and General Staff, and other personnel assigned to key Incident Command System positions designated in the Lessee's OSRP.

2.3.5 Notification Procedures. Descriptions of the procedures for spill notification. Notification procedures must include the 24-hour contact information for:

2.3.5.1 The QI and an alternate, including phone numbers and e-mail addresses;

2.3.5.2 IMT members, if applicable;

2.3.5.3 Federal, State, and local regulatory agencies that must be notified when a spill occurs, including but not limited to the National Response Center;

2.3.5.4 Oil Spill Removal Organization(s) (OSRO) and Spill Response Operating Team(s) (SROT) that are available to respond;

2.3.5.5 Other response organizations and subject matter experts the Lessee will need to rely on for the Lessee's response.

2.3.5.6 "Oil Spill Removal Organization" is an entity contracted by the Lessee or the Designated Operator to provide spill response equipment and/or manpower in the event of an oil spill.

2.3.5.7 "Spill Response Operating Team" refers to the trained persons who respond to spills and deploy and operate oil-spill response equipment.

2.3.6 Spill Mitigation Procedures. A description of the different discharge scenarios that could occur from the Lessee's facilities and the mitigation procedures by which the offshore facility operator and any listed/contracted OSROs (if required) would respond to such discharges. The mitigation procedures must address responding to both smaller spills (such as slow, low volume leakage) and larger spills to include the largest WCD covered under the Lessee's OSRP (refer to definition above).

2.3.7 Trajectory Analysis. For projects that include an ESP, a stochastic spill trajectory analysis from the ESP. The trajectory analysis must address:

2.3.7.1 The WCD from the ESP that is closest to shore.

2.3.7.2 The longest period of time that the discharged oil would reasonably be expected to persist on the water's surface, or 14 days, whichever is shorter.

2.3.7.3 The probabilities for oiling on the water's surface and on shorelines, and minimum travel times for the transport of the oil over the duration of the model simulation. Oiling probabilities and minimum travel times must be calculated for exposure threshold concentrations reaching 10 grams per square meter (g/m^2). Stochastic analysis must incorporate a minimum of 100 different trajectory simulations using random start dates selected over a multi-year period.

2.3.8 Resources at Risk. A concise list of the sensitive resources that are located near the Lessee's offshore facility and could be oiled by a spill. In lieu of listing sensitive resources, the Lessee may identify the areas that could be oiled by a spill from the Lessee's facility and provide hyperlinks to corresponding Environmentally Sensitive Index Maps and/or Geographic Response Strategies for those areas from the appropriate Area Contingency Plans.

2.3.9 Contractual Agreements. A list of OSROs and SROTs that are available to respond to WCD of oil from the Lessee's offshore facilities and their contact information.

2.3.9.1 If the Lessee's OSRP covers only WTGs, the Lessee may provide a Letter of Intent (LOI) in lieu of a contract from each OSRO and

SROT in the Lessee's plan acknowledging that it has agreed to be listed in the Lessee's OSRP.

2.3.9.2 If the Lessee's OSRP covers an ESP, the Lessee are required to ensure the availability of the OSRO and SROT resources necessary to respond through a contract or membership agreement. If a contract has been established with an OSRO and SROT, evidence of such contracts or membership agreements must be provided in the Lessee's plan. An LOI is not required from any OSRO or SROT that has been ensured available through a contract.

2.3.9.3 The OSRP must also include a map(s) that shows equipment storage sites and staging location(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.

2.3.10 Training. A description of the annual training to ensure the QI, IMT, OSRO and SROT (as applicable) are sufficiently trained to perform their respective duties. The Lessee's OSRP must provide the most recent dates of applicable training(s). The Lessee must ensure that the Lessee's QI, IMT, OSRO and SROT personnel receive annual training. The training must be sufficient for personnel to perform their duties. Training records must be maintained and retained for three years and must be provided to BSEE upon request.

2.3.11 Response Plan Exercise. 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. The Lessee must conduct an annual scenario-based notification exercise, and if the Lessee is required to have an IMT, the Lessee must conduct an annual scenario-based IMT tabletop exercise and at least one functional exercise during the triennial exercise period. If the Lessee's plan includes an OSRO and/or SROT contract, an annual deployment exercise of the Lessee's contracted response equipment is required. BSEE will advise on the options the Lessee 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. BSEE may evaluate the results of the exercises and advise the Lessee or Designated Operator of any needed changes in response equipment, procedures, tactics, or strategies. BSEE may periodically initiate unannounced exercises to test the Lessee's spill preparedness and response capabilities. Exercise records must be maintained and retained for three years and must be provided to DOI upon request.

2.3.12 Response Equipment. For OSRPs that cover ESPs, a list or a hyperlink to a list of the oil spill response equipment that is available to the Lessee through OSRO contracts and identification of the location of the equipment depots where the equipment is stored. The Lessee must ensure the Lessee's

contracted response equipment is maintained in proper operating condition, further ensure all maintenance, modification, and repair records are kept for a minimum of three years and provide these records to BSEE upon request. The Lessee or the Lessee's OSRO must provide BSEE with physical access to the Lessee's equipment storage depots and perform functional testing of the Lessee's response equipment upon BSEE request. BSEE may require maintenance, modifications, or repairs to response equipment or require the Lessee to remove response equipment from the Lessee's plan if it does not operate in accordance with its intended purpose.

2.3.13 OSRP Maintenance. If there is a significant change to the Lessee's OSRP that reduces the Lessee's ability to respond to a spill, a significant increase to the Lessee's WCD, removal of a contracted IMT, OSRO, or SROT from the Lessee's plan, or a significant change in the applicable area contingency plans, then the Lessee must revise the Lessee's OSRP and provide notice to BSEE no more than 15 calendar days after said change for review and concurrence. The entire OSRP must be reviewed and updated as needed, but at intervals not to exceed once every three years, starting from the date the OSRP was initially accepted. The Lessee or Designated Operator must send a written notification to BSEE upon completion of this review and submit any updates for concurrence. BSEE may require changes to the Lessee's OSRP if BSEE determines that the OSRP is outdated or contains significant inadequacies through review of the Lessee's OSRP, information obtained during exercises or actual spill responses, or other relevant information obtained by BSEE.

2.4 Cable Routings (Planning). The final Cable Burial Risk Assessment (CBRA) and engineered cable routings for all cable routes on the OCS must be submitted to DOI for review prior to or with the submittal of the FDR. The Final CBRA must include information on (a) natural and man-made hazards, (b) sediment mobility including high and low seabed levels expected over the project lifetime, (c) feasibility and effort level information required to meet burial targets, and (d) profile drawings of the cable routings illustrating cable burial targets along with the stable seabed depth. The Lessee must resolve any DOI-identified comments and concerns about the CBRA to DOI's satisfaction prior to installation of cables and related facilities authorized in the Lessee's COP.

2.5 Cable Protection Measures (Planning) (Construction) (Operations). As described in the COP, the export and inter-link cable is expected to be installed using simultaneous lay and bury via jet plowing or one of the other techniques listed in Section 4.2.3.3.2 of Volume I of the COP. Other methods may be needed in areas of coarser or more consolidated sediment, rocky bottom, or other difficult conditions to ensure a proper burial depth and it is expected achieving proper burial depths may be difficult in some areas. In these areas, where proper burial depth cannot be achieved, the Lessee will employ cable protection measures by using techniques such as placing rocks or prefabricated flexible

concrete coverings on top of the cable (referred to as concrete mattresses), or the use of half-shell pipes/similar products made from composite materials/cast iron with suitable corrosion protection.

As also described in the COP, the use of cable protection measures will not exceed 10% of the total cable routing. This is in accordance with the initial CBRA's estimated length of cable protection of 5.5 kilometers (km), or 8.4% of the cable route.

2.5.1 For the purpose of the COP, DOI defines proper burial depth as a minimum of 1.5 meters (m) depth along federal sections of the export cable, inter-link, and inter-array cables as measured from the stable seabed to the top of the cable. This depth is consistent with the COP and cable burial performance assessment provided in the initial CBRA. The Lessee will employ cable protection measures when proper burial depth is not achieved and provide DOI with detailed drawings/information of the actual burial depths and locations where protective measures were used, when the post-installation reports are submitted.

2.5.2 If the Lessee needs to alter any of the above, before engaging in such alteration, the Lessee will provide for DOI's review additional information, explaining the proposed alteration and the need for it, and will resolve any DOI concerns and objections to such alteration to DOI's satisfaction prior to or with the FIR submission.

2.6 Crossing Agreements (Planning). Final cable crossing agreements for active, in-service submarine cables, or other types of infrastructure such as pipelines, must be provided to DOI no later than 30 days prior to cable installation.

2.7 Post-Installation Cable Monitoring (Construction) (Operations). The Lessee must provide DOI with a cable monitoring report within 60 calendar days following each inter-array and export cable inspection to determine cable location, burial depths, state of the cable, and site conditions. An inspection of the inter-array cable and export cable must include high resolution geophysical methods, such as a multi-beam bathymetric survey equipment, and identify seabed features, natural and man-made hazards, and site conditions along federal sections of the cable routing.

2.7.1 On the OCS, the initial inter-array and export cable inspection will be carried out within 6 months of commissioning and subsequent inspections will be carried out at years 1, 2, and every 3 thereafter, and within 180 days after a major storm event (as defined in Section 2.10). If DOI determines that conditions warrant adjustment to the frequency of inspections following the Year 2 survey due to changes in cable burial or seabed conditions that may impact cable stability or other users of the seabed, DOI may require a revised monitoring plan be provided to DOI for review and concurrence.

2.7.2 In addition to inspection, the export cable will be monitored continuously with the as-built Distributed Temperature Sensing System. If DOI determines the Distributed Temperature Sensing data indicates that burial conditions have deteriorated or changed significantly and remedial actions are warranted, the Distributed Temperature Sensing data, a seabed stability analysis, and report of remedial actions taken or scheduled must be provided to DOI within 45 calendar days of the observations. All remedial actions must be consistent with those described in the approved COP.

2.7.3 The Distributed Temperature Sensing data, cable monitoring survey data, and cable conditions analysis for each year must be provided to DOI as part of the Annual Certification of Compliance, as required by 30 CFR 585.633(b).

2.8 WTG and ESP Foundations Depths (Planning). Information on seabed conditions has been provided to depths of up to 40m at WTG locations and a depth of 75m at ESP locations. If foundation depths are anticipated to exceed these depths, additional information on seabed conditions, geotechnical design parameters and pile drivability assessment for the additional depths must be provided as requested by DOI for its review with the FDR submission.

In the event that the location of project components differs from the 1nmi x1nmi layout already investigated, additional borings and/or CPT probes must be performed at any new locations not already covered by previous investigations extending to depths at least 10 m below expected foundation tip elevation along with a pile drivability assessment for each site. The lessee must provide this data in the FDR along with final foundation designs.

2.9 Minimizing and Monitoring Foundation Scour Protection (Construction) (Operations) (Decommissioning). The Lessee must minimize, to the maximum extent practicable based on design and engineering considerations, the footprint of scour protection measures at the WTG foundations. The Lessee must submit an inspection plan to DOI and to NMFS at least 30 days prior to initiating the inspection program and must address all agency comments and receive DOI's written concurrence prior to initiating the inspection program.

2.9.1 An initial foundation scour inspection will be carried out within 6 months of installation completion of each foundation location, and subsequent inspections will be carried out at a minimum of 20% of foundation locations at intervals of 3 years thereafter, or within 180 days after a major storm event (as defined in Section 2.10).

2.9.2 The Lessee must provide DOI with a foundation scour monitoring report within 45 calendar days following each foundation scour inspection.

2.9.3 Should scour holes develop within 10 percent of the minimum local scour design values, or if spud depressions from installation impact scour

protection stability, the Lessee must submit a plan for additional monitoring and/or mitigation to DOI for review and concurrence.

2.10 Post-Storm Monitoring Plan (Construction) (Operations) (Decommissioning). The Lessee must provide a plan for post-storm monitoring of the facility infrastructure, foundation scour protection, and cables, to DOI for review and concurrence prior to commencing installation activities. This plan must include a description of how the Lessee will measure or monitor environmental conditions; specify the condition thresholds, and their associated technical justification(s), above which post-storm monitoring or mitigation is necessary; potential monitoring, mitigation, and damage identification methods; and when the Lessee will notify DOI of post-storm related activities. DOI reserves the right to require post-storm mitigations to address conditions that could result in safety risks and/or impacts to the environment.

2.11 High Frequency Radar Interference Analysis and Mitigation (Planning) (Construction) (Operations). Recent BOEM research shows that the Lessee's project is within the line of sight (LOS) of seven oceanographic high-frequency (HF) radar systems (SeaSonde® and LERA types):

Radar Name	Radar System
SQUB	Short Range SeaSonde
LPWR	Medium Range LERA
HBSR	Medium Range LERA
NWTP	Medium Range LERA
MVCO	Long Range SeaSonde
NANT	Long Range SeaSonde
AMAG	Long Range SeaSonde

2.11.1 To address concerns related to the potential for the Lessee's project to interfere with the radar sites identified as within LOS in the BOEM study, the Lessee must coordinate with these radar operators to determine if the facility causes radar interference to the degree that radar performance is no longer within the specific radar systems' operational parameters, or mission objectives.

2.11.2 In coordination with the radar operators, the Lessee must perform an analysis of radar impacts and provide the results to DOI within six months of commercial operation.

2.11.2.1 If this information indicates that the project facilities reduce radar performance to a degree where the system no longer meets operations parameters, or mission objectives, the Lessee must provide mitigation to demonstrate the radar's performance stays within the systems' operational parameters, as appropriate. The Lessee must provide

verification of its sufficient mitigation, within one year of the determination, and additionally make a submission to DOI of the information that triggered the need for mitigation. This verification can include a statement by the radar operator.

2.11.3 To mitigate operational impacts to oceanographic HF radar systems, the following options have been identified:

2.11.3.1 Data sharing from turbine operators, to include the following: (i) sharing real-time telemetry of surface currents and other oceanographic data measured at locations in the Project with radar operators into the public domain; and (ii) sharing time-series of blade rotation rates, nacelle bearing angles, and other information about the operational state of each of the Project's turbines with radar operators to aid interference mitigation.

2.11.4 The Lessee must coordinate with the impacted radar operator when selecting and implementing mitigation methods. If mitigation options not identified in these terms and conditions are preferred by the Lessee and radar operator, information to support the request must be submitted to DOI for concurrence.

2.12 Commissioning Surveillance of Safety Related Systems (Planning) (Construction). The Lessee or the Designated Operator must provide qualified third-party verification of proper installation and commissioning of all safety related systems and equipment to DOI prior to commencing commercial operations. The purpose of commissioning surveillance of safety related systems and equipment is to verify that the facilities' various safety systems and equipment are commissioned in conformity with the Original Equipment Manufacturer (OEM)'s manuals and projects functional requirements, and are functioning properly prior to the start of commercial operations.

2.12.1 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 certifications, verifications, and reports required. The third-party must not have been involved in the design of the project.

2.12.2 Safety Related Systems and Equipment Risk Assessment. The Lessee or the Designated Operator must conduct a risk assessment to identify the safety related systems and equipment within their facility. The risk assessment must be submitted to DOI and the qualified third party for review. The qualified third-party must make a recommendation to DOI on the acceptability of the risk assessment and associated conclusions. DOI must concur with the qualified third-party recommendation(s) prior to the Lessee or Designated Operator beginning commissioning activities.

2.12.3 Commissioning Surveillance Requirements. The qualified third-party verifier must evaluate whether the commissioning of the wind farms' safety related systems and equipment, as identified in the risk assessment, are in conformance with the instructions in the OEM's manuals and the projects functional requirements. Other tests to be performed during commissioning may be agreed upon with the Designated Operator.

This evaluation requires examination of commissioning records and witnessing of tests. The qualified third-party verifier must witness the commissioning of the safety related systems and equipment of at least one wind turbine per every 50 turbines in the project, plus fractions thereof.

The qualified third-party must, as a minimum, verify that:

2.12.3.1 The installation procedures and/or commissioning instructions supplied by the manufacturer and identified in the project's functional reequipments are adequate;

2.12.3.2 The instructions supplied by the manufacturer and identified in the project's functional reequipments are followed during commissioning;

2.12.3.3 The systems and equipment function as designed; and

2.12.3.4 The final commissioning reports are complete.

2.12.4 Commissioning Surveillance Report. A Commissioning Surveillance Report (or Conformity Statement) and supporting documentation must be submitted to DOI. Final results and acceptance of the commissioning test by the qualified third-party must be included as an appendix to the Commissioning Surveillance Report. DOI must concur with the Commissioning Surveillance Report (or Conformity Statement) and supporting documentation prior to initiating commercial production of energy from the Lessee's project. If DOI has not responded to the Commissioning Surveillance Report (or Conformity Statement) and supporting documentation submitted by the qualified third party within 3 working days, the Lessee may presume concurrence.

2.13 As-Built Drawings (Construction) (Operations) (Decommissioning). Lessees must compile, retain, and make available to BOEM representatives, the drawings/documents listed in the chart below, within the time specified in the chart.

Drawing Type	Time frame to make available issued for construction drawings	Time frame to make available post fabrication drawings	Time frame to make available final, stamped As-Built drawings
Complete set of structural drawing(s) including major structural components and evacuation routes	With FDR submittal	N/A	Within one calendar year of the facility commencing commercial operation[2]
Front, side, and plan view drawings	With FDR submittal	N/A	Within one calendar year of the facility commencing commercial operation
Location plat for all project facilities	With FDR submittal	N/A	Within one calendar year of the facility commencing commercial operation
Complete set of cable drawing(s)	With FDR submittal	Prior to Final FIR Non-Objection[1]	Within 90 days of the facility commencing commercial operation
Piping and instrumentation diagram(s)		N/A	Within 90 days of the facility commencing commercial operation
Safety flow diagram(s)[3]	With FDR submittal	N/A	Within 90 days of the facility commencing commercial operation
Electrical one-line drawing(s)		Prior to Final FIR Non-Objection	Within 90 days of the facility commencing commercial operation
Cause and Effect Chart		Prior to Final FIR Non-Objection	Within 90 days of the facility commencing commercial operation
Schematics of the fire and gas-detection system(s)		Prior to Final FIR Non-Objection	Within 90 days of the facility commencing commercial operation

1. As installed location must be submitted with the final FIR.
2. Commercial operation is defined at 30 CFR 585.112.

Safety flow diagrams should depict the location of safety devices and the undesirable event(s) which activates the safety device. Undesirable event(s) are events which could result in personnel injury, environmental impact, or facility damage.

3 CONDITIONS RELATED TO NAVIGATIONAL AND AVIATION SAFETY

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

3.1.1 Marking. The Lessee must mark each WTG and ESP with private aids to navigation. No sooner than thirty (30) and no less than fifteen (15) calendar days prior to installation, the Lessee must file an application (form CG-2554), either in paper form or electronically, with the Commander of the First Coast Guard District to establish a private aid to maritime navigation (PATON), per 33 CFR Part 66. Approval must be obtained before installation of the Lessee's facilities begins. The Lessee must:

3.1.1.1 Provide a lighting, marking, and signaling plan for review and concurrence by DOI and the Coast Guard at least 120 days prior to installation. The plan must conform to applicable Federal law and regulation, and guidelines established by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Recommendation O-139, The Marking of Man-Made Offshore Structures, as well as the Coast Guard's Local Notice to Mariners (D1 LNM: 33/20) on Ocean-Structure PATON Marking Guidance and BOEM's Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development (April 28, 2021). Should any part of Recommendation O-139 conflict with Federal law or regulation, or if the Lessee seeks an alternative to Recommendation O-139, then the Lessee must consult with the and gain approval from the Coast Guard;

3.1.1.2 Mark each individual WTG and ESP with clearly visible, unique, alpha numeric identification characters consistent with the attached Rhode Island and Massachusetts Structure Labeling Plot;

3.1.1.3 Light each WTG and ESP in a manner that is visible by mariners in a 360° arc around the WTG and ESP;

3.1.1.4 Light each WTG with red obstruction lighting compatible with night vision goggles and consistent with the Federal Aviation Administration (Advisory Circular (AC) 70/7460-lM);

3.1.1.5 Provide signage, which is visible to mariners in a 360° arc around the structures, warning vessels of the air draft below the turbine blades as determined at highest astronomical tide;

3.1.1.6 Cooperate with the Coast Guard and National Oceanic and Atmospheric Administration to ensure that cable routes, ESPs and WTGs are depicted on appropriate government produced and commercially available nautical charts;

3.1.1.7 Provide mariner information sheets on the Lessee's website with details on the location of the WTGs and ESPs and specifics such as blade clearance above sea level;

3.1.1.8 Submit documentation to DOI within 90 calendar days of beginning commercial operation documenting compliance with 3.1.1.1 to 3.1.1.7.

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

3.1.2.1 Control mechanisms must enable the Lessee or Designated Operators to shut down any requested WTGs as soon as possible after notification from the Department of Defense (DoD) or Coast Guard. A formal shutdown procedure must be part of the Emergency Response Plan's Standard Operating Procedures, test on a regular basis as outlined in Lessee's annual inspection plan. The Lessee must submit the results of testing with the project's annual inspection results.

3.1.2.2 Rotor shutdown may be requested by the DoD or Coast Guard. Lessee must immediately comply with any emergency shutdowns ordered by the DoD or Coast Guard. Normally, Coast Guard-requested shutdowns will be limited to those WTGs in the immediate vicinity of an emergency and for as short a period of time as the Coast Guard determines is safely practicable under the circumstances. Lessee may resume operations only upon notification from the entity (DoD or Coast Guard) that initiated the shutdown.

3.1.2.3 The Lessee must work with the Coast Guard to establish the proper blade configuration during WTG shutdown for Coast Guard search and rescue air assets.

3.1.2.4 The Lessee must participate in Coast Guard periodic coordinated training and exercises to test and refine notification and shutdown procedures, and to provide search and rescue training opportunities for Coast Guard Command Centers, vessels, and aircraft.

3.1.3 Helicopter Landing Platforms. If the Lessee's ESPs include helicopter landing platforms, the Lessee must design and build those platforms to accommodate Coast Guard HH60 rescue helicopters. The design must be verified by the DOI approved CVA.

3.1.4 Structure Micrositing. The Lessee must not adjust approved structure locations in a way that narrows any northwest-southeast or northeast-southwest transit

corridors to less than 0.6 nmi. The final as-built structure locations must be submitted as part of the as-built documentation outlined in 2.13.

3.1.5 Emergency Response Plan. Prior to construction of the project, the Lessee must submit an emergency response plan to address non-routine events for review and concurrence by DOI and the Coast Guard. Annually, the Lessee must submit any revisions of the plan for review and concurrence by the Coast Guard. The Lessee must also submit any Coast Guard accepted revisions to the plan to DOI. The plan must demonstrate that the control center will be adequately staffed to perform the standard operating procedures, communications capabilities with the Coast Guard, and monitoring capabilities over the project. The plan must include, but not be limited to, the following topics, which may be modified through ongoing discussions with the Coast Guard:

3.1.5.1 Standard Operating Procedures. Methods for establishing and testing WTG rotor shutdown and braking; methods of lighting control; method(s) for notifying the Coast Guard of mariners in distress or potential/actual search and rescue incidents; method(s) for notifying the Coast Guard of any events or incidents that may impact maritime safety or security; methods for providing the Coast Guard with environmental data, imagery, communications and other information pertinent to search and rescue or marine pollution response.

3.1.5.2 Staffing. The number of personnel intended to staff the control center to ensure continuous monitoring of WTG operations; communications and surveillance systems; hours of operation; job qualification requirements; and initial, on-the-job, and refresher training requirements.

3.1.5.3 Communications. The capabilities to be maintained by the control center to communicate with the Coast Guard and mariners within and in the vicinity of the lease area. Control center communications capability must include at a minimum landline and wireless telephone for voice and data. Construction and operations vessel communications capability must include at a minimum Very High Frequency marine radio.

3.1.5.4 Monitoring. The control center must maintain the capability to monitor the Lessee's installation and operations in real time, including at night and in periods of poor visibility, for: (i) determining the status of all private aids to navigation, immediately reporting discrepancies to the local Coast Guard Sector Command Center, correcting discrepancies no later than 21 days after detection, and communicating any discrepancy corrections to the Sector Command

Center; and (ii) searching for and locating mariners in distress upon notification of a maritime distress incident.

- The Lessee must test the monitoring systems to ensure functionality on a regular basis as outlined in Lessee's annual inspection plan. The Lessee must submit the results of testing to DOI with the project's annual inspection results.

- The Lessee must contact the Coast Guard immediately if real time monitoring is unavailable for more than 1 hour. The Lessee must put in place alternate plans for monitoring with the agreement of the Coast Guard.

- The Lessee must notify DOI within 24 hours if real time monitoring is/was unavailable for more than 1 hour and any agreed upon alternative monitoring plans in place.

3.1.5.5 Examples of Non-Routine Events: Non-routine events may include, but are not limited to, area oil spills, major storms, marine incidents, mariners taking refuge within and on the facility, and others. The Lessee must consult with the Coast Guard on the events that must be covered within the Emergency Response Plan.

3.2 Installation Conditions (Planning) (Construction).

3.2.1 Schedule. The Lessee must provide a plan to DOI and the Coast Guard at least 60 days prior to construction that describes the schedule and process for installing each WTG and ESP, including all planned mitigations to be implemented to minimize any adverse impacts to navigation while installation is ongoing. No WTG/ESP installation work may commence at the project site (i.e., on or under the water), without prior review by DOI and the Coast Guard of a plan to be submitted by the Lessee. Lessee must submit any revisions or updates to plan specifics at least 60 days prior to commencing the activities described in that update or revision. Appropriate Notice to Mariners submissions must accompany the plan.

3.2.2 Cable Burial. No later than 60 days post-cable installation, the Lessee must submit to DOI and the Coast Guard a copy of the final submarine cable system route positioning list that depicts precise location and burial depths of the entire cable system.

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

3.3.1 Complaints. On a monthly basis, the Lessee must: (1) provide DOI 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) describe remedial action(s) taken in response to complaints received, if any. In accordance with the regulations in 30 C.F.R. part 585, DOI reserves the right to require additional remedial action.

3.3.2 Correspondence. On a monthly basis, the Lessee must provide DOI and the Coast Guard with copies of any correspondence received from other federal, state, or local agencies that mention or address navigation safety issues.

3.3.3 Maintenance Schedule: On an annual basis, the Lessee must provide DOI and the Coast Guard with its maintenance schedule for any planned WTG or ESP maintenance. Appropriate Notice to Mariners submissions must accompany each maintenance schedule.

3.4 Meeting Attendance (Planning) (Construction) (Operations). To ensure sufficient opportunity for the public to receive information directly from the owners/Lessee/Designated Operators of the wind farm, the Lessee must attend meetings (e.g. Harbor Safety Committee, Area Committee) throughout the construction and operation phases, as requested by DOI and the Coast Guard, to provide briefs on the status of construction and operations, and on any problems or issues encountered with respect to navigation safety.

3.5 Area Oil Spill Contingency Planning (Planning) (Construction) (Operations). The Lessee must participate in any Coast Guard-supported efforts to develop area oil spill contingency plans.

3.6 Periodic Review (Planning) (Construction) (Operation). Throughout the life of the project, the Coast Guard will continue to monitor the construction and operation of the Lessee's project for purposes of navigation safety and the execution of Coast Guard missions. The Lessee must cooperate with Coast Guard in this regard, including participation in Coast Guard exercises and evaluations.