UNITED STATES DEPARTMENT OF THE INTERIOR
Office of Renewable Energy Programs
Bureau of Ocean Energy Management

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Guidelines for Information Requirements for a Renewable Energy Site Assessment Plan (SAP)

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Acronyms and Abbreviations

ADCP	Acoustic Doppler Current Profiler
APE	Area of Potential Effect
BMP	Best Management Practice
BOEM	Bureau of Ocean Energy Management
CD	Consistency Determination
CFR	Code of Federal Regulations
CMP	Coastal Management Plan
COP	Construction and Operations Plan
CVA	Certified Verification Agent
CZMA	Coastal Zone Management Act
DoD	Department of Defense, United States
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPAct	Energy Policy Act
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
GIS	Geographic Information System
m	meters
MBTA	Migratory Bird Treaty Act
MMPA	Marine Mammal Protection Act
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NVIC	Navigation and Vessel Inspection Circular
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act
OMB	Office of Management and Budget
OSRO	Oil Spill Response Organization
PEIS	Programmatic Environmental Impact Statement
POC	Point of Contact
PRA	Paperwork Reduction Act
ROD	Record of Decision
ROW	Right-of-Way
RUE	Right of Use and Easement
SAP	Site Assessment Plan
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Officer

USACE	U.S. Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VGP	Vessel General Permit
VIA	Visual Impact Assessment

I. Introduction to Guidelines

This document provides guidance on the information requirements for a Site Assessment Plan (SAP) for Outer Continental Shelf (OCS) renewable energy activities on a commercial lease, as required for site assessment activities pursuant to 30 CFR §§ 585.605-.618. In response to stakeholder requests, the Bureau of Ocean Energy Management (BOEM) is providing these guidelines to clarify and supplement information requirements for SAP submittals. This information is necessary for BOEM to complete analyses under the National Environmental Policy Act (NEPA) and other applicable laws and regulations.

The purpose of this document is to further explain the applicable provisions of BOEM's renewable energy regulations, found at 30 CFR Part 585, and provide examples of documentation that you should submit to help BOEM evaluate whether the requirements found in the regulations have been met. The regulated community should rely on this document as guidance as it does not set information or data standards or prescribe additional requirements.

Since the publication of its initial SAP Guidance in 2016, BOEM has accrued substantial additional experience analyzing the impacts of and issuing approvals for the use of meteorological and oceanographic (metocean) buoys. BOEM is also aware that the offshore wind industry is trending strongly in the direction of using metocean buoys instead of bottom-founded towers to conduct site assessment activities. Accordingly, BOEM has updated this document in the following key ways:

1. Clarified the data requirements specific to metocean buoys;
2. Included recent updates to best management practices; and
3. Included a sample SAP template designed specifically for metocean buoys.

II. Authority and Background

BOEM published the regulations found in 30 CFR Part 585 to establish procedures for issuance and administration of leases, right-of-way (ROW) grants, and right-of-use and easement (RUE) grants for renewable energy production on the OCS. BOEM requires the submission of a SAP by the commercial lease applicant or leaseholder to describe the initial activities necessary to characterize a lease site (e.g., installation of meteorological towers and metocean buoys), resource assessment surveys (e.g., meteorological and oceanographic data collection), or technology testing activities that involve the installation of bottom-founded facilities. BOEM requires the results of site characterization studies to be submitted with your SAP pursuant to 30 CFR § 585.610(b) to evaluate the impact of proposed activities on physical, biological, and socioeconomic resources as well as the seafloor and sub-seafloor conditions that could be affected by the construction, installation, and operation of facilities and supporting structures.

Pursuant to 30 CFR § 585.601, a SAP must be submitted 12 months from lease or grant issuance. A SAP and a Construction and Operations Plan (COP) may also be submitted concurrently. The information required in a SAP is specified in 30 CFR §§ 585.610 and 585.611. This information is used to comply with the Outer Continental Shelf Lands Act (OCSLA), as amended by the Energy Policy Act of 2005 (EPAct), and other applicable laws and regulations. A SAP is also used to inform BOEM, other Federal agencies, affected states (as defined in 30 CFR § 585.112), and the public, of proposed site assessment activities to ensure that activities on the OCS leases will be safe and will protect the human, marine, and coastal environment.

A SAP must demonstrate that the proposed site assessment activities are being conducted in a manner that conforms to responsible offshore development per 30 CFR § 585.606; including the demonstration of Best Management Practices (BMPs). Additional information regarding BMPs resulting from the Record of Decision for the 2007 *Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf* (Section 2.7), prepared by BOEM, is presented in Attachment B. You should review and refer to the BMPs when planning site assessment activities and incorporate them in all project planning and implementation stages. BOEM is in the process of preparing guidance for several BMPs. These guidance documents will be made available at *http://www.boem.gov/Regulatory-Framework-Guidelines/*.

If warranted, lessees may request a departure from specific regulatory requirements, pursuant to 30 CFR § 585.103. BOEM will consider such requests on a case-by-case basis. BOEM recommends lessees consult with the appropriate BOEM project coordinator when preparing departure requests.

III. Site Assessment Plan

1. SAP Purpose and Scope

The purpose of the SAP is to provide a description of the proposed site assessment or technology testing activities that you plan to perform on your commercial lease. The information in the SAP provides the basis for analysis of the environmental and socioeconomic effects of proposed site assessment or technology testing activities.

Pursuant to 30 CFR § 585.610(b), the SAP must provide the results of site characterization and baseline environmental collection studies (e.g., geotechnical investigations, geophysical surveys, hazard surveys, biological studies, and archaeological surveys) conducted in support of the design and siting of any site assessment activities proposed for your commercial lease.

The activities proposed in a SAP may include the installation of meteorological and oceanographic measurement equipment, such as metocean buoys or meteorological towers, or the testing of new technological devices used for site assessment. A metocean buoy is a floating structure, typically

hull-based with a single or u-shaped mooring, with measurement devices attached to the hull. Metocean buoys are generally less than 10 meters (m) in height and diameter. A meteorological tower is a bottom-founded structure with a mast extending above the waterline and measurement devices attached at various heights. Meteorological towers are generally greater than 10 m in height. Seabed-mounted devices, such as an Acoustic Doppler Current Profiler (ADCP), that measures currents and other seafloor conditions may also be deployed alongside either a tower or buoy, secured with an anchor.

The level of information collected and provided in your SAP should be proportional to the scale and impact of your proposed structures. Because the level and extent of impact to some resources for a metocean buoy will be substantially less than for a meteorological tower, the data required for a metocean buoy SAP will be less as well.

To facilitate our review of your SAP, BOEM recommends that the survey data submitted with your SAP should be solely for the proposed site assessment activities. BOEM recommends that survey data for the construction and operation of your project be submitted with your COP. Submitting survey data with your SAP that is outside the scope of your site assessment or technology-testing activities will likely delay BOEM's review of your SAP, as this will extend the data review period.

BOEM recommends structuring your SAP around the regulatory requirements in 30 CFR § 585.610 and 30 CFR § 585.611 and identifying how the information satisfies each section. If you choose an alternate organization for your SAP, BOEM recommends providing cross-references to the corresponding regulatory sections to allow us to trace your inputs back to the regulatory requirements.

Based on experience reviewing previous submittals, BOEM has developed a SAP template specifically for non-complex metocean buoys as part of these guidelines, see Attachment C. While use of this template is not required, it is recommended, as its use may lead to a timelier review.

2. Pre-Survey Coordination with BOEM: SAP Survey Plan and Meeting

Prior to submittal of any plan, BOEM strongly encourages you to discuss your pre-survey planning with BOEM to ensure all surveys are conducted in a manner that addresses the regulatory information requirements for a SAP. Pre-survey coordination provides an opportunity to discuss common goals and expectations, agree upon the technical aspects and key parameters for the surveys, and to advise you of the authorizations or permits from other resource agencies that are necessary before you contract and mobilize an offshore survey.

BOEM recommends, and may require through lease stipulation, the development of a survey plan and the scheduling of one or more pre-survey meetings to discuss the survey plan. A SAP survey plan should provide a general description of the environmental and physical condition of the lease area and the timeline of the surveys to be completed during the site assessment phase. The survey plan and pre-survey meetings are used to support the submission of the SAP and satisfy the

information requirements in the applicable regulations, including but not limited to 30 CFR § 585.610, 30 CFR § 585.611, and 30 CFR § 585.612.

The survey plan should also include results of desktop studies on existing offshore activities, potential hazards, and environmental conditions. The desktop studies typically include the following topics.

Anthropogenic Conditions and Hazards
Cables/pipelines, hydrocarbon exploration, navigational aids, restricted areas, subsea hazards (shipwrecks, anchorage zones, etc.), and territorial claims, etc.

Biological Conditions
Benthic habitats, fisheries, marine sanctuaries, and protected species

Environmental Conditions and Hazards
Bathymetry, geology, geomorphology, oceanography, meteorology, seafloor conditions, sediment transport, and seismic and volcanic activity

3. SAP Review Process

The submission of your SAP is the initial step in a multi-step review and approval process. Your SAP will be reviewed by BOEM to determine Completeness and Sufficiency, under 30 CFR § 585.613.

1. **Completeness:** whether plans contain all of the categories of information required by BOEM's renewable energy regulations;
2. **Sufficiency:** whether the information provided in a submittal is of sufficient quality and quantity to conduct technical and environmental reviews.

BOEM may request additional information if we determine that the information provided is deficient. When providing additional information or an update to your SAP, BOEM recommends that you submit (1) an electronic copy showing the changes that were made and (2) a clean electronic copy.

Complex or Significant
During the review process, BOEM will determine whether your planned activities are complex and/or significant. This determination may depend on a number of factors, including, but not limited to, the use of proven and widely used technology, the use of standard materials, and the size of the seabed footprint. For example, metocean buoys that use multiple-point taut moorings or include new or uncommon technology may be considered complex or significant. Meteorological towers that are bottom founded, require on-site construction, and employ new or uncommon foundation designs may be considered complex or significant. Buoys or towers that have a widely used and accepted design may not be considered complex or significant. Activities deemed not complex or significant may be subject to less extensive information requirements.

If BOEM deems your proposed site assessment activities complex or significant, BOEM will notify you and require a Certified Verification Agent (CVA) nomination for reports pursuant to 30 CFR Part 585 subpart G. BOEM will approve the CVA nomination in accordance with 30 CFR § 585.706 prior to deeming the SAP complete. In addition, you must provide information required in 30 CFR Part 585, subpart G, pursuant to 30 CFR § 585.605(d).

BOEM strives to review SAP submissions in a timely manner. As such, BOEM commits to a policy of issuing a final SAP decision, approval, approval with conditions or denial, within 90 days of BOEM's determination that a received SAP is complete and sufficient. In some cases, a review period of greater than 90 days may be necessary because of factors outside of BOEM's control. For example, a SAP review requires BOEM to consult with outside agencies and delay on their part may impact BOEM's timeline. Additionally, delays may occur if you supplement your application during the 90-day review period.

Upon completion of the reviews, BOEM may approve, disapprove, or approve your SAP with modification. If and when BOEM approves your SAP (with or without modifications), BOEM will publish a version of your SAP on the BOEM website with confidential information redacted; see Section V "Release of SAP Information" of this document for more information.

4. Project-Specific Information Requirements

30 CFR § 585.610(a): A detailed project description is the foundation for understanding the impacts your project will have. BOEM recommends the use of section headings in your SAP that correspond to the requirements of 30 CFR § 585.610(a) (Table 1). The information required by 30 CFR § 585.610(a) may be organized and developed into a detailed project description (see Attachment A). The project description should be written such that it can be easily understood by people unfamiliar with specialist terminology. To ensure that your SAP meets BOEM's information needs required by 30 CFR § 585.610, BOEM recommends that you provide the project-specific information listed in Table 1.

Table 1: Project-specific Information

Section	Project Information	Guideline
(a)(1)	Contact Information	Identify an authorized representative's name, address, email address, and phone number. This representative will be the main contact for the project.
(a)(2)	Site Assessment or Technology Testing Concept	Include a discussion of the following, using tables as appropriate: (i) Include a discussion of the overall objective(s) that the site assessment is designed to fulfill and that of each activity.

Section	Project Information	Guideline
		(ii) Provide a description of the site assessment activities including the surveys and any structures, cables, or other facilities proposed for installation, and all technology you will use, including procedures for installation and removal of equipment and restoration of the leased area (see 30 CFR § 585.900 -904). (iii) Indicate the work commencement date and the schedule with best available beginning and ending dates for all characterization activities and for each proposed activity. (iv) Provide the name and location of the onshore support base(s). Indicate if existing facilities are to be used, if any modifications to existing facilities will be made, or if new facilities will be built. Include a schedule for expected shore base modifications. (v) Indicate the types of support vessel(s) or aircraft to be used and indicate the frequency of round trips that each vessel or vessel class is expected to make for each phase of activity planned in the SAP. Indicate the number of fuel tanks for each vessel or vessel class and the maximum fuel storage capacity for each tank. Indicate the maximum number of vessels expected to be on site at any one time including vessels, crews and onshore support, and estimate the number of people directly employed during each phase of site assessment activity.
(a)(3)	Designation of Operator, if applicable	Designate an operator, if applicable, as required by 30 CFR § 585.405, by submitting the Designation of Operator form, which can be found at *http://www.boem.gov/Form-BOEM-1123/.*
(a)(4)	Commercial Lease Stipulations and Compliance	Include a description of the measures you took, or will take, to satisfy the conditions of any lease stipulations (if applicable) related to your proposed site assessment activities. A table is a suitable format for presenting this information.

Section	Project Information	Guideline
(a)(5)	Location Plat (map drawn to scale)	Provide a bathymetric map (at a scale of 1"=2000') showing surface location(s) for each proposed structure, cable, or other facilities with anchor sites or anchor radius for any construction barge(s). Use a depth contour interval that can be clearly mapped at the required scale. Indicate any existing structures, facilities, and appurtenances located both offshore and onshore that may be affected by your proposal or the development of your lease. On a separate map, show the location of your proposed activities in relation to the shoreline and the location of your onshore base(s), including any construction or modifications to your onshore base(s). Indicate the OCS block outlines of the leasehold or the lease area requested with latitude and longitude. Use the appropriate scale necessary to include all of these features. For each map, in the legend indicate the projection/coordinate system used.
(a)(6)	General Structural and Project Design, Fabrication, and Installation	(i) Describe each type of structure or facility proposed for installation with your project, and how long they are scheduled to remain in place. (ii) Provide a description of all meteorological and oceanographic measurement devices, including number and location of each device and all parameters measured. (iii) Provide diagrams/design drawings and fabrication information for all proposed structures. The plans should be in final ready for construction format stamped by a registered professional engineer. (iv) Provide information regarding design, testing, maintenance, repair, safety devices, exterior corrosion protection, and inspection frequency for all associated structures or cables. (v) Describe the installation method for all project-related structures or facilities.

Section	Project Information	Guideline
		(vi) Provide a table of structure/activity locations, including surface location for each with XY coordinates, in latitude/longitude, and water depth. (vii) Indicate the anchor radius for any construction or derrick barges to be used during installation. If the exact position of construction vessel anchors is not known, indicate maximum radius of anchors on the location plat. (viii) For metocean buoys, indicate the type and diameter of mooring lines/cables to be used, radius of mooring line/cable sweep area, and anchor dimensions and weights. Mooring design should be site specific, complete, and final.
(a)(7)	Deployment Activities	Provide details of how you propose to bring your equipment and materials to the construction site/project location from shore (including port/marina to be used), as well as how you propose to conduct installation activities. Describe the safety, prevention, and environmental protection and pollution control features or measures that will be used. Describe how you will use a CVA, if applicable, to review and verify each stage of the project. Describe your normal operating procedures or system, as well as your operating procedures and systems in the case of accidents or emergencies, whether natural or manmade.

Section	Project Information	Guideline
(a)(8)	Proposed Measures for Avoiding, Minimizing, Reducing, Eliminating, and Monitoring Environmental Impacts	Describe measures you will take (and that will be carried out pursuant to your proposed site assessment activities) to avoid, minimize, reduce, eliminate, or mitigate environmental impacts. BOEM recommends that you demonstrate use of best management practices commensurate with the level of impact from the proposed SAP activity, particularly for benthic habitat, fisheries, and protected species. Describe any existing or planned environmental monitoring and mitigation systems you will implement before, during, and after construction or installation, as appropriate, along with the effectiveness of these systems (see 30 CFR § 585.615). State whether your activities are likely to result in harassment, injury, or death of endangered or other protected species, and describe the measures you will take to avoid adverse interactions with these species. Based on your proposed activities, authorizations or permits may be required by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS) before you begin work. Report if your operations require a Vessel General Permit (VGP) or other National Pollutant Discharge Elimination System (NPDES) permit for your site characterization activities. Provide information on the projected nature and volume of liquid and solid wastes to be generated or chemicals to be used by all vessels and structures involved in your activities. Although an oil spill response plan is not required for a SAP, certain OCSLA obligations compel BOEM to recommend that you provide information regarding your oil spill prevention and response measures as described in Section IV-2 “Oil Spill Response Measures” of this document. Describe measures taken to comply with 30 CFR Part 585, subpart H.

Section	Project Information	Guideline
(a)(9)	CVA Nomination, if required	If your proposed site assessment activities have been deemed complex or significant, provide nominations for a CVA as outlined in 30 CFR § 585.706, or a request to waive the CVA requirement as specified in §585.705(c).
(a)(10)	Reference Information	Provide a list of all documents and published sources referenced as part of this plan or cross-reference to citations in any published material that is readily available to BOEM.
(a)(11)	Decommissioning and Site Clearance Procedures	Describe and explain the general concept and procedures proposed for the decommissioning of all installed components and facilities. Refer to 30 CFR §§ 585.906-910 for additional information on decommissioning and site clearance procedures.
(a)(12)	Air Quality Information	BOEM regulates air quality for OCS facilities in the area of the Gulf of Mexico west of 87°30'W longitude, and the Alaska OCS planning areas in the Chukchi Sea and Beaufort Sea. The U.S. Environmental Protection Agency (EPA) has air quality jurisdiction everywhere else on the OCS. The requirements for submittal of air emissions information for a SAP are provided in 30 CFR § 585.659. Whether installing a buoy or meteorological tower, the relevant EPA Region should be contacted. The EPA may require the formal submittal of a Notice of Intent in order to determine whether an air permit is needed. BOEM recommends that you provide a copy of any analysis that you submit to the EPA, or other agency authorized by EPA to enforce the Clean Air Act (42 U.S.C. § 7409). The digital files should contain the formatted meteorological files used in modeling runs, along with the emission estimates and control measures that apply.

Section	Project Information	Guideline
(a)(13)	List of all Federal, state, and local authorizations, approvals, or permits that will be required to conduct site assessment activities	List all Federal, state, and local application approvals or permits you must obtain from regulatory agencies (e.g., coastal zone consistency certification and/or U.S. Army Corps of Engineers (USACE) permits) in order to conduct your proposed site assessment activities. Identify the originating statutes or regulations that require each permit, and then provide a statement indicating whether you have applied for or obtained such authorization, approval, or permit. If applied for, indicate the approval status for these authorizations. A table is a suitable format for presenting this information.
(a)(14)	List of agencies or persons with whom you consulted, or with whom you will be consulting, regarding potential impacts associated with your proposed activities	Provide contact information for Federal agencies responsible for required environmental consultations (e.g., Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), and Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)) List the agencies and persons consulted, dates of contact, and a short summary of issues discussed. Provide the same information for contacts with state agencies requiring consultations relating to your proposed activities. A table is a suitable format for presenting this information. This list is not exhaustive, but it gives an indication of entities and topics: ● Local USCG Districts – understand marine users of project area ● State(s) fisheries management agencies – understand commercial and recreational fishing use of project area ● USFWS & NMFS – see row a(8) ● EPA region – see row a(12) ● Department of Defense (DoD) – understand military use of project area and any concerns (e.g., lighting requirements) ● USACE – for navigation safety permitting ● Local coastal community governments and public – understand concerns from marine/ocean use community; port authorities; fishing organizations; and tourism sector

Section	Project Information	Guideline
		• State Historic Preservation Officers (SHPO) regarding technical guidance for the appropriate methods to identify historic properties and reporting the results of identification surveys conducted in onshore areas
(a)(15)	Financial Assurance Information	Provide statements and documentation demonstrating that the activities and facilities proposed in your SAP are or will be covered by the appropriate bond or other approved security, as required by 30 CFR § 585.515 and 585.516. Failure to submit appropriate financial assurance in a timely manner may result in disapproval of the SAP.
(a)(16)	Other Information	Additional information requests by BOEM will be based on project-specific and site-specific needs.

5. Survey Results and Supporting Data

Pursuant to 30 CFR § 585.610(b), your SAP must include the results and supporting data from surveys conducted in support of the design and siting of the site assessment instrumentation proposed for installation on your commercial lease (e.g., a meteorological data collecting tower or buoy). So that we can verify the accuracy and quality of the data, BOEM recommends that the information you submit includes the methodology, data acquisition, data processing, and spatial information of surveys and data collections used to support your SAP.

As discussed above, BOEM recommends, and may require through lease stipulation, that you consult with BOEM at one or more pre-survey meetings to ensure the survey results are adequate and sufficient for BOEM decision-making purposes. Note that the regulations require the results of surveys, *as applicable* (30 CFR § 585.610). It is likely that not all surveys will be equally important, or may not be relevant to your proposed activities at all. For example, the level and extent of impact to some resources will be quite different for a metocean buoy as compared to a meteorological tower. The pre-survey meetings will provide an opportunity to discuss with BOEM the appropriate effort for new data acquisition or appropriateness of existing data that is necessary to support the proposed activities. BOEM recommends that the lessee submit a brief explanation to BOEM in advance of the pre-survey meeting(s) describing where the lessee believes existing studies and/or assessments are appropriate for assessing the potential impacts from the proposed activities.

BOEM has prepared separate guidelines containing recommendations for conducting pre-construction surveys to support the acquisition of site characterization data. These regional and national guidelines can be found at
http://www.boem.gov/National-and-Regional-Guidelines-for-Renewable-Energy-Activities/.

These guidelines may be updated periodically, and all new versions will supersede previous versions. As of January 2019, the following separate survey guidelines have been updated to address the unique data requirements for metocean buoys:

- Guidelines for Providing Archaeological and Historic Property Information;
- Guidelines for Providing Avian Survey Information;
- Guidelines for Providing Benthic Habitat Survey Information;
- Guidelines for Providing Information on Fisheries; and
- Guidelines for Providing Information on Marine Mammals and Sea Turtles.

BOEM has prepared the following guidance in Table 2 for complying with the survey requirements in 30 CFR § 585.610(b) (1-5).

Table 2: Survey Requirements

Section	Survey Requirements	Guideline
(b)(1)	Geotechnical Investigation	To conduct a design and hazard assessment, BOEM requests information regarding the type and properties of sediments within the area of disturbance on the seabed. The level of geotechnical investigation required to obtain this information will depend on the type and dimensions of the proposed structure and the level of pre-existing knowledge of the seabed geology. Geophysical surveys with shallow sampling methods, such as vibracores or grab samples, may be sufficient for metocean buoys. BOEM recommends that fixed structures supported by piles or large gravity based foundations, such as meteorological towers, should have at least one deep boring at the proposed location with sediment sampling, laboratory testing, and geotechnical engineering analysis. A deep boring is defined as extending at least 10 meters below lowest foundation tip elevation. The scope of the geotechnical investigation should be submitted to BOEM for review before

Section	Survey Requirements	Guideline
		implementation. The geotechnical investigation results and report must be submitted with the SAP and are to be integrated with the information needs of 30 CFR § 585.611(b)(1).
(b)(2)	Shallow Hazards	The shallow hazards survey results and supporting data must provide information sufficient to determine the presence of surface and shallow subsurface geological features and conditions that may adversely affect your site assessment activities. Such conditions may include, but are not limited to: (i) Shallow faults (ii) Gas seeps or shallow gas (iii) Mobile sediments, slumps or slides, potentially unstable slopes, creep, karst topography (iv) Gas hydrates (v) Surface hardgrounds (hard bottom features—in particular, hard substrate exposed at the surface and not overlain with sediment veneer), buried channels and scour features (vi) Ice scour of seabed sediments (vii) Cables, artificial reefs, buoys, debris and other man-made objects For the installation of metocean buoys and ADCPs, the presence of subsurface shallow hazards such as faults and gas hydrates will likely not adversely impact site assessment activities due to the limited vertical and horizontal extent of the area of potential effect. Also, as these structures are not fixed structurally to the seabed, they are less likely to be affected by seabed changes or hazards. In these instances, information about surficial hazards such as hard bottom or sediment mobility may be sufficient.
(b)(3)	Archaeological Resources Survey	The historic property identification survey results, supporting data, and report(s) should identify and describe any historic properties that may be potentially affected by your proposed activities, as defined by the National Historic Preservation Act (NHPA) (16 U.S.C § 470 et. seq). This includes, but

Section	Survey Requirements	Guideline
		is not limited to, the identification of historic properties located: (1) in offshore areas where any bottom-disturbing activities may take place; and (2) within the onshore viewshed of the proposed project. The extent of the geographic area or areas surveyed for historic properties should be appropriate to the scale of the proposed site assessment activities, and may be different depending on the meteorological and oceanographic measurement equipment proposed in the SAP. For example, a proposed metocean buoy may have a smaller geographic area of seafloor disturbance than a meteorological tower, both horizontally and vertically, and therefore would require archaeological survey of a smaller area. Additionally, metocean buoys may have limited or no visibility from onshore locations and therefore may not include an onshore area of potential effects. This information will be used by BOEM to comply with NHPA, NEPA, and other applicable environmental and historic preservation laws. Applicants should provide a detailed description of the methods and results of the historic property identification surveys in stand-alone report(s) to support their SAP. To facilitate consultations, BOEM must receive the historic property identification reports in complete form; therefore, any changes to a lessee's SAP that may occur after submittal of a plan to BOEM, as a result of either changes in the design of the proposed project or a request for additional information made by BOEM, should be incorporated into revised reports. The historic property identification reports should include a clear description and illustration of the activities proposed in the SAP, and the project description should match that which is presented in other portions of the plan. Details on the contents of the archaeological resources assessment and other historic property identification reports may be found in BOEM's Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30

Section	Survey Requirements	Guideline
		CFR Part 585.
(b)(4)	Geological Survey	BOEM recommends that your geological survey results, supporting data, and report should provide an integrated interpretation of surficial and shallow subsurface conditions based on your shallow hazards survey and geotechnical investigation. The survey report should discuss how identified features may impact your proposed facilities, and should contain interpretations of the following: (i) Seismic activity at your proposed site (ii) Fault zones (iii) The possibility and effects of liquefaction and seabed subsidence (iv) The extent and geometry of faulting attenuation effects of geologic conditions near your site (v) Observed scour and sand waves (vi) Slope stability Your geological survey(s) results and report are submitted with the SAP and information acquired from the survey is to be integrated with the information needs for 30 CFR § 585.611(b) (1). For the installation of metocean buoys and ADCP's, the presence of subsurface shallow hazards such as liquefaction, faulting, or seismic activity may not adversely impact site assessment activities due to the limited vertical and horizontal extent of the area of potential effect. In these instances, information about surficial hazards such as scour or slope stability may be sufficient. Please note that it is the lessee's responsibility to present scientific, engineering, and/or design information to justify such a reduction in data collection and describe how the presence of geologic features and hazards would or would not impact the proposed facility.
(b)(5)	Biological Survey	BOEM recommends providing supporting information for biological resources according to the following BOEM guidelines: ● Fisheries ● Benthic Habitat ● Marine Mammals and Sea Turtles

Section	Survey Requirements	Guideline
		The level of biological information collected should be commensurate with the potential impacts from the proposed SAP activity. For example, metocean buoys may have few impact-producing factors that affect protected species or critical habitat due to their limited environmental footprint. Any activity that has several impact producing factors, such as pile driving, may require more information regarding impacted biological resources and habitat.

IV. Required Information to Accompany the SAP

1. Information for Compliance with NEPA and Other Relevant Laws

In some cases, you may also be required to provide information to support environmental analysis required by NEPA and other relevant laws as described in 30 CFR §§ 585.611 and 585.612. The level of detail to be submitted under 585.611 will depend on the level of NEPA analysis (i.e. a categorical exclusion or an environmental assessment (EA)) necessary for your SAP. The level of NEPA analysis will depend on the facility type and whether or not the proposed SAP activities on the lease were previously analyzed by BOEM under NEPA. You should consult with BOEM regarding the scope of the environmental analysis in your SAP prior to submittal.

Metocean Buoys

For SAPs proposing the installation of metocean buoy(s), it may be appropriate for BOEM to use a categorical exclusion (e.g., nondestructive data collection under 43 CFR 46.210(e)), regardless of whether or not the activities were previously analyzed by BOEM under NEPA. To do so, BOEM must determine that no extraordinary circumstances exist under which a normally excluded action may have a significant environmental effect. If a lessee is proposing the installation and operation of metocean buoy(s) in an area where BOEM has previously analyzed such activities under NEPA, then regulatory requirements in 585.611(b)(2 through 10) will likely not be applicable. Regulatory requirements in 585.611(b)(1) may be applicable for BOEM technical review outside of NEPA.

Meteorological Towers

Prior to lease issuance, BOEM typically prepares an EA that also considers a range of site assessment activities, which may include meteorological towers. Because BOEM does not typically use a categorical exclusion for meteorological towers, it will instead determine whether the EA for lease issuance adequately considers the environmental effects of the activities proposed in the lessee's SAP. If BOEM determines that its lease sale EA adequately considered these effects, BOEM would conduct no further NEPA analysis before SAP approval. If BOEM

determines that the lease sale EA is inadequate, it will prepare an additional NEPA analysis before approving the SAP.

If you are proposing the installation and operation of a meteorological tower in an area where BOEM has previously analyzed such activities, your SAP should demonstrate how your proposed activities fit within the scope of that prior NEPA analysis for each regulatory requirement in 585.611(b).

Facilities Outside of the Scope of Previous NEPA Analyses

If you are proposing the installation and operation of any type of site assessment facility on a lease where BOEM has not previously considered such activities, or if your proposed site assessment activities are outside of the scope of BOEM's prior NEPA analysis for lease issuance, regulatory requirements in § 585.611(b) will apply to your SAP submittal. Tables are provided in Attachment A to assist in developing the information needs for complying with NEPA and other laws requiring consultation with Federal or state agencies, including consistency under the Coastal Zone Management Act (CZMA) (30 CFR § 585.612).

Your discussion of environmental resources and impacting factors should be in narrative form, and the level of detail will depend on the level of NEPA analysis that BOEM determines is necessary (e.g., use of categorical exclusion or preparation of an EA), the area extent of your activities, the duration or intensity of impacting factors, and the sensitivity of resources in your project area.

The USFWS and the National Oceanic and Atmospheric Administration (NOAA) NMFS have determined that, with the implementation of best management practices included in this guidance, site assessment activities may affect, but are not likely to adversely affect listed species. Individual plans are required to be assessed to ensure that all BMPs can be implemented and any site-specific impacts to any designated critical habitats or other habitat areas of special concern are avoided or minimized. The avoidance of potential adverse impacts should be consistent with the requirements of the ESA, MMPA, and MSFCMA.

2. Oil Spill Response Measures

While there are no SAP regulatory requirements specific to oil spills, BOEM has interpreted its OCSLA obligations to require lessees to inform BOEM regarding their capacity to comply with their preexisting oil spill response obligations.

The recommended oil spill emergency measures for metocean buoys are set forth in Attachment C, the SAP template for buoys**.** For all other site assessment facilities, your SAP should include a description of the type and amounts of oil on the facility and design parameters intended to monitor for and/or prevent oil spills. BOEM will evaluate the information to make a determination of emergency measures needed for your proposed facility, in the event of an oil spill, on a case-by-case basis.

V. Release of SAP Information

BOEM will conduct a "completeness and sufficiency" review after your SAP submittal, pursuant to 30 CFR § 585.613(a). Once BOEM has deemed your submittal complete and sufficient, the SAP will be made available on BOEM's website as a public document. Before doing so, BOEM will protect privileged or confidential information, as described in 30 CFR § 585.113.

To assist BOEM in its determination of proprietary information, please label privileged or confidential information "Contains Confidential Information" and consider submitting such information as a separate attachment. In addition, the NHPA requires BOEM to withhold from public disclosure information about the location, character, or ownership of historic resources if the agency determines that the disclosure may, among other concerns, risk harm to the historic resources or impede the use of traditional religious sites by practitioners. This includes such information as the results of archaeological surveys and other historic property identification reports submitted with a SAP.

VI. Revisions to an Approved SAP

30 CFR § 585.617: If there are changes to an already approved SAP, a SAP revision may become necessary. You must notify BOEM in writing before conducting any activities not described in the approved SAP, describing in detail the activities you propose to conduct. You may choose to describe anticipated future activities (e. g. equipment replacement or new instrumentation) in your initial SAP submission to avoid having to revise your SAP in the future. BOEM will also periodically review the activities conducted under an approved SAP. If the review indicates that the SAP should be revised because of any modifications listed in 30 CFR § 585.617(c), BOEM will require you to submit revisions to the SAP.

VII. Number of Copies

30 CFR § 585.607: At initial filing, you are required to provide BOEM with an electronic copy of the SAP and all supporting materials for the review process, and, upon SAP approval, one final electronic copy and one hard copy. Please consult the appropriate BOEM project coordinator for the preferred electronic format. If the SAP contains information considered proprietary, prepare a submittal that contains a version stamped "public copy" without proprietary information and an agency version stamped "proprietary information".

BOEM may request additional hard copies if states require the copies for their CZMA consistency review or concurrence.

VIII. Contacts and Submittal Addresses

For further information or inquiries regarding these guidelines, please contact the Office of Renewable Energy Programs by telephone (703-787-1300) or by email (renewable_reporting@boem.gov). Submit one paper copy and one electronic version of the SAP to the appropriate addressee below (Table 3).

Table 3: Mailing Locations for BOEM Inquiries

Project Location by State (Offshore)	Filing Address
• **Maine** • **New Hampshire** • **Massachusetts** • **Rhode Island** • **New York** • **New Jersey** • **Delaware** • **Maryland** • **Virginia** • **North Carolina** • **South Carolina** • **Georgia** • **Florida (South Atlantic and Straits of Florida Planning Areas)**	Bureau of Ocean Energy Management Office of Renewable Energy Programs 45600 Woodland Road Mail Stop VAM-OREP Sterling, Virginia 20166 Phone: (703) 787-1300
• **Florida (Eastern Gulf of Mexico Planning Area)** • **Alabama** • **Mississippi** • **Louisiana** • **Texas**	Bureau of Ocean Energy Management Gulf of Mexico OCS Regional Office Attn: Renewable Energy Program Mail Stop 5400 1201 Elmwood Park Boulevard New Orleans, Louisiana 70123-2394 Phone: 800-200-GULF
• **Alaska**	Bureau of Ocean Energy Management Alaska OCS Regional Office Mail Stop 8200 Centerpoint Building 3801 Centerpoint Drive, Suite 500 Anchorage, Alaska 99503 Phone: (907) 334-5200
• **Washington** • **Oregon** • **California** • **Hawaii**	Bureau of Ocean Energy Management Pacific OCS Regional Office 760 Paseo Camarillo, Suite 102 Camarillo, California 93010 Phone: (855) 320-1484

IX. Paperwork Reduction Act (PRA) Statement

The information-collection provisions of this document are intended to provide clarification, description, or interpretation of requirements contained in 30 CFR Part 585 subpart F. The Office of Management and Budget (OMB) has approved the information collection requirements for these regulations and assigned them OMB Control Number 1010-0176.

Attachment A: Information Requirements for NEPA and Other Relevant Laws

The information requirements identified in 30 CFR § 585.611(b) ensures that the Site Assessment Plan (SAP) provides information sufficient to comply with National Environmental Policy Act (NEPA) and other environmental laws, including, but not limited to: Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), Marine Mammal Protection Act (MMPA), Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), National Historic Preservation Act (NHPA), and the Coastal Zone Management Act (CZMA). The regulatory requirements in § 585.611(b) will apply to your SAP submittal if you are proposing the installation and operation of any type of site assessment facility in an area not previously considered under NEPA or outside of the scope previously considered. The tables below have been provided to assist in developing the information needed on those resources, conditions, and activities that could be affected by your proposed activities or that could affect the activities proposed in your SAP.

The nature and level of detail of the data and analyses that you provide to the Bureau of Ocean Energy Management (BOEM) will depend on the site assessment activities you are proposing and their reasonably foreseeable impacts. BOEM may request additional project-specific information, depending on the nature and complexity of the site assessment activities.

For each topic, BOEM recommends that you provide a succinct narrative, at a level of detail appropriate to the scale of the impacts that each category of proposed activities may cause. BOEM recommends including data/information in tables or maps where appropriate. You should also provide report(s) that present the methods used, results of, and conclusions reached by any numerical modeling performed.

Please note that you may combine the information provided for biological resources, threatened and endangered species, and sensitive biological resources and habitats (30 CFR § 585.611(b)(3), (4), and (5)) into an integrated section, provided you clearly indicate protected species.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(1): Hazards
Focus	Describe the extent of meteorological and oceanographic forcing, geology and geomorphology, sediment conditions and sediment transport processes, and physiographic conditions within the area of your proposed project.
Scope	Describe a site-specific evaluation of meteorological and oceanographic conditions, geology and geomorphology, sediment conditions and sediment transport processes, and physiographic conditions having the potential to destabilize your planned activities or facilities. The area-wide evaluation should provide a description of the ecosystem context for the location where you intend to place your project.
Baseline Information	Surveys should be conducted in accordance with BOEM's Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information pursuant to 30 CFR Part 585.
Impacting Factors	● Activities that disturb the sea bottom—describe the nature, intensity, and duration of disturbances to the sea bottom, such as buoy anchoring, vessel anchoring, pile driving, and decommissioning. ● Natural hazards—describe the nature, intensity, and duration of currents leading to local and global scour, wave strike and overtopping, slope instability, seismic events, and storm events. ● Accidental events—describe the potential for and effects of collisions and structure failure.
Other Information Needs	● For metocean buoys, describe the regional meteorological and oceanographic conditions that were considered in mooring design specifications and scour potential analysis. ● For meteorological towers, additional information may be needed to support the evaluation of hazards and physical impacts, including but not limited to: 1. Stability analysis of seafloor morphology; 2. Modeling of wave and current interaction with proposed structures; 3. Modeling of proposed scour protection; and 4. Modeling of disturbances associated with foundation installation.
Monitoring	Describe any monitoring activities you propose to undertake as part of your proposed site assessment activities.
Environmental Protection Measures	Describe any proposed environmental protection measures that are designed to minimize potential adverse effects of your proposed site assessment activities on physical resources.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(1): Hazards
Presentation of Information	● Provide reports and associated data in the format requested by BOEM and outlined in the Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information pursuant to 30 CFR Part 585, the Guidelines for Submission of Spatial Data for Atlantic Offshore Renewable Energy Development Site Characterization Surveys, or other relevant guidance provided by BOEM. ● Provide succinct narratives by topic, at a level of detail appropriate to the scale of the impacts that each category of proposed activities may cause. ● Provide report(s) of any numerical modeling performed, including the methods used, results, and conclusions reached. ● Include data/information in tables where appropriate. ● Include maps and charts where appropriate (e.g., a bathymetric map, isopach, storm tracks, bottom type, and in sedimentary or geologic cross sections).

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611 (b)(2): Water Quality
Focus	Describe the existing water quality conditions and project activities that could affect water quality.
Scope	Describe the water quality in the area proximate to your proposed activities and any incremental changes to water quality parameters that may be caused by your proposed activities.
Baseline Information	Describe the general state of water quality in the area proposed for your project by reporting typical metrics for quality, including the following: dissolved oxygen; chlorophyll; nutrient content; seasonal variations in algae or bacterial content; upwelling conditions; presence or absence of contaminants in water or sediment; turbidity or water visibility states and variation.
Impacting Factors	● Activities that disturb the sea bottom—describe the nature, intensity, and duration of disturbances to the sea bottom that may increase turbidity, resuspend sediment bound contaminants, or affect other water quality conditions. ● Natural hazards— describe the environmental hazards that could cause releases of non-hazardous or hazardous materials and wastes, such as storm events. ● Accidental events— describe potential accidental releases from construction equipment, vessels, and installed facilities.
Other Information Needs	● For both metocean buoys and meteorological towers, additional information on oil spill response measures, as described in Attachment C, may be needed. ● For meteorological towers, additional information may be needed to support the evaluation of water quality impacts, including but not limited to: 1. Modeling of turbidity during foundation installation. 2. Operation, Service and Maintenance Plan; Storm Water Pollution Prevention Plan; and any other pollution control plan prepared to avoid and minimize impacts to water quality.
Monitoring	Describe any water quality monitoring that you propose to undertake as part of your proposed site assessment activities.
Environmental Protection Measures	● Describe any part of your site assessment activities that are designed to minimize adverse effects on water quality. ● If you anticipate an NPDES permit to be required by the EPA or if Water Quality Certification is required by the state(s) or USACE, include a summary of the specific portion of your activities requiring the permit and the anticipated reporting and monitoring requirements.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(3): Biological Resources*
Focus	Describe the nature and extent of biological resources that may be affected by activities proposed in your SAP, along with the nature and extent to which your activities will affect such resources.
Scope	Include site-specific descriptions of species with potential impacting factors that may result from your proposed activities. The detail included in the evaluation of biological resources should include the impacts assessed in the NEPA analysis prepared for the lease, any new species listed or critical habitat designated since the NEPA analysis was completed, and take into consideration any project-specific impacts associated with the complexity and significance of the facility design and installation methods. For example, the installation of mooring systems for buoys does not require a detailed analysis of acoustic impacts, whereas pile driving associated with met tower installation would require such an analysis. Additionally, the benthic footprint associated with the installation, operation, and decommissioning of buoys or towers will vary with different designs and installation methods. The information required for the assessment of impacts in the SAP may be less for many buoy designs than will be required for meteorological tower foundation designs. This is due to BOEM's assumption that buoys will have a fewer number of associated impact producing factors, BMPs that minimize or avoid impacts, and that the range/number of biological resources that may be impacted is lessened.
Baseline Information	● Identify and describe coastal sandy and rocky intertidal, dune, wetland and marsh species, and habitats that may be disturbed by proposed activities or reasonably foreseeable extensions of your project that could be impacted by accidental spills, discharges, or collisions. ● Provide survey results in accordance with BOEM's Guidelines for Providing Benthic Habitat Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf pursuant to 30 CFR Part 585. ● Provide supporting information and survey results in accordance with BOEM's Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585.
Impacting Factors	● Activities that disturb the sea bottom—indicate maximum area of sea bottom that would be disturbed as a result of your activities; describe the duration and intensity of disturbances and how those disturbances are relevant to biological resources. ● Activities that introduce sound into the environment: Characterize the sound produced in both air and water. Include source level and

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(3): Biological Resources*
	frequency of each anthropogenic source and the expected sound attenuation path calculations for transmission loss, if applicable. ● Activities that result in changes to ambient lighting—report the type, duration, and intensity of lighting at your facilities during site assessment activities. Annotate areas of steady and/or flashing lighting if used. ● Activities that involve mooring or anchor lines into the marine environment – describe any mooring systems using buoys, lines, (chains, cables, or rope systems), swivels, shackles, and anchors used that may interact with biological resources. ● Activities that may displace biological resources—describe vessel traffic patterns through all phases and locations of proposed structures, as well as any other proposed activities that may displace biological resources. ● Activities that may result in direct injury or death of biological resources (e.g., support/construction vessel activities). ● Accidental events—describe possible accidental events, such as materials or fuel spills and ship strikes.
Other Information Need	● Modeling of impact-producing factors on biological resources may include, but are not limited to the following: 1. Sound dispersion models 2. Materials and fuel spill modeling 3. Collision hazard and risk modeling 4. Species distribution modeling
Research or Monitoring	Describe any monitoring activities you propose to undertake as part of your proposed site assessment activities. These activities may include plans to monitor and evaluate the results of mitigation over time to ensure that the intended outcomes are achieved.
Environmental Protection Measures	Describe proposed environmental protection measures that are designed to avoid, minimize, and/or mitigate adverse effects on biological resources.

Additional mitigation measures may be required for approval of your SAP. These may be developed through scoping and consultations with other stakeholders and state and Federal resource agencies.

** You may combine the information provided for biological resources, threatened and endangered species, and sensitive biological resources and habitats into an integrated section, provided you clearly indicate protected species.*

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(4): Threatened and Endangered Species*
Focus	Describe the nature and extent of threatened and endangered species that may be affected by activities proposed in your SAP. Species or critical habitat proposed for listing under the ESA should also be included.
Scope	Include site-specific descriptions of species and potential impacting factors that may result from your proposed activities. Include site-specific descriptions of species with potential impacting factors that may result from your proposed activities. The detail included in the evaluation of impacts to biological resources should include the species and habitats assessed in the NEPA analysis prepared for the lease, as well as any new species listed or critical habitat designated since the NEPA analysis was completed. The assessment should also take into consideration any project-specific impacts associated with the complexity and significance of the facility design and installation methods. For example, the installation of mooring systems for buoys does not require a detailed analysis of acoustic impacts, whereas pile driving associated with met tower installation would require such an analysis. Additionally, the benthic footprint associated with the installation, operation, and decommissioning of buoys or towers will vary with different designs and methods. The information required for the assessment of impacts in the SAP may be less for many buoy designs than will be required for met tower foundation designs. This is due to BOEM's assumption that buoys will have a fewer number of associated impact producing factors, BMPs that minimize or avoid impacts, and that the range/number of biological resources that may be impacted is lessened.
Baseline Information	Survey results should be provided in accordance with BOEM's Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf pursuant to 30 CFR Part 585 subpart F and the Guidelines for Providing Information on Fisheries Survey for Renewable Energy Development on the Atlantic Outer Continental Shelf pursuant to 30 CFR Part 585.
Impacting Factors	• Activities that disturb the sea bottom—indicate approximate area of sea bottom disturbed as a result of your activities and a description of the duration and intensity of disturbance and how those disturbances are relevant to threatened and endangered species. • Activities that introduce sound into the environment—characterize the sound produced in both air and water and its potential effect on threatened and endangered species. Include source level and frequency of each anthropogenic source and the expected sound attenuation path calculations for transmission loss.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(4): Threatened and Endangered Species*
	● Activities that result in changes to ambient lighting—report the type, duration, and intensity of lighting at your facilities. ● Activities that involve mooring or anchor lines into the marine environment – describe any mooring systems using buoys, lines, (chains, cables, or rope systems), swivels, shackles, and anchors used that may entangle or entrain protected species. ● Activities that may displace threatened and endangered species—describe vessel traffic patterns through all phases and locations of proposed structures. ● Activities that may result in direct injury or death of threatened and endangered species (e.g., turbine operations, support/construction vessel activities). ● Accidental events—describe possible accidental events, such as materials or fuel spills and ship strikes.
Other Information Need	In lieu of direct observations, modeling of impact-producing factors and their potential effects on threatened and endangered species may include, but are not limited to, the following: • Sound dispersion models • Materials and fuel spill modeling • Collision hazard and risk modeling • Species distribution modeling
Monitoring	Describe any research or monitoring activities you propose as part of your SAP proposal. These activities may include plans to monitor and evaluate the results of mitigation over time to ensure that the intended outcomes are achieved.
Environmental Protection Measures	Describe environmental protection measures that are proposed as part of your project that are designed to avoid, minimize, and/or mitigate adverse effects on threatened and endangered species.
Presentation of Information	● Provide reports and associated data in the format requested by BOEM and outlined in the Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf pursuant to 30 CFR Part 585 subpart F, the Guidelines for Providing Information on Fisheries Survey for Renewable Energy Development on the Atlantic Outer Continental Shelf pursuant to 30 CFR Part 585, or other relevant guidance provided by BOEM. ● Provide a succinct narrative by topic, targeted to a level-of-detail proportionate to the scale of the activities you propose.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(4): Threatened and Endangered Species*
	● Include names of species and impact factor tables where appropriate. ● Include maps where appropriate.

** You may combine the information provided for Biological Resources, Threatened and Endangered Species, and Sensitive Biological Resources and Habitats into an integrated section, provided you clearly indicate protected species.*

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(5): Sensitive Biological Resources or Habitats*
Focus	Describe the nature and extent of sensitive biological resources or habitats that may be affected by activities proposed in your SAP. Include sensitive habitats that may be scarce on a regional scale and vulnerable to proposed activities or are designated as special areas (e.g., essential fish habitat, parks, sanctuaries, and marine protected areas).
Scope	Include area-wide and site-specific descriptions of species that may be impacted resulting from your proposed activities. The water quality impacts and benthic footprint associated with the construction, operation, and decommissioning of buoys are generally limited to small geographic areas and short timescales and may have minimal impacts to some benthic habitats such as dynamic sand-dominated seafloors. The level of assessment and detail provided in the SAP may be less for many buoy designs than for tower foundations due to BMPs, the associated number of impact producing factors, and thus the range/number of biological resources that may be impacted.
Baseline Information	Survey results should be provided in accordance with BOEM's Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf pursuant to 30 CFR Part 585 subpart F and Guidelines for Providing Information on Fisheries Survey for Renewable Energy Development on the Atlantic Outer Continental Shelf pursuant to 30 CFR Part 585.
Impacting Factors	● Activities that disturb the sea bottom—indicate approximate area of sea bottom disturbed as a result of your activities, as well as a description of the duration and intensity of disturbance and how those disturbances are relevant to sensitive biological resources or habitats. ● Activities that introduce sound into the environment—characterize sound produced in both air and water by your activities and noise on sensitive biological resources or habitats. Include source level and frequency of each anthropogenic source and the expected sound attenuation path calculations for transmission loss. ● Activities that result in changes to ambient lighting—report the type, duration, and intensity of lighting at your facilities. ● Activities that may displace sensitive biological resources or alter habitats—describe vessel traffic patterns through all phases, locations of proposed structures, and locations of sensitive biological resources or habitats. ● Activities that may result in direct injury or death of sensitive biological resources (e.g., survey and support/construction vessel activities).

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(5): Sensitive Biological Resources or Habitats*
	● Activities that increase the turbidity of the water column and re-suspension of sediment—report the type and duration of activities creating turbidity and how turbidity is relevant to sensitive biological resources or potential sedimentation of benthic fauna and habitats. ● Accidental Events—describe possible accidental events, such as materials or fuel spills and ship strikes and how these may affect sensitive biological resources or habitats.
Other Information Need	● BOEM may recommend a biological survey if survey information from any available source shows that possible sensitive biological resources could be negatively affected by your proposed activities. ● In lieu of direct observations, modeling of impact producing factors on sensitive biological resources or habitats may include, but are not limited to the following: 1. Sound dispersion models 2. Materials and fuel spill modeling 3. Collision risk and hazard modeling 4. Species distribution modeling
Monitoring	Describe any research or monitoring activities you propose to undertake as part of your SAP proposal. These activities may include plans to monitor and evaluate the results of mitigation over time to ensure that the intended outcomes are achieved.
Environmental Protection Measures	Describe environmental protection measures that are proposed that are designed to avoid, minimize, and/or mitigate adverse effects on sensitive biological resources or habitats.
Presentation of Information	● Provide reports and associated data in the format requested by BOEM and outlined in the Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf pursuant to 30 CFR Part 585 subpart F and other relevant guidance provided by BOEM. ● Provide a succinct narrative by topic, targeted to a level-of-detail proportionate to the scale of the activities you propose. ● Include names of species and impact factor tables where appropriate. ● Include maps where appropriate.

** You may combine the information provided for Biological Resources, Threatened and Endangered Species, and Sensitive Biological Resources and Habitats into an integrated section, provided you clearly indicate protected species.*

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(6): Archaeological Resources
Focus	Provide detailed information regarding the nature and location of historic properties that may be affected by your proposed site assessment activities to assist BOEM in reviewing your SAP under NEPA and Section 106 of the NHPA (36 CFR § 800).
Scope	● Describe the methods and results of surveys conducted to identify historic properties that may be affected by your proposed activities. As defined in the Section 106 regulations at 36 CFR § 800.16(l)(1), historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places, which is maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to or located within such properties. This term also includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization (as defined at 36 CFR § 800.16) and that meet the National Register criteria. ● As defined in the Section 106 regulations at 36 CFR § 800.16(d) the area of potential effects (APE) means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.
Baseline Information	● Provide a detailed description of the methods and results of surveys conducted to identify historic properties within the APE. These geographic areas include, but may not be limited to: 1. The depth and breadth of the seabed potentially affected by any bottom-disturbing activities; and 2. The onshore viewshed from which meteorological structures would be visible. ● The APE is specific to the activities proposed in the SAP; therefore, not all of the areas described above may be relevant for your proposed site assessment activities. For example, meteorological buoys may have limited or no visibility from onshore locations and therefore may not include an onshore APE. ● For the identification of historic properties within the seabed portion of the APE, BOEM recommends that a historic property identification survey be conducted in accordance with BOEM's Guidelines for Providing Archaeological and Historic Property Information.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(6): Archaeological Resources
	● For the identification of historic properties within state submerged lands, within the onshore viewshed, and within onshore terrestrial areas, a historic property identification survey(s) should be conducted and reported following the guidance of the relevant SHPO. If the APE is located on tribal lands, historic property identification survey(s) should be conducted and reported following the guidance of the Tribal Historic Preservation Officer (THPO), if the tribe has designated such an official. The term "tribal land" is defined at 36 CFR 800.16(w) to mean all lands within the exterior boundaries of any Indian reservation and all dependent Indian communities.
Impacting Factors	● Activities that disturb the sea bottom—indicate the nature, intensity, extent, and duration of disturbances to the sea bottom that may affect historic properties. ● Activities that disturb the ground—indicate the nature, intensity, extent, and duration of disturbances to the ground that may affect historic properties. ● Visual impacts.
Other Information Need	Additional site-specific information may be requested for compliance with NEPA or NHPA, depending on the nature of the survey results. This may include requests for additional information to verify the presence of historic properties, to evaluate National Register eligibility of identified properties, and/or to resolve adverse effects to historic properties.
Monitoring	Describe any monitoring activities that you propose to undertake as part of your proposed site assessment activities.
Environmental Protection Measures	● Describe protection measures that are proposed as part of your project that are designed to minimize potential effects to historic properties. ● Report recommended avoidance measures and buffers from potential historic properties (including side scan sonar targets, magnetometer anomalies, sub-bottom reflectors, or other data that may indicate the presence of a potential historic property). ● Report how proposed site assessment activities will be conducted to adequately protect known or potential historic properties.
Presentation of Information	● Provide reports and associated data in the format requested by BOEM and outlined in the Guidelines for Providing Archaeological and Historic Property Information pursuant to 30 CFR Part 585, the Guidelines for Submission of Spatial Data for Atlantic Offshore Renewable Energy Development Site Characterization Surveys, and/or other relevant guidance provided by BOEM or SHPOs.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(6): Archaeological Resources
	• For meteorological towers or buoys, provide installation maps or diagrams showing the estimated locations, types, and sizes of anchors or barge placement that will be used during installation activities. Include any areas identified for avoidance. For buoys, provide information on proposed anchoring locations, including clear description and illustration of the seafloor that could be disturbed by anchor chain sweep or drag and a detailed description of all ground tackle and mooring methods that may be employed for the installation of site assessment equipment or structures.

Post-construction maps that show all areas of seafloor impacts with precise locations may be necessary after installation and should include any areas that were identified for avoidance.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(7): Social and Economic Resources
Focus	Describe the onshore economic baseline of the coastal areas that may be affected by your site assessment activities. Describe the context of existing socioeconomic activities and resources and extant demographic and economic patterns for the proposed site assessment activities.
Scope	Describe what socioeconomic activity and resources in the onshore and coastal environment are affected commensurate with the level of impact by your proposed site assessment activities. For example, meteorological buoys may have limited or no visibility from onshore locations and therefore may not include a Visual Impact Assessment (VIA).
Baseline Information	Identify and characterize: ● Major industries (onshore and offshore) that may be affected by your proposed site assessment activites (e.g., employment sectors like fishing and tourism). ● Commercial and recreational fisheries, recreational resource use patterns, employment and demographic patterns (particularly those related to environmental justice considerations), and transportation use patterns that would be affected by your proposed site assessment activities.
Impacting Factors	● Activities that may displace or impact the local economy such as, but not limited to, activities that displace or impact fishing, recreation, and tourism activities. ● Temporary or permanent changes in aesthetic quality of resources and experiences. ● Influx of non-local employees that may impact housing availability. ● Activities associated with your proposed site assessment activities at port or marina that are not characteristic with current use.
Other Information Need	● If your operating facilities are visible from the shoreline, BOEM recommends that you submit a VIA as part of your SAP to evaluate:

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(7): Social and Economic Resources
	1. Visual impacts from variable heights at and above the beach and shoreline; 2. Visual impacts from variable heights at and above known protected areas (see 30 CFR § 585.627(a)(5) and (6)); 3. Visual impacts from variable heights at and above potential places or areas that are eligible for entry onto historic lists; 4. Land cover types or frequented locations along the coastal area that are not directly on the beach; 5. How seasonal sun angles, times of day, and meteorological conditions affect the above; and 6. The potential visual impacts to any coastal prehistoric or historic resources that is listed, eligible, or potentially eligible for listing on the National Register of Historic Places. ● If your operating facilities are not visible from the shoreline, BOEM recommends that you include a statement indicating this, as well as a brief justification of the method used to determine the fact that the facilities are not visible from shore.
Monitoring	Describe any monitoring activities you propose to undertake as part of your SAP proposal.
Environmental Protection Measures	● Describe environmental protection measures that are proposed as part of your project that are designed to minimize adverse effects on social and economic resources. ● Identify implementation of Fisheries Best Management Practices in Attachment B.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(8): Coastal and Marine Uses
Focus	Describe all known current air space, sea surface, subsurface, and sea bottom uses of state and OCS waters nearest to your proposed project.
Scope	Describe existing uses of areas where site assessment activities are taking place. Existing uses include points (e.g., navigation buoys) and zones (e.g., dredge material disposal sites).
Baseline Information	● Describe how your site assessment activities would be able to co-exist with any other authorized use of the OCS and onshore infrastructure (e.g., ports). ● Map the coastal and marine uses, including navigational traffic patterns, military activities, etc. Describe the intensity or seasonality of use. ● Include commercial or military air ascent or descent corridors if potentially impacted by SAP activities.
Impacting Factors	● Activities that may cause conflict with temporal and seasonal space use by other authorized users of the coastal zone or OCS. ● Introduction of navigational hazards.
Other Information Need	● Integrated maps and descriptions of extant coastal and marine use patterns defined by intensity and seasonality in your project area. ● If safety zones are expected to be requested during deployment, their size and duration. ● A geo-referenced (GIS-type) 3-D analysis of your facilities together with all other authorized users of OCS air, or water surface, column, and bottom space in context of temporal or seasonal use pattern, if appropriate for SAP activities. ● A Navigational Safety Risk Assessment is recommended in accordance with the Navigation and Vessel Inspection circular (NVIC) 02-07, "Guidance on the Coast Guard's Roles and Responsibilities for Offshore Renewable Energy Installations if you are placing objects in high traffic areas.
Monitoring	Describe any monitoring activities you propose to undertake as part of your SAP proposal.
Environmental Protection Measures	Describe environmental protection measures that are proposed that are designed to minimize adverse effects on other coastal and marine uses. ● Clear indication of discussions with USCG and DoD should be identified (e.g., plans for issuance of local notice to mariners) ● Adherence to lighting and marking best practices and application for Private Aid to Navigation

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(9): Consistency Certification
Focus	Provide CZMA consistency certification if required.
Scope	● Affected state(s) may require that your project be consistent to the maximum extent practicable with the enforceable policies of their state Coastal Management Plan (CMP) (15 CFR Part 930). ● Federal consistency must be certified prior to SAP approval.
Baseline Information	● If BOEM previously prepared a consistency determination (CD) that covered site assessment activities, a separate consistency certification may not be required[1]. However, if you submit a SAP that shows changes in impacts from those previously considered in the CD, you may be subject to a new consistency review. ● If BOEM has not prepared a CD, you must submit a copy of the SAP, consistency certification, and necessary data and information, pursuant to 15 CFR Part 930, subpart D, to BOEM and the applicable State CZMA agency or agencies at the same time. ● If BOEM has not prepared a CD, you must submit a copy of the SAP, consistency certification, and necessary data and information, pursuant to 15 CFR Part 930, subpart E, to BOEM. After BOEM has determined that all information requirements for the SAP are met, it will forward to the applicable State CZMA agency or agencies one paper copy and one electronic copy of the SAP, consistency certification, and necessary data and information required under 15 CFR Part 930, subpart E. ● You should discuss any decommissioning of bottom-founded site assessment facilities in your consistency certification submittal. To verify compliance with each applicable state's approved CMP, you must include one paper copy and one electronic copy of the consistency certification for the project, including the required information and analysis, pursuant to 30 CFR § 585.612.
Impacting Factors	Conducting site assessment activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of each applicable state's CMP.

[1] The requirement under 30 CFR § 585.612 to submit a Consistency Certification to the State will only apply if BOEM has not previously reviewed the proposed site assessment activities pursuant to CZMA. In such an event, BOEM will review the activities in your SAP and follow the process outlined in 30 CFR § 585.611 to determine whether further consistency review is required.

Parameter	SITE ASSESSMENT PLAN 30 CFR § 585.611(b)(10): Other Resources, Conditions, and Activities
Focus	Depending on the nature and potential impacts of your proposed site assessment activities, BOEM may impose additional informational requirements for your SAP.
Scope	If your proposed site assessment activities presents environmental impacts that are novel or imprecisely understood, BOEM may request additional data or information in order to complete the environmental analysis and to support the necessary consultations with other state and Federal agencies. Therefore, BOEM strongly recommends that you consult with BOEM before submitting a SAP.
Information Need	Contact the appropriate BOEM Regional Office for more information.
Impacting Factors	Contact the appropriate BOEM Regional Office for more information.
Monitoring	Contact the appropriate BOEM Regional Office for more information.
Environmental Protection Measures	Contact the appropriate BOEM Regional Office for more information.

Attachment B: Best Management Practices

Source: Establishment of an OCS Alternative Energy and Alternate Use Program, Record of Decision, Dec. 2007. U.S. Department of the Interior, Bureau of Ocean Energy Management, Regulation and Enforcement, Washington, D.C.

In 2007, the Bureau of Ocean Energy Management (BOEM) prepared a programmatic environmental impact statement (PEIS) to support the establishment of the Alternative Energy and Alternate Use Program. The Record of Decision (ROD) for the programmatic environmental impact statement adopted Best Management Practices (BMPs) that may be applicable to a range of renewable energy projects. BOEM has clarified these BMPs through guidance documents available at *https://www.boem.gov/Regulatory-Development-Policy-and-Guidelines/*. Check this website prior to developing your SAP.

Since 2007, reviews of Site Assessment Plans (SAPs) have resulted in the identification of additional BMPs recommended for metocean buoys. The BMPs applicable to site assessment activities are included below for your reference to assist you in preparing your SAP for submission. Upon request, BOEM will assist you in determining which of these policies, BMPs, and latest revisions are appropriate for a specific lease, easement, or right-of-way.

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Preconstruction Planning		
Lessees shall minimize the area disturbed by preconstruction site monitoring and testing activities and installations.		Buoys and Towers
Lessees shall contact and consult with the appropriate affected Federal, state, and local agencies early in the planning process.	Specific to National Historic Preservation Act (NHPA), BOEM, as the lead Federal agency, has the responsibility to consult with the State Historic Preservation Offices (SHPOs), tribal governments and other parties. However, BOEM encourages Lessees to coordinate with stakeholder groups early in the planning process (e.g., seeking technical guidance from SHPOs). Additional guidance is available in BOEM's Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585.	Buoys and Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Lessees shall consolidate necessary infrastructure requirements whenever practicable.		Buoys and Towers
Lessees shall develop a monitoring program to ensure that environmental conditions are monitored during construction, operation, and decommissioning phases. The monitoring program requirements, including adaptive management strategies, and shall be established at the project level to ensure that potential adverse impacts are mitigated.	It is expected that a monitoring program would be commensurate with the potential impacts from the proposed SAP activity. A monitoring plan for a buoy might confirm deployment location and ensure debris is removed after decommissioning. Expectations would be similar for a tower but may include additional monitoring, such as marine mammal monitoring during pile driving.	Buoys and Towers
Seafloor Habitats		
Lessees shall conduct seafloor surveys in the early phases of a project to ensure that the alternative energy project is sited appropriately to avoid or minimize potential impacts associated with seafloor instability or other hazards.	The results of seafloor surveys are necessary to confirm sensitive seafloor features are not impacted. The level of detail should be commensurate with the potential level of impact.	Buoys and Towers
Lessees shall conduct appropriate pre-siting surveys to identify and characterize potentially sensitive seafloor habitats and topographic features.	The results of seafloor surveys are necessary to confirm sensitive seafloor features are not impacted. The level of detail should be commensurate with the potential level of impact.	Buoys and Towers
Lessees shall avoid locating facilities near known sensitive seafloor habitats, such as coral reefs, hard-bottom areas, and chemosynthetic communities.		Buoys and Towers
Lessees shall avoid anchoring on sensitive seafloor habitats.		Buoys and Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Lessees shall reduce scouring action by ocean currents around foundations and to seafloor topography by taking all reasonable measures and employing periodic routine inspections to ensure structural integrity.		Buoys and Towers
Lessees shall avoid the use of explosives when feasible to minimize impacts to fish and other benthic organisms.		Towers
Marine Mammals		
Lessees shall evaluate marine mammal use of the proposed project area and design the project to minimize and mitigate the potential for mortality or disturbance. The amount and extent of ecological baseline data required will be determined on a project-by-project basis.	See BOEM's Guidelines for Providing Information on Marine Mammals and Sea Turtles at *https://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/Regulatory_Information/BOEM_Renewable_MMandST_Guidelines.pdf*	Towers
Lessees shall evaluate marine mammal use in the area of the proposed project and include a monitoring strategy for the construction and operational phases of the project. The amount and extent of monitoring will be determined on a project-by-project basis.	See information on BOEM's best management practices workshop for protected species at *https://www.boem.gov/BMP-Workshop-Protected-Species/*	Towers
Vessels related to project planning, construction, and operation shall travel at reduced speeds when assemblages of cetaceans are observed, and maintain a reasonable distance from whales, small cetaceans, and sea turtles as determined during site-specific consultations.	See Addendum C of your lease/grant, "Vessel Strike Avoidance Measures" for most up-to-date guidance on this BMP.	Buoys and Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Lessees shall minimize potential vessel impacts to marine mammals and turtles by requiring project-related vessels to follow the National Marine Fisheries Service (NMFS) Regional Viewing Guidelines while in transit. Operators shall be required to undergo training on applicable vessel guidelines.	See Addendum C of your lease/grant, "Vessel Strike Avoidance Measures" for most up-to-date guidance on this BMP.	Buoys and Towers
Lessees shall use the best available mooring systems using buoys, lines (chains, cables, or coated rope systems), swivels, shackles, and anchors that prevent any potential entanglement or entrainment of marine mammals and sea turtles, while ensuring the safety and integrity of the structure or device.	Since the 2007 PEIS, BOEM has further clarified what constitutes a negligible entanglement risk. Any structures or devices attached to the seafloor for periods greater than 24 hours should use best available designs—for example, using coated rope, rubber sleeves, weak-links, chains, cables, and anchoring systems to reduce entanglement or entrapment of protected species. Any attached equipment should be attached by a shackle and the attachment line should be made as short as possible and inside a rubber sleeve for rigidity.	Buoys and Towers
Lessees shall take efforts to minimize disruption and disturbance to marine life from sound emissions, such as pile driving, during construction activities.	See the data synthesis on construction and operation noise at *https://www.boem.gov/ESPIS/5/5413.pdf* and the noise quieting technology report at *https://www.boem.gov/ESPIS/5/5377.pdf*	Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Lessees shall avoid and minimize impacts to marine species and habitat in the project area by posting on-site a qualified observer, approved by BOEM and NMFS, during construction activities.	Since 2007, national standards for protected species observer standards have been published. See the standards at *https://www.fisheries.noaa.gov/resource/document/national-standards-protected-species-observer-and-data-management-program*	Towers
Fish Resources and Essential Fish Habitat		
Lessees shall conduct pre-siting surveys (may use existing data) to identify important, sensitive, and unique marine habitats in the vicinity of the projects and design the project to avoid, minimize, or otherwise mitigate adverse impacts to these habitats.	The results of surveys will confirm potential impacts to fish and essential fish habitat (EFH). The level of detail should be commensurate with the potential level of impact. For example, both meteorological towers and buoys could potentially impact EFH, but towers may also impact fish during pile driving.	Buoys and Towers
Lessees shall minimize construction activities in areas containing anadromous fish during migration periods.		Towers
Lessees shall minimize seafloor disturbance during construction and installation of the facility and associated infrastructure.		Buoys and Towers
Sea Turtles		
Lessees shall minimize potential vessel impacts to marine mammals and sea turtles by requiring project-related vessels to follow the NMFS Regional Viewing Guidelines while in transit. Operators shall be required to undergo training on applicable vessel guidelines.	Regional information from the NMFS can be found for the at *https://www.greateratlantic.fisheries.noaa.gov/protected/shipstrike/doc/guidelines_placard_high.pdf* and *http://sero.nmfs.noaa.gov/protected_resources/section_7/guidance_docs/documents/copy_of_vessel_strike_avoidance_february_2008.pdf*	Buoys and Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Lessees shall take efforts to minimize disruption and disturbance to marine life from sound emissions, such as pile driving, during construction activities.	See the data synthesis on construction and operations noise at *https://www.boem.gov/ESPIS/5/5413.pdf* and the noise quieting technology report at *https://www.boem.gov/ESPIS/5/5377.pdf*	Towers
Lessees shall use the best available mooring systems using buoys, lines (chains, cables, or coated rope systems), swivels, shackles, and anchors that prevent any potential entanglement or entrainment of marine mammals and sea turtles while ensuring the safety and integrity of the structure or device.	Since the 2007 PEIS, BOEM has further clarified what constitutes a negligible entanglement risk. Any structures or devices attached to the seafloor for periods greater than 24 hours should use best available designs, for example, using coated rope, rubber sleeves, weak-links, chains, cables, and anchoring systems to reduce entanglement or entrapment of protected species. Any attached equipment should be attached by a shackle and the attachment line be made as short as possible and inside a rubber sleeve for rigidity.	Buoys and Towers
Lessees shall locate cable landfalls and onshore facilities so as to avoid impacts to known nesting beaches.	Since the 2007 PEIS, nesting beach critical habitat has been designated for loggerhead sea turtles. See nesting beach information at *https://www.fws.gov/northflorida/seaturtles/2014_Loggerhead_CH/Terrestrial_critical_habitat_loggerhead.html* Critical habitat for nearshore reproductive areas and migratory areas was also designated. As identified as potential impacts in the final rule, the construction and lighting of offshore structures on designated critical habitat should be evaluated, and any potential impacts	Buoys and Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
	on these areas should be minimized. See marine critical habitat information at *http://www.nmfs.noaa.gov/pr/species/turtles/criticalhabitat_loggerhead.htm*	
Avian Resources		
The lessee shall evaluate avian use in the project area and design the project to minimize or mitigate the potential for bird strikes and habitat loss. The amount and extent of ecological baseline data required will be determined on a project-to-project basis.	See avian guidelines: *https://www.boem.gov/Avian-Survey-Guidelines/*	Buoys and Towers
Lessees shall take measures to reduce perching opportunities.	See p. 71 "Standard Operating Conditions", #2. *https://www.boem.gov/VOWTAP-EA/*	Buoys and Towers
Lessees shall comply with Federal Aviation Administration (FAA) and USCG requirements for lighting while using lighting technology (e.g., low-intensity strobe lights) that minimize impacts to avian species.	See "Guidelines for Preparation of a Plan for Lighting and Marking of Structures Supporting Renewable Energy Development (Lighting and Marking Plan)" to be published in 2019. For any additional lighting, see p. 71 "Standard Operating Conditions", #1c. *https://www.boem.gov/VOWTAP-EA/*	Buoys and Towers
Acoustic Environment		
Lessees shall take efforts to minimize disruption and disturbance to marine life from sound emissions, such as pile driving, during construction activities.		Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Fisheries		
Lessees shall work cooperatively with commercial/recreational fishing entities and interests to ensure that the construction and operation of a project will minimize potential conflicts with commercial and recreational fishing interests.	See Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishermen on the Atlantic Outer Continental Shelf, OCS Study BOEM 2014-654, *www.boem.gov/OCS-Study-BOEM-2014-654*	Buoys and Towers
Lessees shall review planned activities with potentially affected fishing organizations and port authorities to prevent unreasonable fishing gear conflicts. Lessees shall minimize conflict with commercial fishing activity and gear by notifying registered fishermen of the location and time frame of the project construction activities well in advance of mobilization with updates throughout the construction period.	This includes simple things like avoiding placement of obstructions in heavily trawled areas and providing final deployment coordinates for buoys and towers, as well as coordinating static gear removal during survey work. See Collaborative Fisheries Planning for Virginia's Offshore Wind Energy Area, OCS Study BOEM 2016-040, *www.boem.gov/VWEA-Final-Report*	Buoys and Towers
Lessees shall use practices and operating procedures that reduce the likelihood of vessel accidents and fuel spills.		Buoys and Towers
Lessees shall avoid or minimize impacts to the commercial fishing industry by marking applicable structures (e.g., wind turbines, wave generation structures) with USCG-approved measures (such as lighting) to ensure safe vessel operation.	See "Guidelines for Preparation of a Plan for Lighting and Marking of Structures Supporting Renewable Energy Development (Lighting and Marking Plan)," to be published in 2019.	Buoys and Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Coastal Habitats		
Lessees shall avoid hard-bottom habitats, including seagrass communities and kelp beds, where practicable, and restore any damage to these communities.		Buoys and Towers
Lessees shall implement turbidity reduction measures to minimize effects to hard-bottom habitats, including seagrass communities and kelp beds, from construction activities.		Buoys and Towers
Lessees shall minimize effects to seagrass and kelp beds by restricting vessel traffic to established traffic routes.		Buoys and Towers
Transportation and Vessel Traffic		
Lessees shall site alternative energy facilities to avoid unreasonable interference with major ports and United States Coast Guard (USCG)-designated Traffic Separation Schemes.	See USCG Attachment 1: Marine Planning Guidelines in Atlantic Port Access Route Study, *www.regulations.gov/document?D=USCG-2011-0351-0144*	Buoys and Towers
Lessees shall meet Federal Aviation Administration (FAA) guidelines for sighting and lighting of facilities.	For projects outside of FAA jurisdiction (greater than 12 nm from shore) lessees are encouraged to follow BOEM's "Guidelines for Preparation of a Plan for Lighting and Marking of Structures Supporting Renewable Energy Development (Lighting and Marking Plan)" to be published in 2019.	Buoys and Towers
Lessees shall place proper lighting and signage on applicable alternative energy structures to aid navigation per USCG circular navigation and vessel inspection circular 07-02 (USCG 2007) and	Be advised that as of January 2019, USCG is working on an updated version of NVIC 07-02, so please check with USCG for potential changes.	Buoys and Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
comply with any other applicable USCG requirements.		
Lessees shall conduct all necessary studies of potential interference of proposed wind turbine generators with commercial air traffic control radar systems, national defense radar systems, and weather radar systems, including identification of possible solutions.		Towers
Visual Resources		
Lessees for wind projects shall address key design elements, including visual uniformity, use of tubular towers, and proportion and color of turbines.		Towers
Lessees for wind projects shall use appropriate viewshed mapping, photographic and virtual simulations, computer simulation, and field inventory techniques to determine with reasonable accuracy the visibility of the proposed project. Simulations should illustrate sensitive and scenic viewpoints.		Towers
Lessees shall comply with FAA and USCG requirements for lighting while minimizing the impacts through appropriate application.	For projects outside of FAA jurisdiction (greater than 12 nm from shore) lessees are encouraged to follow BOEM's "Guidelines for Preparation of a Plan for Lighting and Marking of Structures Supporting Renewable Energy Development (Lighting and Marking Plan)" to be published in 2019.	Towers
Lessees shall seek public input in evaluating the visual site design elements of proposed wind energy facilities.		Towers

Best Management Practice Per 2007 PEIS and Updated BMPs	Updates/References/Additional Guidance/Examples	Applicability
Within FAA guidelines, directional aviation lights that minimize visibility from shore should be used.	In addition, BOEM recommends the use of radar activation technologies, such as Aircraft Detection Lighting Systems (ADLS), to minimize visual impacts from aviation lighting.	Towers
Operations		
Lessees shall prepare waste management plans, hazardous material plans, and oil spill prevention plans, as appropriate, for the facility.		Buoys and Towers

Attachment C: Sample SAP Template for Metocean Buoys

This template is intended for use on site assessment activities that involve the deployment of one or more non-complex metocean buoys. Use of this template is not required and is for reference and guidance only.

1.0 EXECUTIVE SUMMARY –

Provide a summary of your proposal. This includes the type of buoy(s), number of buoys or other measuring devices such as an Acoustic Doppler Current Profiler (ADCP) and the location of the buoys. Discuss when you anticipate installation and decommissioning and where these activities will be staged.

2.0 INTRODUCTION –

- *Brief narrative description of proposed activities including 1) what you propose to do, and 2) where you propose to do it*
- *A map/chart of the proposed site assessment location(s) within the lease area and in relation to shore. If more than one location is proposed, please provide a descriptor or nomenclature for the locations (e.g., Site Assessment Plan (SAP) Area 1, Buoy A)*

2.1 Authorized Representative and Designated Operator, if applicable

- *Name of Operator or Authorized Representative, phone number, address, and email*

2.2 Certified Verification Agent (CVA), if applicable

- *Name of CVA and contact information, including phone number, address, and email*

3.0 CONFORMANCE WITH THE REGULATIONS, COMMERCIAL LEASE AND THE EA, EIS, ROD etc. –

- *Provide a table listing each outside agency permit that is required and the status of the permit application (585.610(13);585.611,if applicable; See example Table 1)*
- *Provide a table showing each lease stipulation and/or Standard Operating Condition that is applicable to your project including number of requirement, description, explanation of how you have complied, and where in the SAP the information is located.*
- *Provide a table showing each regulatory requirement in 30 CFR 585.610 (See example Table 2)*

3.1 Project Equipment

3.1.1 Equipment Proposed

- *A description and illustration of the specific equipment proposed for site assessment activities, including, but not limited to: commercial names, dimensions, height above water line, lighting/marking, types of meteorological and oceanographic instrumentation.*

3.1.2 Mooring Design

- *A description and illustration of how the proposed equipment will be secured to the seafloor, including, but not limited to: types, diameters, and lengths of mooring materials, dimensions and weights of anchor systems and seafloor configuration and spacing of anchoring devices.*

3.1.3 Bottom Disturbance

- *A description and illustration of all proposed bottom disturbing activities, including description of the maximum horizontal and vertical extent of the seafloor impacts. This should include consideration of:*
  - *The maximum vertical impact from clump weights or other anchoring devices sinking into the seafloor based on their size, weight, and seabed conditions;*
  - *The maximum horizontal radius of anchor chain sweep that could contact the seafloor from the mooring and anchoring design; and,*
  - *Any impacts from installation including vessel anchoring, chain or equipment placement on the seafloor.*

3.2 Schedule

- *When you plan to deploy and how long you anticipate the buoy will be in place*

3.3 Site Location

- *A table showing the exact geographic location (Latitude/Longitude coordinates) of your buoy and water depth where you propose to install your buoy.*

4.0 DEPLOYMENT / INSTALLATION

4.1 Overview of Installation and Deployment Activities

- *Anticipated duration of buoy installation*
- *Description of installation process including most likely staging location, number of stages, number and type of vessels to be used.*

4.2 Protected Species Avoidance

- *What measures will you implement to avoid and/or minimize potential incidental take. This should include a discussion on how you will implement the conditions of approval of your lease related to protected species*

4.4 Reporting Requirements 585.615 (a)

- *Describe how you will meet reporting requirements in the regulations and conditions of lease approval*

5.0 OPERATIONS AND MAINTENANCE

5.1 Data Collection and Operations for Metocean Data

- *Provide a description of data storage, transmission, and accessibility, and methods of monitoring for potential buoy faults or failures*

5.2 Maintenance Activities

- *Provide a description of the type and frequency of maintenance that will be performed and the type of vessels that will do it*

5.3 Reporting (585.615)

- *Describe how you will meet reporting requirements including those that are required as conditions of lease approval*

6.0 DECOMMISSIONING

6.1 Overview of Decommissioning Activities (585.610(a)(11); 585.902)

- *Describe your methodologies for decommissioning and site clearance, including number and size of vessels and number of days you anticipate the decommissioning will take. The approval of a SAP does not guarantee approval of a decommissioning application. However, you may elect to submit your complete decommissioning application simultaneously with your SAP.*

6.2 Reporting

- *Describe how you will meet reporting requirements for decommissioning (585.912)*

7.0 AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES (for specific survey guidelines see https://www.boem.gov/Survey-Guidelines/)

- *Describe impacts that you anticipate to any on the resources listed below. This list is not exhaustive, and you should also describe any impacts to resources that you anticipate but that are not listed below.*
    - *Geologic Conditions*
    - *Affected Environment*
    - *Potential Impacts and Proposed Mitigation Measures*
    - *Biological Resources*
    - *Benthic and Fisheries Resources*
    - *Marine Mammals and Sea Turtles*
    - *Avian and Bat Resources*
    - *Physical Resources*
    - *Water and Air Quality*
    - *Social and Economic Resources*
    - *Archeological Resources/Historic Properties – See description in Section 9.0 below*

8.0 REFERENCES

9.0 APPENDICES AND TABLES (585.605):

Information can often be conveyed effectively in an Appendix or table. Examples of appendices that are to be included are:

- *Archeological Resources/Historic Properties Report (see Additional Information regarding Archeological Resources/Historic Properties below)*
- *Oil Spill Response Measures (see Additional Information regarding Oil Spill Response Measures below)*
- *Data Reports*
    - *Provide data, as appropriate, for geological, environmental, geophysical, biological and archaeological surveys. The survey data provided should encompass the areas of impacts and bottom disturbance.*

Examples of tables that might be included are:

- *Permit table (see Table 1 below) – Provide crosswalk for other agencies permits that are required for your project*
- *Regulatory requirements table (see Table 2 below) – Provide crosswalk for regulatory requirements that are applicable to your buoy*

Table 1 – Permit Table (Example only)

Permitting Agency	Applicable Permit or Approval	Statutory Basis	Regulations	Applicant Requirements
US Army Corps of Engineers	Category General Permit 1	Clean Water Act 33 U.S.C. 134	33 CFR § 320	ABC company received permit number 1234 on January 1, 2017.

Table 2 – Regulatory Requirements (Example only)

Regulatory Requirement	Lessee Response
585.610(a)(1) Contact Information	ABC company 1234 Main St Town, State abc@gmail.com Contact: John Doe

Additional Information Regarding Archeological Resources/Historic Properties

There are 2 distinct elements for addressing Archeological Resources/Historic Properties:

1) The SAP should include a brief summary of the results of the archaeological survey conducted in support of the SAP. Please do not include the location of known or potential archaeological sites in the SAP; this information should be presented in the complete archaeological report and included as a separate appendix to the SAP. Please additionally provide a brief statement regarding the potential onshore visibility the proposed site

assessment equipment including consideration of the height of the equipment, lighting and marking, and distance from shore, and provide the method used to reach this determination.

2) The ***Marine Archaeological Assessment Report*** should be a stand-alone document prepared in accordance with BOEM's Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585 and submitted as an appendix to the SAP or under separate cover.

Additional Information Regarding Oil Spill Response Measures

BOEM does not require an Oil Spill Response Plan to be submitted for a SAP. However, BOEM recommends that you provide the following information regarding your oil spill prevention and response obligations, and may otherwise make the provision of such information a condition of approval.

1) Information about the nature and location of the facility including a brief physical description of the facility, its location (latitude and longitude), water depth, and types and amounts of oil present. A Material Safety Data Sheet can be submitted for the oil description.
2) A list of Oil Spill Response Organization(s) (OSRO) entities that are available to execute any planned response measures and their contact information. Contracts with OSROs are not required.
3) The name of a designated point-of-contact (POC), as defined below, and an alternate POC, and their contact numbers.
4) A description of the procedures the POC will follow to notify BOEM, the OSRO and any other appropriate officials or personnel within 24 hours of a report of a spill event.
5) A description of the procedure for an annual notification drill to test the ability of the POC to communicate pertinent information regarding the facility emergency situation and the necessary response measures to an OSRO and to BOEM.
6) The address of the onshore location where the information in 1-5 is kept and any associated records.

Definition:

Oil means oil 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, and kernels.

A company POC should be an English-speaking representative of the Lessee or designated operator who is 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 officials and person providing personnel and equipment in removal operations.