



**U.S. Environmental Protection Agency
Region 1**

Outer Continental Shelf Air Permit:
Vineyard Wind 1, LLC

800 MW Windfarm

Offshore Renewable Wind Energy Project
Massachusetts Wind Energy Area

EPA Permit Number
OCS-R1-03-M1

Pursuant to the provisions of Section 328 of the Clean Air Act (CAA) and the Code of Federal Regulations (C.F.R.) Title 40, Part 55, the United State Environmental Protection Agency - Region 1 (EPA) is issuing a modification to the Outer Continental Shelf (OCS) air quality permit to Vineyard Wind 1, LLC (VW1). VW1 requested a modification to its existing OCS air permit to install and operate an 800 MW windfarm in the Massachusetts Wind Energy Area.

The construction and operation of the windfarm is subject to the attached permit conditions and permit limitations. This permit is effective immediately upon issuance (August 19, 2022) and shall remain in effect until it is surrendered to EPA. This modified permit (Permit #OCS-R1-03-M1) replaces all terms and conditions of the original May 19, 2021, permit (Permit #OCS-R1-03) in their entirety.

This permit does not relieve Vineyard Wind 1, LLC from the obligation to comply with applicable state and federal air pollution control rules and regulations.

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Regional Administrator

Date of Signature: August 19, 2022

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Acronyms and Abbreviations

BOEM	Bureau of Ocean Energy Management
CAA	Clean Air Act
C.F.R.	Code of Federal Regulations
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
eGRID	Environmental Protection Agency's Emissions & Generation Resource Integrated Database
EPA	United States Environmental Protection Agency
ESP	Electrical Service Platform
g/hp-hr	Grams per horsepower-hour
g/kw-hr	Grams per kilowatt-hour
HC	Hydrocarbon
IMO	International Maritime Organization
kW	Kilowatt
kW/l	Kilowatt/liter
l/cyl	Liter/Cylinder
MassDEP	Massachusetts Department of Environmental Protection
NMHC	Non-methane hydrocarbons
NNSR	Nonattainment New Source Review
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
OCS	Outer Continental Shelf
PM	Particulate Matter
PM ₁₀	Particulate Matter with an aerodynamic diameter less than or equal to 10 microns
PM _{2.5}	Particulate Matter with an aerodynamic diameter less than or equal to 2.5 microns
PSD	Prevention of Significant Deterioration
PTE	Potential to emit
SO ₂	Sulfur Dioxide
TPY	Tons per year
ULSD	Ultra low sulfur diesel
VW1	Vineyard Wind 1, LLC
VOC	Volatile Organic Compounds
WDA	Wind Development Area
WTGs	Wind Turbine Generators

I. Description of Permitted Activities (For Informational Purposes)

Vineyard Wind 1, LLC (VW1) plans to design, permit, construct, and operate an 800 MW offshore wind energy project in the Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0501 (the wind farm). It is expected that the wind turbine generators (WTGs) will be capable of operating with an annual capacity factor in excess of 45%. According to VW1, electricity generated by the WTGs will displace electricity generated by fossil fuel-powered plants, thereby significantly reducing emissions from the ISO New England power grid over the lifespan of the wind farm. VW1 claims “that based on air emissions data for New England power generation facilities, obtained from the Environmental Protection Agency’s Emissions & Generation Resource Integrated Database (eGRID), the windfarm will reduce carbon dioxide (“CO₂”) emissions from the ISO NE power grid by approximately 1,630,000 tons per year (“tpy”). In addition, the wind farm is expected to reduce nitrogen oxide (“NO_x”) and sulfur dioxides (“SO₂”) emissions by approximately 1,050 tpy and 860 tpy, respectively.”

Construction – The construction of WTGs and the electric service platform (ESP) will require the use of marine vessels to perform the construction and to transport material from the mainland to its location on the OCS. VW1 intends to install two main offshore electrical cables that will connect the ESP to an onshore substation in Barnstable, Massachusetts.

Operation and Maintenance – VW1 anticipates that operation of the wind farm will last approximately 30 years. During this phase, most activities will be related to scheduled and preventative maintenance. The permit also anticipates unscheduled corrective maintenance that may require the use of specialized vessels, such as jack-up vessels.

Criteria air pollutant emissions and their precursors generated from the construction and operation of the windfarm include nitrogen oxides (NO_x), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM₁₀), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM_{2.5}), and volatile organic compounds (VOCs). These air pollutants are associated with the combustion of diesel fuel in (1) a vessel’s propulsion and auxiliary engines and (2) the engine(s) located on a WTG or ESP. The wind farm consists of the Wind Development Area (WDA) facility.

The estimated potential to emit (PTE) of the WDA facility includes 1) emissions from engines on any WTG or ESP, 2) emissions from all engines on vessels included in the definition of an OCS source and, 3) emissions from all engines on vessels servicing or associated with the WDA facility when those vessels are en route to and from the WDA facility and within 25 miles of the WDA facility’s centroid. Based on the PTE, the WDA facility is a major source of air pollution, and thus is subject to Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) permitting requirements. The WDA facility is also subject to the requirements for a comprehensive plan approval under 310 C.M.R. 7.02 of the Commonwealth of Massachusetts air pollution regulations.

II. List of Air Emission Sources (For Informational Purposes)

Table 1

Emission Source	Purpose	Phase
Crew transfer vessels	Transport crew to the WDA. Potential transport of marine mammal observers. Used to refuel diesel-fired engines located on WTGs and ESP.	Construction and Operational
Heavy lift crane vessels	Lift, support, and orient the components of each WTG and ESP during installation. Used for foundation installation.	Construction
Cable installation vessels	Lay and bury transmission cables in the seafloor.	Construction
Scour protection installation vessels	Deposit a layer of stone around the WTG and ESP foundations to prevent the removal of sediment by hydrodynamic forces. May place cable protection over limited sections of the offshore cable system.	Construction
Multipurpose offshore support vessels	Clear the seabed floor of debris prior to laying transmission cables.	Construction
Tugboats	Transport equipment and barges to the Wind Development Area (WDA).	Construction and as needed Operational
Anchor handling tug supply vessels	Install underwater noise mitigation devices (e.g. bubble curtains). Support offshore export cable installation in shallower waters.	Construction
Jack-up vessels	Transport WTG components to the WDA. Extend legs to the ocean floor to provide a safe, stable working platform used for offshore crew accommodations.	Construction and as needed Operational
Dredging vessels	Used in certain areas prior to cable laying to remove the upper portions of sand waves.	Construction
Survey vessels	Used to perform geophysical and geotechnical surveys	Construction
Service operation vessels	Transport crew to the WDA. Provide offshore living accommodation and workspace.	Construction and as needed, Operational
Ocean-Going Heavy Transport Vessels (HTV)	Ocean-going vessels that may transport components (e.g. monopiles) directly to the Wind Development Area.	Construction
Wind Turbine Generator	Generate electricity from wind. Each Wind Turbine Generator (WTG) may have an additional diesel-fired generating set.	Construction and Operational

Electrical Service Platform	Serve as the common interconnection point for the WTGs. The WTG will interconnect with an Electrical Service Platform (ESP) via a 66 kV submarine cable system. The ESP will have circuit breakers and transformers (66 kV to 220 kV) to increase the voltage level and transmit electricity through the offshore cable system to the final connection point to the bulk power grid. The ESP will also have three diesel-fired generator sets to maintain equipment on the ESP when electricity is not available.	Construction and Operational
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III. Definitions

1. *Air Pollutant* shall have the same meaning as that term has within 40 C.F.R. part 55.
2. *Category 1 Engine* means
 - a. For engines regulated under 40 CFR Part 1042 (Tiers 3 and 4), a marine engine with specific engine displacement below 7.0 liters per cylinder; or
 - b. For engines regulated under 40 CFR Part 1042 – Appendix I (Tiers 1 and 2), a marine engine with a rated power greater than or equal to 37 kilowatts and a specific engine displacement less than 5.0 liters per cylinder.
3. *Category 2 Engine* means
 - a. For engines regulated under 40 CFR Part 1042 (Tiers 3 and 4), a marine engine with a specific engine displacement at or above 7.0 liters per cylinder but less than 30.0 liters per cylinder; or
 - b. For engines regulated under 40 CFR Part 1042 – Appendix I, a marine engine with a specific engine displacement greater than or equal to 5.0 liters per cylinder but less than 30 liters per cylinder.
4. *Category 3 Engine* means a marine engine with a specific engine displacement greater than or equal to 30 liters per cylinder.
5. *Commence* means, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

6. *Construction Phase* begins when the first OCS source is established in the WDA and ends when the commissioning activities are completed. Commissioning is completed the day before VW1 identifies in its notice to BOEM, pursuant to 30 C.F.R. § 585.636, that VW1 will commence commercial operations.
7. *Construction Start Date* is the first day any equipment or activity, that meets the definition of an OCS source, operates, occurs, or exists in the WDA. The EPA expects that for the WDA facility, the first OCS source will be a jack-up vessel.
8. *Continuous Emission Reduction Credit (CERC)* is equivalent to 1 ton per year of a pollutant, such as NO_x or VOC. Under 310 CMR 7.00, Appendix B, a CERC is equivalent to a rate-based emission reduction credit (ERC).
9. *Domestic Flagged Vessel* means a vessel operated under the authority of the United States.
10. *Emission Unit* means any part of an OCS source vessel or OCS source, including but not limited to, engines, that emit or would have the potential to emit any air pollutant.
11. *Engine* shall include diesel-fired compression ignition internal combustion engines, marine engines, and diesel-fired generating sets.
12. *Feeder Jack-up Vessel* means a vessel that includes legs and a lifting system that enables the vessel to lower its legs into the seabed and elevate its hull to provide a stable work deck and meets the definition of a “Secondary Crew Transfer Vessel” or “Supply Vessel.”
13. *Foreign Flagged Vessel* means a vessel of foreign registry or a vessel operated under the authority of a country other than the United States.
14. *Jack-up Vessel* means a vessel (whether self-propelled or not) that includes legs and a lifting system that enables the vessel to lower its legs into the seabed and elevate its hull to provide a stable work deck.
15. *Main WTG Installation vessel* is one of the two main jack-up foreign flagged vessels that will install the WTGs; domestically flagged vessels of the size and capabilities required for WTG installation do not exist. These vessels are not crew and supply vessels.
16. *Marine Diesel and Marine Residual Fuel* means Marine diesel with a sulfur content of 1,000 ppm by weight or less.
17. *Marine Engine* means a nonroad engine produced for any purpose that is installed or intended to be installed on a marine vessel. This includes a portable auxiliary marine engine only if its fueling, cooling, or exhaust system is an integral part of the vessel. A fueling system is considered integral to the vessel only if one or more essential elements are permanently affixed to the vessel.

(1) Propulsion marine engine means a marine engine that moves a vessel through the water or directs the vessel's movement.

(2) Auxiliary marine engine means a marine engine not used for propulsion.

18. *No. 1 of the [Ringelmann] Chart* has the same meaning as 20 % opacity.

19. *No. 2 of the [Ringelmann] Chart* has the same meaning as 40 % opacity.

20. Ocean-going Vessel means a commercial, government, or military vessel meeting any one of the following criteria:

- a. A vessel greater than or equal to 400 feet in length overall (LOA) as defined in 50 CFR § 679.2, as adopted June 19, 1996;
- b. A vessel greater than or equal to 10,000 gross tons (GT ITC) per the convention measurement (international system) as defined in 46 CFR 69.51-.61, as adopted September 12, 1989; or
- c. A vessel propelled by a marine compression-ignition engine with a per-cylinder displacement of greater than or equal to 30 liters.

21. *OCS Source* has the same meaning as set forth in 40 C.F.R. § 55.2. For this permit, an OCS source is located in the WDA.

22. *OCS Source Vessel* is any vessel that:

- a. Emits or has the potential to emit any air pollutant;
- b. Is regulated or authorized under the Outer Continental Shelf Lands Act (“OCSLA”) (43 U.S.C. §1331 et seq.); and
- c. Is located on the OCS or in or on waters above the OCS.
- d. Additionally, an OCS Source Vessel must be permanently or temporarily attached to the seabed and erected thereon and used for the purpose of exploring, developing or producing resources therefrom, within the meaning of section 4(a)(1) of OCSLA (43 U.S.C. § 1331 et seq.) or physically attached to an OCS facility, in which case only the stationary source aspects of the vessels will be regulated.

23. *Operational Phase* is the period of normal operations which begins on the operational phase start date.

24. *Operational Phase Start Date* is the date Vineyard Wind identifies in its notice to BOEM, pursuant to 30 C.F.R. § 585.636, that the windfarm will commence commercial operations.
25. *The Permittee* includes Vineyard Wind 1, LLC; its successor(s) in operating the permitted project; its contractors; and any agents or parties acting on its behalf that conduct activities regulated by this permit, including but not limited to vessel, barge, and equipment operators.
26. *Primary Crew Transfer Vessel* means the one crew transport vessel that will be needed on an almost daily basis during both the construction and operational phases.
27. *Responsible Official* means a president, secretary, treasurer, or vice-president of the Permittee in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the Permittee, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - a. The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - b. The delegation of authority to such representatives is approved in advance by the EPA;
28. *Secondary Crew Transfer Vessel* are all self-propelled vessels that are not *Ocean-going Vessels* and are used for carrying personnel to and from off-shore and in-harbor locations (including, but not limited to, off-shore work platforms, construction sites, and other vessels) from the staging area to the WDA facility that are not the primary crew transfer vessel.
29. *Smoke* means the visible aerosol, which may contain fly ash, resulting from combustion of materials but does not mean condensed water vapor.
30. *Supply Vessel* means a self-propelled vessel used for carrying supplies to and from off-shore and in-harbor locations (including, but not limited to, off-shore work platforms, construction sites, and other vessels) from the staging area to the WDA facility and is included in the definition of an OCS source and is not an *Ocean-going Vessel*.
31. *Ultra low sulfur diesel (ULSD)* means transportation diesel or biodiesel (containing no more than 20% non-fossil fuel) with a sulfur content of 15 ppm by weight or less.
32. *Vessel* means:
 - a. self-propelled vessels; and

- b. barges or other non-self-propelled vessels that must be towed by another vessel. It includes vessels with or without systems that attach, either permanently or temporarily to the seabed.

33. *Wind Development Area* is the Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0501, located on the OCS. The Project lease area is about 16 kilometers (km) (8.7 nautical miles [NM]) wide and 50 km (26 NM) long, located in federal waters off the Massachusetts coast. At its nearest points, the WDA is approximately 23 kilometers (14 miles) from the southeast corner of Martha's Vineyard and a similar distance from the southwest side of Nantucket. The WDA is 306 km² (75,614 acres).

IV. Emission Limits

A. All Engines and Emission Units on OCS Sources

1. The Permittee shall not cause, suffer, allow, or permit the emission of smoke from any Engine or Emission Unit which has a shade, density, or appearance equal to or greater than No. 1 of the [Ringelmann] Chart for a period, or aggregate period of time in excess of six minutes during any one hour, provided that at no time during the said six minutes shall the shade, density, or appearance be equal to or greater than No. 2 of the [Ringelmann] Chart. [310 C.M.R. 7.06(1)(a), 40 C.F.R. part 60 subpart III, 40 C.F.R. part 1039 – Appendix I, 40 C.F.R. part 1039]
2. The Permittee shall not cause, suffer, allow or permit the operation of any Engine or Emission Unit to emit any contaminant(s), exclusive of uncombined water or smoke subject to section IV.A.1. above, that exceed 20% opacity for a period or aggregate period of time in excess of two minutes during any one hour provided that, at no time during the said two minutes shall the opacity exceed 40%. [310 C.M.R. 7.06(1)(b)]

B. Diesel-Fired Generating Sets on Wind Turbine Generators

1. The Permittee shall only burn ULSD in the WTG Engine(s). [310 C.M.R. 7.05(1)(a)1.]
2. The Permittee shall install and operate on each WTG only Engines that are certified by the manufacturer to meet or emit less than the emission standards set forth at 40 C.F.R. § 1042.101(a) for new and in-use marine compression-ignition engines with an engine power of approximately 150 kW or less for each engine. The combined emission limit for NO_x +NMHC, and the emission limits for CO and PM, will depend on the Engine's maximum engine power (in kW), the Engine's displacement (l/cyl), and the Engine's power density (kW/l).

[PSD BACT, NNSR LAER, 40 C.F.R. § 60.4201, 40 C.F.R. § 1042.101]

3. The Permittee shall limit the total hours of operation for each engine on the WTGs to no more than 500 hours a year for each engine at each WTG location during the operational phase. [PSD]

C. Diesel-Fired Electric Generating Sets on Electrical Service Platform

1. The Permittee shall only burn ULSD in the ESP Engines. [310 C.M.R. 7.05(1)(a)1.]
2. The Permittee shall install and operate on the ESP only Engines that are certified by the manufacturer to meet or emit less than the emission standards set forth at 40 C.F.R. § 1042.101(a) for in-use marine compression-ignition engines: Tier 3 engines for the two approximately 400 kW Engines and Tier 4 engine for the approximately 800 kW engine. For the approximately 400 kW Engines meeting or emitting less than emissions standards for Tier 3 engines, the combined emission limit for NO_x +NMHC, and the emission limits for CO and PM, will depend on the Engine's maximum engine power (in kW), the Engine's displacement (l/cyl), and the Engine's power density (kW/l). For the approximately 800 kW Engine the emission limits are:
 - i. NO_x = 1.8 grams/kilowatt-hour (g/kW-hr);
 - ii. HC = 0.19 g/kW-hr;
 - iii. CO = 5.0 g/kW-hr;
 - iv. PM = 0.04 g/kW-hr.

[PSD BACT, NNSR LAER, 40 C.F.R. § 60.4201, 40 C.F.R. § 1042.101]

3. The Permittee shall limit the total hours of operation for each engine on the ESP to no more than 500 hours a year for each engine at the ESP location during the operational phase. [PSD]

D. Engines while Vessels are Operating as OCS Sources

The following terms and conditions contained within this subsection shall apply to all operating engines on a vessel while that vessel meets the definition of an OCS source vessel.

1. The Permittee while owning, operating, or having control of a seagoing vessel shall not cause, suffer, allow, or permit, aboard said vessel, tube blowing or soot removal activities that cause or contribute to a condition of air pollution. [310 C.M.R. 7.11(4)]
2. The Permittee shall only burn ULSD, Marine Distillate, or Marine Residual fuels when operating any diesel-fired emission unit. [310 C.M.R. 7.05(1)(a)3 and 40 C.F.R. § 80.510(k).]

3. The Permittee shall ensure that all category 1 and 2 engines on all domestic and foreign flagged feeder jack-up vessels, domestic and foreign flagged supply vessels, and secondary crew transfer vessels, while those vessels are operating as an OCS source, meet the Tier 4 marine engine emission limits in 40 C.F.R. § 1042.101, except if one of the conditions in subparagraph 3.a. or 3.b., below, is met, in which case the Permittee may use a marine engine meeting the emissions limits for the next lower Tier (i.e., Tier 3). Similarly, in the event that one of the conditions in subparagraph 3.a or 3.b., below, is met regarding the use of a marine engine meeting Tier 3 emissions limits, the Permittee may use a marine engine meeting the Tier 2 emission limits in 40 C.F.R. § 1042 – Appendix I in lieu of a marine engine meeting Tier 3 emission limits. All marine engines operating on domestic and foreign flagged feeder jack-up vessels, domestic and foreign flagged supply vessels, and secondary crew transfer vessels while those vessels meet the definition of an OCS source, shall meet the emission limits for a Tier 3 or 4 marine engine in 40 C.F.R. § 1042.101 or 40 C.F.R. § 1042 – Appendix I for a Tier 2 marine engine, whichever is applicable. In order to use a lesser Tier marine engine, as described above, one of the following conditions must be met:
 - a. A vessel with a higher Tier engine is not available within two hours of when the vessel must be deployed;
 - b. The total emissions associated with the use of a vessel with the higher Tier engine(s) would be greater than the total emissions associated with the use of the vessel with the next lower Tier engine(s). For purposes of this subparagraph, when determining the total emissions associated with the use of a vessel with a particular engine, the Permittee may include the emissions of the vessel that would occur when the vessel would be in transit to the WDA from the vessel's starting location.

[PSD BACT, NNSR LAER, and 40 C.F.R. § 60.4201]

4. The Permittee shall ensure that all category 1 and 2 engines for domestic flagged vessels operating as an OCS source that do not meet the definitions for any type of feeder jack-up vessel, supply vessel, or primary or secondary crew transfer vessel, are certified to meet the Tier 4 marine engine standards in 40 C.F.R. § 1042.101, except if one of the conditions in subparagraph 4.a. or 4.b., below, is met, in which case the Permittee may use the next lower Tier marine engine (i.e., Tier 3). Similarly, in the event that one of the conditions in subparagraph 4.a or 4.b., below, is met regarding the use of a Tier 3 marine engine, the Permittee may use a Tier 2 marine engine in lieu of a Tier 3 marine engine. In the event that one of the conditions in subparagraph 4.a or 4.b. is met regarding the use of a Tier 2 marine engine, the Permittee may use a Tier 1 engine in lieu of a Tier 2 marine engine. All engines operating on any vessel that is not a jack-up vessel, supply vessel, or primary or secondary crew transfer vessel while that vessel meets the definition of an OCS source, shall be certified as meeting the emission limits for a Tier 3 or 4 marine engine in 40 C.F.R. § 1042.101 or Tier 1 or 2, and 40 C.F.R. part 1042 – Appendix I, depending upon whichever

Tier the marine engine is certified to meet. In order to use a lesser Tier marine engine, as described above, one of the following conditions must be met:

- a. A vessel with a higher Tier engine is not available within two hours of when the vessel must be deployed;
- b. The total emissions associated with the use of a vessel with the higher Tier engine(s) would be greater than the total emissions associated with the use of the vessel with the next lower Tier engine(s). For purposes of this subparagraph, when determining the total emissions associated with the use of a vessel with a particular engine, the Permittee may include the emissions of the vessel that would occur when the vessel would be going to the WDA from the vessel's starting location;

[PSD BACT, NNSR LAER, and 40 C.F.R. § 60.4201]

5. The Permittee shall ensure that all engines on all foreign flagged vessels not regulated by permit condition IV.D.3, and all Category 3 engines on domestic flagged vessels, while those vessels are operating as an OCS source, are certified to meet either the MARPOL Annex VI (Annex VI) Tier III NO_x limits in the case of a foreign-flagged vessel, or EPA's Tier 3 marine engine standards in the case of U.S.-flagged vessel, in Table 2 of this permit, except if one of the conditions in subparagraph 5.a. or 5.b., below, is met, in which case the Permittee may use the next lower Tier marine engine (i.e., Annex VI Tier II or EPA Tier 2). Similarly, in the event that one of the conditions in subparagraph 5.a or 5.b., below, is met regarding the use of an Annex VI Tier II or EPA Tier 2 marine engine, the Permittee may use an Annex VI Tier I or EPA Tier 1 marine engine in lieu of an Annex VI Tier 2 or EPA Tier 2 marine engine. All marine engines operating on a foreign vessel, and all Category 3 engines on a U.S. vessel, while that vessel meets the definition of an OCS source, shall be certified as meeting the relevant NO_x emission limits for Annex VI or EPA marine engines in Table 2, depending upon whichever Annex VI or EPA Tier the marine engine is certified to meet. In order to use a lesser Annex VI or EPA Tier marine engine, as described above, one of the following conditions must be met:
 - a. A vessel with a higher Annex VI or EPA Tier engine is not available within two hours of when the vessel must be deployed;
 - b. The total emissions associated with the use of a vessel with the higher Annex VI or EPA Tier engine(s) would be greater than the total emissions associated with the use of the vessel with the next lower Annex VI or EPA Tier engine(s). For purposes of this subparagraph, when determining the total emissions associated with the use of a vessel with a particular engine, the Permittee may include the emissions of the vessel that would occur when the vessel would be going to the WDA from the vessel's starting location;

- c. For category 3 engines on domestically flagged vessels, with a model year of 2011 or later, those engines must comply with an HC emission limit of 2 g/kW-hr and a CO emission limit of 5 g/kW-hr. [40 C.F.R. § 1042.104(a)]

Table 2

Annex VI/EPA Tier	Ship constructed after	Total weighted cycle NO _x emission limit (g/kWh) n = engine's rated speed (rpm)		
		n is less than 130	n is 130 or more but less than 2,000	n is 2000 or more
I / 1	1 January 2000 ^a	17.0	$45 \cdot n^{(-0.2)}$ e.g., 720 rpm = 12.1	9.8
II / 2	1 January 2011	14.4	$44 \cdot n^{(-0.23)}$ e.g., 720 rpm = 9.7	7.7
III / 3	1 January 2016	3.4	$9 \cdot n^{(-0.2)}$ e.g., 720 rpm = 2.4	2.0 ^b

a: The EPA Tier I NO_x emission limits for Category 3 engines on U.S. apply beginning model year 2004; however, the Annex VI Tier I standards apply to engines installed on U.S. vessels beginning 1 January 2000 if that U.S. vessel operates internationally.

b: The total weighted cycle NO_x emission limit for engines meeting the Annex VI Tier III standard is 1.96 when the engine speed equals or exceeds 2,000 rpm

[PSD BACT, NNSR LAER, 40 C.F.R. § 60.4201, and 40 C.F.R. § 1043]

6. The Permittee shall ensure that all engines on all foreign flagged vessels, and category 3 engines on domestically flagged vessels, with a model year before 2011, while those vessels are operating as an OCS source, use good combustion practices based on the most recent manufacturer's specifications issued for these engines at the time that these engines are operating under this permit. [PSD BACT and NNSR LAER]
7. The Permittee shall ensure that all engines on vessels not included in condition IV.D.6, while those vessels are operating as an OCS source, use good combustion practices based on the most recent manufacturer's specifications issued for these engines at the time that these engines are operating under this permit. [PSD GHG BACT and NNSR LAER]
8. The Primary Crew Transfer Vessel, while operating as an OCS source, shall have all engine(s) certified as meeting the highest Tier engine for marine engines in 40 C.F.R. § 1042.101. Tier 4 emission standards apply to engine(s) at or above 600 kW, and Tier 3 emission standards apply to engine(s) below 600 kW. These emission standards apply during the construction and operational phases of the WDA facility. If after the Primary Crew

Transfer Vessel is deployed it is necessary to deploy additional Crew Transfer Vessels to the WDA, those additional Crew Transfer Vessels shall meet the requirements of subparagraph 3 above. [PSD BACT, NNSR LAER, and 40 C.F.R. § 60.4201]

9. The Permittee will only use, as applicable, adhesive, sealant, adhesive primer, or sealant primer that meet the VOC content requirements of 310 CMR 7.18(30). [310 CMR 7.18(30)].

V. NNSR Offsets

1. The Permittee shall obtain a minimum of 96 tons per year of NO_x Continuous Emission Reduction Credits (CERCs) and 2 tons per year of VOC CERCs prior to the beginning of the Operational Phase of the WDA facility for CERCs obtained in accordance with V.1.a below. The Permittee shall obtain a minimum of 92 tons per year of NO_x CERCs and 2 tons per year of VOC CERCs prior to the beginning of the Operational Phase of the WDA facility for CERCs obtained in accordance with V.1.b or c below. The Permittee shall obtain the CERCs from one of the following:
 - a. Rate-based emission reduction credits certified under the Massachusetts trading bank regulations codified at 310 CMR 7.00, Appendix B;
 - b. The Permittee may enter into a third-party agreement that requires the third-party to create CERCs. Such an agreement must be federally-enforceable prior to the Permittee using said CERCs;
 - c. A facility that has ceased operations and had its CAA permits revoked or rescinded and has not had the resulting emissions reductions certified under the Massachusetts trading bank regulations under 310 CMR 7,00, Appendix B. CERCs based on a facility shutdown are required to be memorialized in a document from the Commonwealth of Massachusetts to ensure the CERCs from such a shutdown are fully in compliance with the CAA and have not been relied on by Massachusetts to meet other CAA requirements.

VI. Operating Requirements and Work Practices

A. Diesel-Fired Generating Sets on WTG and ESP

1. The Permittee must install, operate and maintain all Engines to achieve the emissions standards at 40 C.F.R. § 60.4204(b) over the entire life of the engine. [40 C.F.R. § 60.4206]
2. The Permittee shall ensure that the diesel fuel purchased for and used in each Engine meets the following per-gallon standards:
 - a. Sulfur content of 15 parts per million (ppm) by weight maximum; and

- b. Cetane index or aromatic content as follows:
 - i. A minimum cetane index of 40; or
 - ii. A maximum aromatic content of 35 volume percent.

[310 CMR 7.05, 40 C.F.R. § 60.4207(b) and 40 C.F.R. § 80.510(b)]

- 3. The Permittee shall install and operate all Engines that are certified by the manufacturer to meet or surpass the emission standards in 40 C.F.R. § 60.4204(b) as specified in this permit; [40 C.F.R. § 60.4211(c)]
- 4. The Permittee shall meet the following requirements:
 - a. The Permittee shall install, operate and maintain all Engines and control devices according to the manufacturer's emission-related written instructions; [40 C.F.R. § 60.4211(a)(1)]
 - b. The Permittee shall only change emission-related settings on the Engines that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)(2)]
 - c. The Permittee shall install and operate the Engines configured according to the manufacturer's emission-related specifications; [40 C.F.R. § 60.4211(c)]

B. Engines on Vessels While the Vessel is Operating as OCS Source

The following term and condition contained within this subsection shall apply to all operating emission units on a vessel while that vessel meets the definition of an OCS source vessel.

- 1. All OCS vessel engines must comply with the operating and work practice standards, as applicable, specified in 40 C.F.R. part 60, subparts IIII and 40 C.F.R. part 63, subpart ZZZZ.

VII. Testing Requirements

- 1. For each engine operating on the *Main WTG Installation Vessel*, the Permittee shall conduct a visible emission test for 30 consecutive minutes using the EPA test method 22 when the vessel is operating as an OCS source, once per 10 operating days. If during the method 22 test visible emissions are observed for more than 3 consecutive minutes, the Permittee shall schedule, within 2 weeks from the observance, a visible emission test using the EPA method 9. An operating day is defined as any calendar day in which the vessel operated as an OCS source. All visible emission tests for this specific permit condition shall be conducted in

accordance with the EPA test requirements specified in 40 C.F.R. part 60, appendix A, methods 9 and 22.

2. The Permittee shall, upon request by the EPA, conduct emission test(s), including visible emissions, of any operating emission unit subject to an emission limit in section IV of this permit, including any engine on any vessel while that vessel is an OCS source. The Permittee shall perform the tests using the procedures and reference in 40 C.F.R. part 60, Appendix A, as applicable.

VIII. Recordkeeping Requirements

The Permittee will maintain records of the following:

1. The date and time that a vessel becomes an OCS source during the construction and operational phases.
2. The date and time that a vessel ceases to be an OCS source during the construction and operational phases.
3. The make, model, maximum rated power output, engine displacement, and manufacturing date of each engine on each vessel included in the PTE during the operational phase, including if the vessel is a domestic or foreign-flagged vessel.
4. The make, model, maximum rated power output, engine displacement, and manufacturing date of each engine on each vessel operating as an OCS source during the construction phase, including if the vessel is a domestic or foreign-flagged vessel.
5. The make, model, maximum rated power output, engine displacement, and manufacturing date of each engine on each and every WTG and ESP.
6. Copies of certifications that demonstrate the Tier standard the engine was manufactured to meet for each engine on each vessel that meets the definition of an OCS source. The different Tier standards are found in 40 CFR Parts 1039 – Appendix I (formerly part 89), 1042 – Appendix I (formerly part 94), 1039, or 1042. For foreign flagged vessels the different Tier standards are found at Regulation 13 of MARPOL Annex VI.
7. For each engine on each vessel that is included in the PTE during the operational phase of the project, record daily, for each and every day, the:
 - a. Total hours of operation when operating at or within 25 miles of the WDA facility's centroid;
 - b. Engine speed rating, in rpms (if applicable in determining daily emissions);

- c. Emission factor associated with the engine certification, or the emission factor specified in Sections VIII.9, as applicable, used in determining the daily emissions required by this permit; and
 - d. Actual fuel usage data and manufacturing load and fuel consumption rate information, if engine load is determined by using the formula for determining a daily load factor in permit Condition VIII.9.a.
8. Beginning on the “operational start date,” as that phrase is defined in Section III of this permit, the Permittee shall start recording on a daily basis for each and every day, the total amount (in tons) of NO_x and VOC emissions emitted from:
- a. engines on any WTG or ESP;
 - b. all engines on vessels included in the definition of an OCS source, and;
 - c. all engines on vessels servicing or associated with the WDA facility when those vessels are at the WDA facility, or en route to or from the WDA facility and are within 25 miles of the WDA facility’s centroid.
9. Daily emissions for vessels shall be calculated using the following formula:

$$E = kW * Hours * LF * EF * 1.10231E^{-6}$$

Where:

- E= total emissions, tons
- kW= total engine size, kW
- Hours = hours for each engine
- LF = engine load factor
- EF= emission factor, g/kW-hr
- 1.10231E⁻⁶ = g to ton conversion factor

When determining the values for the above variables, the Permittee shall use the following:

- a. The engine load factor should be calculated using actual fuel usage data, engine operating time, manufacturing load and fuel consumption rate information, and the following formula:

$$LF = V \div T \div R_{max}$$

Where:

- LF = engine load factor
- V = volume fuel consumed during engine operation, gal
- T = engine operating time, hours
- R_{max} = fuel consumption rate at maximum engine power, gal/hr

Alternatively, if actual fuel usage data is not available, the Permittee may use an engine load factor of 0.69

- b. For domestically flagged vessels, the emission factor shall be the NO_x and HC (used as a surrogate for VOC in this permit) emission rate for the Tier level the engine has been certified to meet. If the Tier level combines both NO_x and either HC or THC (used as a surrogate for VOC in this permit) into one emission limit, then that emission limit shall be multiplied by 0.976 for NO_x and 0.024 for either HC or THC (to determine the VOC ratio of the emissions). The emission rates are contained in 40 C.F.R. §§ 1042 – Appendix I or 1042.101 and vary depending on the engine’s Tier classification. For engines on domestically flagged vessels without a Tier certification the emission factors shall be the following:
 - i. For Category 1 engines 9.7 g/kW-hr for NO_x and 0.52 g/kW-hr for VOC.
 - ii. For Category 2 engines 16.5 g/kW-hr for NO_x and 0.5 g/kW-hr for VOC.
 - iii. For Category 3 engines 19.5 g/kW-hr for NO_x and emission factors for VOC in Table 3 of this permit.
- c. For foreign flagged vessels, the emission factor for NO_x shall be the emission rate for the Tier level engine in Table 2 of this permit. For category 3 engines and foreign flagged vessels without Annex VI certifications, the emission factor shall be 19.5 g/kW-hr for NO_x and Table 3 emission factors for VOC below. There are several different emission factors for VOC emissions depending on an engine’s purpose and type of vessel with which it is associated. Table 3, below, contains these VOC emission factors for foreign flagged vessels.

Table 3

Engine or Vessel Type	VOC Emissions (g/kW-hr)
Auxiliary engines on all vessel types	0.14
Tugboats	0.18
All types of jack-up vessels	0.14
Supply vessels	0.17
All cable laying vessels	0.24
All other vessel types	0.14

- 10. The construction start date and the operational phase start date.
- 11. Record the condition the Permittee relied on to justify the use of a vessel while operating as an OCS source with lower Tier certified engines in accordance with Section IV.D.
- 12. For all engines operating on OCS sources (including vessels meeting the definition of an OCS source), the Permittee shall provide fuel supplier certifications, for each fuel delivery,

documenting the following:

- a. The name of the vessel;
- b. The name of the fuel supplier;
- c. The sulfur content of the fuel;
- d. The method used to determine the sulfur content of the fuel;
- e. The location of the fuel when the sample was drawn for analysis to determine the sulfur content of the fuel; specifically including whether the fuel was sampled as delivered to VW1 or whether the sample was drawn from fuel in storage at the fuel supplier's or fuel refiner's facility or another location;

If the fuel was not sampled as delivered, a statement that the sampling was performed according to either the single tank composite sampling procedure or the all-levels sampling procedure in ASTM D4057-88, "Standard Practice for Manual Sampling of Petroleum and Petroleum Products" and that no additions have been made to the supplier's tank since sampling.

[310 CMR 7.05, 40 C.F.R. § 60.4207(b) and 40 C.F.R. § 80.510(b)]

13. For all adhesives, sealants, adhesive primers, and sealant primers, the Permittee shall maintain records demonstrating compliance with 310 CMR 7.18(30), including, but not limited to, the following information:
 - f. a data sheet or materials list that provides the material name, product category according to 310 CMR 7.18(30)(c): *Table 1*, and *Table 2*, manufacturer identification, the VOC content of each product as supplied, and type of material application;
 - g. a list of each adhesive, sealant, adhesive primer, sealant primer, cleanup solvent, and surface preparation solvent in use and in storage;
 - h. a list of reducers, catalysts, or other components used and the as applied mix ratio;
 - i. the final VOC content of any adhesive, sealant, adhesive primer, or sealant primer as applied;
 - j. the VOC content and vapor pressure, of any cleanup solvents, surface preparation solvents, reducers and catalysts, and VOC-containing materials used in the preparation, application, rework, and cleaning processes related to use or application of any adhesive, sealant, adhesive primer, or sealant primer;

- k. the monthly volume of each adhesive, sealant, adhesive primer, sealant primer, cleanup solvent, and surface preparation solvent used;
- l. the monthly total facility-wide VOC emissions from all adhesives, sealants, adhesive primers, and sealant primers used or applied at any facility where a person is claiming an exemption pursuant to 310 CMR 7.18(30)(d)4.

[310 CMR 7.18(30)e]

14. The Permittee shall make all records required by this permit available to the EPA upon request. The records shall be kept for a minimum of five years and located at an onshore office located near the WDA facility.
15. The Permittee shall keep records of all required information necessary to submit annual Source Registration / Emissions Statements to MassDEP as required by Condition IX.8 of this permit. [310 CMR 7.12]

IX. Reporting Requirements

1. The Permittee shall notify the EPA, in writing, at least 30 days, but no more than 90 days, prior to locating the first OCS source within the WDA.
2. The Permittee shall notify the EPA, in writing, at least 30 days prior to installing and/or operating an Engine on each and every WTG and ESP. The notification shall include for each Engine the make, model, maximum rated power output, engine displacement, and manufacturing date.
3. When requested by the EPA, the Permittee shall furnish any information required by law which is needed to determine compliance with the permit. If the Permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the EPA, the Permittee shall, upon becoming aware of such facts or corrected information, promptly submit to the EPA such facts or corrected information.
4. The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for modifying, revoking, reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the EPA copies of records that are required to be maintained by this permit, including information claimed to be confidential. Information claimed to be confidential must be accompanied by a claim of confidentiality according to the provisions of 40 C.F.R. Part 2, subpart B.
5. The Permittee shall hold at its office, onshore nearby the WDA facility, all records required by the permit including, but not limited to, monitoring data and support information required by this permit, and records of all data used to complete the application for this permit. These

materials shall be retained for at least five years from the date of the sample, measurement, or report unless otherwise specified.

6. The Permittee shall comply with the requirements specified in the following parts of the New Source Performance Standards, Subpart A (General Provisions): 40 C.F.R. §§ 60.1 through 60.6, 60.9, 60.10, 60.12, 60.14 through 60.17, and 60.19, as specified in Table 8 of 40 C.F.R. part 60, subpart IIII (Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE)). [40 C.F.R. § 60.4218]
7. The Permittee shall comply with the requirements specified in the following parts of the New Source Performance Standards, Subpart A (General Provisions): 40 C.F.R. §§ 60.1 through 60.6, 60.9, 60.10, 60.12, 60.14 through 60.17, and 60.19, as specified in Table 8 of 40 C.F.R. part 60, subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines). [40 C.F.R. § 60.4246]
8. In accordance with 310 CMR 7.12, report annually to the Massachusetts Department of Environmental Protection (MassDEP), all information as required by the Source Registration/Emission Statement Form. The Responsible Official for the Permittee shall sign and submit a Source Registration to the MassDEP every year by May 1st. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval. [310 CMR 7.12]
9. The Permittee shall demonstrate that any NO_x and VOC CERCs used for compliance are surplus, quantifiable, enforceable and permanent. The Permittee shall submit the demonstration to the EPA prior to the Operational Phase Start Date of the WDA facility. The demonstration shall include, at a minimum, 1) the source where the CERCs were generated; 2) the time period used to determine the CERCs; and 3) whether the CERCs have been adjusted to take into account the CAA and the Commonwealth's requirements in effect as of January 29, 2019 (the date VW1's application was deemed complete).
10. The Permittee shall submit by January 31, April 30, July 31, and October 31 for the previous three months respectively, a report, including all related supporting information to the EPA. The report shall include the following:
 - a. Results of all visible emission tests performed in accordance with section VII.1. of this permit.
 - b. The daily NO_x and VOC emissions determined by section V of this permit.
 - c. The date of any deviation from a permit term or condition that occurred during the reporting period and the corrective actions taken to resolve the deviation.

- d. The date of return to compliance for any deviation that had occurred during the reporting period.
 - e. A Corrective Action Plan, including the anticipated remedy, for all outstanding deviations at the time of reporting.
 - f. Any additional information for determining the compliance status with the permit required by the EPA in writing prior to the start of the reporting period.
11. The Permittee shall promptly report to the EPA all instances of deviations from permit requirements by email, within three days of discovery of such deviation. The email address can be found in section XXI. of this permit. [310 CMR 7.00 Appendix C, section (10)(f)]
12. All documents submitted to the EPA shall contain certification by the responsible official of truth, accuracy, and completeness. Such certification shall be in compliance with 310 CMR 7.01(2) and contain the following language:

"I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment."

[310 CMR 7.00 Appendix C, section (5)(b)9.c.]

13. The Responsible Official shall certify, annually for the calendar year, that the facility is in compliance with the requirements of this permit. The report shall be postmarked or delivered by January 30th each year to the EPA. The report shall be submitted in compliance with the submission requirements below. The compliance certification and report shall describe:
- a. the terms and conditions of the permit that are the basis of the certification;
 - b. the current compliance status and whether compliance was continuous or intermittent during the reporting period;
 - c. the methods used for determining compliance, including a description of the monitoring, record keeping, and reporting requirements and test methods; and
 - d. any additional information required by the EPA to determine the compliance status of the source.

[310 CMR 7.00 Appendix C, section (3)(g)13]

X. General Conditions

The Permittee shall comply with the following general conditions:

1. Should there be any differences between the permit application and this permit, the permit shall govern.
2. The ability to operate and/or construct an OCS source under this permit shall become invalid if construction is not commenced within 18 months after the effective date of permit modification #OCS-R1-03-M1, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The 18-month period may be extended upon a showing satisfactory to the EPA or the delegated agency that an extension is justified. Sources obtaining extensions are subject to all new or interim requirements and a reassessment of the applicable control technology when the extension is granted. This requirement shall not supersede a more stringent requirement under 40 C.F.R. §§55.13 or 55.14. [40 C.F.R. §55.6(b)(4), 40 C.F.R. § 52.21(r)(2)].
3. This permit may be suspended, modified, or revoked by the EPA if the EPA determines that any condition or part of this permit is being violated. [310 CMR 7.00, Appendix C, section (3)(g)7(c)]
4. This permit may be modified or amended when in the opinion of the EPA such modification or amendment is necessary or appropriate to clarify the permit conditions, or after consideration of a written request by the Permittee to modify or amend the permit conditions. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any OCS permit condition. [310 CMR 7.00, Appendix C, section (3)(g)7(c)]
5. Pursuant to 310 C.M.R. 7.01(3) and 7.02(3)(f) and 40 C.F.R. 55.6(a)(4), the Permittee shall comply with all conditions contained in this permit. Should there be any differences between provisions contained in the General Conditions of this permit and any provisions contained elsewhere in this permit, the latter shall govern.
6. The Permittee shall notify all other owners and operators, contractors, and the subsequent owners and operators (if any) associated with emissions from the permitted activities, of the conditions of the permit. [40 C.F.R. § 55.6(a)(4)(iv)]
7. The Permittee shall comply with all applicable requirements of 40 C.F.R. part 55 and this permit. Failure to do so shall be considered a violation of section 111(e) of the CAA. All enforcement provisions of the CAA, including, but not limited to, the provisions of sections 113, 114, 120, 303 and 304 of the CAA, shall apply to the permitted activities. [40 §§ C.F.R. 55.8, 55.9(a) and (b); 310 CMR 7.00, Appendix C, section (3)(g)7(a)].
8. As provided in 40 C.F.R. § 55.9(c), if the Permittee is ordered to cease operation of any piece of equipment due to enforcement action taken by EPA, the shutdown will be coordinated by

the EPA with the Department of Interior's Bureau of Ocean Energy Management and the United States Coast Guard, to assure that the shutdown will proceed in a safe manner. No shutdown action will occur until after the EPA's consultation with these entities, but in no case, will initiation of the shutdown be delayed by more than 24 hours. [40 C.F.R. part 55]

9. All applicable permit fees as specified under 40 C.F.R. § 55.10 and 310 CMR 4.00, shall be submitted to the federal government according to the fee schedule in 310 CMR 4.00. [310 CMR 7.00, Appendix C, section (3)(g)8]
10. The Permittee, in an enforcement action, cannot use as a defense that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the OCS permit. [310 CMR 7.00, Appendix C, section (3)(g)7(b)]
11. The OCS permit does not convey any property rights of any sort, or any exclusive privilege. [310 CMR 7.00, Appendix C, section (3)(g)7(d)]
12. The Permittee must comply with all conditions of this permit. All terms and conditions of this permit are enforceable by EPA and citizens under the CAA. Any permit noncompliance constitutes a violation of the CAA and is grounds for enforcement action; for permit termination, revocation, and reissuance, or modification; or for denial of a permit renewal application. [310 CMR 7.00, Appendix C, section (3)(g)7(e)]
13. If requested in writing by the EPA, the Permittee shall have up to 30 days to submit to the EPA, an Emission Reduction Plan that meets the requirements of 310 CMR 8.00. [310 CMR 8.08]
14. The Permittee shall construct and operate all equipment regulated herein in compliance with all other applicable provisions of federal and state air regulations. [40 C.F.R. § 55.6(a)(4)(iii)].
15. In the case of a safety issue, engine failure, or a storm at sea, that requires a vessel to attach temporarily to the seabed, the vessel will not be considered an OCS source as a result of that attachment.

XI. Permit Shield

Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that such applicable requirements are included and are specifically identified in the permit.

Nothing in this OCS permit shall alter or affect the following:

1. The provisions of CAA section 303 (emergency orders), including the authority of the Administrator under that section;

2. The liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance; or
3. The ability of the EPA to obtain information from a source pursuant to CAA section 114.

[310 CMR 7.00. Appendix C]

XII. Right of Entry

The Permittee shall allow all authorized representatives of EPA, upon presentation of credentials, to enter upon or through any OCS source permitted by this permit and to enter upon or through any location where records required under this permit are maintained. The Permittee shall allow such authorized representatives, at reasonable times:

1. To access and copy any records that must be maintained under this permit;
2. To inspect any OCS source, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
3. To monitor substances or parameters, and sample emissions, for purposes of assuring compliance with this permit.

[Section 114 of the Clean Air Act, 42 U.S.C. § 7414; 40 C.F.R. §§ 55.8(a), (b), and (d); 310 CMR 7.00, Appendix C, section (3)(g)12].

XIII. Transfer of Ownership

1. In the event of any changes in control or ownership of the Project, this permit shall be binding on all subsequent owners and operators. The Permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions before such change if possible, but in no case later than 14 days after such change. Notification shall be sent by letter with a copy forwarded within 5 days to the EPA.
2. A change in ownership or operation control is considered an administrative permit amendment to the title V operating permit if no other change in the Permit is necessary and provided that a written agreement containing a specific date for transfer of Permit responsibility, coverage and liability between current and new Permittee, has been submitted to the EPA. [310 CMR 7.00, Appendix C, section (8)(a)]

XIV. Severability

The provisions of this permit are severable, and if any provision of the permit is held by a court or other tribunal of competent jurisdiction to be invalid or unenforceable, the remainder of this

permit will not be affected thereby and shall remain in full force and effect. [310 CMR 7.00, Appendix C, section (3)(g)6]

XV. Credible Evidence

For the purpose of establishing whether or not the Permittee has violated or is in violation of any provision of this permit, the methods used in this permit shall be used, as applicable. However, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether the Permittee would have been in compliance with applicable requirements if the appropriate performance or compliance test procedures or methods had been performed.

XVI. Permit Fees

A. General Fee-related Conditions

1. The Permittee shall submit all fee-related payments and supporting documentation to the following address:

U.S. EPA
Fees and Collections Branch
1300 Pennsylvania Ave NW
Mail Code 2733R
Washington, DC 20004

2. When submitting the payment, the Permittee shall include a cover letter containing the following supporting documentation with the payment:
 - a. Permittee's name
 - b. Complete permittee address, including city, state, zip
 - c. Permittee point of contact person and phone number
 - d. EPA permit number: OCS-R1-03
 - e. EPA Contact: Patrick Bird, Chief, Air Permits, Toxics, and Indoor Programs Branch
 - f. Reason for payment: "Miscellaneous Receipts Payment for OCS Air Permit Fee under 40 C.F.R. Part 55"
 - g. If applicable, all emissions information used to calculate the fee.

3. The Permittee shall send a photocopy of each fee payment check (or other confirmation of actual fee paid) and a copy of the supporting documentation for the application fee to:

Chief
Air Permits, Toxics, and Indoor Programs Branch
Air and Radiation Division
U.S. EPA Region 1
5 Post Office Square
Mail Code 05-2
Boston, MA 02109-3912

B. OCS Permit Fee

1. The Permittee shall submit all applicable permit application fees upon written notification by EPA in accordance with the requirements 310 CMR 4.00 and 310 CMR 7.00.
2. The Permittee shall submit the application fees to the EPA within 60 days from receipt of written notice by the EPA of the fee amount due. [40 CFR §55.10, 310 CMR 7.00, and 310 CMR 4.10(2)(c)(4)]

C. Annual Fee for Title V Permit

In accordance with the 40 C.F.R. § 55.10, the Permittee shall calculate and submit to the EPA operating permit fees in accordance with the requirements of 310 CMR 4.00 and 310 CMR 7.00 Appendix C.

1. No later than January 31 of each year after the operational phase start date, the Permittee shall submit the following to the EPA:
 - a. Full payment of the annual permit fee according to the fee requirements in 310 CMR 4.00.
 - b. An annual emissions report of actual emissions used for fee calculation purposes demonstrating the fee calculation.
2. Fee submittals and annual emissions reports shall be certified as to truth, accuracy, and completeness by a responsible official.

[310 CMR 7.00, Appendix C, section (3)(g)(8) and 310 CMR 4.00]

XVII. Procedure for Title V Permit Termination

Upon request by the Permittee, the EPA may determine the operational phase of the WDA facility no longer meets the applicability criteria of 310 CMR 7.00, Appendix C, section (2)(a),

and as such the requirement to submit to the United States an annual permit fee in Section XVI.C of this permit shall be terminated. Any such determination by the EPA shall be made in writing and shall be effective on the date of the written notification to the Permittee. Termination of this permit condition shall not relieve the Permittee from complying with all other applicable provisions of this permit and of federal and state air regulations.

XVIII. Permit Modification

The Permittee may request a permit modification in accordance with the procedures of 310 CMR 7.00, Appendix C, section 8.

[310 CMR 7.00, Appendix C, section (8)]

XIX. Permit Term

The Permit terms and conditions associated with the operational phase of the windfarm shall expire five (5) years after issuance of this Permit.

Permit expiration terminates the Permittee's right to operate the facility's emission units and control equipment or associated equipment as it pertains to all permit terms and conditions associated with the operational phase of the permit, unless a timely and complete renewal application is submitted at least 6 months before the expiration date.

XX. Permit Renewal

Upon the EPA's receipt of a complete and timely application for renewal, this facility may continue to operate subject to final action by the EPA on the renewal application.

In the event the EPA has not taken final action on the Operating Permit renewal application prior to this Permit's expiration date, this Permit shall remain in effect until the EPA takes final action on the renewal application, provided that a timely and complete renewal application has been submitted in accordance with 310 CMR 7.00: Appendix C Section (13), substituting "Department" with "the EPA" within 310 CMR 7.00: Appendix C Section (13).

XXI. Agency Address

Subject to change, except for prompt reporting of permit deviations and fee payments, all correspondence required by this permit, including, but not limited to, all records, reports, or other information requested by EPA shall be forwarded to:

Vineyard Wind 1, LLC
Outer Continental Shelf Air Permit OCS-R1-03-M1 (August 19, 2022)

Air Compliance Clerk
U.S. EPA New England
5 Post Office Square
Mail Code: 04-2
Boston MA 02109-3912

Alternatively, the Permittee may submit reports electronically upon written notification by EPA of an approved electronic reporting procedure.

Prompt reporting of permit deviations shall be sent electronically to the Air Compliance Clerk. At the time of permit issuance, the email address is Schwartz.sandra@epa.gov.