



Interviews with offshore authorities: A webinar series on U.S. offshore wind regulatory issues

Regulating Construction and Operation of Offshore Renewable Energy
March 21, 2019

Save the Date:

IPF Afternoon Pre-Conference Monday, April 8, 2019



Regulating Construction and Operation Of Offshore Renewable Energy

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Winston & Strawn/Offshore Wind Business Network/
Marine Log Webinar Series

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Regulatory Overview



DOI Statutory Authority

- **Energy Policy Act of 2005 adds Outer Continental Shelf Lands Act (OCSLA) Section 8(p) – 43 U.S.C. § 1337(p)**
- **No direct legislative history**
- **Key provisions**
 - Authority to issue leases for energy on OCS other than oil and gas (catch-all)
 - Fair return to U.S. taxpayer
 - Competitive leasing is default
 - BOEM must “provide for” Section 8(p)(4) factors, including **safety, environmental protection, consideration of other ocean users (e.g., navigation, fisheries).**
- **Other parts of OCSLA apply if not specific to oil and gas.**

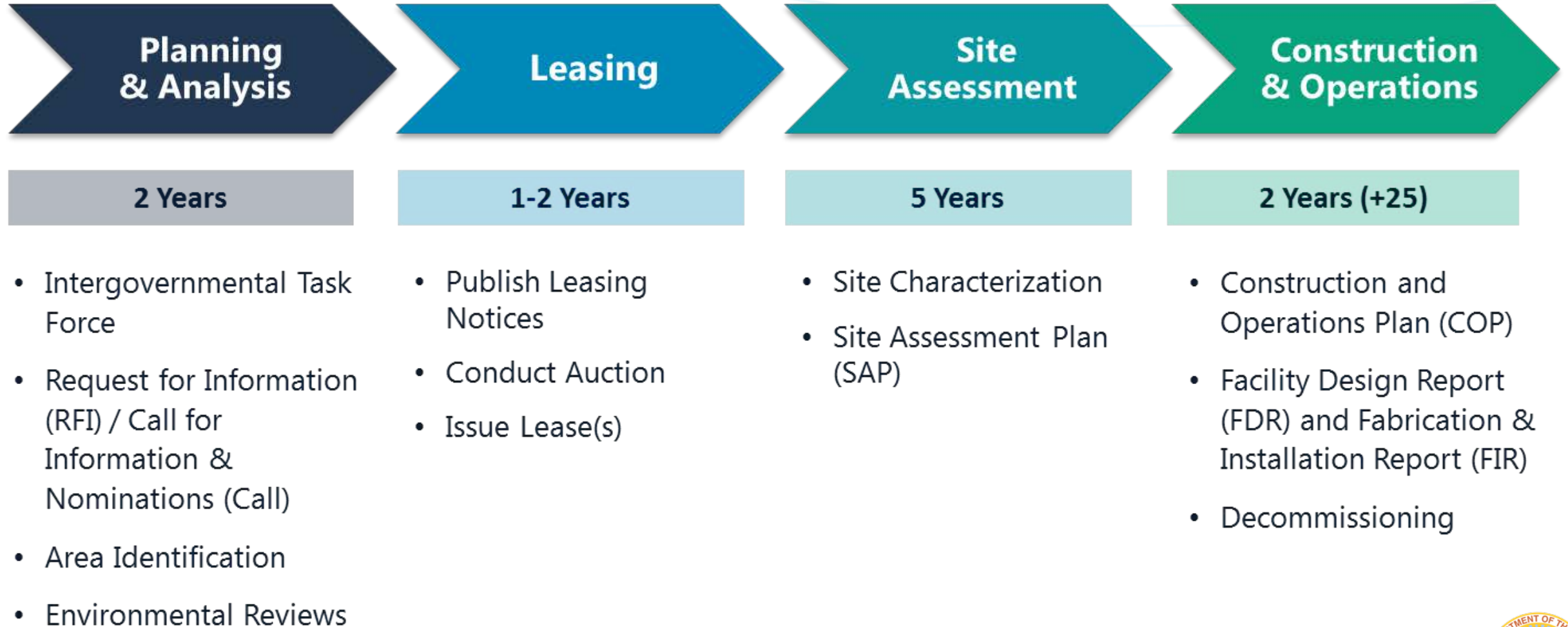
Relationship status: “It’s complicated”

- **2010** – MMS converted into BOEMRE and ONRR after Deepwater Horizon
- **2011** – BOEMRE split into BOEM and BSEE. BOEM does O&G leasing, BSEE does O&G operations (Secretary’s Order 3299A)
 - Renewable energy stays with BOEM until secretary decides to split duties.
 - BSEE consults on safety & enforcement under MOU in the meantime.
- **2019**
 - BOEM is still the regulator, with BSEE in a consulting and collaboration role.
 - With BOEM’s support, BSEE is developing health and safety guidelines.
 - BOEM & BSEE coordinate to avoid conflicting guidance.

Regulations

- **30 CFR part 585 (promulgated 2009)**
- **Largely modeled on offshore O&G regulations**
- **Streamlining proposed rule is in development**
 - Best guess: notice of proposed rulemaking in mid-2019, final rule in early 2020

Overview of Regulatory Process



COP review vs. FDR/FIR review

COP (30 CFR part 585, subpart F)

- Project design and installation description can be high level; lessee encouraged to use “envelope”
- BOEM analyzes for impacts to environment, socioeconomics, other ocean uses, safety
- NEPA applies
- CVA can review, but verification not necessary.

FDR/FIR (30 CFR part 585, subpart G)

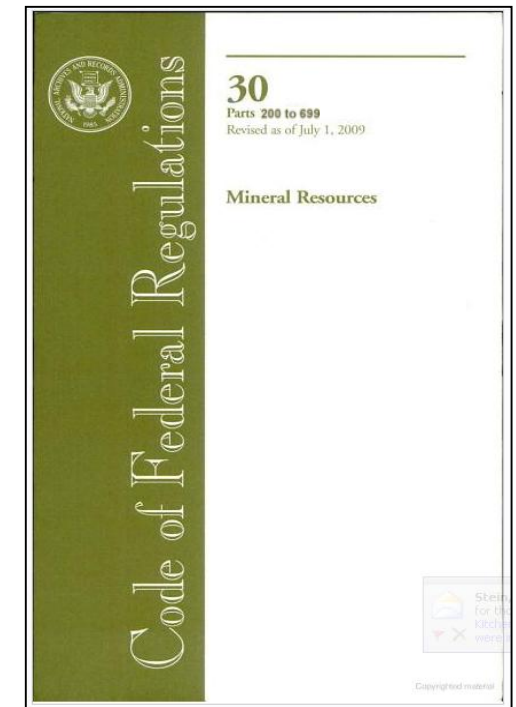
- Detailed design and installation with final specs & procedures; “envelope” has been narrowed down.
- BOEM analyzes for consistency with approved COP, good engineering practices
- Covered by COP NEPA
- CVA provides 3rd party verification

FDR/FIR and CVA Nominations



Regulations – Reporting Requirements

- 30 CFR 585 – Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf
 - 30 CFR 585. 600 – Plans and Information Requirements
 - COP, GAP, SAP (includes **CVA nomination**)
 - 30 CFR 585. 700 – Facility Design and Installation
 - **FDR, FIR (includes CVA results)**



Regulations – CVA Activation

- 30 CFR part 585, subpart F (the 600s)
- COP, GAP or SAP describe proposed activities in sufficient detail to afford environmental clearance and “**Complex and Significant**” determination.
 - A non-complex/significant decision does not excuse the developer from providing engineering designs, reports or description of deployment procedures and compliance with safety regulations
- “Complex and Significant” facilities will require third party verification (CVA) of the Design, Fabrication and Installation, CVA to be nominated as part of the Plan.
- CVA Nomination and scope of work approval will be obtained as part of the Plan approval.
- BOEM interprets regulations to allow CVA nomination prior to COP submittal, though BOEM approval of CVA prior to COP submittal requires a regulatory departure (30 CFR 585.103)
- BOEM is considering decoupling CVA nomination from plan submittal in forthcoming rulemaking

Regulations – Technical Reports

- 30 CFR 585.700 – Facility Design and Installation
- Requires the developer to submit Technical Reports (FDR)
 - **Facility Design Report:** Technical details pertinent for regulatory review ...(Design briefs, design notes/memoranda, engineering reports, engineering analysis, plans and specifications, example calculations, etc...)
 - May be submitted on project whole, or on discreet major elements of the project (Integrated OWT structure – cables – ESP/OSS)
 - Fabrication of project elements can NOT be proceed until BOEM has received the FDR/CVA reports and has no objections
 - We have guidance of what constitutes “Fabrication” vs. procurement, recommend coordination with BOEM on specific items in question

Note: BOEM encourages Developers (with CVA) to coordinate fabrication issues regarding long lead-times, procurement of standard items, submittal of multiple/discreet FDRs early on in the project. Future rulemaking may propose to clarify these issues.

Regulations – Technical Reports

- 30 CFR 585.700 – Facility Design and Installation
- Requires the developer to submit Technical Reports (FIR)
 - **Fabrication and Installation Report:** Technical details pertinent for regulatory review...(Fab/Inst Plan, Fab/Inst surveillance reports, test results, mill sheets, commissioning reports, etc...)
 - May be submitted on project whole, or on discreet major elements of the project (Integrated OWT structure – cables – ESP/OSS)
 - Installation of project elements can NOT be proceed until BOEM has received the FIR/CVA reports and has no objections
 - Specifics of certain aspects of the Installation Plan may not be available early in project development. BOEM encourages an “envelope” design process where alternative methods are described and cleared, specifics to be provided prior to installation approval.

Note: BOEM encourages Developers (with CVA) to coordinate Installation issues regarding long lead-times, procurement of specific vessels, submittal of multiple/discreet FIRs early on in the project. Future rulemaking may propose to clarify these issues.

Technical Reports – BOEM policies

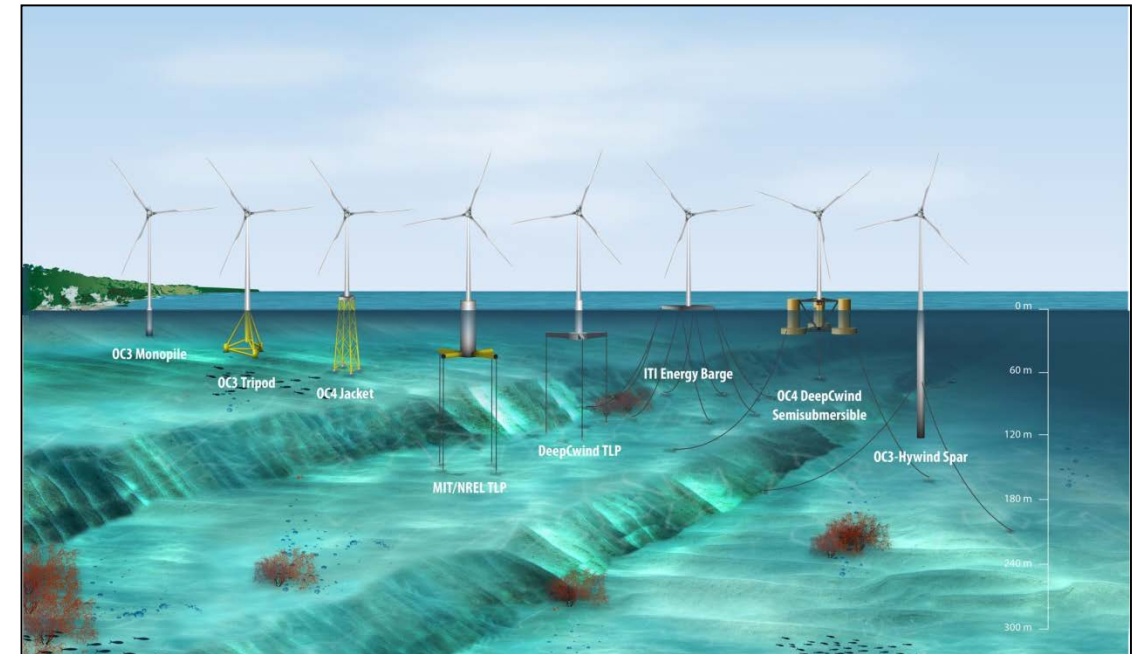
- BOEM interprets 585.700 to allow **separate FDRs/FIRs for each major component**.
 - integrated wind turbine, accessory platform, cables.
- You may **submit your FDR/FIR before COP approval** (for preliminary review), but 60 day clock won't start until COP approval. “Non-objection” will not be granted prior to COP approval.
- Definition of **“FABRICATION”**: developer assumes all business risk associated with acquisition of project components prior to FDR non-objection.
 - Fabrication **is**, the cutting, fitting, welding or assemblage of project elements of a custom design, conforming to project-specific requirements.
 - Fabrication **is not** the procurement of “off-the-shelf” parts (electrical components, ball bearings, etc.),
 - Fabrication **is not** the manufacture of type-certified components (nacelles, blades, etc.).
- BOEM intends to propose these clarifications in forthcoming rulemaking. BOEM also intends to **de-couple the link between the CVA approval and COP approval**. BOEM realizes CVA review prior to early procurement actions is critical to de-risk projects and strongly recommends developers coordinate all acquisitions of pre-FDR/FIR components with CVA/BOEM.

CVA PROGRAM – What is it?

- a program by which DOI utilizes qualified, vetted entities to perform independent third-party reviews of complex technical facility designs.

What do they do?

- verify and document that appropriate environmental and operational factors are adequately considered in the design, fabrication and installation of the facility.



Graphic credit: NREL

BOEM CVA NOMINATION

30 CFR 585.706 – CVA Nomination:

- a) The developer must nominate a CVA for BOEM approval.
 - Specify whether a design CVA or Fabrication and Installation CVA
 - The CVA must not have a conflict of interest.
 - The developer must nominate a new CVA if the approved CVA is no longer able to perform.

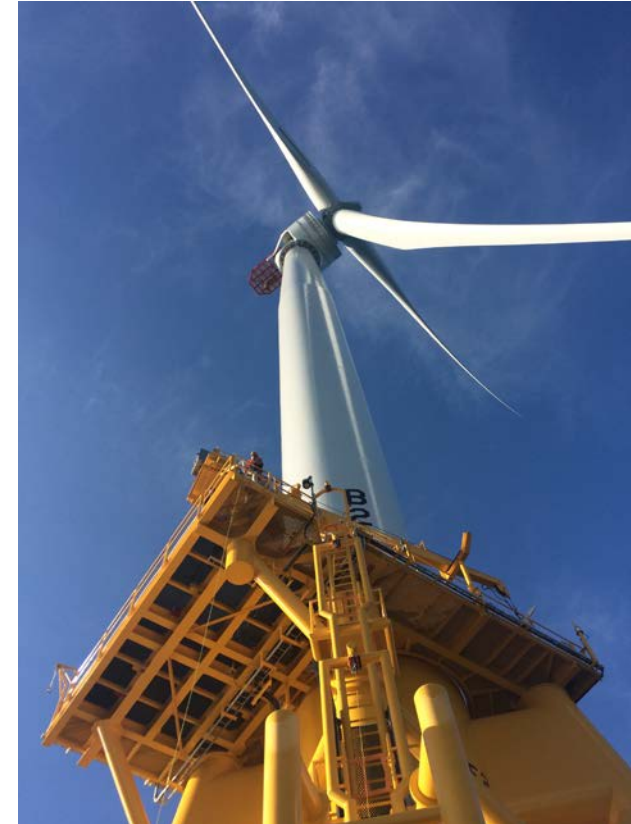
- b) For EACH nominated CVA, the developer must submit:
 - A list of all materials for review and the level of work to be performed ([Detailed SOW](#))
 - A qualifications statement including:
 - Previous experience/Technical capabilities (organization and key personnel)



BOEM CVA PROGRAM

30 CFR 585.707 – Facility Design Review:

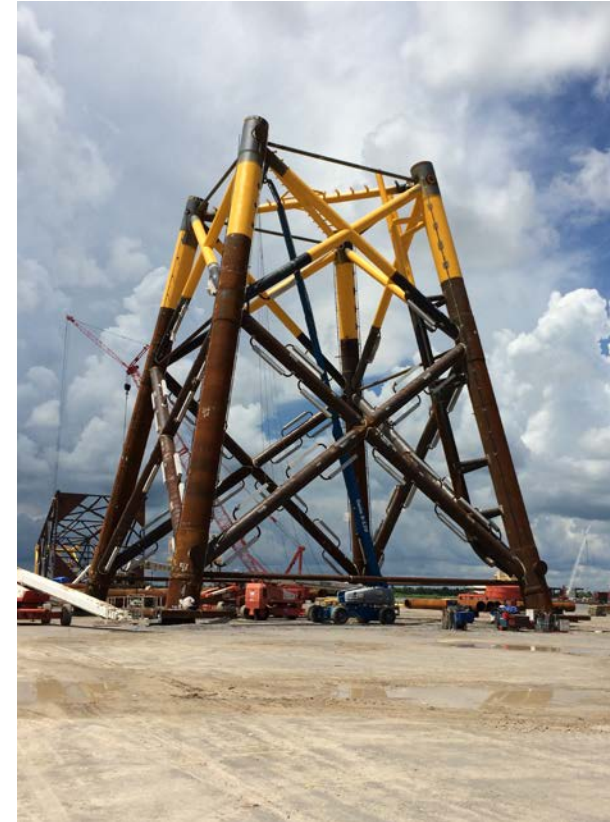
- a) The CVA must conduct an independent assessment of the design of the facility.
- b) The CVA must ~~certify~~ verify the facility design for the environmental and functional load conditions expected for the intended service life at the proposed location.
- c) For floating facilities, the CVA must also ensure that all USCG requirements for structural integrity and stability have been met.



BOEM CVA PROGRAM

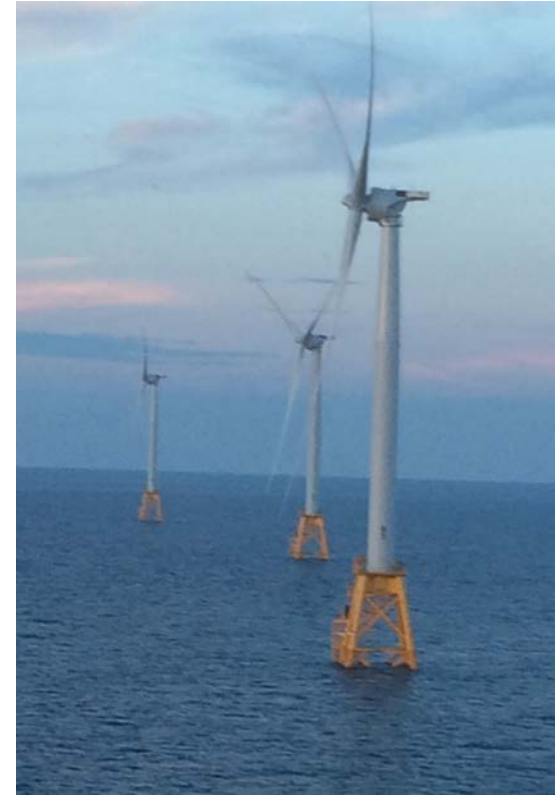
30 CFR 585.708 – Fabrication/Installation Review:

- a) The CVA must conduct an independent assessment of the fabrication and installation activities.
- b) The CVA must monitor the fabrication and installation of the facility.
 - Make periodic inspections during Fabrication
 - Make periodic inspections during Installation
- c) Inform BOEM of any incidences of nonconformance during Fabrication or Installation.



INDEPENDENT ASSESSMENT

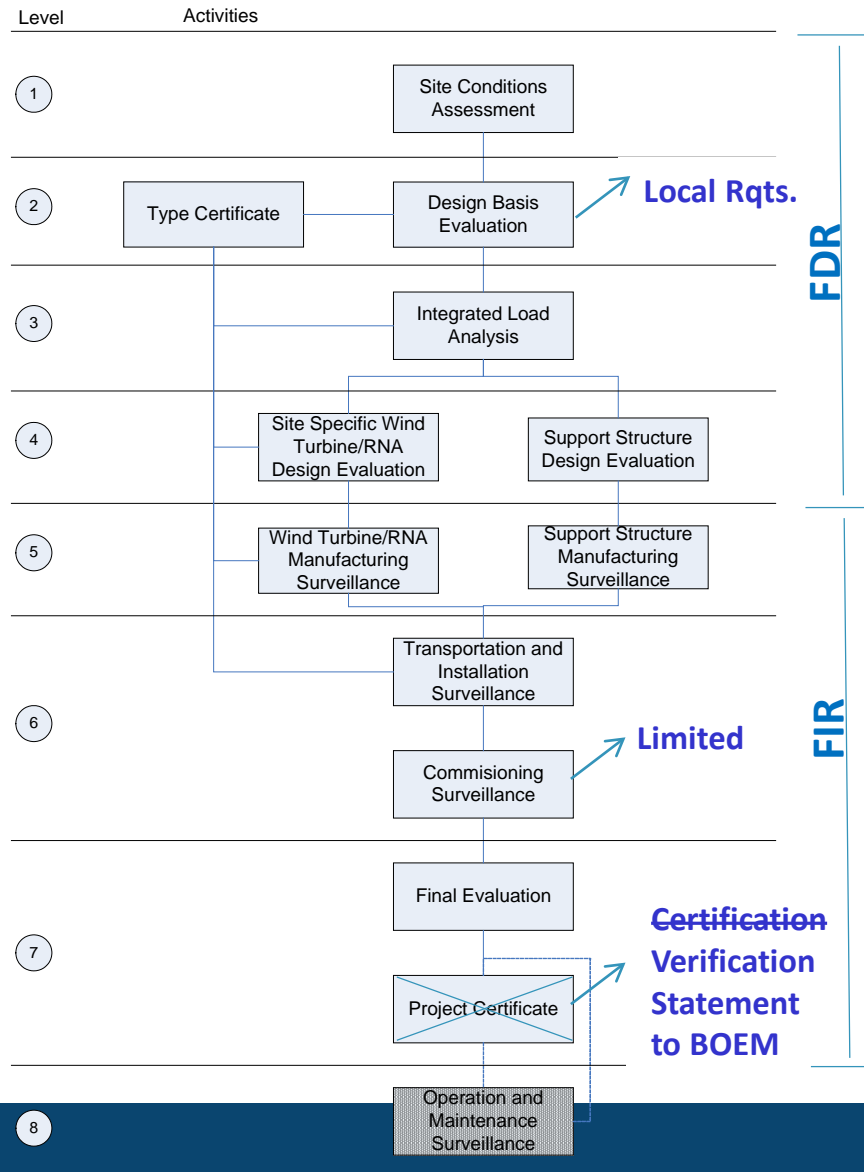
- **Site Conditions assessment:** site/project specific studies (metocean, geotechnical and geophysical, wind resource analysis, etc.), assessment of site specific hazards, etc.
- **Design Basis:** Standards, rules and codes governing your design, functional specifications/OEM requirements, type certifications, safety class, etc.
- **Tower and Support Structure:** global motions, integrated load analysis, stress levels, fatigue analysis, material types, corrosion control, etc.
- **Foundations:** piles, soil reactions, pile-soil interactions, etc.
- **Blades and Blade Controls:** blade design, braking, pitch and yaw control
- **Infield and Export/Transmission Cables:** associated connectors, crossings, appurtenances, etc.
- **Safety and Electrical Systems:** fire control, grounding, personnel lifts, etc.



CVA PROJECT OVERVIEW



Tower and Foundation are site Specific, Turbine is Standard.



Site-specific conditions

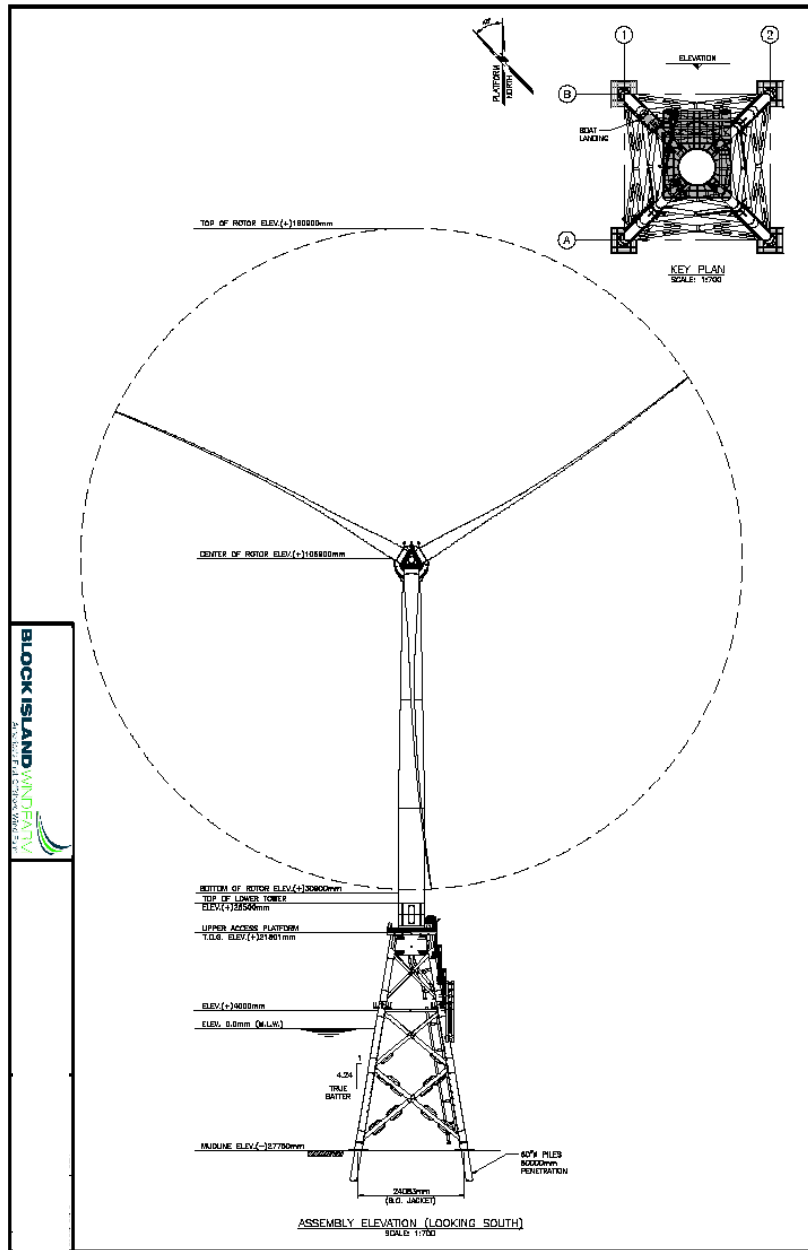
Design conditions

Load and design analysis

Surveillance (Fab, Trans, Storage, Inst, Comm.)

Reporting

* The same process applies to Cables and ESP.



5 – GE/Alstom 6MW turbines:
 Highest Elev: +594' MLLW
 Hub Height: +348' MLLW
 Mudline: -91' MLLW
 Pile Tip: -287' MLLW
 Penetration: 196'
 Diameter: 60"

Jacket Base (@ML): 80' x 80'

Tower Diameter: 22' (Base) (GE/Alstom)
 15' (Top)

Blade length: 240' (LM Wind Power)
 Blade lowest Elevation: +101 MLLW
 Blade swept area: = 4.4 acres
 = 23 times typ. res. Lot



Safety and Operations: Subpart H Safety Regulations



Federal Regulatory Roles for Safety

- **Three federal agencies with safety role on the OCS**

- **DOI (BOEM & BSEE)**

- Primary regulator for offshore renewable environmental protection and workplace safety.
- Regulates all wind farm construction and operations, and associated easements and rights-of-way, on the OCS.

- **OSHA**

- Has indicated that it will defer to DOI as the primary regulator and enforcement agency on the OCS for workplace safety and health; regulations are preempted, but will cooperate with DOI and provide expertise.

- **USCG**

- Regulates renewable energy support vessels, including installation vessels, feeders, tugs, and barges. Responsible for navigational safety, life, and property on inspected vessels.

What is Subpart H?

- **30 C.F.R. §§ 585.800-585.833**

- Covers how to conduct activities under approved plans in a manner that protects environmental and safety concerns;
- prescribes standards for developing and implementing environmental and safety management systems;
- and outlines procedures for incident reporting, inspections, and facility assessments.

Subpart H: Current Implementation

○ Conducting activities

- 30 C.F.R. §§ 585.800-803
- Approved activities must be conducted in a way that ensures safety, prevents undue harm or damage to natural resources, uses trained personnel, and complies with approved plans.
- Activities must comply with the various wildlife protection statutes—including the Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA)—and lessees and grantees must follow certain procedures if they encounter potential archeological resources.

Subpart H: Current Implementation

○ Safety Management Systems (SMS)

- ***The SMS is the primary tool by which safety and compliance will most likely and most effectively be achieved and maintained.***
- 30 C.F.R. §§ 585.810-811
- SMS is a combination of policies, procedures, and control mechanisms designed to allow an organization to meet its safety objectives in a disciplined, continually improving manner.
- Subpart H requires an SMS for all COP-permitted renewable energy facilities and SAP- and GAP-permitted facilities that BOEM deems to be complex and significant.

Subpart H: Current Implementation

- **What typically makes up an SMS?**
 - Leadership
 - Hazards Analysis
 - SOPs
 - Management of Change
 - Training
 - Contractor Management
 - Mechanical Integrity
 - Internal Auditing
 - Emergency Preparedness and Response
 - Performance monitoring and measurement
- Consensus industry standards (e.g., ISO 45001 or ANSI Z10) provide additional guidance.

Subpart H: Incident Reporting

- 30 C.F.R. §§ 585.813-816, 585.830-833
- Must timely report when equipment removed from service that was necessary for implementing an approved plan, as well as major repairs.
- Must report significant safety or environmental incidents as listed in 585.831.
- BOEM may require submission of additional information, per 585.815(c) or 585.833(c).

Subpart H: Current Implementation

○ Inspection Process

- 30 C.F.R. §§ 585.820-824
- must have ***annual self-inspection plans*** covering all facilities;
- BOEM has authority to conduct scheduled and unscheduled inspections of OCS facilities;
- still developing what inspection program will ultimately look like.

○ Facility Assessments

- 30 C.F.R. § 585.825
- Must assess structure when needed as identified in API RP 2A-WSD and mitigate if the structure does not pass the assessment – you essentially need to ensure structural integrity throughout life of facility

Subpart H: Potential Rulemaking Impacts

- **BOEM intends to propose revisions to SMS provisions (585.810-811):**
 - ***provide clarity*** regarding the type of information that must be described in the SMS;
 - ***incentivize adoption of a certified SMS*** by providing for streamlined review and oversight;
 - and ***implement SMS reporting requirements*** to track and verify that SMS remains fully functional.
- **Intent of proposed changes would be to further support the understanding among DOI, USCG, and OSHA that Subpart H represents the primary workplace health and safety regulations for OCS renewable energy operations.**

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