United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT
WASHINGTON, DC 20240-0001

Memorandum

To: Chief, Projects and Coordination Branch

From: Darryl K. François DARRYL FRANCOIS Digitally signed by DARRYL FRANCOIS Date: 2021.05.05 09:07:24 -04'00'
Chief, Engineering and Technical Review Branch

Subject: Review of Vineyard Wind 1 (VW1) Project Construction and Operations Plan (COP) for Commercial Lease OCS-A 0501

Vineyard Wind, LLC (Vineyard Wind) submitted a COP to the Bureau of Ocean Energy Management (BOEM) on December 19, 2017 for lease OCS-A 0501. Vineyard Wind proposes to install an 800-megawatt (MW) wind energy project, known as the VW1 Project, consisting of the following offshore components:

- Up to 84 Wind Turbine Generators (WTGs) placed on monopile WTG foundations connected by a network of 66kV Inter-Array Cables;
- One 800 MW conventional Electric Service Platform (ESP) or two 400 MW conventional ESPs connected by an inter-link cable; and
- Two 220kV export cables, co-located within a single Offshore Export Cable Corridor.

Vineyard Wind selected the GE Haliade-X WTG with a name plate capacity of 13 MW for the final project design. The GE Haliade has a rotor diameter of 220 meters (m) and a maximum tip height of 247.5 m, a hub height of 137.5 m and a minimum tip clearance of 27.5 m. After commissioning the VW1 project will have an operational life of up to 30 years.

The Engineering and Technical Review Branch (ETRB) subject matter experts (SMEs) reviewed the proposed facilities, project design, project activities, and fabrication and installation details in the COP and coordinated with the following agencies:

- Bureau of Safety and Environmental Enforcement (BSEE), for Safety;
- Federal Aviation Administration (FAA) & National Oceanic and Atmospheric Administration (NOAA), for radar interference; and
- The United States Coast Guard (USCG), for vessel navigation.

The SME comments and the responses from Vineyard Wind are logged in the COP review matrix on the Office of Renewable Energy Programs' shared drive [AEAU\SHARE:\ State of Massachusetts\Vineyard Wind LLC (OCS-A 0501)\COP\Submissions].

On May 10, 2019, BOEM approved the nomination of DNV, to be the Certified Verification Agent for the VW1 project, to review and to certify that the facilities would be designed, fabricated and

installed in conformance with accepted engineering practices as described in the Facility Design Report and the Facility Installation Report, pursuant to 30 CFR 585.705.

In review of the COP, ETRB determines that the technical information and supporting data submitted by Vineyard Wind: meets the requirements of 30 CFR 585.626 and is sufficient to allow the safe installation of the proposed project on the Outer Continental Shelf (OCS), does not unreasonably interfere with other uses of the OCS, uses properly trained personnel, and uses best available and safest technology, pursuant to 30 CFR 585.621.

ETRB recommends approval of the COP along with the inclusion of the following terms and conditions (T&C) (attached), and developed in consultation with BSEE, FAA, NOAA, and the USCG. The T&C are derived from the review of the information requirements in BOEM's regulation and the relevant mitigation measures identified in Appendix D of the Final Environmental Impact Statement (FEIS). The table below provides a cross-reference.

Information Requirement	**Regulation/Source**	**Terms and Condition**
▪ Shallow Hazards Review	§585.626(a)(1)	▪ Unexploded Ordnance and/or Discarded Military Munitions
▪ Geological Survey Review ▪ Geotechnical Survey Review ▪ Technical Feasibility Review	-§585.626(a)(2) -§585.626(a)(4) -§585.626(a)(6)	▪ WTG and ESP Foundations Depths
▪ Physical and Oceanographic Condition Review	-§585.626(a)(6)	▪ Foundation Scour Monitoring
▪ Cables	-§585.626(b)(7)	▪ Cable Depth ▪ Cable Routings ▪ Cable Protection Measures ▪ Cable Crossing Agreements ▪ Post Installation Cable Monitoring
▪ Certified Verification Agent Nomination	-§585.626(b)(20)	▪ Commissioning Surveillance of Safety Related Systems ▪ As-Built Drawings
▪ Radar	-§585.626(b)(23) -FEIS	▪ Onshore Radar Interference Analysis
▪ Navigation Safety Risk Assessment ▪ Lighting & Marking	-§585.626(b)(23) -§585.626(b)(23) -FEIS	▪ Conditions related to Navigational Safety
▪ Safety Management System (SMS) ▪ Oil Spill Response Plan (OSRP)	-§ 585.810 & -§ 585.254	▪ Conditions related to SMS ▪ Conditions related to OSRP

Attachment