Appendix H. Mitigation and Monitoring

The Final Environmental Impact Statement (EIS) assesses the potential biological, socioeconomic, physical, and cultural impacts that could result from the construction, operations and maintenance (O&M), and conceptual decommissioning of the Coastal Virginia Offshore Wind Commercial Project (CVOW-C or Project) proposed by Coastal Virginia Offshore Wind (CVOW) in its Construction and Operations Plan (COP) (Dominion Energy 2023). The Project described in the COP and this Final EIS would be approximately 2,500–3,000 megawatts (MW) in scale and sited 27 miles (23.75 nautical miles) off the Virginia Beach, Virginia Coastline within Lease Area OCS-A 0483. The Project is designed to serve demand for renewable energy in Virginia and North Carolina.

As part of the Project, CVOW has committed to implementing applicant-proposed measures (APMs) to avoid, reduce, mitigate, or monitor impacts on the resources discussed in Chapter 3, *Affected Environment and Environmental Consequences*, of the Final EIS. These APMs are described in Table H-1 of this appendix. The U.S. Department of the Interior, Bureau of Ocean Energy Management (BOEM) considers as part of the Proposed Action only those measures that CVOW has committed to in Section 4 of the COP (Dominion Energy 2023).

BOEM may select alternatives and require additional mitigation or monitoring measures to further protect and monitor these resources. Table H-2 provides additional mitigation and monitoring measures that may result from reviews under several environmental statutes (Clean Air Act, Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, Marine Mammal Protection Act, and National Historic Preservation Act) that are described in Appendix A of the Final EIS. Please note that not all of these mitigation measures are within BOEM's statutory and regulatory authority but could be adopted and imposed by other governmental entities. Other measures identified during development of this EIS are listed in Table H-3, and Table H-4 identifies measures that may be required by authorizations and permits issued to the lessee.

If BOEM decides to approve the COP, the Record of Decision (ROD) would state which of the mitigation and monitoring measures identified by BOEM in Table H-1 have been adopted, and if not, why they were not. As such, the ROD would inform terms and conditions of COP approval and would compel compliance with or execution of identified mitigation and monitoring measures (40 Code of Federal Regulations [CFR] 1505.3). CVOW would be required to certify compliance with certain terms and conditions, as required under 30 CFR 585.633(b). Furthermore, BOEM would periodically review the activities conducted under the approved COP. The frequency and extent of the review would be based on the significance of any changes in available information and on onshore or offshore conditions affecting, or affected by, the activities conducted under the COP.

Monitoring measures may be required to evaluate the effectiveness of a mitigation measure or to identify if resources are responding as predicted to impacts from the Proposed Action. Monitoring programs would be developed in coordination among BOEM and agencies with jurisdiction over the resource to be monitored. The information generated by monitoring may be used to (1) adapt how a mitigation measure identified in the COP or ROD is being implemented, (2) revise or develop new mitigation or monitoring measures required under the COP in accordance with 30 CFR 585.634(b) or develop measures for future projects, or (3) contribute to regional efforts for better understanding of the impacts and benefits resulting from offshore wind energy projects in the Atlantic (e.g., potential cumulative impact assessment tool). Unless specified, the proposed mitigation measures described below would not change the impact ratings on the affected resource, as described in Chapter 3, *Affected Environment and Environmental Consequences*, of the Final EIS, but would further reduce expected impacts or inform the development of additional mitigation measures if required.

Table H-1 Applicant-Proposed Measures

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
Construction; Decommissioning	Offshore Project Area	Disturbance to seabed. Disturbance to objects along the seabed. Disturbance to onshore geology.	• Dominion Energy would identify the most appropriate locations, based on geologic conditions, for installation that would require the least disturbance to the seabed. By opting for locations that avoid the most challenging geology, Dominion Energy would be able to utilize the least-invasive tools for Project installation to the extent practicable. • Dominion Energy would implement appropriate avoidance buffers to avoid contact with any objects on the seabed, to the extent practicable. Objects that cannot be avoided would be further investigated and an appropriate mitigation would be implemented. For cable crossings, this would include optimization of the crossing geometry as well as engineering of the crossing and associated protection. For potential unexploded ordnance, this would include investigation of contacts and mitigation through micrositing if possible and further action and mitigation if necessary. • Dominion Energy would minimize disturbance to onshore geology during the installation of Onshore Project Components by optimizing routes along previously disturbed onshore locations to the extent practicable. • Dominion Energy would consider weather forecasts at all times during the construction stage, and would halt operations in the event that extreme weather events are likely to occur. • Dominion Energy would avoid and/or relocate boulders that are too close to the installation of the Offshore Export Cable. • The Project would site Offshore Project Components to avoid areas of steep and/or unstable seabed where determined to prove a challenge to specific Project	Physical and Oceanographic Conditions

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			features or installation methods during detailed design. • Dominion Energy would incorporate information on the location of mobile sediments and potential for scour into the design and installation of the Offshore Project Components. • The risk related to soft soils would be thoroughly considered when the jack-up vessel is deployed. • Dominion Energy has moved or eliminated some wind turbine generators (WTGs) locations near potential shallow gas from consideration for the Project. • The Project would implement an avoidance buffer around all wrecks, to the extent possible. Shipwrecks of cultural significance would be avoided in accordance to recommendations from the Project's QMA and are discussed in detail in COP Appendix F, Marine Archaeological Resources Assessment. • The Project would avoid identified debris during Project installation, to the extent possible. In the event that avoidance is not feasible, individual targets may be inspected by a remotely operated vehicle (ROV) to determine if the object poses a risk to operations and if it may be removed from the seabed. • Dominion Energy will engage with asset owners in order to complete crossing agreements which will detail the conditions and methodology for each cable crossing. • Dominion Energy would microsite and re-route Offshore Project Components to avoid an unexploded ordnance (MEC) when feasible. If potential MEC cannot be avoided through micrositing, ROV investigations will be implemented in order to fully assess the MEC potential. If ROV investigations determine MEC is present, MEC mitigation will be considered by the Project, subject to agency approval. If MEC mitigation is necessary, it is anticipated that only MEC relocation, and no MEC detonation, would occur in conjunction with Project	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			activities • The Offshore Export Cable Route Corridor has been reduced in width while crossing the Dam Neck Ocean Disposal Site (DNODS) in order to minimize the portion of the DNODS impacted by the Project. While seabed processes are likely to disperse dumped sediment through time, the accumulation of deposited dredge material overlying the buried cables could result in thermal and ampacity changes. This would be considered during the detailed design of the Offshore Project Components and installation works.	
O&M	Offshore Project Area	Disturbance to seabed. Disturbance to objects on the seabed.	• Operations would occur at locations of previously disturbed seabed to minimize the potential for disturbing new seabed whenever possible. • Whenever possible, operations and maintenance would occur at locations of previously disturbed seabed to minimize the potential for disturbing new objects along the seabed whenever possible. In addition, the Project would conduct routine geophysical surveys to monitor the status of the installed cable on the seabed as discussed in Section 3, *Description of Proposed Activity*.	Physical and Oceanographic Conditions
Construction; Decommissioning	Onshore Project Area	Short-term elevated in-air noise levels associated with vibratory pile driving at the cofferdam for Trenchless Installation exit at the Offshore Trenchless Installation Punch-Out location. Short-term elevated in-air noise levels associated with Trenchless Installation at the Cable Landing Location and the	• Trenchless Installation activities would occur during the daytime period. • Dominion Energy would consult with the appropriate regulatory agency regarding nighttime work in the case of an emergency. In the case of nighttime operations, only the drill rig, power unit, and light banks would be used unless otherwise deemed acceptable from the appropriate regulatory authority. • If necessary, subject to regulatory requirements and stakeholder engagement, Dominion Energy would install moveable temporary noise barriers as close to the sound sources as possible, which have been shown to effectively reduce sound levels by 5 to 15 A-weighted decibels (dBA).	In-Air Acoustic Environment

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		onshore cable crossing locations. Short-term elevated in-air noise levels associated with construction of the Onshore Export Cable Route, Switching Station, Interconnection Cable Route, and Onshore Substation.	• Dominion Energy would limit construction to the daytime period unless deemed acceptable from the appropriate regulatory authority. • Dominion Energy would ensure construction equipment is well maintained and vehicles using internal combustion engines equipped with mufflers would be routinely checked to ensure they are in good working order. • Dominion Energy would ensure construction equipment is located as far as possible from noise-sensitive areas. • If noise issues are identified, Dominion Energy would install moveable temporary noise barriers as close to the sound sources as possible, which have been shown to effectively reduce sound levels by 5 to 15 dBA. • Dominion Energy would make a Project Communications Plan available to help actively address all noise-related issues in a timely manner.	
Construction; Decommissioning	Offshore Project Area	Short-term elevated in-air noise levels associated with impact pile driving of Wind Turbine Generator Foundation and Offshore Substation Jacket Foundations. Short-term elevated in-air noise levels associated with offshore support vessels.	• If the final design engineering requires sound mitigation measures, Dominion Energy would implement such measures within the Project footprint, as necessary.	In-Air Acoustic Environment
O&M	Onshore Project Area	Long-term elevated in-air sound levels associated with Switching Station and Onshore Substation. Short-term elevated in-	• If the final design engineering requires sound mitigation measures, Dominion Energy would implement such measures within the Project footprint, as necessary.	In-Air Acoustic Environment

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		air sound levels associated with operations and maintenance activities.		
O&M	Offshore Project Area	Long-term elevated in-air sound levels associated with the Wind Turbine Generators, Offshore Substation, and, as necessary, operation of sound signals.	No mitigation measures are expected for the Offshore Project area.	In-Air Acoustic Environment
Construction; Decommissioning	Offshore Project Area	Short-term increase in underwater noise levels associated with WTG Foundations and/or pin pile impact pile driving activities required for the installation of WTG and Offshore Substation Jacket Foundations. Short-term increase in underwater noise levels associated with pile driving for cofferdam installation. Short-term increases in underwater noise levels associated with impact pile driving for goal post installation. Short-term increase in underwater noise levels associated with Offshore Export Cables and Inter-Array Cable laying	• Noise mitigation requirements and methods have not been finalized at this stage of permitting; therefore, two levels (6 decibels [dB] and 10 dB) of reduction were applied to potentially mimic the use of noise mitigation options such as bubble curtains. • The results of the analysis would be used to inform development of evaluation and mitigation measures that would be applied during construction and operations and maintenance (O&M) of the Project, in consultation with BOEM and National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). • The Project would obtain necessary permits to address potential impacts on marine mammals, sea turtles and fisheries resources from underwater noise and would establish appropriate and practicable mitigation and monitoring measures through discussions with regulatory agencies.	Underwater Acoustic Environment

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		activities. Short-term increase in underwater noise levels associated with Project-related vessels.		
O&M	Offshore Project Area	Increase in underwater noise levels associated with WTG operations. Increase in intermittent underwater noise levels associated with Project O&M and Project-related vessels.	• No mitigation measures are expected to be needed during Project O&M to minimize underwater noise levels.	Underwater Acoustic Environment
Construction; Decommissioning	Onshore Project Area	Short-term increase in Project-related emissions.	• Most of the vessels and the onboard construction equipment would utilize diesel engines burning ultra-low sulfur fuel, while some larger construction vessels may use fuel containing up to 1,000 ppm sulfur by weight. • Onshore Project area construction activities would primarily utilize diesel-powered equipment, including horizontal directional drilling operations, trenching/duct bank construction, and cable pulling and termination. • Any fugitive dust generated during construction of the Onshore Project Components would be managed in accordance with the Project's Fugitive Dust Control Plan.	Air Quality
Construction; Decommissioning	Offshore Project Area	Short-term increase in Project-related emissions.	• Vessels constructed on or after January 1, 2016, would meet IMO Tier III nitrogen oxides requirements when operating within the North American Emission Control Area (200 nautical miles [370.4 kilometers]) established by the International Maritime Organization. • Vessels would use the highest-tier marine engines available to the Project at the time of vessel deployment. • The jack-up vessel used for WTG installation would use selective catalytic reduction for control of NO_x emissions	Air Quality

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			from its main engines. • Project-related vessels that are fueled exclusively at U.S. terminals would use ultra-low sulfur diesel fuel and vessels fueled at marine terminals outside the U.S. will, at a minimum, use fuel at or below the maximum fuel sulfur content requirement of 1,000 parts per million established per the requirements of 40 CFR 80.510(k). • Diesel generator engines (i.e., both permanent and temporary non-emergency and emergency engines) would comply with the applicable requirements in New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines in 40 CFR 60 Subpart IIII. • The Project would provide EPA with data on horsepower rating of all propulsion and auxiliary engines, duration of operating time, load factor, and fuel consumption for Project-related vessels to determine actual emissions from Project-related vessels, as applicable. • The Project would provide vessel engines and emissions control equipment information to BOEM and the USEPA, as applicable, in accordance with the requirements set forth in the ROD and/or the issued Outer Continental Shelf air permit.	
O&M	Offshore Project Area	Long-term increase in Project-related emissions.	• As detailed in COP Appendix N, *Air Emissions Calculations and Methodology*, operations and maintenance activities are assumed to include one service operations vessel, two crew transfer vessels, and several vessels for periodic surveys and maintenance over the operational life of the Project. • Operations and maintenance support vessels are assumed to operate out of a port located in the Hampton Roads area of Virginia (Lambert's Point in Norfolk, Virginia has been used for the purpose of estimating emissions).	Air Quality

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			• Vessels would use the highest-tier marine engines available to the Project at the time of vessel deployment. • Vessels constructed on or after January 1, 2016, would meet IMO Tier III nitrogen oxides requirements when operating within the North American Emission Control Area (200 nautical miles [370.4 kilometers]) established by International Maritime Organization. • Project-related vessels that are fueled exclusively at U.S. terminals would use ultra-low sulfur diesel fuel and vessels fueled at terminals outside the U.S. will at a minimum, use fuel at or below the maximum fuel sulfur content requirement of 1,000 parts per million established per the requirements of 40 CFR 80.510(k). • Permanent diesel generator engines will comply with the applicable requirements in New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines in 40 CFR 60 Subpart IIII. • The Project would provide EPA with data on horsepower rating of all propulsion and auxiliary engines, duration of operating time, load factor, and fuel consumption for Project-related vessels to determine actual emissions from Project-related vessels, as applicable. • The Project would provide vessel engines and emissions control equipment information to BOEM and the USEPA, as applicable, in accordance with the requirements set forth in the ROD and/or the issued Outer Continental Shelf air permit.	
O&M	Onshore Project Area	Long-term increase in Project-related emissions.	• Onshore emergency generators would comply with applicable emission standards in 40 CFR Part 60 Subpart JJJJ and 40 CFR Part 63 Subpart ZZZZ.	Air Quality

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
Construction; Decommissioning	Offshore Project Area	Short-term disturbance of seabed sediment due to installation of the WTG Monopile Foundations and Offshore Substation Jacket Foundations, Inter-Array Cables, Offshore Export Cables, and site preparation for installation of scour protection. Short-term potential for inadvertent return of drilling fluids during horizontal directional drilling. Short-term potential for inadvertent return of drilling fluids during horizontal directional drilling. Short-term impacts due to accidental spills and/or releases offshore.	• Dominion Energy would develop and implement a horizontal directional drilling inadvertent release plan. Local pollution prevention and spill response procedures would be included in the Stormwater Pollution Prevention Plan (SWPPP) submitted to State agencies for the portions of the land-disturbing activity covered by the Virginia Pollutant Discharge Elimination System Construction General Permit. • Dominion Energy would manage accidental spills or releases of oils or other hazardous wastes through the Oil Spill Response Plan (Appendix Q). Project-related vessels would be subject to U.S. Coast Guard (USCG) wastewater and discharge regulations and would operate in compliance with oil spill prevention and response plans that meet USCG requirements. Specifically, all Project vessels would comply with USCG standards in U.S. territorial waters to legally discharge uncontaminated ballast and bilge water as well as standards regarding ballast water management. While outside the 3.0-nautical mile (5.6 kilometer) state-border/no-discharge zone (NDZ), vessels would deploy a USCG-certified marine sanitation device (MSD) with certifications displayed. While inside the 3.0 nautical mile (5.6 kilometer) state-border/NDZ, vessels would take normal vessel procedures to close off MSD-effluence discharge piping and redirect it to onboard	Water Quality

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
	Onshore Project Area	Short- term increase in erosion and runoff due to land disturbance. Short-term impacts due to dewatering trenches and excavations. Short-term potential for accidental releases from onshore construction vehicles or equipment.	"Zero-Discharge Tanks" for appropriate disposal either at dock or outside of an NDZ. Additionally, all vessels less than 79 feet (24 meters) would comply with the Small Vessel General Permit issued by USEPA on September 10, 2014, for compliance with National Pollutant Discharge Elimination System permitting. Prevention and response measures for accidental spills and releases are further described in Appendix Q, *Oil Spill Response Plan.* • Dominion Energy would avoid or minimize excavation dewatering in the location of the Battlefield Golf Club. • Dominion Energy would develop a SWPPP for construction activities that would conform with the Virginia Department of Environmental Quality Construction General Permit, Dominion Energy's approved Annual Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) for Electric Transmission Line Development, and local pollution prevention and spill response procedures. The SWPPP would include steps that Dominion Energy must take to comply with the permit, including water quality requirements, and discuss the potential to encounter contaminated groundwater during excavation near the Battlefield Golf Club. The SWPPP would discuss how to protect surface water and groundwater quality if contaminated groundwater is encountered. • Dominion Energy would restrict access to only existing paved roads and approved access roads at wetland and stream crossings where possible. • Dominion Energy would restrict access through wetlands and waterbodies to identified construction sites, access roads, and work zones. • Dominion Energy would conduct onshore refueling and/or maintenance of construction equipment and vehicles outside resource areas to the extent	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			practicable. • Dominion Energy would implement an inadvertent return plan with use of non-toxic drilling fluids for review and approval by the appropriate regulatory agencies.	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
O&M	Offshore Project Area	Long-term effects due to WTG Monopile Foundations and Offshore Substation Jacket Foundations and associated scour protection. Short-term change in water quality due to oil spills or accidental release of fluids from vessels required during operations.	• Dominion Energy would use scour protection as necessary around the WTG Monopile Foundations and Offshore Substation Jacket Foundations and cable protection mats to minimize effects of local sediment transport. • Dominion Energy would subject Project-related vessels to USCG wastewater and discharge regulations and ensure they operate in compliance with oil spill prevention and response plans that meet USCG requirements. Specifically, all Project vessels would comply with USCG standards in U.S. territorial waters to legally discharge uncontaminated ballast and bilge water as well as standards regarding ballast water management. While outside the 3.0 nautical mile (5.6 kilometer) state-border/NDZ, vessels would deploy a USCG-certified MSD with certifications displayed. While inside the 3.0-nautical mile (5.6-kilometer) state-border/NDZ, vessels would take normal vessel procedures to close off MSD-effluence discharge piping and redirect it to onboard “Zero -Discharge Tanks” for the appropriate disposal either at dock or outside of an NDZ. Additionally, all vessels less than 79 feet (24 meters) would comply with the Small Vessel General Permit issued by USEPA on September 10, 2014, for compliance with National Pollutant Discharge Elimination System permitting. Prevention and response measures for accidental spills and releases are further described in Appendix Q, *Oil Spill Response Plan*. • Dominion Energy would develop an SWM Plan and ESC Plan ESC in accordance with Dominion Energy’s approved Annual Standards and Specifications for SWM and ESC for Electric Transmission Line Development, and local ordinances as applicable. Routinely inspect and clean on-site stormwater control features to remove debris or excess vegetation that may impede the designed functionality. The SWM plan would describe how the stormwater control facilities would be	Water Quality
	Onshore Project Area	Long-term effects due to stormwater runoff.		

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			operated and maintained after construction is complete.	
Construction; Decommissioning	Onshore Project Area	Installation of permanent structures within wetlands, wetland transition areas, riparian areas, and protected watersheds. The permanent conversion of existing wetland cover types. The temporary removal of vegetation within wetlands, wetland transition areas, riparian buffers, and protected watershed features. Erosion of sediment from construction activities into adjacent wetlands and waterbodies. The potential for an inadvertent release of non-toxic drilling fluids to the surface during horizontal directional drilling (HDD) activities The potential for accidental releases from construction vehicles or equipment.	• Temporary construction areas and workspaces would be restored to pre-construction conditions, while permanent structures would remain in place. • Dominion Energy would collocate Onshore Project Components in existing rights-of-way (ROWs), existing roads, previously disturbed areas, and otherwise urbanized locations to the maximum extent practicable. • Dominion Energy would site permanent structures outside of protected watershed features and flood-prone areas to the maximum extent practicable. • Dominion Energy would use a combination of HDD and overhead routing to the best extent practicable to avoid and minimize impacts on natural resources. • Dominion Energy would purchase stream and wetland mitigation credits in the applicable service area of a mitigation bank or contribute to an approved in-lieu-of-fee program, such as the Virginia Aquatic Resources Trust Fund Program, prior to construction to mitigate unavoidable impacts on wetlands and waterbodies. • Dominion Energy would restrict access during construction to existing paved roads or access roads constructed for stream or waterbody crossings. Where necessary, access would also be restricted to avoid alteration of soil properties (compaction) that may result in unintended impacts. • Dominion Energy would use temporary avoidance/minimization efforts for wetland access where avoidance is not possible. These efforts would include use of temporary timber mats, using 8- to 12-inch (20- to 30-centimeter)-thick timber, for heavy machinery movement and to avoid unintended impacts on wetlands such as soil compaction, damage to root systems, and development of ruts. • Dominion Energy would develop an invasive species	Wetlands

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			control plan to prevent the spread of invasive species throughout the maintained ROWs and recently disturbed locations. Only agency-approved native species would be replanted, and all plans would be guided by desktop and on-the-ground evaluation of invasive species present in the area. • Dominion Energy would develop a compensatory mitigation plan, where permanent conversion of wetlands is unavoidable, to include on-site mitigation where practicable, off-site mitigation, or purchase of mitigation credits. This mitigation plan would be further refined as a component of the U.S. Army Corps of Engineers (USACE) permitting package. • Dominion Energy would restrict access through wetlands except where approved by regional and local regulatory entities. • Dominion Energy would develop and implement erosion and sediment control plans in compliance with Dominion Energy's Virginia Department of Environmental Quality-approved Standards and Specifications for Erosion and Sediment Control and Stormwater Management for Electric Transmission Line Development and appurtenant facilities such as substations and switching stations, as well as any additional requirements specific to the U.S. Department of Defense (DoD) lands (if applicable). • Dominion Energy would install temporary timber matting for access routes through wetlands to protect vegetation to reduce compaction, minimize ruts, and reduce soil discharge. • Dominion Energy would develop and implement an inadvertent release plan with use of non-toxic drilling fluids to be reviewed and approved by the appropriate regulatory agencies. • Dominion Energy would manage accidental spills or releases of oils through a spill prevention, control, and	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			countermeasures plan for approval by the appropriate regulatory agency.	
O&M	Onshore Project Area	It is not anticipated that Project-related activities in association with O&M would result in new impacts on wetlands and waterbodies.	• Dominion Energy would take protective measures to prevent access to any active operation area including, but not limited to, security and safety fencing. • Dominion Energy would monitor revegetation throughout the life of the Project and leading up to decommissioning. Monitoring would comply with a restoration plan and invasive species control plan. Monitoring would serve as the primary measure for ensuring return of wetland, waterbody, and special area functionality following completion of construction and during necessary O&M. • Dominion Energy would monitor mitigation efforts where appropriate and define via the approved permitting package. • Dominion Energy would assess and maintain stormwater control and treatment features on a regular interval, as specified in the SWPPP. This would include removal of debris and a determination of functionality.	Wetlands
Construction; Decommissioning	Onshore Project Area	Vegetation removal associated with installation of all Onshore Project Components. The inadvertent release of drilling fluids to the surface during HDD activities within environmentally sensitive areas. Noise and light activities associated with construction equipment and other noise-generating activities	• Dominion Energy would collocate Onshore Project Components in or adjacent to existing ROWs, existing roads, previously disturbed areas, and other urbanized locations to the maximum extent practicable. • Dominion Energy would seed and stabilize construction areas involving temporary vegetation clearing with an appropriate grass seed mix (in urban areas) or native seed mix (in natural areas) and in accordance with Virginia Erosion and Sediment Control Law and Regulations (Virginia Department of Environmental Quality [VDEQ] 2014) and the Virginia Erosion and Sediment Control Handbook (VDEQ 1992). • Dominion Energy would prepare and submit a mitigation planting plan to the City of Virginia Beach for approval to address unavoidable temporary impacts that would	Terrestrial Vegetation and Wildlife [Coastal Habitat and Fauna]

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		associated with construction Impedance to local migration of terrestrial biota (such as reptiles and amphibians) from installation and placement of erosion- and sediment-control measures such as staggered silt fencing or stabilization matting. Accidental releases of petroleum products from construction vehicles or equipment. Potential for erosion into adjacent vegetation and wildlife habitat. Conversion of existing vegetation cover types (e.g., forested to herbaceous) where the onshore routes are not collocated with existing road corridors or utility ROWs. Permanent fragmentation of habitat as a result of clearing, particularly of large contiguous forested wetland habitats. Colonization and establishment of invasive vegetation in formerly undisturbed	occur within sensitive ecological areas (such as within the Southern Rivers Watershed). The City of Virginia Beach may require native plantings. • Dominion Energy would plant or seed larval host plants and forage plants in the Interconnection Cable Routes after construction efforts have been completed in order to avoid and minimize impacts on pollinator species. A list of regionally appropriate species as well as regional suppliers of native seed mixes are available from the U.S. Department of Agriculture Natural Resources Conservation Service (2020). • Dominion Energy would develop and implement an inadvertent release plan with use of non-toxic drilling fluids to be reviewed and approved by the appropriate regulatory entities. • Dominion Energy would coordinate with the U.S. Fish and Wildlife Service (USFWS), Virginia Department of Wildlife Resources (VDWR), and Virginia Natural Heritage Program to ensure potential impacts on threatened and endangered (T&E) species are avoided and minimized to the maximum extent practicable. • Dominion Energy would evaluate time-of-year restrictions for applicable T&E species via coordination with the USFWS, VD WR, and Virginia Natural Heritage Program. • Dominion Energy would limit lighting associated with construction vehicles and work zones when possible to reduce interaction with or disturbance of wildlife species such as bats and insectivorous birds. • Dominion Energy would initiate coordination with the VDWR and Virginia Natural Heritage Program to evaluate potential impacts on T&E reptile and amphibian species, including the canebrake rattlesnake. • Dominion Energy would install staggered silt fencing in areas surrounding wetlands, waterbodies, and areas with the potential to contain T&E species, rare natural	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		areas due to clearing. Impacts to locally rare or sensitive species and natural communities.	communities, and habitat for reptiles and amphibians. Staggered gaps would ensure reptiles and amphibians could continue to move relatively unrestricted through the Onshore Project area. This strategy would be employed on a site-specific basis following coordination with VDWR and the Virginia Natural Heritage Program. • Dominion Energy would, when applicable, employ snake-friendly erosion-control blankets containing natural or biodegradable fibers or loose-weave netting in areas surrounding wetlands, waterbodies, and areas with the potential to contain habitat for reptiles and amphibians. • Additional mitigation strategies would be adhered to in accordance with VDWR consultation regarding impacts on canebrake rattlesnake habitat if determined to be necessary. • Dominion Energy would restrict vehicular access to paved roads, approved road crossings, and designated construction areas. • Dominion Energy would manage accidental spills or releases of oils through a spill prevention, control, and countermeasures plan approved by the appropriate regulatory entity. • Dominion Energy would develop and implement erosion and sediment control plans in compliance with Dominion Energy's VDEQ-approved Standards and Specifications for ESC and Stormwater Management (SWM) for Electric Transmission Line Development and appurtenant facilities such as substations and switching stations. • Dominion Energy would prepare and maintain a SWPPP in compliance with Virginia Pollution Discharge Elimination System VAR10 Construction General Permit. A permit would be required because the land-disturbing activity would exceed 1.0 acre (0.4 hectare). As a component of the permit, the SWPPP would be	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			prepared and maintained throughout Project construction and retained for 3 years following construction completion as required by Virginia Law. • Dominion Energy would restrict construction access to existing paved roads or access roads constructed for stream or waterbody crossings. Where possible, restrict access to avoid alteration of soil properties (compaction) that may result in unintended impacts. • Dominion Energy would use temporary timber mats in wetlands, using 8- to 12-inch (20- to 30-centimeter)-thick timber, for heavy machinery movement and to avoid unintended impacts on wetland soils. • Dominion Energy would develop an invasive species control plan to prevent the spread of invasive vegetation into natural communities via maintained ROWs and recently disturbed locations. Replanting would be an approved use of native species only, and all plans would be guided by desktop and on-site evaluation of invasive species present in the area. • Dominion Energy would develop and implement a landscape restoration plan in compliance with applicable local and regional ordinances, paying specific attention to re-seeding and replanting with native plant stock. • Dominion Energy would revegetate temporary access areas with native plants and/or an appropriate native seed mix. • Dominion Energy would develop standard best management practices (BMPs) to reduce the spread of invasive species to previously uncolonized areas that would be incorporated into the invasive species control plan and implemented during construction. Resources detailing BMPs to prevent the introduction and spread of invasive species are recommended by the U.S. Department of Agriculture National Invasive Species Information Center (NISIC), and a comprehensive guide	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			was published by the University of Georgia in 2011 (USDA NISIC 2020; Moorhead et al. 2011). • Dominion Energy would coordinate with the USFWS, VDWR, and the Virginia Natural Heritage Program to avoid impacts on rare and T&E species or natural communities to the greatest extent practicable, and to identify additional minimization and mitigation measures if necessary. • Dominion Energy would develop and implement invasive species control and landscape restoration plans to prevent the introduction and spread of invasive species and to facilitate restoration of disturbed habitats. • Dominion Energy would develop a compensatory mitigation plan, where permanent conversion of wetlands is unavoidable, to include on-site mitigation where practical, off-site mitigation, or purchase of mitigation credits or payment of an in-lieu fee mitigation as appropriate. This mitigation plan would be further refined as a component of the USACE permitting package.	
O&M	Onshore Project Area	Conversion of existing vegetation cover types as a result of permanent access roads, structures, and facilities in previously vegetated areas. Vegetation disturbance as a result of routine or periodic facility maintenance (e.g., invasive species control, herbicide applications, and mowing) throughout the lifetime of the facility.	• Dominion Energy would implement an invasive species control plan to avoid the spread of invasive species for the lifetime of the Project, and provide the plan for agency review and approval, as applicable. • Dominion Energy would limit unauthorized access of Onshore Project personnel and vehicles beyond existing disturbed areas and approved access roads to the extent practicable. • Dominion Energy would plant and seed desirable noninvasive native species within the ROWs to reduce establishment of invasive woody vegetation requiring control. • Dominion Energy would adhere to all federal, state, and local laws and regulations pertaining to herbicide	Terrestrial Vegetation and Wildlife [Coastal Habitat and Fauna]

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		Noise or light disturbance associated with routine facility maintenance and activities (at permanent facilities such as substations) throughout the lifetime of the facility.	application. If herbicides are to be used in wetland habitats, use wetland-safe herbicide to avoid unintended impacts on sensitive wetland wildlife and vegetation. • During operations, the Project will be in compliance with relevant City of Virginia Beach and City of Chesapeake noise requirements. If the final design engineering requires sound mitigation measures, they will be implemented within the Project footprint, as necessary. • Dominion Energy would implement lighting-reduction measures, such as downward projecting lights, lights triggered by motion sensors, and limiting artificial light to the extent practicable, to avoid disruption to nocturnal avian and bat species. • Dominion Energy would take protective measures to prevent access to any active operation area including, but not limited to, security and safety fencing. • Dominion Energy would monitor revegetation throughout the life of the Onshore Project and leading up to decommissioning. Monitoring would comply with the approved landscape restoration plan and invasive species control plan, as required by the City of Virginia Beach and the City of Chesapeake, as well as an invasive species control plan. Monitoring would serve as the primary measure for ensuring return of natural habitat functionality following completion of construction and necessary operation. • Dominion Energy would employ vegetation control methods, including application of herbicides for maintenance of ROWs that would comply with all applicable federal, state, and local laws and regulations.	
Construction; Decommissioning	Offshore Project Area	Short-term attraction to, and potential collision with, Project-related vessels and partially installed Offshore	• To mitigate impacts from lighting, Dominion Energy would use BMPs identified by BOEM COP guidelines (BOEM 2020) and would comply with Federal Aviation Administration (FAA) and USCG requirements for lighting while, to the extent practicable, using lighting	Avian and Bat Species

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		Project Components. Short-term disturbance of, and displacement from, offshore habitat.	technology (e.g., low-intensity strobe lights) that minimize impacts on avian and bat species. • Dominion Energy would document any dead or injured birds or bats found on Project vessels or structures during the construction stage of the Project and would submit an annual report to BOEM and USFWS (any birds found with federal bands will be reported to the U.S. Geological Survey [USGS] Bird Band Laboratory). Any occurrence of dead ESA birds or bats must be reported to BOEM, Bureau of Safety and Environmental Enforcement (BSEE), and USFWS as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting, and if practicable, carefully collect the dead specimen and preserve the material in the best possible state (BOEM requirement).	
Construction; Decommissioning	Onshore Project Area	Disturbance of, and displacement from, onshore habitat.	• Dominion Energy would avoid potential effects to birds and bats by using trenchless installation techniques in coastal areas at the Cable Landing Location; collocating the Onshore Export Cable Route with existing roads as much as possible; and timing construction activities to avoid critical periods when endangered and threatened species may be affected to the extent practicable. • If either or both of the Harpers or Chicory Switching Stations are constructed, then they would be constructed within either previously developed areas associated with an existing golf course or small areas of mixed forest and woody wetland. Some tree and vegetation clearing will be required, but will be minimized to the extent practicable. • To the extent practicable, Dominion Energy would collocate the Interconnection Cable Route within or adjacent to existing transmission line corridors and ROWs as much as possible, timing construction activities to avoid critical periods when endangered and threatened species may be affected.	Avian and Bat Species

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			• Tree/vegetation clearing would avoid trees favorable for bat maternity roosting locations and would be conducted outside of the breeding/roosting season to avoid nesting birds and bat maternity roosting locations to the extent practicable. • Dominion Energy conducted presence/absence surveys for bats (acoustic and/or mist net) along the Onshore Project area, pursuant to discussions with VDWR, USFWS, and appropriate regulatory agencies that were performed in June/July 2022 under the approved bat survey plan. • Dominion Energy conducted an eagle/osprey/raptor nest survey along the Interconnection Cable Route in March 2022 of the Onshore Project area, pursuant to discussions with VDWR, USFWS, and appropriate regulatory agencies. • Where surveys indicate the presence of species of conservation concern, Dominion Energy would work with the VDWR and USFWS to minimize potential impacts prior to construction. • Dominion Energy has conducted presence/absence surveys for bats (acoustic and/or mist-net) along the interconnection cable route and developing avoidance and minimization measures in coordination with the VDWR, USFWS, and appropriate regulatory agencies to ensure protection of Indiana bats and northern long-eared bats. • Dominion Energy is developing avoidance and minimization measures in coordination with the VDWR, USFWS, and appropriate regulatory agencies to ensure protection of threatened and endangered species or to address the potential for incidental take, that may occur within the Project area; • These avoidance and minimization measures would include that Dominion Energy adhere to the existing 4(d) provisions for tree clearing activities performed	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			prior to the new regulation on April 1, 2024 and will adhere to the year-round time of year restrictions for suitable habitat after new regulation implementation. • Dominion Energy would ensure avoidance, minimization, and mitigation measures protective of wetlands, vegetation, and other wildlife species discussed in COP Section 4.2.1, *Wetlands and Waterbodies*, and COP Section 4.2.2, *Terrestrial Vegetation and Wildlife*, also would be protective of bird and bat species and their habitats.	
O&M	Offshore Project Area	Long-term risk of collision with WTGs and Offshore Substations. Long-term displacement from the Lease Area due to presence of WTGs and Offshore Substations. Long-term attraction to and displacement from Project-related maintenance vessels.	• To mitigate the potential for collision with WTGs and Offshore Substations during O&M stage of the Project, Dominion Energy would use BMPs identified by BOEM COP guidelines (BOEM 2020) and comply with FAA and USCG requirements for lighting and, to the extent practicable, use lighting technology (e.g., low-intensity strobe lights, flashing red aviation lights) that minimize impacts on bat species. • To continue the advancement of the understanding of avian and bat activity in the offshore environment, Dominion Energy will continue operation of one Acoustic Thermographic Offshore Monitoring System two additional years to inform the development of the CVOW Commercial Project as the CVOW Pilot WTGs are installed adjacent to the west side of the CVOW Commercial lease. • Dominion Energy will provide Motus Wildlife Tracking tags to the USFWS, which is currently studying the movements of piping plovers in the region. The specific deployment location will be determined in consultation with the USFWS. • Dominion Energy will purchase satellite tags to be attached to Rufa red knots (*Calidris canutus*; rufa subspecies). These tags will provide accurate data on Rufa red knot movements onshore, offshore, and flight heights that can be related to weather data. The	Avian and Bat Species

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			deployment location will be determined in consultation with USFWS. • Dominion Energy upgraded the Motus network/antennas on both CVOW Pilot WTG platforms to a "dual-mode" (166 and 434 megahertz [MHz]) system with one station prioritized for 434 MHz and the other prioritized for 166 MHz in accordance with the updated USFWS guidance document. This antenna upgrade increases the monitoring range from approximately 1 mile (2 kilometers) to approximately 9 miles (15 kilometers) and will remain in place for 2 years. • Dominion Energy would reduce perching opportunities on offshore structures to the extent practicable and, where possible, in compliance with health and safety requirements for the WTGs and Offshore Substations. • Dominion Energy would develop a robust post-construction monitoring plan with clear goals, monitoring questions, and methods, including monitoring that focuses on areas of uncertainty such as bird and bat presence offshored, and would install automated radio telemetry receiver stations (i.e., Motus towers) on select offshore structures. • Dominion Energy would document any dead or injured birds or bats found on Project vessels or infrastructure (offshore and onshore) during construction, O&M, or decommissioning, in an annual report submitted to BOEM and USFWS (any birds found with federal bands would be reported to the USGS Bird Band Laboratory); Any occurrence of dead ESA birds or bats must be reported to BOEM, BSEE, and USFWS as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting, and if practicable, carefully collect the dead specimen and preserve the material in the best possible state (BOEM requirement).	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			• Dominion Energy would limit risks of long-term displacement of offshore bird species, to the extent practicable. • Potential impacts would be further minimized by reducing lighting on O&M vessels to the extent practicable.	
O&M	Onshore Project Area	Long-term risk of collision with overhead Interconnection Cables. Long-term displacement from onshore habitat at Onshore Project Components.	Dominion Energy would reduce potential impacts of the overhead lines by complying with Avian Power Line Interaction Committee (https://www.aplic.org/) best practices to reduce collision and electrocution.	Avian and Bat Species
Construction; Decommissioning	Offshore Project Area	Disturbance of softbottom habitat. Disturbance, injury, or mortality of benthic and pelagic species. Change in water quality, including turbidity, sediment deposition, and chemical contamination. Entrainment of plankton and ichthyoplankton. Increase in underwater noise and vibration.	• Dominion Energy would further microsite within the Offshore Export Cable Route Corridor to avoid such habitats where feasible to minimize the probability of adverse interactions with sensitive benthic resources. • The release of non-toxic drilling muds during Trenchless Installation activities is possible but unlikely. Dominion Energy would develop and implement an Inadvertent Release Plan that would include pollution prevention measures and spill response procedures covered by the SWPPP. • Dominion Energy would commit to using a soft-start procedure and noise mitigation systems such as bubble curtain technologies to avoid or minimize impacts on marine mammals, sea turtles, fishes, and mobile invertebrates. During pile-driving activities, Dominion	Benthic Resources; Marine Mammals; Sea Turtles; and Finfish, Invertebrates, and EFH

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			Energy will implement near-field and/or far-field noise mitigation systems to minimize underwater sound propagation. Examples of near-field noise mitigation systems include the Hydro Sound Damper, the Noise Mitigation Sleeve or the AdBm Noise Mitigation System. Dominion Energy is committed to the use of a double big-bubble curtain for far-field noise mitigation.	
O&M	Offshore Project Area	Long-term conversion of softbottom to artificial hardbottom habitat and introduction of vertical infrastructure to the water column. Habitat creation for nonindigenous species such as invasive tunicate (*Didemnun vexilium*). Increase in shading and artificial lights. Increase in underwater noise and vibration. Change in water quality, including fuel and chemical spills. Introduction of Project-related electromagnetic fields (EMF).	• Dominion Energy does not expect the installation of hard structure to introduce nonindigenous species to the Project Area; however, existing species in the area may colonize or become associated with the structures once they are installed (e.g., lionfish). • Dominion Energy will comply with USCG Lighting, Marking, and signage requirement for navigational safety, on all Project structures. • Dominion Energy would develop and implement an Oil Spill Response Plan describing measures to avoid accidental spills and protocols to be implemented should a spill occur. Dominion Energy also would require all Project-related vessels to operate in accordance with laws regulating at-sea discharges of vessel -generated waste. • Dominion Energy would commit to burying Project-related cables wherever feasible to minimize detectable EMF.	Benthic Resources
Construction; Decommissioning	Offshore Project Area	Short-term disturbance of habitat. Short term loss of local prey species. Short-term introduction of marine debris. Short-term increase in	• Dominion Energy has sited Offshore Project Components, including WTG Monopile and Offshore Substation Jacket Foundations and Offshore Export Cable Route Corridors, to avoid sensitive benthic habitats and minimize disturbance of benthic features to the extent practical. • Dominion Energy would implement practices to prevent	Marine Mammals

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		risk of entanglement and entrapment. Short-term increase in underwater noise. Short-term increase in risk of ship strike due to the increase in vessel traffic. Short-term change in water quality, including oil spills.	Project personnel from commencing or continuing certain construction activities should marine mammals be observed within clearance and exclusion zones based on required NOAA Fisheries monitoring and mitigation protocols and stipulations of the Lease. The specific clearance and exclusion zones for marine mammals are provided in Section 3.15, Marine Mammals, of the EIS. • During pile driving of WTG Monopile and Offshore Substation Jacket Foundations, Dominion Energy would apply monitoring and exclusion zones as appropriate to underwater noise assessments and impact thresholds. The specific clearance and exclusion zones for marine mammals are provided in Table 3.15-7 in Section 3.15, Marine Mammals, of the EIS. • Qualified NOAA Fisheries-approved Protected Species Observers, real-time monitoring systems, Passive Acoustic Monitoring systems, and reduced visibility monitoring tools (e.g., night vision, infrared, and/or thermal cameras) will be employed to enforce these zones. • Construction personnel will employ soft starts and shutdown procedures as appropriate to thresholds of noise-emitting survey equipment; soft starts will last 30 minutes at the onset of pile driving. • If shutdown is called for but it is determined that shutdown is not feasible due to risk of injury or loss of life, there will be a reduction of hammer energy. • Dominion Energy would use commercially and technically available noise-reducing technologies as appropriate to achieve a minimum of 10 dB noise reduction, and will provide marine mammal sighting and reporting training for each specific stage of construction to emphasize individual responsibility for marine mammal awareness and protection. • Foundation installation will only occur between May and	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			October, in order to avoid the winter and spring seasons when NARW presence is greatest. • Dominion Energy would ensure continued engagement with regulatory agencies regarding potential best practices. • All Project-related vessels larger than 65 feet (20 meters) will be required to abide by speed restrictions when transiting within the Seasonal Management Area (SMA) from November 1 to April 30. • Dominion Energy would conduct monitoring of NOAA's website for updates to Dynamic Management Area (DMA) locations. • All Project-related vessels will be required to comply with the Ship Strike Reduction Rule speed restrictions within the Mid-Atlantic U.S. SMA and any DMA that intersects the Study Area (10 knots [18.5 kilometers/hour] or less for vessels 65 feet [20 meters] or longer). • Dominion Energy would require Project-related vessels to maintain a distance of 328 feet (100 meters) or greater from all marine mammals and 1,640 feet (500 meters) from North Atlantic right whales. Vessels larger than 300 gross tons (305 metric tons) will receive whale sighting updates and vessel speed reminders when transiting North Atlantic right whale territory by reporting to the North Atlantic right whale Mandatory Ship Reporting System. • Project personnel, particularly marine mammal observers, will check the NOAA Fisheries website for DMA locations. • Dominion Energy would provide Project personnel with marine mammal sighting, take and harassment, and reporting training to emphasize individual responsibility for marine mammal awareness and protection. • Dominion Energy has also developed an Oil Spill	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			Response Plan (COP Appendix Q; Dominion Energy 2023), proposing measures to avoid inadvertent releases and spills and a protocol to be implemented should an event occur. Project-related vessels will operate in accordance with laws regulating at-sea discharges of vessel-generated waste.	
O&M	Offshore Project Area	Modification of habitat. Project-related EMF. Project-related marine debris. Project-related underwater noise. Increase in risk for ship strike due to the increase in vessel traffic. Changes in water quality, including oil spills.	• Dominion Energy proposes to use submarine high-voltage alternating-current (HVAC) offshore export cables; such cables emit EMF below levels documented to have adverse effects on fish or marine mammal behavior. • Dominion Energy would require all Project personnel to implement appropriate practices and protocols to prevent the release of marine debris. • Dominion Energy would implement several measures to avoid, minimize, and mitigate marine mammal physical disturbances, strikes, and collisions. • All Project-related vessels will be required to comply with the Ship Strike Reduction Rule speed restrictions within the Mid-Atlantic United States. SMA and any DMA that intersects the Project Area (10 knots [18.5 kilometers/hour] or less for vessels 65 feet [20 meters] or longer). • Dominion Energy would require Project-related vessels to maintain a distance of 328 feet (100 meters) or greater from all marine mammals and 1,640 feet (500 meters) from North Atlantic right whales. • Vessels larger than 300 gross tons (305 metric tons) will receive whale sighting updates and vessel speed reminders when transiting North Atlantic right whale territory by reporting to the North Atlantic right whale Mandatory Ship Reporting System. • Project personnel, particularly marine mammal observers, will check the NOAA Fisheries website for DMA locations.	Marine Mammals

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			• Dominion Energy would provide Project personnel with marine mammal sighting and reporting training to emphasize individual responsibility for marine mammal awareness and protection. • Dominion Energy has also developed an Oil Spill Response Plan (Appendix Q) proposing measures to avoid inadvertent releases and spills and a protocol to be implemented, should a potential vessel oil and fuel spill or contaminant release from resuspended sediments occur. • Project-related vessels will operate in accordance with laws regulating at-sea discharges of vessel-generated waste.	
Construction; Decommissioning	Offshore Project Area	Short-term disturbance of habitat. Short-term loss of local prey species. Short-term increase in construction-related lighting. Short-term introduction of marine debris. Short-term increase in risk of entanglement and entrapment. Short-term increase in underwater noise. Short-term increase in risk of ship strike due to the increase in vessel traffic. Short-term change in water quality, including oil spills.	• Dominion Energy has sited Offshore Project Components, including WTG and Offshore Substation Foundations and Offshore Export Cable Route Corridors, to avoid sensitive benthic habitats and minimize disturbance of benthic features to the extent practical. • Dominion Energy would require all offshore personnel and vessel contractors to implement appropriate debris control practices and protocols to prevent the accidental release of marine debris. All Project-related vessels would operate in accordance with regulations pertaining to at-sea discharge of vessel-generated waste. • Dominion Energy would implement the following measures as appropriate to avoid, minimize, and mitigate potential impacts of construction-related underwater noise: o Implement monitoring and exclusion zones where pile-driven foundations are installed, enforced by qualified NOAA Fisheries-approved Protected Species Observers. o Implement real-time monitoring systems. o Employ soft starts and shutdown procedures where technically feasible.	Sea turtles

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			○ Employ soft starts for a duration of 30 minutes at the onset of pile-driving activities. ○ Use reduced visibility monitoring tools/technologies (e.g., night vision, infrared, and/or thermal cameras). ○ Use commercially and technically available noise-reducing technologies. ○ Provide sea turtle sighting and reporting procedures for appropriate Project-related personnel specific to construction and its potential impacts on sea turtles. • Dominion Energy would also ensure continued engagement with regulatory agencies regarding potential best practices. • Dominion Energy has developed an Oil Spill Response Plan (Appendix Q), detailing all proposed measures to avoid accidental spills and a protocol to be implemented should such an event occur. Additional information may be found in COP Section 4.4.12, *Public Health and Safety*. All Project-related vessels would operate in accordance with regulations pertaining to at-sea discharge of vessel-generated waste. • Dominion Energy would provide a full decommissioning plan to the appropriate regulatory agencies for approval prior to decommissioning activities, and potential impacts will be re-evaluated at that time.	
Operations and Maintenance	Offshore Project Area	Modification of habitat. Project-related EMF. Project-related lighting. Project-related marine debris. Project-related underwater noise. Increase in risk for ship strike due to the	• Dominion Energy has identified areas where sufficient cable burial is achievable, further buffering the pelagic environment from cable EMF, and cable protection would serve as an alternative barrier where sufficient cable burial is not feasible. • Dominion Energy would consult appropriate regulatory agencies regarding operational lighting requirements. • Dominion Energy would require all offshore personnel to implement appropriate practices and protocols to avoid and minimize the release of marine debris.	Sea Turtles

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated

		increase in vessel traffic.
		Changes in water quality, including oil spills.
			• Dominion Energy would implement the following measures as appropriate to avoid, minimize, and mitigate potential vessel-related impacts:
			  ○ Vessel speed restrictions while transiting to and from the review area.
			  ○ Vessel collision avoidance measures for vessels working in or transiting to and from the Project area, including a 164 feet (50 meters) separation distance from all sea turtle species.
			• Dominion Energy has developed an Oil Spill Response Plan (Appendix Q) that details all measures proposed to avoid an inadvertent spill of vessel oil or fuel and a protocol to be implemented should such an event occur.
			• Dominion Energy would implement the following measures as appropriate to avoid, minimize, and mitigate potential impacts on water quality:
			  ○ Vessel operation in accordance with regulations pertaining to at-sea discharges of vessel-generated waste.	

Construction; Decommissioning	Offshore Project Area	Disturbance to submerged marine archaeological and cultural resources.	• Dominion Energy will develop an operations plan prior to construction, to ensure that construction activities adhere to the recommended avoidance buffers. • Design and construction methods, including micrositing opportunities, will continue to be evaluated in order to avoid the extent of seabed disturbance and adverse effects to historic properties. • Disturbance to known resources that cannot practicably be avoided would only occur with appropriate consultations (i.e., BOEM, State Historic Preservation Offices, Tribal Historic Preservation Officers) and approvals. • Dominion Energy has developed and will implement an Unanticipated Discoveries Plan (UDP) to avoid and mitigate impacts to unknown resources and ancient submerged landform features.	Cultural Resources

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			• Dominion Energy will establish and comply with requirements for all protective buffers recommended by the QMA for each marine cultural resource (i.e., archaeological resource and ancient submerged landform feature) based on the size and dimension of the resource.	
O&M	Offshore Project Area	Disturbance to submerged marine archaeological and cultural resources.	• Repairs and other future activities will only occur within previously disturbed portions of the area of potential effects (APE) which have been previously assessed by the QMA. • Adherence to the QMA recommended avoidance buffers would remain in effect during operations.	Cultural Resources
Construction; Decommissioning	All Onshore Project Areas	Disturbance to subsurface terrestrial archaeological and cultural resources	• All Project personnel involved in construction activities must be familiar with the Unanticipated Discoveries Plan (UDP) and the processes for notification of appropriate individuals if archaeological material is encountered. • An archaeological monitor will be on call and ready to assess unanticipated discoveries during all construction activities along the length of the APE. • The identity of the avoided, or partially avoided resources as archaeological sites will not be disclosed to the public or to construction/installation staff but will be known to the archaeological monitor.	Cultural Resources
Construction; Decommissioning	Cable Landing Location and Onshore Export Cable Route	Disturbance to subsurface terrestrial archaeological and cultural resources	• An archaeological monitor will be present at SMR Camp Pendleton during all construction activities that involve subsurface disturbance. • Portions of site 44VB0388 outside of the present APE will be delineated with temporary fencing during all construction activities.	Cultural Resources
Construction; Decommissioning	Switching Station	Disturbance to subsurface terrestrial archaeological and cultural resources	• A buffer of 10 ft (3 m) will be established around the grave/memorial site identified on NAS Oceana/Aeropines Golf Course. • The buffer will be surrounded by fencing during all construction activities.	Cultural Resources

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			• An archaeological monitor will be present during all construction activities. • Any archaeological removal of human remains would require a permit from Virginia DHR, pursuant to Code of Virginia §10.1-2305, "Permit required for the archaeological excavation of human remains."	
Construction; Decommissioning	Interconnection Cable Route	Disturbance to subsurface terrestrial archaeological and cultural resources	• An archaeological monitor will be present at site 44VB0162 during all construction activities that involve subsurface disturbance. • Portions of site 44VB0162 outside of the present APE will be delineated with temporary fencing during all construction activities. • An archaeological monitor will be present at site 44CS0250 during all construction activities that involve subsurface disturbance. • Portions of site 44VCS0250 outside of the present APE will be delineated with temporary fencing during all construction activities.	Cultural Resources
Construction; Decommissioning	Laydown Yard	Disturbance to subsurface terrestrial archaeological and cultural resources	• The APE of site 44VB0412 will be delineated by fencing. Construction personnel will be instructed to stay within the fenced area and avoid work outside of the APE.	Cultural Resources
O&M	Offshore Project Area	Long-term visual effects from the presence of Offshore Project Components on cultural resources.	• Dominion Energy will provide financial support for the survey and documentation of Doyletown or Queen City. These funds will support scholarship on one of these historic resources and further the understanding of the property by the public. • Dominion Energy will provide financial support for the development of a renovation plan for the Cape Henry Lighthouse Visitor Services Center. These funds will support the interpretation of the first and second Cape Henry lighthouses and Fort Story for the public good. • Dominion Energy will provide financial support for the preparation of NRHP nominations for the Pocahontas Fowling Club and the Princess Anne County Gunning	Cultural Resources

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			and Hunt Clubs MPD. These funds will support scholarship on these historic resources and further the understanding of the properties by the public. This measure serves to educate the public on hunt clubs. • Dominion Energy will provide the funds for the City of Virginia Beach to hire a contractor to develop a Sea Level Rise Mitigation Plan. This mitigation measure will further preservation efforts of historic buildings in Virginia Beach for the public good. • Dominion Energy will provide funds for the Outer Banks Conservationists to help restore the Currituck Beach Lighthouse. This measure will further the preservation of the Currituck Beach Lighthouse.	
Construction; O&M	Onshore and Offshore Project Area	Physical impacts from Onshore Project components and long-term visual effects from the presence of Offshore Project Components on cultural resources.	• Documentation with a public outreach component of historic resources associated with the SMR. This would enhance the public's knowledge of the resource and ensure its protection.	Cultural Resources
O&M	Offshore Project Area	Long-term visual effects from the presence of Offshore Project Components on cultural resources and visual and scenic resources.	• Dominion Energy would implement an aircraft detection lighting system (ADLS) to automatically activate lights when aircraft approach and then return to darkness.	Cultural Resources and Visual Resources
Construction; Decommissioning	Onshore Project Area	Short-term visual impacts during offshore construction activities. Short-term visual impacts during onshore construction activities.	• Dominion Energy would implement a Fugitive Dust Plan to minimize dust and visual pollution. The Onshore Project area would be maintained free of debris, trash, and waste to the extent possible during construction, and areas temporarily disturbed during construction would be restored to the conditions required by state and/or local permits.	Visual Resources
O&M	Onshore Project Area	Long-term visual effects from the presence of Onshore Project	• Dominion Energy would evaluate vegetative screening to help screen views of the Onshore Substation and Switching Station and design the lighting of the Onshore	Visual Resources

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		Components.	Substation and Switching Station to reduce light pollution where feasible (e.g., downward lighting, motion-detecting sensors). • Dominion Energy would consult with the U.S. Navy, City of Virginia Beach, and the City of Chesapeake to evaluate color treatment and other visual impact mitigations for Switching Station and the Onshore Substation.	
Construction; Decommissioning	Onshore Project Area	Short-term increase in spending on construction materials and services and related economic activity in the region (Hamptons Road area) and state (Virginia). Short-term increase in construction-related employment and income in the region and state. Short-term increase in tax revenues for state and local governments. Short-term increase in the demand for housing. Potential short-term effects to property values. Short-term increase in the demand for public services.	• Project-related vessels transiting to the Lease Area would be consistent with existing vessel traffic off the coast of Virginia. • Dominion Energy would coordinate with local fire and police departments as needed throughout construction of the Project.	Demographics
O&M	Onshore Project Area	Long-term increase in spending on O&M and related economic activity in the region.	• Dominion Energy would coordinate with local fire and police departments as needed throughout operation of the Project.	Demographics

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		Long-term increase in O&M-related employment and income in the region. Long-term increase in tax revenues for state and local governments. Long-term increase in demand for housing. Long-term increase in the demand for public services. Long-term change in property values due to O&M activities.		
Construction; Decommissioning	Onshore Project Area	Short-term increase in construction vehicle traffic and activity. Temporary shortage of affordable temporary housing due to increased demand. Short-term increase in tax revenues for state and local governments. Short-term increase in construction-related employment and income in the region and state. Short-term increase in the demand for public services.	• Dominion Energy would coordinate with local fire and police departments as needed throughout construction of the Project. • The Project would use existing roads, ROWs, and infrastructure where possible. • Communications and outreach to foster the meaningful public participation of potential environmental justice communities is ongoing to better understand how communities may be affected and identify related mitigation measures.	Environmental Justice
O&M	Onshore Project Area	Decrease in availability of long-term housing due to in-migration of	• Dominion Energy has attempted to site the Offshore Project area where it would have the least impact on commercial fishing. Further, the addition of Offshore	Environmental Justice

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		operations workers. Long-term presence of Offshore Project Components in the Lease Area (e.g., wind turbine generators [WTGs] and Offshore Substations). Long-term presence of Onshore Project Components. An increase in O&M-related vehicle traffic. Long-term increase in local and regional government tax revenues. Long-term increase in O&M-related employment and income in the region. Long-term increase in the demand for public services.	Project Components (WTGs and scouring) would facilitate natural reef building which can increase overall species abundance and diversity. This may have positive benefits for the fishing industries in the area. • Dominion Energy is committed to coexistence with commercial and recreational fishing and is conducting extensive outreach and engagement with the fishing community as part of this Project, which will assist in identifying additional environmental justice populations that may rely on the Offshore Project area for fishing and who may require additional engagement. • Dominion Energy would coordinate with local fire and police departments as needed throughout the operations period of the Project.	
Construction; Decommissioning	Onshore Project Area	Short-term disruption to adjacent land uses at the Cable Landing Location and along the Onshore Export Cable Route and Interconnection Cable Route Corridors, including recreational uses associated with the SMR property within the Onshore Export Cable	• A schedule showing the months when construction would occur is provided in Section 1, Table 1.1-3. • To avoid disruption of recreational uses, installation of the Onshore Export Cable would be coordinated with localities and stakeholders to avoid and minimize potential impacts on recreational and tourism uses to the extent practicable. Once construction is complete, the roads and parking lots would be restored to previous conditions. • To further minimize potential construction effects, adjacent landowners would be provided timely	Land Use and Coastal Infrastructure

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		Route Corridor. Direct disturbance during construction and installation of the Onshore Export Cable Route, Switching Station, Interconnection Cable Route, and Onshore Substation.	information regarding the planned construction activities and schedule, and work also would be coordinated with appropriate regulatory agencies. Dominion Energy would provide regular updates to the local community through social media, public notices, and/or other appropriate communications tools. • Temporary safety zones would be implemented around construction activities to ensure the safety of the public. • Dominion Energy would provide regular updates to the local community through social media, public notices, and/or other appropriate communications tools. • Any additional temporary staging areas necessary to support onshore construction activities are anticipated to be located on either previously disturbed lands or within the area of disturbance for construction, to the extent practicable. • During construction, the Project would additionally involve temporary construction laydown area(s). The portion of the parcel not required for long-term operation of the Onshore Substation would be restored to previous conditions once construction is complete.	
O&M	Onshore Project Area	Long-term conversion of land for the access to facilities of Onshore Export Cable, Switching Station, Interconnection Cable Route, and the Onshore Substation.	• If necessary, permitting, regulatory actions, and other actions would be taken in the future for development of the Interconnection Route as part of the Preferred Alternative if direct land use displacement, land acquisitions, or re-zonings are required. • Dominion Energy intends to coordinate with permitting authorities and stakeholders to identify what, if any, land use may continue within land acquired for the Interconnection Route, as well as any additional mitigation measures that may be appropriate related to impacts on local land use and resources during construction and operations and maintenance.	Land Use and Coastal Infrastructure
Construction; Decommissioning	Onshore Project Area	Short-term increase in Project-related	• Dominion Energy would develop a Traffic Management Plan (TMP) in coordination with, and approved by, the	Land Use and Coastal

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		construction vehicle traffic, including workforce commuting trips. Temporary modification of roadway traffic patterns due to lane closures, street closures, and travel restrictions (e.g., one-way traffic, alternating traffic).	affected federal, state, and local agencies as applicable to offset any anticipated traffic-related impacts associated with increased vehicle demand during construction. As part of the preparation of the TMP, Dominion Energy would coordinate with local and state transportation and public works departments to identify any planned roadway improvements that may impact traffic operations within the Transportation and Traffic geographic analysis area. The TMP would include, but not be limited to, the development of vehicular travel routes to and from the Project construction site; provision of highly visible markings, signage, and lighting of active construction sites; provision of sufficient on-site parking; and implementation of temporary, localized construction zones to minimize areas or sections of road closure. • Dominion Energy would provide regular updates to the local community through social media, public notices, and other appropriate communications methods and schedule construction activities to minimize impacts on the summer peak tourism season to the extent practicable where appropriate and as deemed necessary by local authorities.	Infrastructure
O&M	Onshore Project Area	An increase in operation and maintenance vehicle traffic, including workforce commuting trips.	• Dominion Energy would develop a TMP that would offset any anticipated traffic-related impacts associated with increased vehicle demand during construction in the same manner as described above for Project-related construction vehicle traffic.	Land Use and Coastal Infrastructure
Construction; Decommissioning	Offshore and Onshore Project Area	Short-term displacement of marine users due to the establishment of safety zones around Project-related vessels and structures. Short-term displacement of recreational users onshore due to the	• Dominion Energy would establish a Project-specific website to share information about the Project's construction progress with the community and to give guidance on the construction activities and how they may affect marine traffic in the area. Dominion Energy would also issue specific local notices to mariners (LNTMs) in coordination with USCG throughout the construction period. To ensure the safety of commercial and recreational mariners, temporary vessel restrictions	Recreation and Tourism

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		establishment of safety zones around Project-related equipment and construction areas. Minor and temporary increases to local traffic during construction for the Onshore Project area.	may reduce access within the temporary Wind Turbine Generator work areas, the nearshore HDD area, and along the offshore installation corridor during construction. As appropriate, these areas would be marked and illuminated in accordance with USCG requirements and monitored by a security boat available to assist local mariners. • Dominion Energy would coordinate shoreline construction activities with localities and stakeholders to avoid and minimize conflicts with users to the extent practicable. In addition, Dominion Energy intends on coordinating construction activities with the Virginia SMR to avoid and minimize conflicts with recreational uses to the extent practicable. • To avoid disruption of recreational uses, installation of the Onshore Export Cable would be coordinated with localities and stakeholders to avoid and minimize potential impacts on recreational and tourism uses to the extent practicable. Once construction is complete, the roads and parking lots would be restored to previous conditions. • Dominion Energy intends to coordinate construction activities to minimize impacts on the extent practicable and to provide regular updates to the local community through social media, public notices, and/or other appropriate communications tools. • Dominion Energy would not block roadways to the SMR vehicular traffic for long periods of time for onshore construction activities.	
O&M	Offshore and Onshore Project Area	Long-term modification of existing marine uses in the Offshore Project area. Long-term displacement of recreational activities in the Onshore Project	• Dominion Energy would notify recreational mariners of all non-emergency Project-related maintenance activities on its website and social media sites and work in accordance with the USCG requirements. When possible, Dominion Energy would schedule and plan maintenance activities to minimize impact and interruption to recreation and tourism activities in the	Recreation and Tourism

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		area.	Project Area. In order to maintain navigational safety for marine recreational users, Dominion Energy would place a radar beacon (RACON; radar responder) at the WTG site comply with USCG Lighting, Marking, signage requirement • When possible, Dominion Energy would schedule and plan maintenance activities to minimize impact and interruption to recreation and tourism activities in the Project Area.	
Construction; Decommissioning	Offshore Project Area	Potential for temporary displacement of fishing activity. Potential for temporary disturbance to local commercial fish species. Potential for risk of gear entanglements on partially installed structures. Potential for increase in Project-related vessel traffic.	• Closures would be limited to discrete segments of the Offshore Project Components that would have restricted access on a temporary basis while construction is active. • Dominion Energy would work with fishermen and the head of marine construction operations to review operational planning and schedules in order to identity any areas where fishing operations may be temporarily displaced. Dominion Energy would also work with the USCG and make notices of area closures publicly available through LNTMs posted to Dominion Energy's website and social media. • Dominion Energy would work with those affected fishermen to minimize any potential impact. Dominion Energy would remain committed to coexistence with the commercial and recreational fishing industries. • Dominion Energy is planning to utilize underwater noise mitigation (e.g., bubble curtain or equivalent) to mitigate temporary impacts of pile driving on marine species. • The Fisheries Communications Plan (COP Appendix V; Dominion Energy 2023) developed for the Project, combined with the direct outreach activities anticipated during construction, would provide the fishing community with advance notice, prior to formal LNTM, describing the extent and duration of construction activities and locations of all fixed structures within the Offshore Project area, including partially installed	Commercial Fisheries and For-Hire Recreational Fishing

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			structures within the safety zone. • For the safety of both mariners and Project technicians, Dominion Energy would establish safety zones around construction activities as applicable. Dominion Energy would notify all mariners via LNTM of the presence and location of partially installed structures. • Dominion Energy would ensure that all Project-related vessels follow appropriate navigational routes and communicate to other mariners via LNTM and/or radio communications to mitigate risks to the commercial and recreational fishing industries as well as other mariners.	
O&M	Offshore Project Area	Potential for loss of access to traditional fishing grounds, or temporary displacement of fishing activity during maintenance activities. Potential for modification of habitat and displacement of target commercial species. Potential for increased Project-related vessel traffic. Potential for positive beneficial increases in species diversity and abundance. Potential for impacts on marine radar/navigation instruments due to the presence of WTGs.	• Dominion Energy would continue to coordinate with existing commercial fishermen that utilize the Offshore Project area (largely using fixed gear [pots/traps and gillnets]) and emerging fisheries to ensure they can deploy and recover their gear safely during operations and maintenance. • Dominion will also ensure that the operation WTGs and Offshore Substations comply with USCG safety zones (should they become effective during the operational life of the Project) when offshore service vessels/crew transfer vessels are present and/or WTG technicians are aboard Project components, to ensure safe working conditions and safe vessel operation. • Dominion will also ensure that the operational wind turbine generators and Offshore Substations include adequate marking and lighting in accordance with USCG approved measures to ensure safe vessel operation. • Dominion Energy is in the process of establishing partnerships with local and regional experts from institutions, including the Virginia Institute of Marine Science and the Virginia Aquarium to facilitate preparation of pre- and post-construction monitoring plans, driven by the stakeholders' interests and built upon existing data.	Commercial Fisheries and For-Hire Recreational Fishing

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			• Dominion Energy would continue to ensure that all Project-related vessels follow appropriate navigational routes and other USCG "rules of the road," communicate via USCG LNTM, issue regular mariner updates and/or direct offshore radio communications to help mitigate risks to the commercial and recreational fishing industry as well as other mariners. • Dominion Energy would leverage its experience on this topic with the CVOW Pilot Project and would work with the USCG and the local fishing community to refine site-specific controls or settings that may help to mitigate potential interference of marine radar associated with the presence of Offshore Project Components.	
Construction; Decommissioning	Offshore Project Area	Temporary displacement of existing regional vessel traffic. Vessel allision risk with partially installed structures.	• Project-related vessel traffic would follow existing transit routes to the extent practicable and Dominion Energy would coordinate with USCG and local port authorities during the construction stage of the Project. • Project-related construction and vessel activities would be communicated to the maritime community by use of LNTMs in coordination with the USCG throughout the construction stage. This information would also be posted on Dominion Energy's social media pages and website. • The Project will require operational Automated Identification System (AIS) on all vessels associated with the construction, operation, and decommissioning of the Project, pursuant to USCG and AIS carriage requirements. AIS will be required to monitor the number of vessels and traffic patterns for analysis and compliance with vessel speed requirements. • To reduce the risks of vessel allision, Dominion Energy would mark potential hazards in coordination with USCG. • Dominion Energy would develop LNTMs that would include locations of partially installed structures. In addition, Dominion Energy would advise mariners of	Navigation

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			safety zones around all Offshore Project Components under construction and construction-related activities for the safety of mariners.	
O&M	Offshore Project Area	Long-term displacement of maritime vessels due to new fixed structures. Temporary diversion of maritime vessel traffic because of occasional O&M activities to the Offshore Project Components. Long-term vessel collision risk. Long-term vessel allision risk with WTGs and Offshore Substations.	• The WTG layout was designed to have a 397-foot (121-meter) buffer to the edges of the Lease Area to ensure that no structures would be outside of the Lease Area including the blades. • Dominion Energy would provide information to the USCG for publication in the LNTM, which provides schedules and locations for all O&M activities, and would continue to coordinate with the USCG. • All Offshore Project Components (i.e., infrastructure associated with the Project) would be charted on the relevant nautical charts (electronic and print) in conjunction with NOAA Fisheries. Dominion Energy would seek to have infrastructure charted prior to the start of the construction stage. This includes precise, planned Offshore Export Cable location information provided in spreadsheet and geographic information system formats. • Dominion Energy will Comply with Federal Aviation Administration (FAA), BOEM, and U.S. Coast Guard (USCG) lighting, marking and signage requirements to aid navigation for each WTG.	Navigation
Construction; Decommissioning	Offshore Project Area	Short-term increase in Project-related vessel traffic due to the construction of Offshore Project Components. Short-term adjustments to military vessel traffic during offshore construction activities.	• Dominion Energy would schedule and track Project-related vessels to best manage congestion and traffic flow in coordination with the USCG, DoD, and other national security stakeholders. • Where practical, Project vessels would utilize transit lanes, fairways, and predetermined passage plans consistent with existing waterway uses. • Dominion Energy would continue to communicate and engage with key national security stakeholders, including the USCG, DoD, and others, to coordinate installation activities.	Other Uses

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			• USCG would publish LNTMs and broadcast LNTMs to inform mariners and aviators of Project activities in the area. • Dominion Energy would publish an operations plan on the Project website to inform mariners and other interested parties on what work is being done in the Offshore Project area. • Dominion Energy would establish and enforce safety zones around active construction areas. • Should USCG safety zone authorities not extend beyond 12 nautical miles (22 kilometers) at the time of construction, Dominion Energy would utilize a combination of safety vessels, LNTMs, and Convention on the International Regulations for Prevention of Collisions at Sea to promote both awareness of these activities and the safety of the construction equipment and personnel. Project vessels will also send and receive AIS signals for awareness and collision avoidance.	
Construction; Decommissioning	Onshore Project Area	Short-term disturbance at the Cable Landing Location and along the Onshore Export Cable Corridor.	• Once construction is complete, the lands, roads, and parking lots would be restored to previous conditions. • To minimize potential construction effects on DoD activities, DoD would be provided timely information.	Other Uses
O&M	Offshore Project Area	Long-term modification of existing waterway use. Long-term presence of new fixed structures (e.g., Offshore Project Components) in the Offshore Project area. Occasional diversion of national security maritime vessel traffic	• Dominion Energy may need to implement temporary safety zones (e.g., foundation locations and/or cable installation vessels) during O&M activities. • Dominion Energy would maintain regular communications and updates with all key national security stakeholders on timing and locations of maintenance activities in order to avoid, minimize, and mitigate impacts. • Dominion Energy would ensure that Wind Turbine Generators and Offshore Substations are properly marked and lighted in accordance with FAA Advisory	Other Uses

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		due to short-term inspection, repair, or replacement of Offshore Export Cables or Inter-Array Cables, and other such O&M activities.	Circular 70/7460-1M (FAA 2020), BOEM's Proposed Guidelines for Providing Information on Lighting and Marking of Structures Supporting Renewable Energy Development (BOEM 2021), the International Association of Marine Aids' (IALA's) Navigation and Lighthouse Authorities Recommendation G1162 the Marking of Man-Made Offshore Structures (IALA 2021), and referencing COP Appendix T, *Obstruction Evaluation and Additional Analysis*. • Dominion Energy would provide as-built information to NOAA) National Ocean Service to support necessary updates to navigation charts in coordination with other stakeholders as needed. • Dominion Energy would work with USCG to facilitate training exercises within the Offshore Project area as requested. Dominion Energy would also provide regular communications and updates with key national security stakeholders on Project-related activities that may affect national security operations. • Dominion Energy would employ helicopters for O&M activities for the transfer of personnel and materials to the Offshore Project area. Dominion Energy would control Project vessel and helicopter movements through the Control Center to minimize vessel encounters during training operations in and near the Offshore Project area. • Dominion Project vessels will also send and receive AIS signals for awareness and collision avoidance. • Dominion Energy would communicate with key national stakeholders on the timing and location of O&M activities. Dominion Energy would also follow the USCG establishment of safety zones around O&M activities.	
O&M	Offshore Project Area	Long-term conversion of land for the access to facilities (e.g., Cable Landing Location) in the	• Dominion Energy intends to coordinate with the SMR to identify what, if any, land use may continue within land acquired or leased for the Cable Landing Location, as well as any additional mitigation measures that may be	Other Uses

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		Onshore Project area.	appropriate related to impacts on DoD activities and resources during O&M.	
Construction; Decommissioning	Offshore Project Area	Short-term restricted access to sand resources and dredge disposal sites due to the implementation of safety zones. Short-term disturbance to seafloor, including existing submarine cables during construction. Short-term increase in vessel traffic during construction. Short-term noise impacts during construction.	• Dominion Energy would provide advance notice of construction and maintenance activities through LNTMs and broadcast LNTMs as well as on the Project website. • Dominion Energy would monitor and control Project vessel movements to minimize impacts on sand-borrowing and dredge spoil dumping activities. • Because safety zones would be implemented during construction activities, marine users are expected to be outside of this potential area of effect and are, therefore, not anticipated to be affected by this temporary disturbance in the Offshore Project area, other than temporarily being restricted from accessing these areas during construction activities. • Installation of the Offshore Export Cables in proximity to the four existing submarine cables (BRUSA fiber optic cable, MAREA fiber optic cable, DUNANT fiber optic cable, and Commercial Virginia Offshore Wind Pilot Export Cable) would be coordinated with these asset owners to avoid impacts on any of these critical seabed assets. • Dominion Energy would schedule and track Project-related vessels to best manage congestion and traffic flow in coordination with USCG and other maritime stakeholders. • All Dominion Project vessels will send and receive AIS signals for awareness and collision avoidance. • Where practical, Project vessels would utilize traffic separation schemes, fairways (should they be developed), and predetermined passage plans consistent with existing waterway uses. • The USCG would publish LNTMs and broadcast LNTMs to inform mariners of Project activities in the area. Additionally, a Project website with the operations plan	Other Uses

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			would be updated so that mariners know what work is being done in the various offshore Project locations. • During pile driving of WTG Monopile Foundations, Dominion Energy would apply monitoring and exclusion zones as appropriate to underwater noise assessments and impact thresholds. • Construction personnel would employ soft starts and shutdown procedures as appropriate to thresholds of noise-emitting survey equipment; soft starts would last 30 minutes at the onset of pile driving. • Dominion Energy would use commercially and technically available noise-reducing technologies as appropriate and provide marine mammal sighting and reporting training for each specific stage of construction to emphasize individual responsibility for marine mammal awareness and protection. • Dominion Energy would ensure continued engagement with regulatory agencies regarding potential best practices for noise mitigation.	
O&M	Offshore Project Area	Short-term restricted access in the vicinity of inspection, survey, maintenance, or repair. Long-term restricted access for inspection, maintenance, and repairs to existing cables.	• Should this activity be conducted near the Atlantic Ocean Channel and shipping lanes, Dominion Energy would schedule and control Project-related vessels to best manage congestion and traffic flow in coordination with USCG, as well as DoD exercises and training activities, as appropriate. • Dominion Energy has proactively sited the Offshore Export Cables to avoid active sand borrow sites and disposal sites to the extent practicable in an effort to avoid impacts. • Dominion Energy would work with the appropriate federal and state agencies to safeguard the export cable assets.	Other Uses
Construction; Decommissioning	Onshore and Offshore Project Area	Short-term interference with airspace and aviation radar systems	• Notice Criteria check (14 CFR § 77.9) and/or additional airspace and aviation radar system assessment would be performed to determine whether there are potential	Other Uses

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
		due to the temporary presence of construction equipment onshore and offshore as well as transportation of Project Components to the Project Area.	airspace impacts and FAA filing is required during the storage or transit of Project materials and Offshore Project Components. FAA coordination for the onshore portion of the Project will occur following further detailed engineering of structures, when structure heights have been determined. It is also possible that the DoD would request to be informed through the Informal Review Process for the transit of large materials. Further coordination with the DoD will occur as a result of the findings of the Informal Review Process and any notifications requested by the DoD will be applied to the Project as needed. • Dominion Energy would be in direct communication with applicable agencies and personnel to alert the appropriate parties to planned construction movements and actions. All WTG Components and construction equipment would be properly lighted and marked in accordance with FAA's Advisory Circular 70/7460-1M within FAA jurisdiction and beyond, or other methods as deemed required during consultation and as applicable.	
Operations	Onshore and Offshore Project Area	Long-term interference with regulated airspace due to the presence of fixed structures (Onshore and Offshore Project Components). Long-term interference with regulated aviation radar systems. Long-term interference with military radar operations. Long-term interference with high-frequency radar operations.	• Dominion Energy would coordinate with the FAA to make this required change to the airspace as necessary. In addition, all WTGs would be properly lighted and marked in accordance with FAA's Advisory Circular number 70/7460-1M within FAA jurisdiction and beyond. • Dominion Energy would continue to engage and coordinate with applicable military contacts to assess and address potential impacts as needed. • Dominion Energy would continue to engage and coordinate with applicable owners and operators of these high-frequency radar systems to assess and address potential impacts as needed.	Other Uses
Construction;	Offshore	Short-term change in	• Dominion Energy would take measures to minimize	Other Uses

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
Decommissioning	Project Area	Project-related vessel traffic. Short-term displacement of marine users due to the establishment of safety zones around Project-related vessels and structures. Short-term interference with access to nearshore and beach area. Short-term increases in turbidity and water quality. Short-term disturbance and displacement of local marine wildlife.	impacts associated with construction vessels, including transiting within existing traffic lanes to the extent feasible, regular communication with stakeholders regarding Project activity, completing construction as quickly as is safely practicable, and limiting vessel activity to necessary transits. • Dominion Energy would continue to coordinate with appropriate personnel from the Navy to ensure construction activities do not conflict with training and testing activities within the Virginia Capes Range Complex, including transits to/from such activities. • Dominion Energy would minimize displacement of other marine users by establishing restricted zones in portions of the Offshore Project area only for the time required to complete the work. • Dominion Energy would provide frequent and regular updates of construction activity and implemented safety zones to the local marine community through the Project website, social media, and the LNTMs and by actively engaging other stakeholders. Impacts on other marine and coastal uses will be short term and localized. • Dominion Energy would minimize the size of safety areas and duration of exclusion to reduce impacts on other users of the area. Dominion Energy is committed to keeping the coastal community informed by providing advance notice of area restrictions and regular updates to the public via local news, on-site signage, social media, and other suitable information outlets. • All Dominion Energy vessel crews would be familiar with practices to avoid and minimize accidental spills as detailed in Dominion Energy's Marine Trash and Debris Prevention Training, Emergency Response Plan, and Oil Spill Response Plan (see Appendix Q). • Dominion Energy would avoid and minimize disturbance of wildlife, particularly endangered sea turtles and	

Project Stage	Location	Impact	Description of Applicant-Proposed Avoidance, Minimization, and Mitigation Measures	Resource Area Mitigated
			marine mammals. Avoidance, minimization, and mitigation measures include soft-start pile driving, dedicated marine mammal and sea turtle observers on vessels, and other activities.	
O&M	Offshore Project Area	Long-term modification of existing uses. Long-term changes in vessel traffic. Increase in diving, snorkeling, and other tourism in the wind farm in the Offshore Project area. Increase in recreational fishing (including tournaments) near the WTGs as artificial reefs become established on the Foundations.	• Dominion Energy would minimize and mitigate impacts on other users by notifying local marine users when any major repairs are planned and reducing any necessary restriction to the extent that safety precautions allow. The crew transfer and O&M vessels would use established transit lanes and will not substantially restrict other uses. No measurable impact of vessel traffic is expected.	Other Uses

Table H-2 Mitigation and Monitoring Measures Resulting From Consultations

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
NHPA Section 106 Mitigation and Monitoring Measures					
1	Prior to C, C, O&M, D	Compliance with Section 106 Memorandum of Agreement	Dominion Energy will comply with stipulations of *The Memorandum Of Agreement Among the Bureau Of Ocean Energy Management, the State Historic Preservation Officers of Virginia and North Carolina, and the Advisory Council on Historic Preservation Regarding the Coastal Virginia Offshore Wind Commercial Project* (hereafter referred to as the *MOA*; Appendix O, Attachment A) as developed by BOEM, federally recognized tribes, State Historic Preservation Officers (SHPOs), the ACHP, and consulting parties (as defined in the Section 106 regulations) through NHPA Section 106 consultations. Consulting parties include those who are property owners of or have demonstrated interest in the historic properties BOEM has determined would be adversely affected by the Project.	Cultural Resources	BOEM, BSEE, VA SHPO, NC SHPO, USACE, U.S. Navy, ACHP, VDMA-VaARNG
2	C	Avoidance of Adverse Effects on Historic Properties in Marine Area of Potential Effect	Per MOA Stipulation I.A.1 and the associated avoidance plan for marine cultural resources (MOA, Attachment 3), Dominion Energy will comply with horizontal protective buffers recommended by the Qualified Marine Archaeologist for all 31 identified marine archaeological resources (i.e., Targets 1–31) and six (6) identified ancient submerged landform features (i.e., P-01, P-02, P-03, P-04-A, P-04-B, and P-05) to avoid adverse effects on these historic properties in the marine area of potential effects (APE).	Cultural Resources	BOEM, BSEE, VA SHPO, USACE
3	C	Marine Archaeology Post-Review Discovery Plan	Per MOA Stipulation XI, if historic properties are discovered that may be historically significant or unanticipated effects on historic properties are found; or in the event of a post-review discovery of a historic property or unanticipated effects on a historic property prior to or during construction, installation, O&M, or decommissioning of the Project,	Cultural Resources	BOEM, BSEE, VA SHPO, USACE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			Dominion Energy will implement actions which are consistent with the post-review discovery plan (PRDP) for marine archaeology (MOA, Attachment 7).		
4	C	Avoidance of Adverse Effects on Historic Properties in Terrestrial Area of Potential Effect	Per MOA Stipulation I.A.2 and the associated avoidance plan for cultural resources located in the terrestrial APE (MOA, Attachment 4), Dominion Energy will install temporary fencing for avoiding adverse effects on three (3) terrestrial archaeological resources (i.e., 44CS0250, 44VB0162, and 44VB0412) and one (1) grave/memorial on Naval Air Station Oceana (i.e., 34-5027-0050) in the terrestrial APE; and on one (1) terrestrial archaeological resource outside of but adjacent to the terrestrial APE.	Cultural Resources	BOEM, BSEE, VA SHPO, U.S. Navy, VDMA-VaARNG
5	C	Archaeological Monitoring in the Terrestrial Area of Potential Effects	Per MOA Stipulation II.A.1, Stipulation X, and the associated minimization plan for cultural resources located in the terrestrial APE (MOA, Attachment 4), Dominion Energy will conduct archaeological monitoring of construction activities such that an archaeological monitor will be present at the locations of the following historic properties and cultural resources during construction activities that involve subsurface disturbance: 44CS0250; Camp Pendleton/State Military Reservation Historic District; and the grave/memorial on Naval Air Station Oceana (i.e., 34-5027-0050).	Cultural Resources	BOEM, BSEE, VA SHPO, U.S. Navy, VDMA-VaARNG
6	C	Terrestrial Archaeology Post-Review Discovery Plan	Per MOA Stipulation XI, if historic properties are discovered that may be historically significant or unanticipated effects on historic properties are found; or in the event of a post-review discovery of a historic property or unanticipated effects on a historic property prior to or during construction, installation, O&M, or decommissioning of the Project, Dominion Energy will implement actions which are consistent with the PRDP for terrestrial archaeology (MOA, Attachment 8).	Cultural Resources	BOEM, BSEE, VA SHPO, U.S. Navy, VDMA-VaARNG
7	C	Avoidance of Adverse Effects on Historic	Per MOA Stipulation I.A.3, to maintain avoidance of adverse effects on historic properties in the visual APE where BOEM determined no adverse effects or where no	Cultural Resources	BOEM, BSEE, VA SHPO, NC SHPO,

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
		Properties in Visual Area of Potential Effect	effects would occur, BOEM will require Dominion Energy to ensure Project structures are within the design envelope, sizes, scale, locations, lighting prescriptions, and distances that were used by BOEM to inform the definition of the APE for the Project and for determining effects in the *Finding of Adverse Effect for the Coastal Virginia Offshore Wind Commercial Construction and Operations Plan* (Appendix O).		U.S. Navy
8	C	Minimization of Adverse Effects on Historic Properties in the Visual Area of Potential Effect	Per MOA Stipulation II.A.2, a. Dominion Energy will use uniform WTG design, speed, height, and rotor diameter to reduce visual contrast and decrease visual clutter; b. Dominion Energy will reserve the option to reduce the number of constructed WTGs from a maximum proposed number of 202 positions. c. Dominion Energy will apply a paint color to the WTGs no lighter than RAL 9010 pure white and no darker than RAL 7035 light gray to help reduce potential visibility of the turbines against the horizon during daylight hours. Dominion Energy has committed to the use of an aircraft detection lighting system (ADLS) to automatically activate lights when aircraft approach and then return to darkness. The WTGs and OSS will be lit and marked in accordance with Federal Aviation Administration and U.S. Coast Guard lighting standards and consistent with BOEM's *Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development* (April 28, 2021) to reduce light intrusion.	Cultural Resources	BOEM, BSEE, VA SHPO, NC SHPO, USACE, U.S. Navy, VDMA-VaARNG
9	Prior to C	Historic Property Treatment Plans	Per MOA Stipulation III.A.1 and the associated Historic Property Treatment Plans (HPTPs; MOA, Attachments 5, 6, and 7), BOEM will ensure measures described in the HPTPs to resolve adverse effects on the 24 adversely affected historic properties are required as conditions of approval of the Project COP and are funded and	Cultural Resources	BOEM, BSEE, VA SHPO, NC SHPO, U.S. Navy, VDMA-VaARNG

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			implemented by Dominion Energy according to a timeline determined through consultation; the 24 adversely affected historic properties are: • Atlantic Wildfowl Heritage Cottage/De Witt Cottage (Virginia Beach, Virginia); • Camp Pendleton/State Military Reservation Historic District (Virginia Beach, Virginia); • Cavalier Hotel and Beach Club (Virginia Beach, Virginia); • Cavalier Shores Historic District (Virginia Beach, Virginia); • Chesapeake Bay Bridge-Tunnel (Northampton County and Virginia Beach, Virginia); • Chesapeake Light Tower (Virginia Beach, Virginia); • Currituck Beach Lighthouse (Corolla, North Carolina); • Cutty Sark Motel Efficiencies (Virginia Beach, Virginia); • Econo Lodge/Empress Motel (Virginia Beach, Virginia); • First Cape Henry Lighthouse (National Historic Landmark; Virginia Beach, Virginia); • Fort Story Historic District[1] (Virginia Beach, Virginia); • Hilton Washington Inn/Quality Inn and Suites (Virginia Beach, Virginia); • House (100 54th Street, Virginia Beach, Virginia); • House (4910 Ocean Front Avenue, Virginia Beach, Virginia); • House (5302 Ocean Front Avenue, Virginia Beach, Virginia);		

[1] The Fort Story Historic District is part of the Joint Expeditionary Base Little Creek-Fort Story (JEBLCFS).

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			• House (7900 Ocean Front Avenue, Virginia Beach, Virginia); • House (8304–8306 Ocean Front Avenue, Virginia Beach, Virginia); • House (8600 Ocean Front Avenue, Virginia Beach, Virginia); • Oceans II Condominiums/Aeolus Motel (Virginia Beach, Virginia); • Sandbridge Historic District (Virginia Beach, Virginia); • Seahawk Motel (Virginia Beach, Virginia); • Seatack Lifesaving Station/U.S. Coast Guard Station (Virginia Beach, Virginia); • Second Cape Henry Lighthouse (Virginia Beach, Virginia); and • Virginia House (Virginia Beach, Virginia) The HPTPs have been developed in consultation with consulting parties, including those who are property owners of or have demonstrated interest in the historic properties BOEM has determined would be adversely affected by the Project.		
BOEM-Proposed Mitigation and Monitoring Measures in the NMFS BA					
1	C, O&M, D	Vessel strike avoidance procedures	Applicant proposed measures plus: • As part of vessel strike avoidance, a training program will be implemented. The training program will be provided to NMFS for review and approval prior to the start of surveys. Confirmation of the training and understanding of the requirements will be documented on a training course log sheet. Signing the log sheet will certify that the crew members understand and will comply with the necessary requirements throughout the survey event. • Vessel operators and crew must maintain a vigilant	Marine mammals and sea turtles	BOEM, BSEE, and NMFS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			watch for marine mammals and sea turtles by slowing down or stopping their vessels to avoid striking these protected species. Vessel crew members responsible for navigation duties will receive site-specific training on marine mammal sighting/reporting and vessel strike avoidance measures. Vessel strike avoidance measures will include, but are not limited to the following, except under extraordinary circumstances when complying with these measures would put the safety of the vessel or the crew at risk: o If underway, vessels must steer a course away from any sighted NARW at 10 knots (18.5 km/hr) or less until the 1,640 feet (500 meters) minimum separation distance has been established. If a NARW is sighted in a vessel's path, or within 330 feet (100 meters) of an underway vessel, the underway vessel must reduce speed and shift the engine to neutral. Engines will not be engaged until the NARW has moved outside of the vessel's path and beyond 330 feet (100 meters). If stationary, the vessel must not engage engines until the NARW has moved beyond 330 feet (100 meters); o All vessels will maintain a separation distance of 330 feet (100 meters) or greater of any sighted whales. If sighted, the vessel underway must reduce speed and shift the engine to neutral and must not engage the engines until the whale has moved outside the vessel's path and beyond 330 feet (100 meters). If a survey vessel is stationary, the vessel will not engage engines until the whale has moved out of the vessel's path and beyond 330 feet (100 meters); o Vessel operators will use all available sources of information of NARW presence, including daily monitoring of the Right Whale Sightings Advisory System, WhaleAlert app, and monitoring of USCG		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			VHF Channel 16 to receive notifications of right whale detections, SMAs, DMAs, and Slow Zones to plan vessel routes to minimize the potential for co-occurrence with right whales. ○ All vessels will comply with NMFS regulations and speed restrictions and state regulations as applicable for NARW. ○ All vessels regardless of size operating from November 1 through April 30 will operate at speeds of 10 knots or less when transiting from port to port within the Lease Area and export cable route, or within the boundaries of any DMA, slow zone, or SMA.		
2	C, O&M, D	Incorporate LOA requirements	The measures required by the final MMPA LOA would be incorporated into COP approval, and BOEM, BSEE, or both would monitor compliance with these measures.	Marine mammals	BOEM and BSEE
3	C, O&M, D	BOEM PDCs and BMPs	BOEM will require Dominion Energy comply with all the Project Design Criteria and BMP for Protected Species at https://www.boem.gov/sites/default/files/documents//PDCs%20and%20BMPs%20for%20Atlantic%20Data%20Collection%2011222021.pdf, that implement the integrated requirements for threatened and endangered species resulting from the June 29, 2021, programmatic consultation under the ESA, revised September 1, 2021. This requirement also applies to non-ESA-listed marine mammals that are found in that document. Consultation conditions occurring in State waters outside of BOEM jurisdiction may apply to co-action agencies issuing permits and authorizations under this consultation	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and NMFS
4	C, O&M, D	Look out for sea turtles and reporting	a. For all vessels operating north of the Virginia/North Carolina border, between June 1 and November 30, Dominion Energy would have a trained lookout posted on all vessel transits during all phases of the project to observe for sea turtles. The trained lookout would	Sea turtles	BOEM, BSEE and USACE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			communicate any sightings, in real time, to the captain so that the requirements in I below can be implemented. b. For all vessels operating south of the Virginia/North Carolina border, year-round, Dominion Energy would have a trained lookout posted on all vessel transits during all phases of the project to observe for sea turtles. The trained lookout would communicate any sightings, in real time, to the captain so that the requirements II below can be implemented. This requirement is in place year-round for any vessels transiting south of Virginia, as sea turtles are present year-round in those waters. c. The trained lookout would monitor https://seaturtlesightings.org/ prior to each trip and report any observations of sea turtles in the vicinity of the planned transit to all vessel operators/captains and lookouts on duty that day. d. If a sea turtle is sighted within 330 feet (100 meters) or less of the operating vessel's forward path, the vessel operator would slow down to 4 knots (unless unsafe to do so) and then proceed away from the turtle at a speed of 4 knots or less until there is a separation distance of at least 330 feet (100 meters), at which time the vessel may resume normal operations. If a sea turtle is sighted within 164 feet (50 meters) of the forward path of the operating vessel, the vessel operator would shift to neutral when safe to do so and then proceed away from the turtle at a speed of 4 knots. The vessel may resume normal operations once it has passed the turtle. e. Vessel captains/operators would avoid transiting through areas of visible jellyfish aggregations or floating sargassum lines or mats. In the event that operational safety prevents avoidance of such areas, vessels would slow to 4 knots while transiting through such areas.		

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			f. All vessel crew members would be briefed in the identification of sea turtles and in regulations and best practices for avoiding vessel collisions. Reference materials would be available aboard all project vessels for identification of sea turtles. The expectation and process for reporting of sea turtles (including live, entangled, and dead individuals) would be clearly communicated and posted in highly visible locations aboard all project vessels, so that there is an expectation for reporting to the designated vessel contact (such as the lookout or the vessel captain), as well as a communication channel and process for crew members to do so. g. The only exception is when the safety of the vessel or crew necessitates deviation from these requirements on an emergency basis. If any such incidents occur, they would be reported to NMFS within 24 hours. h. If a vessel is carrying a PSO or trained lookout for the purposes of maintaining watch for NARWs, an additional lookout is not required and this PSO or trained lookout would maintain watch for marine mammals and sea turtles. Vessel transits to and from the Offshore Project area, that require PSOs will maintain a speed commensurate with weather conditions and effectively detecting sea turtles prior to reaching the 330 feet (100 meters) avoidance measure.		
5	C, O&M, D	Marine debris awareness training	Dominion Energy would ensure that vessel operators, employees, and contractors engaged in offshore activities pursuant to the approved COP complete marine trash and debris awareness training annually. The training consists of two parts: (1) viewing a marine trash and debris training video or slide show (described below); and (2) receiving an explanation from management personnel that emphasizes their commitment to the requirements. The marine trash	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM and BSEE

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			and debris training videos, training slide packs, and other marine debris related educational material may be obtained at https://www.bsee.gov/debris or by contacting BSEE. The training videos, slides, and related material may be downloaded directly from the website. Operators engaged in marine survey activities would continue to develop and use a marine trash and debris awareness training and certification process that reasonably assures that their employees and contractors are in fact trained. The training process would include the following elements: • Viewing of either a video or slide show by the personnel specified above; • An explanation from management personnel that emphasizes their commitment to the requirements; • Attendance measures (initial and annual); and • Record keeping and the availability of records for inspection by DOI. By January 31 of each year, Dominion Energy would submit to DOI an annual report that describes its marine trash and debris awareness training process and certifies that the training process has been followed for the previous calendar year. Dominion Energy would send the reports via email to BOEM (at renewable_reporting@boem.gov) and to BSEE (at marinedebris@bsee.gov).		
6	C and year 1 of O&M	BOEM/NMFS meeting requirements for sea turtle take documentation	To facilitate monitoring of the incidental take exemption for sea turtles, through the first year of operations, BOEM and NMFS would meet twice annually to review sea turtle observation records. These meetings/conference calls would be bi-annually) and would use the best available information on sea turtle presence, distribution, and abundance, project vessel activity, and observations to estimate the total number of sea turtle vessel strikes in the action area that are attributable to project operations. These meetings would continue on an annual basis	Sea turtles	BOEM, BSEE, and NMFS

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			following year one of operations. Upon mutual agreement of NMFS and BOEM, the frequency of these meetings can be changed.		
7	C, O&M, D	Data Collection BA BMPs	BOEM would ensure that all PDC and BMPs incorporated in the Atlantic Data Collection consultation for Offshore Wind Activities (June 2021) shall be applied to activities associated with the construction, maintenance and operations of the Dominion Energy project as applicable.	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and NMFS
8a	C, O&M	BOEM COP PDCs and BMPs	Use standard underwater cables that have electrical shielding to control the intensity of electromagnetic fields (EMF).	Marine Mammals, Sea Turtles, and ESA-listed Fish; Finfish, Invertebrates, and EFH	BOEM, BSEE, and NMFS
8b	Pre-C	BOEM COP PDCs and BMPs	Lessees and grantees should evaluate marine mammal use of the proposed Action Area and should design the project to minimize and mitigate the potential for mortality or disturbance. The amount and extent of ecological baseline data required should be determined on a project basis.	Marine Mammals	BOEM, BSEE, and NMFS
8c	C, O&M, D	BOEM COP PDCs and BMPs	Vessels related to project planning, construction, and operation should travel at reduced speeds when assemblages of cetaceans are observed. Vessels also should maintain a reasonable distance from whales, small cetaceans, and sea turtles, and these should be determined during site-specific consultations.	Marine Mammals and Sea Turtles	BOEM, BSEE, and NMFS
8d	C, O&M, D	BOEM COP PDCs and BMPs	Lessees and grantees should minimize potential vessel effects on marine mammals and sea turtles by having project-related vessels follow the NMFS Regional Viewing Guidelines while in transit. Operators should undergo training on applicable vessel guidelines.	Marine Mammals and Sea Turtles	BOEM, BSEE, and NMFS
8e	C, O&M, D	BOEM COP	Lessees and grantees should take efforts to minimize	Marine	BOEM, BSEE, and

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
		PDCs and BMPs	disruption and disturbance to marine life from sound emissions, such as pile driving, during construction activities.	Mammals, Sea Turtles, and ESA-listed Fish; Finfish, Invertebrates, and EFH	NMFS
8f	C	BOEM COP PDCs and BMPs	Lessees and grantees should avoid and minimize effects on marine species and habitats in the Action Area by posting a qualified observer on site during construction activities. This observer should be approved by BOEM and NMFS.	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and NMFS
9	O&M	Periodic Underwater Surveys, Reporting of Monofilament and Other Fishing Gear Around WTG Foundations	Dominion Energy must monitor indirect effects associated with charter and recreational fishing gear lost from expected increases in fishing around WTG foundations by surveying at least 10 of the WTGs located closest to shore in the Dominion Energy Lease Area (OCS-A 0483) annually. Survey design and effort may be modified with review and concurrence by DOI. Dominion Energy may conduct surveys by remotely operated vehicles, divers, or other means to determine the frequency and locations of marine debris. Dominion Energy must report the results of the surveys to BOEM (at renewable_reporting@boem.gov) and BSEE (at marinedebris@bsee.gov) in an annual report, submitted by April 30, for the preceding calendar year. Annual reports must be submitted in Word format. Photographic and videographic materials must be provided on a portable drive in a lossless format such as TIFF or Motion JPEG 2000. Annual reports must include survey reports that include: the survey date; contact information of the operator; the location and pile identification number; photographic, video documentation, or both of the survey and debris encountered; any animals sighted; and the disposition of any located debris (i.e., removed or left in place). Annual reports must also include claim data	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and NMFS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			attributable to the Project from Dominion Energy corporate gear loss compensation policy and procedures. Required data and reports may be archived, analyzed, published, and disseminated by BOEM.		
10	C and post-C	PAM Plan	BOEM and USACE would ensure that Dominion Energy prepares a PAM Plan that describes all proposed equipment, deployment locations, detection review methodology and other procedures, and protocols related to the proposed uses of PAM for mitigation and long-term monitoring. This plan would be submitted to NMFS and BOEM for review and concurrence at least 120 days prior to the planned start of activities requiring PAM.	Marine Mammals, Sea Turtles, and ESA-listed Fish; Finfish, Invertebrates, and EFH	BOEM, BSEE, and NMFS
11	C	Pile driving monitoring plan	BOEM would ensure that Dominion Energy prepare and submit a Pile Driving Monitoring Plan to BOEM, BSEE, and NMFS for review and concurrence at least 90 days before start of pile driving. The plan would detail all plans and procedures for sound attenuation as well as for monitoring ESA-listed whales and sea turtles during all impact and vibratory pile driving. The plan would also describe how BOEM and Dominion Energy would determine the number of whales exposed to noise above the Level B harassment threshold during pile driving with the vibratory hammer to install the cofferdam at the sea to shore transition. Dominion Energy would obtain NMFS' concurrence with this plan prior to starting any pile driving.	Marine Mammals and Sea Turtles	BOEM, BSEE, and NMFS
12	C	PSO Coverage	BOEM and USACE would ensure that PSO coverage is sufficient to reliably detect marine mammals and sea turtles at the surface in the identified clearance and shutdown zones to execute any pile driving delays or shutdown requirements during foundation installation. This will include a PSO/ PAM team on the construction vessel and two additional PSO vessels each with a visual monitoring team. The following equipment and personnel will be on each associated vessel: ***Construction Vessel:***	Marine Mammals and Sea Turtles	BOEM, BSEE, and USACE

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			• 2, visual PSOs on watch • 2, (7x) or (10x) reticle binoculars calibrated for observer height off the water. • 2 (25x or similar) mounted "big eye" binoculars if vessel is deemed appropriate to provide a platform in which use of the big eye binoculars would be effective. • 1, PAM operator on duty • 1, mounted thermal/IR camera system • 2, (25x or similar) "big eye" binoculars mounted 180 deg apart • 1, monitoring station for real-time PAM system • 2, handheld or wearable NVDs with IR spotlights • 1, Data collection software system • 2, PSO-dedicated VHF radios • 1, digital single lens reflex camera equipped with a 300-mm lens **Each Additional PSO Vessels (2):** • 2, visual PSOs on watch • 2, (7x) or (10x) reticle binoculars calibrated for observer height off the water. • 1, (25x or similar) mounted "big eye" binoculars if vessel is deemed appropriate to provide a platform in which use of the big eye binoculars would be effective. • 1, mounted thermal/IR camera system • 1, handheld or wearable NVD with IR spotlight • 1, Data collection software system • 2, PSO-dedicated VHF radios • 1, digital single lens reflex camera equipped with a 300-mm lens		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			• If, at any point prior to or during construction, the PSO coverage that is included as part of the Proposed Action is determined not to be sufficient to reliably detect ESA-listed whales and sea turtles within the clearance and shutdown zones, additional PSOs, platforms, or both would be deployed. Determinations prior to construction would be based on review of the Pile Driving Monitoring Plan. Determinations during construction would be based on review of the weekly pile driving reports and other information, as appropriate.		
13	O	Sound Field Verification Plan	BOEM would require Dominion Energy to develop an operational sound field verification plan to determine the operational noises emitted from the Offshore Project area. The plan would be reviewed and approved by BOEM and NMFS. The plan will include measurement procedures and results reporting that meet ISO standard 18406:2017 (Underwater acoustics – Measurement of radiated underwater sound from percussive pile driving)	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and USACE
14	C	Sound field verification	Applicant proposed measures plus: BOEM and USACE would ensure that if the clearance, shutdown zones, or both are expanded due to the verification of sound fields from Project activities, PSO coverage is sufficient to reliably monitor the expanded clearance, shutdown zones, or both. Additional observers would be deployed on additional platforms for every 4,921 feet (1,500 meters) that a clearance or shutdown zone is expanded beyond the distances modeled prior to verification.	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and USACE
15	C	Adaptive shutdown zones	BOEM and USACE may consider reductions in the shutdown zones for sei, fin or sperm whales based on sound field verification of a minimum of 3 piles; however, BOEM/USACE would ensure that the shutdown zone for	Marine Mammals and Sea Turtles	BOME, BSEE, and USACE

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			sei whales, fin whales, blue whales, and sperm whales is not reduced to less than 3,280 feet (1,000 meters), or 1,640 feet (500 meters) for sea turtles. No reductions in the clearance or shutdown zones for NARWs would be considered regardless of the results of sound field verification of a minimum of three piles.		
16	C	Minimum visibility requirement	• In order to commence pile driving at foundations, PSOs must be able to visually monitor a 5,741-foot (1,750-meter) radius from their observation points for at least 60 minutes immediately prior to piling commencement. • In order to commence pile driving at trenchless installation sites, PSOs must be able to visually monitor a 3,280-foot (1,000-meter) from their observation points for at least 30 minutes immediately prior to piling commencement. • Acceptable visibility will be determined by the Lead PSO.	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and USACE
17	C	Monitoring zone for sea turtles	Applicant proposed measures plus: • BOEM and USACE would ensure that Dominion Energy monitors the full extent of the area where noise would exceed the root-mean-square sound pressure level (SPL) 175 dB re 1 µPa behavioral disturbance threshold for turtles for the full duration of all pile driving activities and for 30 minutes following the cessation of pile driving activities and record all observations in order to ensure that all take that occurs is documented.	Sea Turtles	BOEM, BSEE, and USACE
18	C	Alternative Monitoring Plan (AMP) for Pile Driving	Dominion Energy must not conduct pile driving operations at any time when lighting or weather conditions (e.g., darkness, rain, fog, sea state) prevent visual monitoring of the full extent of the clearance and shutdown zones. • Dominion Energy must submit an AMP to BOEM and NMFS for review and approval at least 6 months prior to the planned start of pile-driving. This plan may include deploying additional observers, alternative monitoring	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and NMFS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			technologies such as night vision, thermal, and infrared technologies, or use of PAM and must demonstrate the ability and effectiveness to maintain all clearance and shutdown zones during daytime as outlined below in Part 1 and nighttime as outlined in Part 2 to BOEM's and NMFS's satisfaction. • The AMP must include two stand-alone components as described below: • Part 1 – Daytime when lighting or weather (e.g., fog, rain, sea state) conditions prevent visual monitoring of the full extent of the clearance and shutdown zones. Daytime being defined as 1 hour after civil sunrise to 1.5 hours before civil sunset. • Part 2 – Nighttime inclusive of weather conditions (e.g., fog, rain, sea state). Nighttime being defined as 1.5 hours before civil sunset to 1 hour after civil sunrise. • If a protected marine mammal or sea turtle is observed entering or found within the shutdown zones after impact pile-driving has commenced, Dominion Energy would follow the shutdown procedures outlined in Table 1-7 of the NMFS Biological Assessment. Dominion Energy would notify BOEM and NMFS of any shutdown occurrence during piling driving operations with 24 hours of the occurrence unless otherwise authorized by BOEM and NMFS. • The AMP should include, but is not limited to the following information: • Identification of night vision devices (e.g., mounted thermal/infrared camera systems, hand-held or wearable NVDs, infrared spotlights), if proposed for use to detect protected marine mammal and sea turtle species. • The AMP must demonstrate (through empirical evidence) the capability of the proposed monitoring		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			methodology to detect marine mammals and sea turtles within the full extent of the established clearance and shutdown zones (i.e., species can be detected at the same distances and with similar confidence) with the same effectiveness as daytime visual monitoring (i.e., same detection probability). Only devices and methods demonstrated as being capable of detecting marine mammals and sea turtles to the maximum extent of the clearance and shutdown zones will be acceptable. • Evidence and discussion of the efficacy (range and accuracy) of each device proposed for low visibility monitoring must include an assessment of the results of field studies (e.g., Thayer Mahan demonstration), as well as supporting documentation regarding the efficacy of all proposed alternative monitoring methods (e.g., best scientific data available). • Reporting procedures, contacts and timeframes. • BOEM may request additional information, when appropriate, to assess the efficacy of the AMP.		
19	C, O&M, D	Sampling gear	All sampling gear would be hauled at least once every 30 days, and all gear would be removed from the water and stored on land between survey seasons to minimize risk of entanglement.	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM and BSEE
20	C, O&M, D	Gear identification	To facilitate identification of gear on any entangled animals, all trap/pot gear used in the surveys would be uniquely marked to distinguish it from other commercial or recreational gear. Using black and yellow striped duct tape, place a 3-foot-long mark within 2 fathoms of a buoy. In addition, using black and white paint or duct tape, place 3 additional marks on the top, middle and bottom of the line. These gear marking colors are proposed as they are not gear markings used in other fisheries and are, therefore, distinct. Any changes in marking would not be made	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and NMFS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			without notification and approval from NMFS.		
21	C, O&M, D	Lost survey gear	If any survey gear is lost, all reasonable efforts that do not compromise human safety would be undertaken to recover the gear. All lost gear would be reported to NMFS (nmfs.gar.incidental-take@noaa.gov) within 24 hours of the documented time of missing or lost gear. This report would include information on any markings on the gear and any efforts undertaken or planned to recover the gear.	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and NMFS
22	C, O&M, D	Training	At least one of the survey staff onboard the trawl surveys and ventless trap surveys would have completed NEFOP observer training (within the last 5 years) or other training in protected species identification and safe handling (inclusive of taking genetic samples from Atlantic sturgeon). Reference materials for identification, disentanglement, safe handling, and genetic sampling procedures would be available on board each survey vessel. BOEM would ensure that Dominion Energy prepares a training plan that addresses how this requirement would be met and that the plan is submitted to NMFS in advance of any trawl or trap surveys. This requirement is in place for any trips where gear is set or hauled.	Atlantic sturgeon	BOEM, BSEE, and NMFS
23	C, O&M, D	Sea turtle disentanglement	Vessels deploying fixed gear (e.g., pots/traps) would have adequate disentanglement equipment (i.e., knife and boathook) onboard. Any disentanglement would occur consistent with the Northeast Atlantic Coast STDN Disentanglement Guidelines at https://www.reginfo.gov/public/do/DownloadDocument?objectID=102486501 and the procedures described in "Careful Release Protocols for Sea Turtle Release with Minimal Injury" (NOAA Technical Memorandum 580; https://repository.library.noaa.gov/view/noaa/3773).	Sea Turtles	BOEM, BSEE, and NMFS
24	C, O&M, D	Sea turtle/ESA-fish identification and data	Any sea turtles or ESA-fish caught, retrieved, or both in any fisheries survey gear would first be identified to species or species group. Each ESA-listed species caught, retrieved, or both would then be properly documented using	Sea Turtles and ESA-listed Fish	BOEM, BSEE, and NMFS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
		collection	appropriate equipment and data collection forms. Biological data, samples, and tagging would occur as outlined below. Live, uninjured animals should be returned to the water as quickly as possible after completing the required handling and documentation. • The Sturgeon and Sea Turtle Take Standard Operating Procedures would be followed (download at: https://media.fisheries.noaa.gov/2021-11/Sturgeon%20%26%20Sea%20Turtle%20Take%20SOPs_external_11032021.pdf). • Survey vessels would have a passive integrated transponder (PIT) tag reader onboard capable of reading 134.2 kHz and 125 kHz encrypted tags (e.g., Biomark GPR Plus Handheld PIT Tag Reader) and this reader be used to scan any captured sea turtles and sturgeon for tags. Any recorded tags would be recorded on the take reporting form (see below). • Genetic samples would be taken from all captured ESA-fish (alive or dead) to allow for identification of the DPS of origin of captured individuals and tracking of the amount of incidental take. This would be done in accordance with the Procedures for Obtaining Sturgeon Fin Clips (download at: https://media.fisheries.noaa.gov/2021-11/Sturgeon%20%26%20Sea%20Turtle%20Take%20SOPs_external_11032021.pdf). • Fin clips would be sent to a NMFS approved laboratory capable of performing genetic analysis and assignment to DPS of origin. To the extent authorized by law, BOEM is responsible for the cost of the genetic analysis. Arrangements would be made for shipping and analysis in advance of submission of any samples; these arrangements would be confirmed in writing to NMFS within 60 days of the receipt of this ITS. Results		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			of genetic analysis, including assigned DPS of origin would be submitted to NMFS within 6 months of the sample collection. • Subsamples of all fin clips and accompanying metadata forms would be held and submitted to a tissue repository (e.g., the Atlantic Coast Sturgeon Tissue Research Repository) on a quarterly basis. The Sturgeon Genetic Sample Submission Form is available for download at: https://media.fisheries.noaa.gov/2021-02/Sturgeon%20Genetic%20Sample%20Submission%20sheet%20for%20S7_v1.1_Form%20to%20Use.xlsx?null. • All captured sea turtles and ESA-fish would be documented with required measurements and photographs. The animal's condition and any marks or injuries would be described. This information would be entered as part of the record for each incidental take. A NMFS Take Report Form would be filled out for each individual sturgeon and sea turtle (download at: https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null) and submitted to NMFS as described below.		
25	C, O&M, D	Sea turtle/ESA-fish handling and resuscitation guidelines	Any sea turtles or ESA-fish caught and retrieved in gear used in fisheries surveys would be handled and resuscitated (if unresponsive) according to established protocols and whenever at-sea conditions are safe for those handling and resuscitating the animal(s) to do so. Specifically: • Priority would be given to the handling and resuscitation of any sea turtles or ESA-fish that are captured in the gear being used, if conditions at sea are safe to do so. Handling times for these species should be minimized (i.e., kept to 15 minutes or less) to limit the amount of stress placed on the animals.	Sea Turtles and ESA-listed Fish	BOEM, BSEE, and NMFS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			• All survey vessels would have copies of the sea turtle handling and resuscitation requirements found at 50 CFR 223.206(d)(1) prior to the commencement of any on-water activity (download at: https://media.fisheries.noaa.gov/dam-migration/sea_turtle_handling_and_resuscitation_measures.pdf). These handling and resuscitation procedures would be carried out any time a sea turtle is incidentally captured and brought onboard the vessel during the Proposed Actions. • If any sea turtles that appear injured, sick, or distressed, are caught and retrieved in fisheries survey gear, survey staff would immediately contact the Greater Atlantic Region Marine Animal Hotline at 866-755-6622 for further instructions and guidance on handling the animal, and potential coordination of transfer to a rehabilitation facility. If unable to contact the hotline (e.g., due to distance from shore or lack of ability to communicate via phone), the USCG should be contacted via VHF marine radio on Channel 16. If required, hard-shelled sea turtles (i.e., non-leatherbacks) may be held on board for up to 24 hours following handling instructions provided by the Hotline, prior to transfer to a rehabilitation facility. • Attempts would be made to resuscitate any ESA-fish that are unresponsive or comatose by providing a running source of water over the gills as described in the Sturgeon Resuscitation Guidelines (download at: https://media.fisheries.noaa.gov/dam-migration/sturgeon_resuscitation_card_06122020_508.pdf). • Provided that appropriate cold storage facilities are available on the survey vessel, following the report of a dead sea turtle or sturgeon to NMFS, and if NMFS requests, any dead sea turtle or ESA-fish would be		

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			retained on board the survey vessel for transfer to an appropriately permitted partner or facility on shore as safe to do so. • Any live sea turtles or ESA-fish caught and retrieved in gear used in any fisheries survey would ultimately be released according to established protocols and whenever at-sea conditions are safe for those releasing the animal(s) to do so.		
26	C, O&M, D	Take notification	GARFO PRD would be notified as soon as possible of all observed takes of sea turtles and ESA-fish occurring as a result of any fisheries survey. Specifically: • GARFO PRD would be notified within 24 hours of any interaction with a sea turtle or ESA-fish (nmfs.gar.incidental-take@noaa.gov). The report would include at a minimum: (1) survey name and applicable information (e.g., vessel name, station number); (2) GPS coordinates describing the location of the interaction (in decimal degrees); (3) gear type involved (e.g., bottom trawl, gillnet, longline); (4) soak time, gear configuration and any other pertinent gear information; (5) time and date of the interaction; and (6) identification of the animal to the species level. Additionally, the email would transmit a copy of the NMFS Take Report Form (download at: https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null) and a link to or acknowledgement that a clear photograph or video of the animal was taken (multiple photographs are suggested, including at least one photograph of the head scutes). If reporting within 24 hours is not possible due to distance from shore or lack of ability to communicate via phone, fax, or email, reports would be submitted as soon as possible; late reports would be submitted with an explanation for the delay. • At the end of each survey season, a report would be	Sea Turtles and ESA-listed Fish	BOEM, BSEE, and NMFS

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			sent to NMFS that compiles all information on any observations and interactions with ESA-listed species. This report would also contain information on all survey activities that took place during the season including location of gear set, duration of soak/trawl, and total effort. The report on survey activities would be comprehensive of all activities, regardless of whether ESA-listed species were observed.		
27	C, O&M, D	Monthly/annual reporting	Applicant proposed measures plus: BOEM would ensure that Dominion Energy implements the following reporting requirements necessary to document the amount or extent of take that occurs during all phases of the Proposed Action: • All reports would be sent to: nmfs.gar.incidental-take@noaa.gov. • During the construction phase and for the first year of operations, Dominion Energy would compile and submit monthly reports that include a summary of all project activities carried out in the previous month, including vessel transits (number, type of vessel, and route), and piles installed, and all observations of ESA-listed species. Monthly reports are due on the 15th of the month for the previous month. • Beginning in year two of operations, Dominion Energy would compile and submit annual reports that include a summary of all project activities carried out in the previous year, including vessel transits (number, type of vessel, and route), repair and maintenance activities, survey activities, and all observations of ESA-listed species. These reports are due by April 1 of each year (i.e., the 2026 report is due by April 1, 2027). Upon mutual agreement of NMFS and BOEM, the frequency of reports can be changed.	Marine Mammals, Sea Turtles, and ESA-listed Fish	BOEM, BSEE, and NMFS
28	C, O&M, D	Special	Dominion Energy will comply with any special conditions	ESA-listed	USACE

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		conditions	and required mitigation associated with work authorized or permitted through Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and ESA terms and conditions landward of the Submerged Lands Act boundary.	Fish, marine mammals, sea turtles	
Reasonable and Prudent Measures and Terms and Conditions from the NMFS Biological Opinion Issued September 18, 2023					
RPM 1	C	Pile Driving	Effects to ESA-listed species must be minimized during pile driving.	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, and NMFS
RPM 2	C, O&M, D	Reporting Requirements	Effects to, or interactions with, ESA-listed Atlantic sturgeon, whales, and sea turtles must be documented during all phases of the proposed action, and all incidental take must be reported to NMFS GARFO.	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, and NMFS
RPM 3	C, O&M, D	Review of Plans	Plans must be prepared that describe the implementation of activities or monitoring protocols for which the details were not available at the time this consultation was completed. All required plans must be submitted to NMFS GARFO with sufficient time for review, comment, and concurrence.	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, and NMFS
RPM 4	C, O&M, D	On-site Observation and Inspection	BOEM and BSEE must exercise their authorities to assess and ensure compliance with the implementation of measures to avoid, minimize, monitor and report incidental take of ESA-listed species during activities described in this Opinion. On-site observation and inspection must be allowed to gather information on the implementation of measures, and the effectiveness of those measures, to minimize and monitor incidental take during activities described in this Opinion, including its Incidental Take Statement.	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, and NMFS
T&C 1	C	Pile Driving Shutdown Zone	Establish a shutdown zone for sea turtles extending 500 m around any pile being installed during impact pile driving of WTG and OSS foundations. BOEM must ensure that there is sufficient PSO coverage to reliably document sea turtle	ESA-listed Sea Turtles	BOEM, BSEE, and NMFS

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			presence within the 500 m shutdown zone. In the event that a PSO detects a sea turtle within the 500 m clearance zone, the shutdown procedures described as part of the proposed action must be implemented.		
T&C 2	C	Pile Driving	To implement the requirements of RPM 1 for ESA-listed whales, to the extent that the final MMPA ITA requires additional measures from those in the proposed ITA (which are incorporated into the proposed action) to minimize effects of pile driving on ESA-listed whales, CVOW-C must comply with those measures. To facilitate implementation of this requirement: a. BOEM must require, through an enforceable condition of their approval of CVOW-C's Construction and Operations Plan, that CVOW-C comply with any measures in the final MMPA ITA that are revised from, or in addition to, measures included in the proposed ITA, which already have been incorporated into the proposed action. b. NMFS OPR must ensure compliance with all mitigation measures as prescribed in the final ITA. We expect this will be carried out through NMFS OPR's review of plans and monitoring reports, including interim and final sound field verification (SFV) reports, submitted by CVOW-C over the life of the MMPA ITA and taking any responsive action within its statutory and regulatory authority it deems necessary to ensure compliance based on the foregoing review. c. The USACE must review the final MMPA ITA as issued by NMFS OPR and determine if an amendment or revision is necessary to the permit issued to CVOW-C by USACE to incorporate any new or revised measures for pile driving or related activities addressed in the USACE permit, to ensure compliance with any measures in the final MMPA ITA that are revised from, or in addition to, measures included in the proposed	ESA-listed marine mammals	BOEM, BSEE, NMFS, and USACE

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			ITA, which have been incorporated into the proposed action; and, if necessary, exercise its regulatory authority to make appropriate amendments or revisions.		
T&C 3	C	Sound Field Verification	To implement the requirements of RPM 1, the following related to SFV must be implemented by BOEM, BSEE, USACE, and/or CVOW-C. The purpose of SFV and the steps outlined here are to ensure that CVOW-C does not exceed the distances to the injury or behavioral harassment threshold (Level A and Level B harassment, respectively) for ESA-listed marine mammals, the injury or behavioral harassment thresholds for sea turtles, or the injury or behavioral disturbance thresholds for Atlantic sturgeon that are identified in this opinion and that underpin the effects analysis, exposure analysis and our determination of the amount and extent of incidental take exempted in this ITS, including the determination that no incidental take is anticipated. The measures outlined here are based on the expectation that CVOW-C's initial pile driving methodology and sound attenuation measures will result in noise levels that do not exceed the identified distances (as modeled assuming 10 dB attenuation) but, if that is not the case, provide a step-wise approach for modifying operations and/or modifying or adding sound attenuation measures that can reasonably be expected to avoid exceeding those thresholds prior to the next pile being driven. a. Consistent with the measures incorporated into the proposed action, BOEM, BSEE, and USACE must require and CVOW-C must implement Sound Field Verification (SFV) on at least the first three monopiles installed (see also T&C 8.d. below) in accordance with the additional requirements specified here. If any of the SFV measurements from any of the piles indicate that the distance to any isopleth of concern is greater than those modeled assuming 10 dB attenuation (see Table	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, NMFS, and USACE

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			34, Table 37,and Table 40), before the next pile is installed CVOW-C must implement the following measures as applicable: b. Identify and propose for review and concurrence: additional, modified, and/or alternative noise attenuation measures or operational changes that present a reasonable likelihood of reducing sound levels to the modeled distances (e.g., if the pile was installed with a single bubble curtain and a near field sound attenuation device, add a second bubble curtain or if the pile was installed with a double bubble curtain without a near field sound attenuation device, add a nearfield noise attenuation device; adjust hammer operations; adjust noise attenuation system to improve performance); provide an explanation to NMFS GARFO, BOEM, BSEE, and USACE supporting that determination and requesting concurrence to proceed; and, following NMFS GARFO's concurrence, deploy those additional measures on any subsequent piles that are installed (e.g., if threshold distances are exceeded on pile 1 then additional measures must be deployed before installing pile 2). NMFS GARFO will strive to provide concurrence as quickly as possible following review of the submission and necessary coordination with the action agencies and will ensure communication with the action agencies and BOEM no later than two business days after receiving CVOW-C's proposal and request for concurrence. c. If any of the SFV measurements indicate that the distances to level A thresholds for ESA-listed whales (peak or cumulative) or PTS peak or cumulative thresholds for sea turtles are greater than the modeled distances assuming 10 dB attenuation (see Table 34, Table 37,and Table 40), the clearance and shutdown zones (see Table 47) for subsequent piles must be		

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			increased so that they are at least the size of the distances to those thresholds as indicated by SFV (e.g., if threshold distances are exceeded on pile 1 then the clearance and shutdown zones for pile 2 must be expanded). For every 1,500 m that a marine mammal clearance or shutdown zone is expanded, additional PSOs must be deployed from additional platforms/vessels to ensure adequate and complete monitoring of the expanded shutdown and/or clearance zone; CVOW-C must submit a proposed monitoring plan for NMFS GARFO's concurrence describing the proposed deployment of additional PSOs including the number of PSOs and location of all PSOs. In the event that the clearance or shutdown zone for sea turtles needs to be expanded, the proposed monitoring plan must also include a description of how additional PSOs will be deployed to ensure effective monitoring for sea turtles in the expanded zones. d. If, after implementation of 3.a.i, any subsequent SFV measurements indicate that the distances to any identified isopleth of concern are still greater than those modeled assuming 10 dB attenuation (see Table 34, Table 37,and Table 40), CVOW-C must identify and propose for review and concurrence: additional modified, and/or alternative noise attenuation measures or operational changes that present a reasonable likelihood of reducing sound levels to the modeled distances; provide an explanation to NMFS GARFO, BOEM, BSEE, and USACE supporting that determination and requesting concurrence to proceed; and, following NMFS GARFO's concurrence, deploy those additional measures or modifications on any subsequent piles that are installed (e.g., if threshold distances are still exceeded on pile 2 the additional measures must be deployed for pile 3). NMFS GARFO will strive to provide concurrence as quickly as possible		

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			following review of the submission and necessary coordination with the action agencies and will ensure communication with the action agencies and BOEM no later than two business days after receiving CVOW-C's proposal and request for concurrence. Clearance and shutdown zones must be expanded consistent with the requirements of 3.b.ii. e. Following installation of the pile with additional modified, and/or alternative noise attenuation measures or operational changes required by 3.a.iii, if SFV results indicate that any isopleths of concern are still larger than those modeled assuming 10 dB attenuation, before any additional piles can be installed, CVOW-C must and propose for review and concurrence: additional, modified, and/or alternative noise attenuation measures or operational changes that present a reasonable likelihood of reducing sound levels to the modeled distances; provide an explanation to NMFS GARFO, BOEM, BSEE, and USACE supporting that determination and requesting concurrence to proceed; and, following NMFS GARFO's concurrence, deploy those additional measures or modifications on any subsequent piles that are installed. Following concurrence from NMFS GARFO, BOEM, BSEE, and USACE must require and CVOW-C must implement those measures and any expanded clearance and shutdown zone sizes (and any required additional PSOs) consistent with the requirements of 3.b.ii. Additionally, BOEM, BSEE, and USACE must require and CVOW-C must continue SFV for two additional piles with enhanced sound attenuation measures and submit the interim reports as required above (for a total of at least three piles with consistent noise attenuation measures). i. If no additional measures are identified for		

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			implementation, or if the SFV required by 3.a.iv indicates that the distance to any isopleths of concerns for any ESA-listed species are still larger than those modeled assuming 10 dB attenuation, NMFS GARFO will presume that reinitiation of consultation is necessary, consistent with 50 CFR §402.16(a)(2) and/or (a)(3). NMFS GARFO, NMFS OPR, BOEM, BSEE, and USACE will meet within three business days to discuss: the results of SFV monitoring, the severity of exceedance of distances to identified isopleths of concern, the species affected, modeling assumptions, and whether any triggers for reinitiation of consultation are met (50 CFR 402.16), including consideration of whether the SFV results constitute new information revealing effects of the action that may affect listed species in a manner or to an extent not previously considered in the consultation. ii. Following installation of the pile with additional alternative, or modified noise attenuation measures/operational changes required by 3.a.iii or 3.a.iv, if SFV results indicate that all isopleths of concern are within distances to isopleths of concern modeled assuming 10 dB attenuation (see Table 34, Table 37,and Table 40), SFV must be conducted on two additional piles (for a total of at least three piles with consistent noise attenuation measures). If the SFV results from all three of those piles are within the distances to isopleths of concern modeled assuming 10 dB attenuation, BOEM, BSEE, and USACE must require, and CVOW-C must continue to implement the approved additional, alternative, or modified sound attenuation measures/operational changes, BOEM, BSEE, USACE and/or CVOW-C can request concurrence from NMFS GARFO to the original clearance and shutdown zones (Table 48) or		

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			CVOW-C can continue with the expanded clearance and shutdown zones with additional PSOs. f. Consistent with the measures incorporated into the proposed action, BOEM, BSEE, and USACE must require, and CVOW must implement SFV on all piles associated with installation of all three OSS foundations with the additional requirements specified here (see also T&C 8.d. below). If any of the SFV measurements from the first OSS foundation installation indicate that the distance to any isopleth of concern is larger than those modeled assuming 10 dB attenuation (see Table 34, Table 37,and Table 40), before the second OSS foundation is installed BOEM, BSEE, and USACE must ensure that CVOW must: i. Identify and propose for review and concurrence: additional, modified, and/or alternative noise attenuation measures or operational changes that present a reasonable likelihood of reducing sound levels to the modeled distances; provide an explanation to NMFS GARFO and NMFS OPR supporting that determination; and, following concurrence from NMFS GARFO, deploy those additional measures for the second OSS foundation. BOEM, BSEE, and USACE supporting that determination and request concurrence to proceed; and, following NMFS GARFO's concurrence, deploy those additional, modified, and/or alternative measures or modifications to operations for the second OSS foundation. ii. If any of the SFV measurements indicate that the distances to level A thresholds for ESA-listed whales or PTS peak or cumulative thresholds for sea turtles are larger than the modeled distances (assuming 10 dB attenuation, see Table 34, Table 37,and Table 40), the clearance and shutdown zones (see Table		

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			48) for the second OSS foundation must be increased to be at least the size of the distances to those thresholds as indicated by SFV. For every 1,500 m that a marine mammal clearance or shutdown zone is expanded, additional PSOs must be deployed from additional platforms or vessels to ensure adequate and complete monitoring of the expanded shutdown and/or clearance zone; CVOW must submit a proposed monitoring plan for NMFS GARFO's concurrence describing the proposed deployment of additional PSOs including the number and location of all PSOs. In the event that the clearance or shutdown zone for sea turtles needs to be expanded, the proposed monitoring plan must also include a description of how additional PSOs will be deployed to ensure effective monitoring for sea turtles in the expanded zones. iii. If, after implementation of 3.b.i, any subsequent SFV measurements indicate that the distances to any identified isopleth of concern are still greater than those modeled assuming 10 dB attenuation (see Table 34, Table 37,and Table 40), CVOW-C must identify and propose for review and concurrence: additional modified, and/or alternative noise attenuation measures or operational changes that present a reasonable likelihood of reducing sound levels to the modeled distances; provide an explanation to NMFS GARFO, BOEM, BSEE, and USACE supporting that determination and requesting concurrence to proceed; and, following NMFS GARFO's concurrence, deploy those additional measures or modifications on any subsequent piles that are installed (e.g., if threshold distances are still exceeded on OSS, 2 the additional measures must be deployed for OSS 3). NMFS GARFO will strive to provide concurrence as quickly		

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			as possible following review of the submission and necessary coordination with the action agencies and will ensure communication with the action agencies and BOEM no later than two business days after receiving CVOW-C's proposal and request for concurrence. Clearance and shutdown zones must be expanded consistent with the requirements of 3.b.ii. iv. Following installation of the OSS with additional modified, and/or alternative noise attenuation measures or operational changes required by 3.b.iii, if SFV results indicate that any isopleths of concern are still greater than those modeled assuming 10 dB attenuation, before the third OSS can be installed, CVOW-C must and propose for review and concurrence: additional, modified, and/or alternative noise attenuation measures or operational changes that present a reasonable likelihood of reducing sound levels to the modeled distances; provide an explanation to NMFS GARFO, BOEM, BSEE, and USACE supporting that determination and requesting concurrence to proceed; and, following NMFS GARFO's, BOEM, BSEE, and USACE must require and CVOW-C must implement those measures and any expanded clearance and shutdown zone sizes (and any required additional PSOs) consistent with the requirements of 3.b.ii. 1. If no additional measures are identified for implementation and NMFS concurs with that determination, NMFS GARFO will presume that reinitiation of consultation is necessary, consistent with 50 CFR §402.16(a)(2) and/or (a)(3). NMFS GARFO, NMFS OPR, BOEM, BSEE, and USACE will meet within three business days to discuss: the results of SFV		

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			monitoring, the severity of exceedance of distances to identified isopleths of concern, the species affected, modeling assumptions, and whether any triggers for reinitiation of consultation are met (50 CFR §402.16), including consideration of whether the SFV results constitute new information revealing effects of the action that may affect listed species in a manner or to an extent not previously considered in the consultation. v. Following installation of the second OSS with additional noise attenuation measures required by 3.b.iii, if SFV results indicate that all isopleths of concern are within distances those modeled assuming 10 dB attenuation (see Table 34, Table 37,and Table 40), BOEM, BSEE, and USACE must require, and CVOW-C must continue to implement the approved additional, alternative, or modified sound attenuation measures/operational changes, BOEM, BSEE, USACE and/or CVOW-C can request concurrence from NMFS GARFO to the original clearance and shutdown zones (Table 48) or CVOW-C can continue with the expanded clearance and shutdown zones with additional PSOs. g. Abbreviated SFV Monitoring (consisting of a single acoustic recorder placed at an appropriate distance from the pile) must be performed on all foundation installations for which the complete SFV monitoring outlined in 3a and 3b is not carried out. Results must be included in the weekly reports. Any indications that distances to the identified Level A and Level B harassment thresholds for whales or distances to injury or behavioral disturbance distances for sea turtles or Atlantic sturgeon must be addressed by CVOW-C, including an explanation of factors that contributed to		

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			the exceedance and corrective actions that were taken to avoid exceedance on subsequent piles. BOEM, BSEE, USACE, and CVOW-C must meet with NMFS GARFO within two business days of CVOW-C's submission of a report that includes an exceedance to discuss if any additional action is necessary. h. CVOW-C must inspect and carry out appropriate maintenance on the noise attenuation system prior to every pile driving event and prepare and submit a Noise Attenuation System (NAS) inspection/performance report. For piles for which full SFV is carried out, this report must be submitted as soon as it is available, but no later than when the interim SFV report is submitted for the respective pile. Performance reports for all subsequent piles must be submitted with the weekly pile driving reports. All reports must be submitted by email to nmfs.gar.incidental-take@noaa.gov. i. Performance reports for each bubble curtain deployed must include water depth, current speed and direction, wind speed and direction, bubble curtain deployment/retrieval date and time, bubble curtain hose length, bubble curtain radius (distance from pile), diameter of holes and hole spacing, air supply hose length, compressor type (including rated Cubic Feet per Minute (CFM) and model number), number of operational compressors, performance data from each compressor (including Revolutions Per Minute (RPM), pressure, start times, and stop times), free air delivery (m^3/min), total hose air volume (m^3/(min m)), schematic of GPS waypoints during hose laying, maintenance procedures performed (pressure tests, inspections, flushing, re-drilling, and any other hose or system maintenance) before and after installation and timing of those tests, and the length of time the bubble curtain was on the		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			seafloor prior to foundation installation. Additionally, the report must include any important observations regarding performance (before, during, and after pile installation), such as any observed weak areas of low pressure. The report may also include any relevant video and/or photographs of the bubble curtain(s) operating during all pile driving.		
T&C 4	C, O&M, D	Reporting Requirements	To implement the requirements of RPM 2, CVOW-C must file a report with NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) and BSEE (via TIMSWeb and notification email to protectedspecies@bsee.gov) in the event that any ESA-listed species is observed within the identified shutdown zone during active pile driving. This report must be filed within 48 hours of the incident and include the following: duration of pile driving prior to the detection of the animal(s), location of PSOs and any factors that impaired visibility or detection ability, time of first and last detection of the animal(s), distance of animal(s) at first detection, closest point of approach of animal(s) to pile, behavioral observations of the animal(s), time the PSO called for shutdown, hammer log (number of strikes, hammer energy), time the pile driving began and stopped, and any measures implemented (e.g., reduced hammer energy) prior to shutdown. If shutdown was determined not to be feasible, the report must include an explanation for that determination and the measures that were implemented (e.g., reduced hammer energy).	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, and NMFS
T&C 5	C, O&M, D	Reporting Requirements	To implement the requirements of RPM 2, BOEM, BSEE, USACE, and CVOW-C must implement the following reporting requirements necessary to document the amount or extent of incidental take that occurs during all phases of the proposed action: a. If a North Atlantic right whale is observed at any time by PSOs or project personnel, CVOW-C must ensure the sighting is immediately reported to	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, NMFS, and USACE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			NMFS. If immediate reporting is not possible, the report must be made within 24 hours of the sighting. i. The report must be made to the appropriate geographic reporting line: • If in the Northeast Region (ME to VA/NC border) call (866-755-6622). • If in the Southeast Region (NC to FL) call (877-WHALE-HELP or 877-942-5343). • If calling the hotline is not possible, reports can also be made to the U.S. Coast Guard via channel 16 or through the WhaleAlert app (http://www.whalealert.org/). The sighting report must include the time (note time format, e.g., UTC, EST), date, and location (latitude/longitude in decimal degrees) of the sighting, number of whales, animal description/certainty of sighting (provide photos/video if taken), lease area/project name, PSO/personnel name, PSO provider company (if applicable), and reporter's contact information. ii. If a North Atlantic right whale is detected at any time by PSOs/PAM Operators via PAM, CVOW-C must ensure the detection is reported as soon as possible and no longer than 24 hours after the detection to NMFS via the 24-hour North Atlantic right whale Detection Template (https://www.fisheries.noaa.gov/resource/document/passive-acoustic-reporting-system-templates). Calling the hotline is not necessary when reporting PAM		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			detections via the template. iii. A summary report must be sent within 24 hours to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) and NMFS OPR (PR.ITP.MonitoringReports@noaa.gov) with the above information and confirmation the sighting/detection was reported to the respective hotline, the vessel/platform from which the sighting/detection was made, activity the vessel/platform was engaged in at time of sighting/detection, project construction and/or survey activity ongoing at time of sighting/detection (e.g., pile driving, cable installation, HRG survey), distance from vessel/platform to animal at time of initial sighting/detection, closest point of approach of whale to vessel/platform, vessel speed, and any mitigation actions taken in response to the sighting. b. In the event of a suspected or confirmed vessel strike of any ESA-listed species (e.g., marine mammal, sea turtle, listed fish) by any vessel associated with the Project or other means by which project activities caused a non-auditory injury or death of a ESA-listed species, CVOW-C must immediately report the incident to NMFS. If in the Greater Atlantic Region (ME-VA), call the NMFS Greater Atlantic Stranding Hotline (866-755-6622) and if in the Southeast Region (NC-FL), call the NMFS Southeast Stranding Hotline (877-942-5343). As well as notify BSEE (via TIMSWeb and notification email to (protectedspecies@bsee.gov). Separately, CVOW-C must immediately report the		

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			incident to NMFS GARFO (*nmfs.gar.incidental-take@noaa.gov*), and if in the Southeast region (NC-FL), also to NMFS SERO (*secmammalreports@noaa.gov*). The report must include: (A) Time, date, and location (coordinates) of the incident; (B) Species identification (if known) or description of the animal(s) involved (i.e., identifiable features including animal color, presence of dorsal fin, body shape and size); (C) Vessel strike reporter information (name, affiliation, email for person completing the report); (D) Vessel strike witness (if different than reporter) information (name, affiliation, phone number, platform for person witnessing the event); (E) Vessel name and/or MMSI number; (F) Vessel size and motor configuration (inboard, outboard, jet propulsion); (G) Vessel's speed leading up to and during the incident; (H) Vessel's course/heading and what operations were being conducted (if applicable); (I) Part of vessel that struck whale (if known); (J) Vessel damage notes; (K) Status of all sound sources in use; (L) If animal was seen before strike event; (M) behavior of animal before strike event; (N) Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike; (O) Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike; (P) Estimated (or actual, if known) size and length of animal that was struck; (Q) Description of the behavior of the marine mammal immediately preceding and following the strike; (R) If available, description of the presence and behavior of any other marine mammals immediately preceding the strike; (S)		

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			Other animal details if known (e.g., length, sex, age class); (T) Behavior or estimated fate of the animal post-strike (*e.g.*, dead, injured but alive, injured and moving, external visible wounds (linear wounds, propeller wounds, non-cutting blunt-force trauma wounds), blood or tissue observed in the water, status unknown, disappeared); (U) To the extent practicable, photographs or video footage of the animal(s); and (V) Any additional notes the witness may have from the interaction. For any numerical values provided (i.e., location, animal length, vessel length), please provide if values are actual or estimated. Reports of Atlantic sturgeon take must include a statement as to whether a fin clip sample for genetic sampling was taken. Fin clip samples are required in all cases to document the DPS of origin; the only exception to this requirement is when additional handling of the sturgeon would result in an imminent risk of injury to the fish or the survey personnel handling the fish, we expect such incidents to be limited to capture and handling of sturgeon in extreme weather. Instructions for fin clips and associated metadata are available at: https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic, under the "Sturgeon Genetics Sampling" heading. c. In the event that personnel involved in the Project discover a stranded, entangled, injured, or dead ESA-listed species (e.g., marine mammal, sea turtle, listed fish), CVOW-C must immediately report the observation to NMFS. If in the Greater Atlantic Region (ME-VA) call the NMFS Greater Atlantic Stranding Hotline (866-755-6622) and if in the Southeast Region (NC-FL) call the NMFS		

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			Southeast Stranding Hotline (877-942-5343). Separately, CVOW-C must report the incident, if in the Greater Atlantic region (ME to VA) to GARFO (nmfs.gar.incidental-take@noaa.gov) or if in the Southeast region (NC-FL) to NMFS SERO (secmammalreports@noaa.gov) as soon as feasible. As well as notify BSEE (via TIMSWeb and notification email to (protectedspecies@bsee.gov). Note, the stranding hotline may request the report be sent to the local stranding network response team. Reports of listed fish should only be sent to nmfs.gar.incidental-take@noaa.gov. The report must include: (A) Contact information (name, phone number,), time, date, and location (coordinates) of the first discovery (and updated location information if known and applicable); (B) Species identification (if known) or description of the animal(s) involved; (C) Condition of the animal(s) (including carcass condition if the animal is dead); (D) Observed behaviors of the animal(s), if alive; (E) If available, photographs or video footage of the animal(s); and (F) General circumstances under which the animal was discovered. Staff responding to the hotline call will provide any instructions for handling or disposing of any injured or dead animals, which may include coordination of transport to shore, particularly for injured sea turtles d. CVOW-C must compile and submit weekly reports during pile driving that document the pile ID, type of pile, pile diameter, start and finish time of each pile driving event, hammer log (number of strikes, max hammer energy, duration of piling) per pile, any changes to noise attenuation systems and/or hammer schedule, details on the deployment of PSOs and PAM operators, including the start and		

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			stop time of associated observation periods by the PSOs and PAM Operators, and a record of all observations/detections of marine mammals and sea turtles, including time (UTC) of sighting/detection, species ID, behavior, distance (meters) from vessel to animal at time of sighting/detection (meters), animal distance (meters) from pile installation vessel, vessel/project activity at time of sighting/detection, platform/vessel name, and mitigation measures taken (if any) and reason. Sightings/detections during pile driving activities (clearance, active pile driving, post-pile driving) and all other (transit, opportunistic,) sightings/detection must be reported and identified as such. These weekly reports must be submitted to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov), BOEM, and BSEE by CVOW-C or the PSO providers and can consist of QA/QC'd raw data. Weekly reports are due on Wednesday for the activities occurring the previous week (Sunday–Saturday, local time). e. Starting in the first month that in-water activities occur (e.g., cofferdam installation, fisheries surveys, and HRG activities), CVOW-C must compile and submit monthly reports that include a summary of all project activities carried out in the previous month, including dates and location of any fisheries surveys carried out, vessel transits (name, type of vessel, number of transits, vessel activity, and route (this includes transits from all ports, foreign and domestic), cable installation activities (including sea to shore transition), number of piles installed and pile IDs, and all sightings/detections of ESA-listed whales, sea turtles, and sturgeon, inclusive of any mitigation measures taken as a result of those observations. Sightings/detections		

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			must include species ID, time, date, initial detection distance, vessel/platform name, vessel activity, vessel speed, bearing to animal, project activity, and if any mitigation measures taken. These reports must be submitted to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) and are due on the 15th of the month for the previous month. f. CVOW-C must submit to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) an annual report describing all activities carried out to implement their Fisheries Research and Monitoring Plan. This report must include a summary of all activities conducted, the dates and locations of all fisheries surveys, summarized by month, number of vessel transits inclusive of port of origin and destination, and a summary table of any observations of ESA-listed species during these surveys. Each annual report is due by February 15 (i.e., the report for 2024 activities is due by February 15, 2025). g. BOEM, BSEE, and/or CVOW-C must submit full detection data, metadata, and location of recorders (or GPS tracks, if applicable) from all real-time hydrophones used for monitoring during construction within 90 calendar days after pile-driving has ended. Reporting must use the webform templates on the NMFS Passive Acoustic Reporting System website at https://www.fisheries.noaa.gov/resource/document/passive-acoustic-reporting-system-templates. BOEM, BSEE, and/or CVOW-C must submit the full acoustic recordings from all the real-time hydrophones to the National Centers for Environmental Information (NCEI) for archiving within 90 calendar days after pile-driving has		

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			ended and instruments have been pulled from the water. Archiving guidelines outlined here (https://www.ncei.noaa.gov/products/passive-acoustic-data#tab-3561) must be followed. Confirmation of both submittals must be sent to NMFS GARFO.		
T&C 6	C, O&M, D	BOEM/NMFS meeting requirements for sea turtle take documentation	To implement the requirements of RPM 2 and to facilitate monitoring of the incidental take exemption for sea turtles, BOEM, BSEE, USACE, and NMFS must meet twice annually to review sea turtle observation records. These meetings/conference calls will be held in September (to review observations through August of that year) and December (to review observations from September to November) and will use the best available information on sea turtle presence, distribution, and abundance, project vessel activity, and observations to estimate the total number of sea turtle vessel strikes in the action area that are attributable to project operations.	Sea turtles	BOEM, BSEE, NMFS, and USACE
T&C 7	C	Review of Plans	To implement RPM 2, within 10 business days of BOEM, BSEE, and/or USACE obtaining updated information on project plans (i.e., as obtained through a relevant Facility Design Report (FDR)/Fabrication and Installation Report (FIR) or other submission), BOEM, BSEE, and/or USACE must provide NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) with the following information: number and size of foundations to be installed to support wind turbine generators and offshore substations, installation method for the sea to shore transition (e.g., casing pipe, cofferdam, no containment), the proposed construction schedule (i.e., months when pile driving is planned), and any available updates on anticipated vessel transit routes (e.g., any changes to the ports identified for use by project vessels) that will be used by project vessels. NMFS GARFO will review this information and request a meeting with BOEM, BSEE, and USACE if there is any indication that there are	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, NMFS, and USACE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			changes to the proposed action that would cause an effect to listed species or critical habitat that was not considered in this Opinion, including the amount or extent of predicted take, such that any potential trigger for reinitiation of consultation can be discussed with the relevant action agencies. days of BOEM's submission to NMFS, and NMFS' receipt of the requested information.		
T&C 8	C	Review of Plans	To implement RPM 3, the plans identified below must be submitted to NMFS GARFO at nmfs.gar.incidental-take@noaa.gov by BOEM, BSEE, and/or CVOW-C. Any of the identified plans can be combined such that a single submitted plan addresses multiple requirements provided that the plan clearly identifies which requirements it is addressing. For each plan, within 45 calendar days of receipt of the plan, NMFS GARFO will provide comments to BOEM, BSEE, and CVOW-C, including a determination as to whether the plan is consistent with the requirements outlined in this ITS and/or in Section 3 (Description of the Proposed Actions) of this Opinion. If the plan is determined to be inconsistent with these requirements, BOEM, BSEE and/or CVOW-C must resubmit a modified plan that addresses the identified issues within 30 days of the receipt of the comments, but at least 15 calendar days before the start of the associated activity. At that time, BOEM, BSEE and NMFS GARFO and OPR will discuss a timeline for review and approval of the modified plan. If further revisions are necessary, at all times, NMFS GARFO, BOEM, and BSEE will be provided at least three business days for review and, whenever possible, NMFS GARFO, BOEM, and BSEE will aim to provide responses within four business days. BOEM, BSEE and CVOW-C must receive NMFS GARFO's concurrence with these plans before the identified activity is carried out: a. Passive Acoustic Monitoring Plan for Pile Driving. BOEM, BSEE, and/or CVOW-C must submit this Plan to		BOEM, BSEE, NMFS, and USACE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			NMFS GARFO at least 180 calendar days before impact pile driving is planned. BOEM, BSEE, and CVOW-C must obtain NMFS GARFO's concurrence with this Plan prior to the start of any pile driving. The Plan must include a description of all proposed PAM equipment and hardware, the calibration data, bandwidth capability and sensitivity of hydrophones, and address how the proposed passive acoustic monitoring will follow standardized measurement, processing methods, reporting metrics, and metadata standards for offshore wind (Van Parijs et al., 2021). The Plan must describe and include all procedures, documentation, and protocols including information (i.e., testing, reports, equipment specifications) to support that it will be able to detect vocalizing whales within the clearance and shutdown zones, including deployment locations, procedures, detection review methodology, and protocols; hydrophone detection ranges with and without foundation installation activities and data supporting those ranges; communication time between call and detection, and data transmission rates between PAM Operator and PSOs on the pile driving vessel; where PAM Operators will be stationed relative to hydrophones and PSOs on pile driving vessel calling for delay/shutdowns; and a full description of all proposed software, call detectors, and filters. The Plan must also incorporate the requirements relative to North Atlantic right whale reporting in 5.a. b. Marine Mammal and Sea Turtle Monitoring Plan – Pile Driving. BOEM, BSEE, and/or CVOW-C must submit this Plan to NMFS GARFO at least 180 calendar days before any pile driving for foundation installation is planned. BOEM, BSEE, and/or CVOW-C must obtain NMFS GARFO's concurrence with this Plan(s) prior to the start of any pile driving for foundation installation. The Plan(s) must include: a description of how all		

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			relevant mitigation and monitoring requirements contained in the incidental take statement will be implemented, a pile driving installation summary and sequence of events, a description of all training protocols for all project personnel (PSOs, PAM Operators, trained crew lookouts,), a description of all monitoring equipment and evidence (i.e., manufacturer's specifications, reports, testing) that it can be used to effectively monitor and detect ESA-listed marine mammals and sea turtles in the identified clearance and shutdown zones (i.e., field data demonstrating reliable and consistent ability to detect ESA-listed large whales and sea turtles at the relevant distances in the conditions planned for use), communications and reporting details, and PSO monitoring and mitigation protocols (including number and location of PSOs) for effective observation and documentation of sea turtles and ESA-listed marine mammals during all pile driving events. The Plan(s) must demonstrate sufficient PSO and PAM Operator staffing (in accordance with watch shifts), PSO and PAM Operator schedules, and contingency plans for instances if additional PSOs and PAM Operators are required. The Plan must detail all plans and procedures for sound attenuation, including procedures for adjusting the noise attenuation system(s) and available contingency noise attenuation measures/systems if distances to modeled isopleths of concern are exceeded during SFV. The plan must also describe how CVOW-C would determine the number of sea turtles exposed to noise above the 175 dB harassment threshold during impact pile driving of WTG and OSS foundations and how CVOW-C would determine the number of ESA-listed whales exposed to noise above the Level B harassment (behavioral disturbance) threshold during impact pile driving of WTG and OSS foundations.		

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			c. Reduced Visibility Monitoring Plan. BOEM, BSEE, and/or CVOW-C must submit this Plan to NMFS GARFO at least 180 calendar days before impact pile driving is planned to begin. BOEM, BSEE, and CVOW-C must obtain NMFS GARFO's concurrence with this Plan prior to the start of pile driving. This Plan must contain a thorough description of how CVOW-C will monitor pile driving activities during reduced visibility conditions (e.g., rain, fog) and at night (i.e., between 1.5 hours prior to civil sunset and 1 hour after civil sunrise), including proof of the efficacy of monitoring devices (e.g., mounted thermal/infrared camera systems, hand-held or wearable night vision devices NVDs, spotlights) in detecting ESA-listed marine mammals and sea turtles over the full extent of the required clearance and shutdown zones, including demonstration that the full extent of the minimum visibility zones (2,000 m for WTG and OSS foundations, 1,000 m for goal posts) can be effectively and reliably monitored. The Plan must identify the efficacy of the technology at detecting marine mammals and sea turtles in the clearance and shutdowns under all the various conditions anticipated during construction, including varying weather conditions, sea states, and in consideration of the use of artificial lighting. The Plan must include a full description of the proposed technology, monitoring methodology, and data demonstrating to NMFS GARFO's satisfaction that marine mammals and sea turtles can reliably and effectively be detected within the clearance and shutdown zones for foundation piles before and during impact pile driving. Additionally, this Plan must contain a thorough description of how CVOW-C will monitor pile driving activities during daytime when unexpected changes to lighting or weather occur during pile driving that prevent visual monitoring of the full extent of the clearance and shutdown zones.		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			d. Sound Field Verification Plan - WTG and OSS Installation. BOEM, BSEE, and/or CVOW-C must submit this Plan to NMFS GARFO at least 180 calendar days before pile driving for WTG and/or OSS foundations is planned to begin. BOEM, BSEE, and CVOW-C must obtain NMFS GARFO's concurrence with this Plan(s) prior to the start of these pile driving activities. To validate the estimated sound fields, SFV measurements will be conducted during pile driving of the first three monopiles and the three OSS foundations (inclusive of all four pin piles) installed over the course of the Project, with noise attenuation activated (inclusive of vibratory and impact driving). The Plan(s) must describe how the first three monopile installation sites and installation scenarios (i.e., hammer energy, number of strikes) are representative of the rest of the monopile installations and, therefore, why these monopile installations would be representative of the remaining monopile installations. If the monitored pile locations are different from the ones used for exposure modeling, justification must be provided for why these locations are representative of the modeling. In the case that these sites are not determined to be representative of all other monopile installation sites, CVOW-C must include information on how additional monopiles/sites would be selected for SFV. The Plan(s) must also include the piling schedule and sequence of events, communication and reporting protocols, methodology for collecting, analyzing, and preparing SFV data for submission to NMFS GARFO, including instrument deployment, locations of all hydrophones, including direction and distance from the pile, hydrophone sensitivity, recorder/measurement layout, and analysis methods, and a template of the interim report to be submitted. The Plan must also identify the number and location of hydrophones that will be reported in the SFV		

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			Interim Reports and any additional hydrophone locations that will be included in the final report(s). The Plan must describe how the effectiveness of the sound attenuation methodology will be evaluated based on the results. The Plan must address how CVOW-C will implement Terms and Conditions 3a and 3b (see above) which includes, but is not limited to identifying additional noise attenuation measures (e.g., add noise attenuation device, adjust hammer operations, adjust NMS) that will be applied to reduce sound levels if measured distances are greater than those modeled. The plan must describe how Abbreviated SFV Monitoring (consisting of a single acoustic recorder placed at an appropriate distance from the pile) required by Term and Condition 3.c. will be performed on all foundation installations for which the complete SFV monitoring outlined in 3a and 3b is not carried out. The plan must also outline the anticipated results that will be included in the weekly reports. The plan must also specify steps that will be taken should any exceedances occur. e. SFV Interim Reports - Pile Driving. BOEM, BSEE, and USACE must require and CVOW-C must provide, as soon as they are available but no later than 48 hours after the installation of each of the first three monopiles and after each of the three OSS foundations (inclusive of all four pin piles), the initial results of the SFV measurements to NMFS GARFO in an interim report. If technical or other issues prevent submission within 48 hours, CVOW-C must notify BOEM, BSEE, and NMFS GARFO within that 48-hour period with the reasons for delay and provide an anticipated schedule for submission of the report. These reports are required for each of the first three monopiles and each of the three OSS foundations installed, and any additional piles for which SFV is required. The interim report must include		

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			data from hydrophones identified for interim reporting in the SFV Plan and include a summary of pile installation activities (pile diameter, pile weight, pile length, water depth, sediment type, hammer type, total strikes, total installation time [start time, end time], duration of pile driving, max single strike energy, NAS deployments), pile location, recorder locations, modeled and measured distances to thresholds, received levels (rms, peak, and SEL) results from Conductivity, Temperature, and Depth (CTD) casts/sound velocity profiles, signal and kurtosis rise times, pile driving plots, activity logs, and weather conditions. Additionally, any important sound attenuation device malfunctions (suspected or definite), must be summarized and substantiated with data (e.g., photos, positions, environmental data, directions,) and observations. Such malfunctions include gaps in the bubble curtain, significant drifting of the bubble curtain, and any other issues which may indicate sub-optimal mitigation performance or are used by CVOW-C to explain performance issues. Requirements for actions to be taken based on the results of the SFV are identified in 3.a. above. f. The final results of SFV for monopile and pin pile installations must be submitted as soon as possible, but no later than within 90 days following completion of pile driving for which SFV was carried out. g. Vessel Strike Avoidance Plan. BOEM, BSEE, and/or CVOW-C must submit this plan to NMFS GARFO as soon as possible after issuance of this Opinion but no later than 180 days prior to the planned start of in-water construction activities (including cable installation). The Plan must provide details on all relevant mitigation and monitoring measures for listed species, vessel speeds and transit protocols from all planned ports, vessel-based observer protocols for transiting vessels,		

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			communication and reporting plans, proposed alternative monitoring equipment to maintain vessel strike avoidance zones in varying weather conditions, darkness, sea states, and in consideration of the use of artificial lighting. If CVOW-C plans to implement PAM in any transit corridor to allow vessel transit above 10 knots, the plan must describe how PAM, in combination with visual observations, will be conducted to ensure the transit corridor is clear of North Atlantic right whales. PAM information should follow what is required to be submitted for the PAM Plan in 8.a.		
T&C 9	C, O&M, D	On-site Observation and Inspection	To implement the requirements of RPM 4, BOEM and BSEE must exercise their authorities to assess the implementation of measures to avoid, minimize, monitor, and report incidental take of ESA-listed species during activities described in this Opinion. BOEM and/or BSEE shall immediately exercise their respective authorities to take effective action to ensure prompt implementation and compliance if CVOW-C is not complying with: any avoidance, minimization, and monitoring measures incorporated into the proposed action or any term and condition(s) specified in this statement, as currently drafted or otherwise amended in agreement between the BOEM, BSEE, and NMFS; if BOEM and/or BSEE fail to do so, the protective coverage of Section 7(o)(2) may lapse.	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, and NMFS
T&C 10	C, O&M, D	On-site Observation and Inspection	To implement the requirements of RPM 4, CVOW-C must consent to on-site observation and inspections by Federal agency personnel (including NOAA personnel) during activities described in the Biological Opinion, for the purposes of evaluating the effectiveness and implementation of measures designed to minimize or monitor incidental take.	ESA-listed fish, marine mammals, sea turtles	BOEM, BSEE, and NMFS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
BOEM-Proposed Mitigation and Monitoring Measures in the Essential Fish Habitat Assessment					
1	C, O&M, D	Essential Fish Habitat	The measures required by the final Essential Fish Habitat consultation would be incorporated into COP approval, and BOEM and/or NMFS would monitor compliance with these measures.	Benthic Resources	BOEM, BSEE
2	Pre-C, Post-C	Whelk Surveys	Perform Whelk surveys to help determine the relative abundance, length frequency and demographic characteristics (age structure and reproduction) of whelk within the Study Area before and after construction	Finfish, Invertebrates, and EFH (Whelk)	BOEM
3	Pre-C, Post-C	Black Sea Bass Surveys	Perform Black sea bass surveys to help determine the relative abundance, length frequency and demographic characteristics (age structure and reproduction) of whelk within the Study Area before and after construction	Finfish, Invertebrates, and EFH (Black Sea Bass)	BOEM, BSEE
4	Pre-C, Post-C	Atlantic Surf Clam Surveys	Perform Atlantic surf clam surveys to examine abundance and population structure within the CVOW Lease Area	Finfish, Invertebrates, and EFH (Atlantic Surf Clam)	BOEM, BSEE
NMFS Essential Fish Habitat (EFH) Conservation Recommendations (CRs)[2] issued July 21, 2023.					
1	C	Benthic habitat impact minimization	Recommendations to minimize impacts to benthic habitats: 1. Relocate the four priority WTGs identified and discussed in the Habitat Minimization Alternative (Alternative C) outside of the area of stable, spatially complex, high-relief sand ridge/trough habitats to avoid and minimize impacts to those habitats, while also still	Benthic Resources	BOEM, BSEE, and USACE

[2] NMFS issued conservation recommendations to BOEM and USACE for the CVOW project via letter on July 21, 2023. As required by section 305(b)(4)(B) of the Magnuson-Stevens Act, USACE and BOEM will provide a detailed response to these conservation recommendations to NMFS regarding which measures will be adopted, partially adopted, or not adopted along with a rationale. At the time of FEIS issuance, BOEM and USACE have yet not determined which conservation recommendations each agency intends to adopt or partially adopt. As such, the full list of conservation recommendations received from NMFS is included in this document.

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			avoiding shipwrecks. 2. All cables, including export cable bundles, should be routed/rerouted around the area characterized by stable, spatially complex, high-relief sand ridges and troughs. 3. Develop and implement a WTG, OSS and cable micrositing plan to facilitate the avoidance and minimization of impacts to complex habitats[3] and benthic features. We recommend the plan use habitat maps depicting areas of complex habitats and benthic features to inform micrositing around complex habitat and benthic features. A copy of the final plan should be provided to NMFS HESD prior to construction. 4. To the extent practicable, if cables must cross complex habitat they should do so at the narrowest points perpendicularly; cables that must cross benthic features such as sand waves should be sited along natural benthic contours within troughs/lows to maximize cable burial while minimizing disturbance to local submarine topography. 5. To minimize impacts of benthic habitat modification, in all project areas where seafloor preparation activities include the use of plows, jets, grapnel runs or similar methods, post-construction acoustic surveys (e.g., multibeam backscatter and side scan sonar) capable of detecting bathymetry changes of 0.5 feet (ft.) or less, should be completed to demonstrate how the bottom was modified by preparation and construction activities. 6. In areas where plows, jets, or other similar methods are used and the created berm height exceeds three feet above the existing grade, the created berm should be		

[3] Defined in the NMFS March 2021 Recommendations for Mapping Fish Habitat.

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			restored to match that of the existing grade/pre-construction conditions. 7. Avoid anchoring or placing jack-up barge spud cans or footings on/in complex habitats or areas with large benthic features (i.e., sand waves). 8. If anchoring is necessary in complex habitats or areas with large benthic features, anchor lines should be extended to the extent practicable to minimize the number of times the anchors must be raised and lowered to reduce the amount of habitat disturbance. 9. If anchoring must occur in any complex habitats or areas with large benthic features and vessels must remain stationary, dynamic positioning systems (DPS) or mid-line buoys on anchor chains should be required to minimize impacts to those habitats. 10. If placement of jack-up barge spud cans is necessary in complex habitats or areas with large benthic features, we recommend proposed locations for the spud cans be selected to avoid areas in the following order: (i) complex habitats; (ii) crests of large benthic features; and (iii) slopes of large benthic features. 11. Develop and implement an anchoring and jack-up barge plan to facilitate the avoidance and minimization of impacts to complex habitats and benthic features. We recommend the use of habitat maps depicting areas of complex habitats and benthic features to inform this plan. A copy of the final plan should be provided to NMFS HESD prior to construction. 12. To minimize permanent adverse impacts to existing benthic habitats from the placement of scour protection, all cables should be microsited to allow for full penetration/burial, regardless of habitat type (by siting cables in appropriate substrates). Additional bottom surveys should be conducted, as necessary, to inform		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			the micrositing of the cables. 13. To minimize the impacts of habitat conversion from scour protection, natural or engineered rounded stone of consistent grain size that mimics natural seafloor substrates should be used. At a minimum, any exposed surface layer should be designed and selected to provide three-dimensional structural complexity that creates a diversity of crevice sizes (e.g., mixed stone sizes) and rounded edges (e.g., tumbled stone), and be sloped such that outer edges match the natural grade of the seafloor. Alternatively, bioactive concrete (i.e., with bio-enhancing admixtures) should be used as primary scour protection (e.g., concrete mattresses) or veneer to support biotic growth. 14. Avoid the use of plastics/recycled polyesters/net material (i.e., fronded mattresses) in all scour protection, as these materials may degrade and result in plastic pollution. 15. Develop and implement a scour protection plan to facilitate the avoidance and minimization of impacts to complex habitats and benthic features. We recommend the plan use the Seabed Morphology and Habitat-CMECS interpretation maps depicting areas of complex habitats and benthic features to inform this plan. A copy of the final plan should be provided to NMFS HESD prior to construction.		
2	C	Acoustic impacts from pile driving	Recommendations to minimize acoustic impacts from pile driving: 1. The use of noise mitigating measures should be required during pile driving construction, including the use of soft start procedures and the deployment of noise dampening equipment such as bubble curtains or double-bubble curtains. 2. Additional noise dampening/mitigation measures (e.g.,	Benthic Resources	BOEM, BSEE, and USACE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			double bubble curtains) should be used for any pile driving activity within 10.7 km of artificial reef sites/shipwrecks/fish havens, including those found at the north end of the lease area. 3. A plan outlining the noise mitigation procedures for both offshore and inshore activities should be filed with BOEM and the USACE for approval before construction commences. BOEM should provide NMFS HESD with a copy of the final plan before in- water work begins. The noise mitigation plan should include (i) passive acoustic sound verification monitoring during pile driving activities - additional noise dampening technology should be applied should real-time monitoring indicate noise levels exceed the modeled 10 decibel attenuation levels; (ii) a process for notifying NMFS HESD within 24 hours if any evidence of a fish kill during construction activity is observed, and contingency plans to resolve issues; and (iii) acoustic monitoring reports that include any/all noise-related monitoring should be provided to NMFS HESD.		
3	O&M	Address uncertainties and minimize impacts	Recommendations to address uncertainties and minimize impacts from project operation: 1. Develop a Benthic Habitat Monitoring Plan to address impacts related to the stable high-relief sand ridge/trough habitats and the introduction of artificial manmade substrate. The plan should incorporate sufficient samples and replications to identify potential changes to benthic features, habitat complexity, and associated macrobenthic communities across and within each habitat type in the project area, including the artificial substrates to be constructed. The plan should include the collection of at least three years of pre-construction data and post-construction acoustic data (multibeam bathymetry and backscatter and side scan sonar). The applicant should consult with the resource	Benthic Resources	BOEM, BSEE, and USACE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			agencies in development of this plan and give the resource agencies a minimum of 90 days to review and comment on the plan. The applicant should submit a final plan to BOEM that addresses, and includes, all resource agency comments, as well as the applicant's response to those comments. A copy of the final monitoring plan should be provided to NMFS HESD prior commencement of any in-water work. All data and metadata should be made available to NMFS HESD. 2. Develop an in situ project specific monitoring program to address uncertainties related to impacts of the operation of the CVOW project on EFH and federally managed species. This monitoring recommendation is consistent with principles outlined in NOAA's Mitigation Policy for Trust Resources which highlights the use of the best available scientific information, such as results of surveys and other data collection efforts when existing information is not sufficient for the evaluation of proposed actions and mitigation, or when additional information would facilitate more effective or efficient mitigation recommendations. The project specific monitoring program should measure in situ the stressors created by project operation on the ecosystem from the presence of turbines, operational noise, and oceanic-wind wake effects. Monitoring plans should include the collection of baseline data and be provided to NMFS HESD and NEFSC for review and comment within 90 days of ROD issuance. A response to NMFS comments should be provided. These monitoring studies should be developed in partnership with NMFS and other scientific institutions to aid in addressing these and other questions: a. How do construction and permanent placement of WTGs and OSSs impact sand ridge and trough habitat?		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			i. What are the effects of construction and operation (presence) on physical characteristics of the sandridge and trough complexes over time, including sediment properties and shape/geometry, depth, and rugosity. ii. To what extent do fish assemblages and food web dynamics change in the ridge and trough complexes as a result of construction and operation of the wind farm? b. Does the presence of novel hard structures (WTGs, OSS, and associated scour protection) change the distribution and abundance of invasive Indo-Pacific lionfish [Pterois volitans and P. miles]) in the project area? i. How do individual structures or wind farm as a whole change the thermal regime, especially in the context of facilitating overwintering/colonization of invasive lionfish? ii. Do lionfish exhibit age-specific habitat preferences on novel wind farm structures (i.e., do young-of-year lionfish prefer scour protection while adult lionfish prefer vertical monopile)? c. How far do effects on sound pressure, particle motion, and substrate vibration extend from the individual WTGs and the CVOW project collectively? i. How does construction and operation of the CVOW project impact fish assemblages at artificial reef sites/shipwreck, including those found at the north end of the lease area? d. How far does the marine/oceanographic and atmospheric wind wake extend from the CVOW project during operation? i. What are the effects on physical water column properties, primary and secondary production,		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			and larval dispersal for species with designated EFH in the project area? 2. Require the implementation of preventive measures to reduce the risk of contaminant emissions or accidental release of chemicals. Such measures may include backup systems, secondary containments, closed loop systems, and/or recovery tanks. 3. Information on any anti-corrosion protection methods or systems proposed should be provided to NMFS HESD. If sacrificial anodes are used, Al anodes should be selected over Zn anodes. Any application of anti- corrosion coatings should be allowed to cure fully on land, and BMPs for reducing spills should be implemented if reapplied offshore.		
4	D	Decommissioning	Project decommissioning: The EFH consultation should be reinitiated prior to decommissioning turbines to ensure that the impact to EFH as a result of the decommissioning activities have been fully evaluated and minimized to the extent practicable. Pre-consultation coordination related to decommissioning should occur at least five years prior to proposed decommissioning.	Benthic Resources	BOEM and BSEE
5	C, O&M, D	Fish and Wildlife Coordination Act	Fish and Wildlife Coordination Act Recommendations: 1. The project should be required to mitigate any major impacts to NMFS scientific surveys consistent with NMFS-BOEM Federal Survey Mitigation Strategy - Northeast U.S. Region. Plans to mitigate these impacts at the project and regional levels should be provided to NMFS for review and approval prior to BOEM's decision on its acceptance. Mitigation is necessary to ensure that NMFS can continue to accurately, precisely, and timely execute our responsibilities to monitor the status and	Benthic Resources	USACE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			health of trust resources. 2. Locations of scour protection, including cable protection measures (i.e., concrete mattresses) should be provided to NMFS and the public as soon as possible to help inform marine users, including, but not limited to the fishing industry and entities conducting scientific surveys of potential gear obstructions.		
BOEM-Proposed Measures in the USFWS BA					
1	C, O&M, D	Reporting	Dominion Energy must provide an annual report to BOEM and USFWS documenting any dead (or injured) birds or bats found on vessels and structures during construction, operations, and decommissioning. The report must contain the following information: the name of species, date found, location, a picture to confirm species identity (if possible), and any other relevant information. Carcasses with federal or research bands must be reported to the United States Geological Survey Bird Band Laboratory, available at https://www.pwrc.usgs.gov/bbl/. Any occurrence of a dead ESA-listed bird or bat must be reported to BOEM, BSEE, and USFWS as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting, and, if practicable, the dead specimen will be carefully collected and preserved in the best possible state.	Birds and Bats	BOEM, BSEE, and USFWS
2		Monitoring	BOEM will require that Dominion Energy develops and implements a Post-Construction Monitoring [PCM] plan based on Dominion Energy's Proposed Bird and Bat Monitoring Framework in coordination with USFWS and other relevant regulatory agencies. Annual monitoring reports will be used to determine the need for adjustments to monitoring approaches, consideration of new monitoring technologies, and/or additional periods of monitoring. Prior to commencing offshore construction activities, Dominion Energy must submit the PCM for BOEM and USFWS review. BOEM and USFWS will review the PCM	Birds & Bats	BOEM, BSEE, and USFWS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			and provide any comments on the plan within 30 calendar days of its submittal. Dominion Energy must resolve all comments on the PCM to BOEM and USFWS's satisfaction before implementing the plan. a. Monitoring. Dominion Energy must conduct monitoring as outlined in Dominion Energy's Proposed Bird and Bat Monitoring Framework, which will include acoustic monitoring of bat presence, the use of motus receivers and tags to monitor bird and bat movements, and others TBD. b. Annual Monitoring Reports. Dominion Energy must submit to BOEM (at renewable_reporting@boem.gov), USFWS, and BSEE (at protectedspecies@bsee.gov) a comprehensive report after each full year of monitoring (pre- and post-construction) within 6 months of completion of the last avian survey. The report must include all data, analyses, and summaries regarding ESA-listed and non-ESA-listed birds and bats. BOEM, USFWS, and BSEE will use the annual monitoring reports to assess the need for reasonable revisions (based on subject matter expert analysis) to the PCM. BOEM, BSEE, and USFWS reserve the right to require reasonable revisions to the PCM and may require new technologies as they become available for use in offshore environments. c. Post-Construction Quarterly Progress Reports. Dominion Energy must submit quarterly progress reports during the implementation of the PCM to BOEM (at renewable_reporting@boem.gov) and the USFWS by the 15th day of the month following the end of each quarter during the first full year that the Project is operational. The progress reports must include a summary of all work performed, an explanation of overall progress, and any technical problems encountered.		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			d. Monitoring Plan Revisions. Within 15 calendar days of submitting the annual monitoring report, Dominion Energy must meet with BOEM and USFWS to discuss the following: the monitoring results; the potential need for revisions to the PCM, including technical refinements or additional monitoring; and the potential need for any additional efforts to reduce impacts. If BOEM or USFWS determines after this discussion that revisions to the PCM are necessary, BOEM may require Dominion Energy to modify the PCM. If the reported monitoring results deviate substantially from the impact analysis included in the Final BA, Dominion Energy must transmit to BOEM recommendations for new mitigation measures and/or monitoring methods. e. Operational Reporting (Operations). Dominion Energy must submit to BOEM (at renewable_reporting@boem.gov) and BSEE (at OSWSubmittals@bsee.gov) an annual report summarizing monthly operational data calculated from 10-minute SCADA data for all turbines together in tabular format: the proportion of time the turbines were operational (spinning at >x rpm) each month, the average rotor speed (monthly revolutions per minute (rpm)) of spinning turbines plus 1 standard deviation, and the average pitch angle of blades (degrees relative to rotor plane) plus 1 standard deviation. BOEM and BSEE will use this information as inputs for avian collision risk models to assess whether the results deviate substantially from the impact analysis included in the Final BA. f. Raw Data. The Lessee must store the raw data from all avian and bat surveys and monitoring activities according to accepted archiving practices. Such data must remain accessible to BOEM, BSEE and USFWS, upon request for the duration of the Lease. The Lessee		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			must work with BOEM to ensure the data are publicly available. The USFWS may specify third-party data repositories that must be used, such as the Motus Wildlife Tracking System or MoveBank, and such parties and associated data standards may change over the duration of the monitoring plan.		
3	C	Surveys, Avoidance, and Minimization (ESA-listed bats) - Onshore	To minimize potential impacts to northern long-eared bats and Indiana bats, which may be present year-round, Dominion Energy has conducted surveys (mist-net) and is developing avoidance and minimization measures, including adhering to the existing requirements for tree clearing under 4(d) provisions prior to implementation of the new regulations on April 1, 2024 and adhering to the year-round time of year restrictions for suitable habitat included in the new regulation in coordination with BOEM, USFWS, and VDWR.	Bats	USFWS, VDWR
4	C, O&M	Offshore structures	To minimize attracting birds to operating turbines, Dominion Energy must install bird perching-deterrent devices on WTGs and OSSs. The location of bird-deterrent devices must be proposed by Dominion Energy based on best management practices applicable to the appropriate operation and safe installation of the devices. Dominion Energy must confirm the locations of bird perching-deterrent devices with a monitoring plan to track the efficacy of the deterrents as part of the as-built documentation it must submit with the FDR.	Birds	BOEM, USFWS
5	C, O&M	Offshore structures	Dominion Energy must use an FAA-approved vendor for the Aircraft Detection Lighting System (ADLS), which will activate the FAA hazard lighting only when an aircraft is in the vicinity of the wind facility to reduce visual impacts at night. Dominion Energy must confirm the use of an FAA-approved vendor for ADLS on WTGs and OSSs in the FDR. (Tentative)	Birds	FAA, BOEM, BSEE
6	C, O&M	Offshore structures	Dominion Energy must light each WTG and OSS in a manner that is visible by mariners in a 360-degree arc	Birds	USCG, BOEM, BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			around the WTG and OSS. To minimize the potential of attracting migratory birds, the top of each light shall be shielded to minimize upward illumination (Conditional on USCG approval).		
7	C, O&M, D	Other	Reasonable and Prudent Measures and Terms and Conditions from the USFWS Biological Opinion, to be issued September 1	Birds, Bats, Sea Turtles	BOEM, BSEE, USFWS
Reasonable and Prudent Mitigation and Monitoring Measures and Terms and Conditions in the USFWS Biological Opinion Issued August 31, 2023					
RPM 1	C, O&M, D	Training	Ensure that all individuals performing work onshore (i.e., Dominion staff, concessioners, contractors) are familiar with the PIPL, REKN, NLEB, and TCB and their respective habitats and are aware of all protection measures detailed in this Opinion.	Birds, Bats	BOEM, BSEE, and USFWS
T&C 1	C, O&M, D	Training	Provide annual training to all individuals directly or indirectly responsible for implementing and/or overseeing actions described in the BA. The training will review the protection measures outlined in the BA and how the conservation measures are to be implemented, species habitat characteristics, and applicable locations for NLEB and TCB.	Birds, Bats	BOEM, BSEE, and USFWS
MRR 1	C, O&M	Monitoring and Reporting Requirements	Prior to commissioning the first WTG, BOEM must extract from existing project documentation (e.g., the BA, other consultation documents, the final Environmental Impact Statement, the COP) a stand-alone summary of technologies and methods that BOEM evaluated to reduce or minimize bird collisions at the CVOW-C WTGs. Provide this summary to the Service contact email provided below.	Birds	BOEM, BSEE, and USFWS
MRR 2	C, O&M	Monitoring and Reporting Requirements	Within 5 years of commissioning the first WTG, and then every 5 years for the life of the project, BOEM must prepare a Collision Minimization Report, reviewing best available scientific and commercial data on technologies and methods that have been implemented or are being studied, to reduce or minimize bird collisions at WTGs. The	Birds	BOEM, BSEE, and USFWS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			review must be global in scope and include both offshore and onshore WTGs. A. BOEM must distribute a draft Collision Minimization Report to the Service and Dominion for a 60-day review period. BOEM must address all comments received during the review period and issue the final report within 60 days of the close of the review period. A. BOEM must distribute a draft Collision Minimization Report to the Service and Dominion for a 60-day review period. BOEM must address all comments received during the review period and issue the final report within 60 days of the close of the review period. B. Following issuance of the final Collision Minimization Report, the Service may request a meeting. Within 60 days following the Service's request, BOEM must convene a meeting with the Service and Dominion. Meeting participants will discuss the Collision Minimization Report and seek consensus on whether implementation of any technologies/methods is warranted. C. Within 60 days of the close of the review period if a meeting is not held, BOEM must provide a plan to the Service and Dominion that details how the technologies/methods will be implemented.		
MRR 3	C, O&M, D	Monitoring and Reporting Requirements	Provide updated model runs and associated input data from both SCRAM and Band (2012) for PIPL and REKN using the best available information on each species and provide a report containing this information by December 31 of each year until the year after decommissioning is complete to the Service contact email provided below.	Birds	BOEM, BSEE, and USFWS
MRR 4	C, O&M, D	Monitoring and Reporting Requirements	Care must be taken in handling any dead or injured specimens of proposed or listed species to preserve biological material in the best possible state. In conjunction with the preservation of any dead specimens, the finder has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not	Birds, Bats	BOEM, BSEE, and USFWS

#	Proposed Project Phase	Mitigation & Monitoring Measures	Description of Mitigation and Monitoring Measures Resulting From Consultations	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			unnecessarily disturbed. The finding of dead or injured specimens does not imply enforcement proceedings pursuant to the ESA. The reporting of dead or injured specimens is required to enable the Service to determine if take is reached or exceeded and to ensure that the terms and conditions are appropriate and effective. Upon locating a dead or injured specimen, notify the Service's Virginia Law Enforcement Office at 804-771-2883 and the Virginia Field Office at the phone number provided below.		
MRR 5	C	Monitoring and Reporting Requirements	Notify the Service regarding the projected and actual start dates, progress, and completion of the project and verify that the removal of 117.04 acres of trees was not exceeded, and confirmation that all conservation measures were followed. Provide a report containing this information by December 31 of each year until the year after construction is complete to the Service contact email provided below.	Birds, Bats	BOEM, BSEE, and USFWS
BOEM-Proposed Measure for Reporting Incidental Take of Endangered or Threatened Species					
1	C, O&M, D	Reporting	Dominion Energy will report to BOEM and BSEE within 24-hours of confirmation any incidental take of an endangered or threatened species.	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM, BSEE

Table H-3. Additional Agency-Required Mitigation and Monitoring Measures

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
BOEM-Proposed Measures to Minimize Impacts on Air Quality					
1	O&M	SF_6 leak rate monitoring and detection	Leak detection and monitoring requirements of less than 1% would be required, in line with IEC and USEPA guidance.	Air Quality	BOEM and BSEE
DoD Measures Resulting from DoD Clearinghouse Review					
1	C, O&M	Mitigation for NORAD radar impacts	Dominion Energy will enter into a mitigation agreement with DoD for impacts on the North American Aerospace Defense Command (NORAD). Mitigation measures include the following: • Notify the NORAD 30-to-60 days ahead of project completion and when the project is complete and operational for Radar Adverse Impact Management (RAM) scheduling. • Contribute funds ($80,000) toward the execution of the RAM for each affected radar. • Curtailment for National Security or Defense Purposes as described in the leasing agreement.	Other Uses – Radar Systems	BOEM and BSEE
4	C	Mitigation for impacts to DON operations	Dominion Energy will enter into a mitigation agreement with DoD for impacts on the Department of the Navy (DON). Mitigation measures include the following:	Other Uses – National Security and Military Uses	BOEM and BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			• Coordinate prior to mobilization and work with DON to develop communication protocols for construction activities, providing relevant notifications and regular updates to U.S. Fleet Forces Command (USFFC) and the Naval Air Warfare Center Aviation Division (NAWCAD). • Following construction, develop communication protocols to ensure notification and coordination with USFFC and NAWCAD on relevant operations and maintenance activities with the potential to impact military activities. • Work with DoD/DON to prevent, minimize, or mitigate effects on radar systems to potentially include curtailment of turbine operation for National Security or Defense purposes. • Spinning turbines may conflict with the DON's Advanced Dynamic Aircraft Measurement System. Dominion Energy must facilitate a DON risk assessment through deployment of distributed fiber optic sensing technology and passive acoustic monitoring, and mitigate risks to national		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			security, if identified. • Provide DoD/DON notification and opportunity to assess risk related to foreign investment and material vendors for the project, and must address risk to national security requiring mitigation, if identified. • Continue to coordinate with the DON regarding real estate leasing with NAS Oceana regarding access for the proposed Interconnection Cable Route Options.		
10	O&M	Identification of impacts from UAS to US Army	Dominion Energy must coordinate with the US Army to safely deconflict any use of unmanned aircraft systems (UAS) by Dominion Energy with Army Aviation operations near Joint Base Langley-Eustis and training areas to the east.	Other Uses – National Security and Military Uses	BOEM and BSEE
BOEM OCS Study 2020-039 – Radar Systems Mitigations to Operations					
1	O&M	Mitigation for ARSR-4 and ASR-8/9 radars	Dominion Energy will enter into a mitigation agreement with DoD for impacts on ARSR-4 and for ASR-8/9 radars. Possible mitigation measures might include the following: • Passive aircraft tracking using ADS-B or signal/transponder • Increasing aircraft altitude near	Other Uses - Radar	BOEM and BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			radar • Sensitivity time control (range-dependent attenuation) • Range azimuth gating (ability to isolate/ignore signals from specific range-angle gates) • Track initiation inhibit, velocity editing, plot amplitude thresholding (limiting the amplitude of certain signals) • Modification mitigations for ARSR-4 and for ASR-8/9 systems: o Utilizing the dual beams of the radar simultaneously o In-fill radars		
2	O&M	Mitigation for oceanographic high-frequency radars	• BOEM will require that Dominion Energy coordinates with the radar operators and the Surface Currents Program of NOAA Integrated Ocean Observing System (IOOS) Office to assess if the Project causes radar interference to the degree that radar performance is no longer within the specified radar system's operation parameters or fails to meet mission objectives. If either is the case, the lessee must notify BOEM, make publicly available via NOAA IOOS the near real-time accurate	Other Uses - Radar	BOEM and BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			numerical telemetry of surface current velocity, wave height, wave period, wave direction, and other oceanographic data measured at Project locations selected by the Lessee in coordination with the affected radar operators and the NOAA IOOS Surface Currents Program; and, if requested by the affected radar operators or the NOAA IOOS Surface Currents Program, share with them accurate numerical time-series data of blade rotation rates, nacelle bearing angles, and other information about the operational state of each turbine in the wind development area to aid interference mitigation.		
USACE-Proposed Measures					
1	C, O&M, D	Clean Water Act (CWA) 404; Section 10 of the Rivers and Harbors Act	Dominion Energy will comply with all mitigation required by USACE for CWA Section 404 and Section 10 impacts.	Wetlands	USACE
NPS- and BOEM-Proposed Measures					
1	C, O&M, D	Lighting	Dominion Energy will comply with BOEM's detailed Lighting and Marking Guidelines and NPS sustainable lighting best practices.	Cultural, Historic, and Archaeological Resources; ESA-listed Species; Recreation	BOEM and BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
				and Tourism; Scenic and Visual Resources	
BOEM-Proposed Measures for Fisheries Compensation					
1	C, O&M, D	Fisheries compensation	BOEM would require that Dominion Energy implement a compensation program for lost income for commercial and recreational fishermen and other eligible fishing interests (including shoreside support services) for construction and operations consistent with BOEM's draft guidance for *Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585* or as modified in response to public comment. This measure, if adopted, would reduce impacts from the impact-producing factor (IPF) presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. Levels of funding required by Dominion Energy to be set aside for fulfilling verified claims would be commensurate with commercial fishing revenue amounts in the Project area as described in Section 3.9.1.3. If adopted, this	Commercial Fisheries and For-Hire Recreational Fishing	BOEM and BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			measure would reduce the negligible to major impact level from the presence of structures to negligible to moderate. This is because a compensation scheme will mitigate "indefinite" impacts to a level where the fishing community would have to adjust somewhat to account for disruptions due to impacts but income losses would be mitigated.		
2	C, O&M, D	Compensation for gear loss and damage	The lessee must implement a gear loss and damage compensation program consistent with BOEM's draft guidance for *Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585* or as modified in response to public comment. The fisheries gear loss and damage claims procedure must be maintained throughout the life of the Project and must be available to all fishermen impacted by Project activities or infrastructure regardless of homeport BOEM recognizes that Dominion Energy has a fishing gear damage or loss claims process resulting from survey activities (Appendix V-1: Fisheries Communications Plan of the COP). This measure, if adopted, would be applicable to the IPF presence of structures during both construction	Commercial Fisheries and For-Hire Recreational Fishing	BOEM and BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			and operations. If adopted, this measure would reduce negative impacts resulting from loss of gear associated with uncharted obstructions resulting from the Proposed Action.		
USCG-Proposed Measures for Navigation					
1	C, O&M	Safety zones	Establishing safety zones should not be used as the key mitigating factor when considering risks and impacts. Commander, USCG Fifth District, may consider safety zones in the lease area, but safety zones will not be granted for the sole purpose of keeping project construction on track.	Navigation and Vessel Traffic	USCG
BOEM-Proposed Measures for Cable Protection					
1	C, O&M, D	Mobile gear–friendly cable protection measures	Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure, if adopted, ensures that seafloor cable protection does not introduce potential for snags for mobile fishing gear (reducing impacts from the presence of structures IPF). Therefore, the cable protection measures should be trawl-friendly with tapered/sloped edges. This measure, if adopted, would be applicable to the IPF new cable emplacement and maintenance activities during both construction and operations. If adopted, this	Commercial Fisheries and For-Hire Recreational Fishing	BOEM and BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			measure would reduce negative impacts resulting from loss of gear associated with cable protection resulting from the Proposed Action.		
BOEM-Proposed Measure for Long-Term PAM					
1	C, O&M, D	Long-term PAM	The Lessee must conduct long-term monitoring of ambient noise, baleen whale and commercially-important fish vocalizations in the Lease Area before, during, and following construction. The Lessee must conduct continuous recording at least 1 year before construction, during construction, and for at least 3 but no more than 10 full calendar years of operation to monitor for potential noise impacts. The Lessee must meet with BOEM and BSEE at least 60 days prior to conclusion of the third full calendar year of operation monitoring (and at least 60 days prior to the conclusion of each subsequent year until monitoring is concluded) to discuss: 1) monitoring conducted to-date, 2) the need for continued monitoring, and 3) if monitoring is continued, whether adjustments to the monitoring are warranted. Following this meeting, BOEM will make a determination as to continued monitoring requirements and inform the Lessee of any changes to monitoring	Marine Mammals, Finfish	BOEM and BSEE

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			requirements. The instrument(s) must be configured to ensure that the specific locations of vocalizing NARW anywhere within the lease area could be identified, based on the assumption of a 10 km detection range for their calls. The lessee may execute the implementation of this condition through Option 1 or Option 2, as below. The timing requirement (i.e., monitoring for at least 3 but no more than 10 full calendar years of operation) will be reevaluated by BOEM and BSEE at the end of the third year and each year subsequently thereafter at the request of the Lessee (at a maximum frequency of requests of once per year). a) Option 1 - Lessee Conducts Long-term Passive Acoustic Monitoring. The Lessee must conduct PAM, including data processing and archiving following the Regional Wildlife Science Collaborative (RWSC) best practices to ensure data comparability and transparency. PAM instrumentation must be deployed to allow for identification of any NARW that vocalize anywhere within the lease area. The sampling rate (minimum 10		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			kHz) of the recorders must prioritize baleen whale detections, but must also have a minimum capability to record noise from vessels, pile-driving, and WTG operation in the lease area. The system must be configured for continuous recording over the entire year. If temporal gaps in recording are expected, the Lessee must ensure that additional recorders can be deployed to fill gaps. The Lessee must use trawl-resistant moorings to ensure that instruments are not lost, and must replace any lost instruments as soon as possible. The Lessee must also notify BOEM if this occurs. The Lessee must follow the best practices outlined in the RWSC best practices document, unless otherwise required through conditions of COP approval. The best practices include engaging with the RWSC, calibrating the instruments, running QA/QC on the raw data, following the templates for reporting species vocalizations, and preparing the data for archiving at National Centers for Ecological Information (NCEI). Although section III of the RWSC best practices document specifies steps for Section 106 compliance, the Lessee must instead follow the conditions outlined		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			in the Section 106 Memorandum of Agreement. In terms of data processing, the Lessee must document the occurrence of whale vocalizations (calls of North Atlantic right, humpback, sei, fin, and minke whales, as well as odontocete clicks, as available based on sample rate) using automatic or manual detection methods. The Lessee must submit a log of these detections as well as the detection methodology to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov) and NMFS (at nmfs.pacmdata@noaa.gov) within 120 days following each recorder retrieval. All raw data must be sent to the NCEI Passive Acoustic Data archive on an annual basis and the Lessee must follow NCEI guidance for packaging the data and pay the fee. i. Long-term Passive Acoustic Monitoring Plan. The Lessee must prepare and implement a Long-term PAM Plan under this option. No later than 120 days prior to instrument deployment and before any construction		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			begins, the Lessee must submit to BOEM and BSEE (renewable_reporting@boem.gov and OSWsubmittals@bsee.gov) the Long-term PAM Plan that describes all proposed equipment (including number and configuration of instruments), deployment locations, mooring design, detection review methodology, and other procedures and protocols related to the required use of PAM. As the Lessee prepares the Long-term PAM Plan, it must coordinate with the RWSC. BOEM and BSEE will review the Long-term PAM Plan and provide comments, if any, on the plan within 45 days of its submittal. The Lessee may be required to submit a modified Long-term PAM Plan based on feedback from BOEM and BSEE. The Lessee must address all outstanding comments to BOEM's and BSEE's satisfaction and must receive written concurrence from BOEM and BSEE. If BOEM or BSEE do not provide comments on the Long-term PAM Plan within 45 days of its submittal, the Lessee may conclusively presume BOEM's and BSEE's 's concurrence with the		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			Long-term PAM Plan. Option 2 – Economic and Other Contributions to BOEM's Environmental Studies Program. As an alternative to conducting long-term PAM in the Lease Area, the Lessee may opt to make an economic contribution to BOEM's Environmental Studies Partnership for an Offshore Wind Energy Regional Observation Network (POWERON) initiative on an annual basis and cooperate with the POWERON team to allow access to the Lease Area for deployment, regular servicing, and retrieval of instruments. The Lessee's economic contribution will provide for all activities necessary to conduct PAM within the Lease Area, such as vessel and staff time for regular servicing of instruments, QA/QC on data, data processing to obtain vocalizations of sound-producing species and ambient noise metrics, as well as long-term archiving of data at NCEI. At the Lessee's request, the amount of the economic contribution will be estimated by BOEM's Environmental Studies Program. The Lessee will also be invited to contribute to discussions about the scientific approach of the POWERON initiative via the RWSC.		

#	Proposed Project Phase	Mitigation & Monitoring Measures	Table H-3. Description of Additional Agency-Required Mitigation and Monitoring Measures	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency
			The Lessee may request temporary withholding of the public release (placement into the NCEI public data archive) of raw acoustic data collected within the Lease Area or up to 180 days after it is collected. During this temporary hold, the Lessee may be provided a copy of the raw PAM data that was collected in the Lease Area or ROW after it has been cleared for any national security concerns under the RWSC best practices document.		

Table H-4. Lessee Authorization and Permit Conditions

#	Table H-4. Description of Lessee Authorization and Permit Conditions
North Carolina Department of Environmental Quality Consistency Determination Conditions Issued June 24, 2022	
1	NC DEQ's coastal consistency determination did not include any conditions.
Virginia Department of Environmental Quality Consistency Determination Conditions	
1	Conditions included in the VA DEQ coastal consistency determination would be noted in BOEM's ROD.
NMFS Proposed Incidental Take Regulations (ITR) and Associated 5-year Letter of Authorization Issued Pursuant to the Marine Mammal Protection Act (MMPA) on May 4, 2023	
1	*General conditions.* The following measures apply to the CVOW–C Project: 1. A copy of any issued LOA must be in the possession of Dominion Energy and its designees, all vessel operators, visual protected species observers (PSOs), passive acoustic monitoring (PAM) operators, pile driver operators, and any other relevant designees operating under the authority of the issued LOA. 2. Dominion Energy must conduct briefings between construction supervisors, construction crews, and the PSO and PAM team prior to the start of all construction activities, and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring and reporting protocols, and operational procedures. A simple guide must be included with the Marine Mammal Monitoring Plan to aid personnel in identifying species if they are observed in the vicinity of the project area. 3. Prior to and when conducting any in-water construction activities and vessel operations, Dominion Energy personnel (*e.g.,* vessel operators, PSOs) must use available sources of information on North Atlantic right whale presence in or near the project area including daily monitoring of the Right Whale Sightings Advisory System, and monitoring of Coast Guard VHF Channel 16 throughout the day to receive notification of any sightings and/or information associated with any Slow Zones (i.e., Dynamic Management Areas (DMAs) and/or acoustically-triggered slow zones) to provide situational awareness for both vessel operators and PSO. 4. Dominion Energy must ensure that any visual observations of an Endangered Species Act (ESA)-listed marine mammal are communicated to PSOs and vessel captains during the concurrent use of multiple project-associated vessels (of any size; e.g., construction surveys, crew/supply transfers,). 5. Dominion Energy must establish and implement clearance and shutdown zones as described in the LOA. 6. Dominion Energy must instruct all vessel personnel regarding the authority of the PSO(s). Any disagreement between the Lead PSO and the vessel operator would only be discussed after shutdown has occurred. 7. If an individual from a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized take number has been met, is observed entering or within the relevant Level B harassment zone for a specified activity, pile driving and HRG acoustic sources must be shut down immediately, unless shutdown would result in imminent risk of injury or loss of life to an individual, pile refusal, or pile instability, or be delayed if the activity has not commenced. Impact and vibratory pile driving and initiation of HRG acoustic sources must not commence or resume until the animal(s) has been confirmed to have left the relevant clearance zone or the observation time has elapsed with no further sightings.

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	8. Construction and survey activities shall only commence when visual clearance zones are fully visible (e.g., not obscured by darkness, rain, fog,) and clear of marine mammals, as determined by the Lead PSO, for at least 30 minutes immediately prior to initiation of equipment (i.e., vibratory and impact pile driving, HRG surveys that use boomers, sparkers, and Compressed High-Intensity Radiated Pulses (CHIRPs)). 9. Any visual or acoustic detection within the clearance or shutdown zones must trigger a delay to the commencement of construction and survey activities. Any marine mammals observed within a clearance or shutdown zone must be allowed to remain in the area (i.e., must leave of their own volition) prior to commencing pile driving activities or HRG surveys. 10. Dominion Energy must treat any large whale sighted by a PSO or acoustically detected by a PAM operator as if it were a North Atlantic right whale and apply the mitigation measures applicable to North Atlantic right whales, unless a PSO or a PAM operator confirms the large whale is another type of whale. 11. Following a shutdown, construction and survey activities shall not recommence until the minimum visibility zone is fully visible and clear of marine mammals for 30 minutes and no marine mammals have been detected acoustically within the PAM clearance zone for 30 minutes. 12. For in-water construction heavy machinery activities, other than impact and vibratory pile driving, if a marine mammal is on a path towards or comes within 10 m of equipment, Dominion Energy must cease operations until the marine mammal has moved more than 10 m on a path away from the activity to avoid direct interaction with equipment. 13. All vessels must be equipped with an Automatic Identification System (AIS) and Dominion Energy must report all Maritime Mobile Service Identify (MMSI) numbers to NMFS Office of Protected Resources prior to initiating in-water activities.
2	*Vessel strike avoidance measures.* The following measures apply to all vessels associated with the CVOW–C: 1. Prior to the start of construction activities, all vessel operators and crew must receive a protected species identification training that covers, at a minimum: i. Identification of marine mammals and other protected species known to occur or which have the potential to occur in the Dominion Energy project area; ii. Training on making observations in both good weather conditions (i.e., clear visibility, low winds, low sea states) and bad weather conditions (i.e., fog, high winds, high sea states, with glare); iii. Training on information and resources available to the project personnel regarding the applicability of Federal laws and regulations for protected species; iv. Observer training related to vessel strike avoidance measures must be conducted for all vessel operators and crew prior to the start of in-water construction activities; and v. Confirmation of marine mammal observer training must be documented on a training course log sheet and reported to NMFS; 2. All vessel operators and crews, regardless of their vessel's size, must maintain a vigilant watch for all marine mammals and slow down, stop their vessel, or alter course, as appropriate, to avoid striking any marine mammal; 3. All vessels must have a visual observer on board who is responsible for monitoring the vessel strike avoidance zone for marine mammals. Visual observers may be a PSO or crew member, but crew members responsible for these duties must

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	be provided sufficient training by Dominion Energy to distinguish marine mammals from other types of animals or objects and must be able to identify a marine mammal as a North Atlantic right whale, other whale (defined in this context as sperm whales or baleen whales other than North Atlantic right whales), or other marine mammal. Crew members serving as visual observers must not have duties other than observing for marine mammals while the vessel is operating over 10 knots (kts); 4. Year-round and when a vessel is in transit, all vessel operators must continuously monitor U.S. Coast Guard VHF Channel 16, over which North Atlantic right whale sightings are broadcasted. At the onset of transiting and at least once every four hours, vessel operators and/or trained crew members must monitor the project's Situational Awareness System, WhaleAlert, and the Right Whale Sighting Advisory System (RWSAS) for the presence of North Atlantic right whales. Any observations of any large whale by any Dominion Energy staff or contractors, including vessel crew, must be communicated immediately to PSOs, PAM operator, and all vessel captains to increase situational awareness. Conversely, any large whale observation or detection via a sighting network (*e.g.,* Mysticetus) by PSOs or PAM operators must be conveyed to vessel operators and crew; 5. Any observations of any large whale by any Dominion Energy staff or contractor, including vessel crew, must be communicated immediately to PSOs and all vessel captains to increase situational awareness; 6. Nothing in this subpart exempts vessels from applicable speed regulations at 50 CFR 224.105; 7. All vessels must transit active Slow Zones (i.e., Dynamic Management Areas (DMAs) or acoustically-triggered slow zone), and Seasonal Management Areas (SMAs) at 10 kts or less; 8. Between November 1st and April 30th, all vessels must transit at 10 kts or less; 9. All vessels, regardless of size, must immediately reduce speed to 10 kts or less when any large whale, mother/calf pairs, or large assemblages of non-delphinid cetaceans are observed (within 500 m) of an underway vessel; 10. All vessels, regardless of size, must immediately reduce speed to 10 kts or less when a North Atlantic right whale is sighted, at any distance, by anyone on the vessel; 11. All transiting vessels operating at any speed must have a dedicated visual observer on duty at all times to monitor for marine mammals within a 180 degree direction of the forward path of the vessel (90 degrees port to 90 degree starboards) located at the best vantage point for ensuring vessels are maintaining appropriate separation distances from marine mammals. Visual observers must be equipped with alternative monitoring technology for periods of low visibility (e.g., darkness, rain, fog,). The dedicated visual observer must receive prior training on protected species detection and identification, vessel strike minimization procedures, how and when to communicate with the vessel captain, and reporting requirements. Visual observers may be third-party observers (i.e., NMFS-approved PSOs) or crew members. Observer training related to these vessel strike avoidance measures must be conducted for all vessel operators and crew prior to the start of vessel use; 12. All vessels must maintain a minimum separation distance of 500 m from North Atlantic right whales. If underway and making way, all vessels must steer a course away from any sighted North Atlantic right whale at 10 kts or less such that the 500-m minimum separation distance requirement is not violated. If a North Atlantic right whale is sighted within 500 m of a transiting vessel, that vessel must shift the engine to neutral. Engines must not be engaged until the whale has moved

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	outside of the vessel's path and beyond 500 m. If a whale is observed but cannot be confirmed as a species other than a North Atlantic right whale, the vessel operator must assume that it is a North Atlantic right whale; 13. All vessels must maintain a minimum separation distance of 100 m from sperm whales and baleen whales other than North Atlantic right whales. If one of these species is sighted within 100 m of a transiting vessel, that vessel must shift the engine to neutral. Engines must not be engaged until the whale has moved outside of the vessel's path and beyond 100 m; 14. All vessels must maintain a minimum separation distance of 50 m from all delphinoid cetaceans and pinnipeds, with an exception made for those that approach the vessel (*e.g.,* bow-riding dolphins). If a delphinid cetacean or pinniped is sighted within 50 m of a transiting vessel, that vessel must shift the engine to neutral, with an exception made for those that approach the vessel (*e.g.,* bow-riding dolphins). Engines must not be engaged until the animal(s) has moved outside of the vessel's path and beyond 50 m; 15. When a marine mammal(s) is sighted while a vessel is transiting, the vessel must take action as necessary to avoid violating the relevant separation distances (*e.g.,* attempt to remain parallel to the animal's course, avoid excessive speed or abrupt changes in direction until the animal has left the area). If a marine mammal(s) is sighted within the relevant separation distance, the vessel must shift the engine to neutral and not engage the engine(s) until the animal(s) outside and on a path away from the separation area. This does not apply to any vessel towing gear or any situation where respecting the relevant separation distance would be unsafe (i.e., any situation where the vessel is navigationally constrained); 16. All vessels underway must not divert or alter course to approach any marine mammal. If a separation distance is triggered, any vessel underway must avoid abrupt changes in course direction and transit at 10 kts or less until the animal is outside the relevant separation distance; and 17. Dominion Energy must submit a North Atlantic right whale vessel strike avoidance plan 180 days prior to the commencement of vessel use. This plan must describe, at a minimum, how PAM, in combination with visual observations, would be conducted to ensure the transit corridor is clear of right whales and would also provide details on the vessel-based observer protocols on transiting vessels.
3	*WTG and OSS foundation installation.* The following requirements apply to pile driving activities associated with the installation of WTG and OSS foundations: 1. Foundation vibratory and impact pile driving may not occur November 1st through April 30th; 2. Monopiles must be no larger than 9.5-m in diameter, representing the larger end of the tapered 9.5/7.5-m monopile design. Pin piles must be no larger than 2.8-m in diameter. During all monopile and pin pile installation, the minimum amount of hammer energy necessary to effectively and safely install and maintain the integrity of the piles must be used. Hammer energies must not exceed 4,000 kilojoules (kJ) for monopile installations and 3,000 kJ for pin pile installation. No more than two monopile foundation or two pin piles for jacket foundations may be installed per day; 3. Dominion Energy must not initiate pile driving earlier than 1 hour after civil sunrise or later than 1.5 hours prior to civil sunset, unless Dominion Energy submits, and NMFS approves an Alternative Monitoring Plan as part of the Pile Driving and Marine Mammal Monitoring Plan that reliably demonstrates the efficacy of their night vision devices;

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	4. Dominion Energy must utilize a soft-start protocol for each impact pile driving event of all monopiles and pin piles by performing 4–6 strikes per minute at 10 to 20 percent of the maximum hammer energy, for a minimum of 20 minutes; 5. Soft-start must occur at the beginning of monopile and pin pile installation and at any time following a cessation of impact pile driving of 30 minutes or longer; 6. If a marine mammal is detected, visually or acoustically, within or about to enter the applicable clearance zones, prior to the beginning of soft-start procedures, impact pile driving must be delayed until the animal has been visually observed exiting the clearance zone or until a specific time period has elapsed with no further sightings. The specific time periods are 15 minutes for small odontocetes and pinnipeds and 30 minutes for all other species; 7. Dominion Energy must deploy dual noise abatement systems that are capable of achieving, at a minimum, 10 decibel (dB) of sound attenuation, during all vibratory and impact pile driving of monopiles and pin piles and comply with the following requirements related noise abatement: i. A single bubble curtain must not be used unless paired with another noise attenuation device; ii. A big double bubble curtain may be used without being paired with another noise attenuation device; iii. The bubble curtain(s) must distribute air bubbles using an air flow rate of at least 0.5 m^3 /(min*m). The bubble curtain(s) must surround 100 percent of the piling perimeter throughout the full depth of the water column. In the unforeseen event of a single compressor malfunction, the offshore personnel operating the bubble curtain(s) must make appropriate adjustments to the air supply and operating pressure such that the maximum possible sound attenuation performance of the bubble curtain(s) is achieved; iv. The lowest bubble ring must be in contact with the seafloor for the full circumference of the ring, and the weights attached to the bottom ring must ensure 100-percent seafloor contact; v. No parts of the ring or other objects may prevent full seafloor contact; vi. Construction contractors must train personnel in the proper balancing of airflow to the ring. Construction contractors must submit an inspection/performance report for approval by Dominion Energy within 72 hours following the performance test. Dominion Energy must then submit that report to NMFS; and vii. Corrections to the bubble ring(s) to meet the performance standards in this paragraph (c)(7) must occur prior to impact pile driving of monopiles and pin piles. If Dominion Energy uses a noise mitigation device in addition to the bubble curtain, Dominion Energy must maintain similar quality control measures as described in this paragraph (c)(7); 8. Dominion Energy must conduct sound field verification (SFV) during all vibratory and impact pile driving of the first three monopiles and all piles associated with the first OSS foundation installed. Subsequent SFV is required should additional piles be driven that are anticipated to produce louder sound fields than those previously measured; 9. Dominion Energy must conduct SFV after construction is complete to estimate turbine operational source levels based on measurements in the near and far-field at a minimum of three locations from each foundation monitored. These data must be used to also identify estimated transmission loss rates; 10. Dominion Energy must submit a sound field verification (SFV) plan to NOAA Fisheries for review and approval at least 180

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	days prior to planned start of pile driving that identifies how Dominion Energy will comply with the following requirements: i. Dominion Energy must empirically determine source levels, the ranges to the isopleths corresponding to the Level A harassment and Level B harassment thresholds in meters, and the transmission loss coefficient(s). Dominion Energy may estimate ranges to the Level A harassment and Level B harassment isopleths by extrapolating from *in situ* measurements conducted at several distances from the piles monitored; ii. Dominion Energy must perform sound field measurements at four distances from the pile being driven, including, but not limited to, 750 m and the modeled Level B harassment zones to verify the accuracy of those modeled zones; iii. The recordings must be continuous throughout the duration of all impact and vibratory hammering of each pile monitored; iv. The measurement systems must have a sensitivity appropriate for the expected sound levels from pile driving received at the nominal ranges throughout the installation of the pile; v. The frequency range of the system must cover the range of at least 20 hertz (Hz) to 20 kilohertz (kHz); vi. The system will be designed to have omnidirectional sensitivity and will be designed so that the predicted broadband received level of all impact pile-driving strikes exceeds the system noise floor by at least 10 dB. The dynamic range of the system must be sufficient such that at each location, pile driving signals are not clipped and are not masked by noise floor; and vii. Identify operational noise levels and transmission loss rates; 11. If acoustic field measurements collected during installation of foundation piles indicate ranges to the isopleths, corresponding to Level A harassment and Level B harassment thresholds, are greater than the ranges predicted by modeling (assuming 10 dB attenuation), Dominion Energy must implement additional noise mitigation measures prior to installing the next monopile. Each modification must be evaluated empirically by acoustic field measurements; 12. In the event that field measurements indicate ranges to isopleths, corresponding to Level A harassment and Level B harassment thresholds, are greater than the ranges predicted by modeling (assuming 10 dB attenuation), NMFS may expand the relevant harassment, clearance, and shutdown zones and associated monitoring protocols; 13. If the harassment zones are expanded beyond an additional 1,500 m, additional PSOs must be deployed on additional platforms, with each observer responsible for maintaining watch in no more than 180 degrees and of an area with a radius no greater than 1,500 m; 14. If acoustic measurements indicate that ranges to isopleths corresponding to the Level A harassment and Level B harassment thresholds are less than the ranges predicted by modeling (assuming 10 dB attenuation), Dominion Energy may request to NMFS a modification of the clearance and shutdown zones for impact pile driving of monopiles and pin piles; 15. For NMFS to consider a modification request for reduced zone sizes, Dominion Energy must have had to conduct SFV on three or more monopiles and four or more pin piles to verify that zone sizes are consistently smaller than those predicted by modeling (assuming 10 dB attenuation) and subsequent piles would be installed within and under similar conditions (e.g., monitoring data collected during installation of a typical pile cannot be used to adjust difficult-to-drive pile ranges);

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	16. If a subsequent monopile installation location is selected that was not represented by the previous three locations (i.e., substrate composition, water depth), SFV is required; 17. Dominion Energy must utilize, at minimum, four PSOs who must be actively observing for marine mammals before, during, and after pile driving. At least two PSOs must be stationed on the primary pile driving vessel and at least two PSOs must be stationed on a secondary, dedicated PSO vessel. The dedicated PSO vessel must be positioned approximately 3 km from the pile being driven and must circle the pile at a speed of less than 10 knots; 18. PSOs must be able to visually clear (i.e., confirm no marine mammals are present) an area that extends around the pile being driven as described in the LOA. The entire minimum visibility zone must be visible (i.e., not obscured by dark, rain, fog,) for a full 30 minutes immediately prior to commencing vibratory and impact pile driving (2,000 m); 19. PSOs must visually monitor clearance zones for marine mammals for a minimum of 60 minutes prior to commencing pile driving. Prior to initiating soft-start procedures, all clearance zones must be visually confirmed to be free of marine mammals for 30 minutes before pile driving can begin; 20. At least one PAM operator must review data from at least 24 hours prior to pile driving and actively monitor hydrophones for 60 minutes prior to pile driving. All clearance zones must be acoustically confirmed to be free of marine mammals for 60 minutes before activities can begin immediately prior to starting a soft-start of impact pile driving; 21. If a marine mammal is observed entering or within the relevant clearance zone prior to the initiation of vibratory and/or impact pile driving activities, pile driving must be delayed and must not begin until either the marine mammal(s) has voluntarily left the specific clearance zones and have been visually or acoustically confirmed beyond that clearance zone, or, when specific time periods have elapsed with no further sightings or acoustic detections. The specific time periods are 15 minutes for small odontocetes and 30 minutes for all other marine mammal species; 22. For North Atlantic right whales, any acoustic detection must trigger a delay to the commencement of pile driving. The clearance zone may only be declared clear if no confirmed North Atlantic right whale acoustic detections (in addition to visual) have occurred within the PAM clearance zone during the 60-minute monitoring period. Any large whale sighting by a PSO or detected by a PAM operator that cannot be identified by species must be treated as if it were a North Atlantic right whale; 23. If a marine mammal is observed entering or within the respective shutdown zone, as defined in the LOA, after pile driving has begun, the PSO must call for a temporary shutdown of pile driving; 24. Dominion Energy must immediately cease pile driving when a marine mammal is detected within a shutdown zone, unless shutdown is not practicable due to imminent risk of injury or loss of life to an individual, pile refusal, or pile instability. In this situation, Dominion Energy must reduce hammer energy to the lowest level practicable and the reason(s) for not shutting down must be documented and reported to NMFS; 25. If pile driving has been shut down due to the presence of a North Atlantic right whale, pile driving may not restart until the North Atlantic right whale is no longer observed or 30 minutes has elapsed since the last detection; 26. Upon restarting impact pile driving, soft-start protocols must be followed; and 27. Pile driving must not restart until either the marine mammal(s) has voluntarily left the specific clearance zones and has been visually or acoustically confirmed beyond that clearance zone, or, when specific time periods have elapsed with no

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	further sightings or acoustic detections have occurred. The specific time periods are 15 minutes for small odontocetes and 30 minutes for all other marine mammal species. In cases where these criteria are not met, pile driving may restart only if necessary to maintain pile stability at which time Dominion Energy must use the lowest hammer energy practicable to maintain stability.
4	*Cable landfall construction.* The following requirements apply to cable landfall pile driving activities: 1. Dominion Energy must conduct pile driving during daylight hours only. 2. Dominion Energy must have a minimum of two PSOs on active duty during any installation and removal of the temporary cofferdams and goal posts. PSOs must be located at the best vantage point(s) on the pile driving platform or secondary platform in the immediate vicinity of the pile driving platform, in order to ensure that appropriate visual coverage is available for the entire visual clearance zone and as much of the Level B harassment zone, as possible. 3. Prior to the start of pile driving activities, at least two PSOs must monitor the clearance zone for 30 minutes, continue monitoring during pile driving and for 30 minutes post-pile driving. 4. If a marine mammal(s) is observed entering or is observed within the clearance zones, pile driving must not commence until the animal(s) has exited the zone or a specific amount of time has elapsed since the last sighting. The specific time periods are 15 minutes for small odontocetes and pinnipeds and 30 minutes for all other marine mammal species. 5. If a marine mammal is observed entering or within the respective shutdown zone, as defined in the LOA, after pile driving has begun, the PSO must call for a temporary shutdown of pile driving. 6. Dominion Energy must immediately cease pile driving when a marine mammal is detected within a shutdown zone, unless shutdown is not practicable due to imminent risk of injury or loss of life to an individual, pile refusal, or instability. In this situation, Dominion Energy must reduce hammer energy to the lowest level practicable and the reason(s) for not shutting down must be documented and reported to NMFS. 7. Pile driving must not restart until either the marine mammal(s) has voluntarily left the specific clearance zones and has been visually or acoustically confirmed beyond that clearance zone, or, when specific time periods have elapsed with no further sightings or acoustic detections have occurred. The specific time periods are 15 minutes for small odontocetes and pinnipeds and 30 minutes for all other marine mammal species. In cases where the criteria in this paragraph (e)(7) is not met, pile driving may restart only if necessary to maintain pile stability at which time Dominion Energy must use the lowest hammer energy practicable to maintain stability. 8. If pile driving has been shut down due to the presence of a North Atlantic right whale, pile driving may not restart until the North Atlantic right whale is no longer observed or 30 minutes has elapsed since the last detection. 9. Dominion Energy must employ a soft-start for all impact pile driving. Soft start requires contractors to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets.
5	*HRG surveys.* The following requirements apply to HRG surveys operating sub bottom profilers (SBPs): 1. Dominion Energy is required to have at least one PSO on active duty per vessel during HRG surveys that are conducted during daylight hours i.e., from 30 minutes prior to civil sunrise through 30 minutes following civil sunset) and at least two

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	PSOs on active duty per vessel during HRG surveys that are conducted during nighttime hours. 2. Dominion Energy must deactivate acoustic sources during periods where no data are being collected, except as determined to be necessary for testing. Unnecessary use of the acoustic source(s) is prohibited. 3. Dominion Energy is required to ramp-up sub-bottom profilers (SBPs) prior to commencing full power, unless the equipment operates on a binary on/off switch. Ensure visual clearance zones are fully visible (*e.g.,* not obscured by darkness, rain, fog,) and clear of marine mammals, as determined by the Lead PSO, for at least 30 minutes immediately prior to the initiation of survey activities using acoustic sources specified in the LOA. 4. Prior to a ramp-up procedure starting or activating SBPs, the operator must notify the Lead PSO of the planned start time. This notification time must not be less than 60 minutes prior to the planned ramp-up or activation as all relevant PSOs must monitor the clearance zone for 30 minutes prior to the initiation of ramp-up or activation. 5. Prior to starting the survey and after receiving confirmation from the PSOs that the clearance zone is clear of any marine mammals, Dominion Energy must ramp-up sources to half power for 5 minutes and then proceed to full power, unless the source operates on a binary on/off switch in which case ramp-up is not required. Ramp-up and activation must be delayed if a marine mammal(s) enters its respective shutdown zone. Ramp-up and activation may only be reinitiated if the animal(s) has been observed exiting its respective shutdown zone or until 15 minutes for small odontocetes and pinnipeds, and 30 minutes for all other species, has elapsed with no further sightings. 6. Dominion Energy must implement a 30-minute clearance period of the clearance zones immediately prior to the commencing of the survey or when there is more than a 30 minute break in survey activities or PSO monitoring. A clearance period is a period when no marine mammals are detected in the relevant zone. 7. If a marine mammal is observed within a clearance zone during the clearance period, ramp-up or acoustic surveys may not begin until the animal(s) has been observed voluntarily exiting its respective clearance zone or until a specific time period has elapsed with no further sighting. The specific time period is 15 minutes for small odontocetes and seals, and 30 minutes for all other species. 8. Any large whale sighted by a PSO within 1 km of the SBP that cannot be identified by species must be treated as if it were a North Atlantic right whale and Dominion Energy must apply the mitigation measure applicable to this species. 9. In any case when the clearance process has begun in conditions with good visibility, including via the use of night vision equipment (infrared (IR)/thermal camera), and the Lead PSO has determined that the clearance zones are clear of marine mammals, survey operations would be allowed to commence (i.e., no delay is required) despite periods of inclement weather and/or loss of daylight. 10. Once the survey has commenced, Dominion Energy must shut down SBPs if a marine mammal enters a respective shutdown zone, except in cases when the shutdown zones become obscured for brief periods due to inclement weather, survey operations would be allowed to continue (i.e., no shutdown is required) so long as no marine mammals have been detected. The shutdown requirement does not apply to small delphinids of the following genera: Delphinus, Stenella, Lagenorhynchus, and Tursiops. If there is uncertainty regarding the identification of a marine mammal species (i.e., whether the observed marine mammal belongs to one of the delphinid genera for which shutdown is waived), the PSOs must use their best professional judgment in making the decision to call for a shutdown. Shutdown is required if a

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	delphinid that belongs to a genus other than those specified in this paragraph €(10) is detected in the shutdown zone. 11. If SBPs have been shut down due to the presence of a marine mammal, the use of SBPs may not commence or resume until the animal(s) has been confirmed to have left the Level B harassment zone or until a full 15 minutes (for small odontocetes and seals) or 30 minutes (for all other marine mammals) have elapsed with no further sighting. 12. Dominion Energy must immediately shutdown any SBP acoustic source if a marine mammal is sighted entering or within its respective shutdown zones. If there is uncertainty regarding the identification of a marine mammal species (i.e., whether the observed marine mammal belongs to one of the delphinid genera for which shutdown is waived), the PSOs must use their best professional judgment in making the decision to call for a shutdown. Shutdown is required if a delphinid that belongs to a genus other than those specified in this paragraph (e)(12) is detected in the shutdown zone. 13. If a SBP is shut down for reasons other than mitigation (*e.g.,* mechanical difficulty) for less than 30 minutes, it would be allowed to be activated again without ramp-up only if: i. PSOs have maintained constant observation; and ii. No additional detections of any marine mammal occurred within the respective shutdown zones.
6	*Fisheries monitoring surveys.* The following measures apply to fishery monitoring surveys using trap/pot gear: 1. All captains and crew conducting fishery surveys must be trained in marine mammal detection and identification. Marine mammal monitoring will be conducted by the captain and/or a member of the scientific crew before (within 1 nautical mile (nm) and 15 minutes prior to deploying gear), during, and after haul back. 2. Survey gear will be deployed as soon as possible once the vessel arrives on station. 3. Dominion Energy and/or its cooperating institutions, contracted vessels, or commercially-hired captains must implement the following “move-on” rule: If marine mammals are sighted within 1 nm of the planned location and 15 minutes before gear deployment, Dominion Energy and/or its cooperating institutions, contracted vessels, or commercially-hired captains, as appropriate, must move the vessel away from the marine mammal to a different section of the sampling area. If, after moving on, marine mammals are still visible from the vessel, Dominion Energy and/or its cooperating institutions, contracted vessels, or commercially-hired captains must move again or skip the station. 4. If a marine mammal is deemed to be at risk of interaction after the gear is set, all gear must be immediately removed from the water. 5. Dominion Energy must maintain visual monitoring effort during the entire period of time that gear is in the water (i.e., throughout gear deployment, fishing, and retrieval). 6. All fisheries monitoring gear must be fully cleaned and repaired (if damaged) before each use. 7. All lost gear must be reported to NOAA Greater Atlantic Regional Fisheries Office Protected Resources Division (*nmfs.gar.incidental-take@noaa.gov*) within 24 hours of the documented time of missing or lost gear. This report must include information on any markings on the gear and any efforts undertaken or planned to recover the gear. All reasonable efforts, that do not compromise human safety, must be undertaken to recover gear. 8. Dominion Energy must implement measures within the Atlantic Large Whale Take Reduction Plan at 50 CFR 229.32.
7	*Protected species observer (PSO) and passive acoustic monitoring (PAM) operator qualifications.* Dominion Energy must

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	implement the following measures applicable to PSOs and PAM operators: 1. Dominion Energy must use independent, dedicated, qualified PSOs, meaning that the PSOs must be employed by a third-party observer provider, must have no tasks other than to conduct observational effort, collect data, and communicate with and instruct relevant vessel crew with regard to the presence of protected species and mitigation requirements; 2. PSOs must successfully complete relevant training, including completion of all required coursework and passing a written and/or oral examination developed for the training; 3. PSOs must have successfully attained a bachelor's degree from an accredited college or university with a major in one of the natural sciences, a minimum of 30 semester hours or equivalent in the biological sciences, and at least one undergraduate course in math or statistics. The educational requirements may be waived if the PSO has acquired the relevant skills through alternate experience. Requests for such a waiver shall be submitted to NMFS and must include written justification. Alternate experience that may be considered includes, but is not limited to: Secondary education and/or experience comparable to PSO duties; previous work experience conducting academic, commercial, or government sponsored marine mammal surveys; or previous work experience as a PSO; the PSO should demonstrate good standing and consistently good performance of PSO duties; 4. PSOs must have visual acuity in both eyes (with correction of vision being permissible) sufficient enough to discern moving targets on the water's surface with the ability to estimate the target size and distance (binocular use is allowable); ability to conduct field observations and collect data according to the assigned protocols; sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations; writing skills sufficient to document observations, including but not limited to, the number and species of marine mammals observed, the dates and times of when in-water construction activities were conducted, the dates and time when in-water construction activities were suspended to avoid potential incidental injury of marine mammals from construction noise within a defined shutdown zone, and marine mammal behavior; and the ability to communicate orally, by radio, or in-person, with project personnel to provide real-time information on marine mammals observed in the area, as necessary; 5. All PSOs must be approved by NMFS. Dominion Energy must submit PSO resumes for NMFS' review and approval at least 60 days prior to commencement of in-water construction activities requiring PSOs. Resumes must include dates of training and any prior NMFS approval, as well as dates and description of last experience, and must be accompanied by information documenting successful completion of an acceptable training course. NMFS shall be allowed three weeks to approve PSOs from the time that the necessary information is received by NMFS, after which PSOs meeting the minimum requirements will automatically be considered approved; 6. All PSOs must be trained in marine mammal identification and behaviors and must be able to conduct field observations and collect data according to assigned protocols. Additionally, PSOs must have the ability to work with all required and relevant software and equipment necessary during observations; 7. At least one PSO on active duty for each activity (i.e., foundation installation, cable landfall activities, and HRG surveys) must be designated as the "Lead PSO". The Lead PSO must have a minimum of 90 days of at-sea experience working in an offshore environment and is required to have no more than eighteen months elapsed since the conclusion of their last at-sea experience; 8. PAM operators must complete specialized training for operating PAM systems and must demonstrate familiarity with the

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	PAM system on which they must be working. PSOs may act as both acoustic operators and visual observers (but not simultaneously), so long as they demonstrate that their training and experience are sufficient to perform each task; and 9. PAM operators may additionally function as PSOs, assuming all qualifications and requirements in paragraphs (a)(1) through (7) of this section are met, but may only perform one role at any one time and must abide by the requirements specified for that role.
8	*General PSO requirements.* The following measures apply to PSOs during all project activities and must be implemented by Dominion Energy: 1. PSOs must monitor all clearance and shutdown zones prior to, during, and following pile driving, cable landfall construction activities, and during HRG surveys that use boomers, sparkers, and CHIRPs (with specific monitoring durations and needs described in paragraphs (c) through (e) of this section, respectively). PSOs must also monitor the Level B harassment zones and document any marine mammals observed within these zones, to the extent practicable. PSOs must ensure that there is appropriate visual coverage for the entire clearance and shutdown zones and as much of the Level B harassment zone as possible; 2. All PSOs must be located at the best vantage point(s) on the primary vessel, pile driving platform, or secondary platform, whichever is most appropriate to the activity occurring, in order to obtain 360 degree visual coverage of the entire clearance and shutdown zones around the activity area, and as much of the Level B harassment zone as possible. PAM operators may be located on a vessel or remotely on-shore but must have the appropriate equipment (i.e., computer station equipped with a data collection software system (i.e., Mysticetus or similar system and acoustic data analysis software) available wherever they are stationed; 3. During all visual observation periods, PSOs must use high magnification (25x) binoculars, standard handheld (7x) binoculars, and the naked eye to search continuously for marine mammals. During impact pile driving, at least one PSO on the primary pile driving vessel must be equipped with functional Big Eye binoculars (*e.g.,* 25 x 150; 2.7 view angle; individual ocular focus; height control). These must be pedestal mounted on the deck at the best vantage point that provides for optimal sea surface observation and PSO safety; 4. During periods of low visibility (*e.g.,* darkness, rain, fog, poor weather conditions,), PSOs must use alternative technology (i.e., infrared or thermal cameras) to monitor the clearance and shutdown zones; 5. PSOs must not exceed four consecutive watch hours on duty at any time, must have a two-hour (minimum) break between watches, and must not exceed a combined watch schedule of more than 12 hours in a 24-hour period; 6. Any PSO has the authority to call for a delay or shutdown of project activities; 7. Any observations of marine mammals must be communicated to PSOs on all nearby project vessels during construction activities and surveys; 8. PSOs must remain in contact with the PAM operator currently on duty regarding any animal detection that would be approaching or found within the applicable zones no matter where the PAM operator is stationed (i.e., onshore or on a vessel); 9. During daylight hours when equipment is not operating, Dominion Energy must ensure that visual PSOs conduct, as rotation schedules allow, observations for comparison of sighting rates and behavior with and without use of the specified

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	acoustic sources. Off-effort PSO monitoring must be reflected in the monthly PSO monitoring reports; and 10. Dominion Energy's personnel and PSOs are required to use available sources of information on North Atlantic right whale presence to aid in monitoring efforts. These include daily monitoring of the Right Whale Sightings Advisory System, consulting of the WhaleAlert app, and monitoring of the Coast Guard's VHF Channel 16 throughout the day to receive notifications of any sightings and information associated with any Dynamic Management Areas, to plan construction activities and vessel routes, if practicable, to minimize the potential for co-occurrence with North Atlantic right whales.
9	*PSO and PAM operator requirements during WTG and OSS foundation installation.* The following measures apply to PSOs and PAM operators during monopile and OSS foundation installation and must be implemented by Dominion Energy: 1. At least four PSOs must be actively observing marine mammals before, during, and after installation of foundation piles (i.e., monopiles and pin piles for jacket foundations). At least two PSOs must be stationed and observing on the pile driving vessel and at least two PSOs must be stationed on a secondary, PSO-dedicated vessel. Concurrently, at least one acoustic monitoring PSO (i.e., passive acoustic monitoring (PAM) operator) must be actively monitoring for marine mammals with PAM before, during, and after impact pile driving; 2. All on-duty visual PSOs must remain in contact with the on-duty PAM operator, who would monitor the PAM systems for acoustic detections of marine mammals in the area, regarding any animal detection that might be approaching or found within the applicable zones no matter where the PAM operator is stationed (i.e., onshore or on a vessel); 3. If PSOs cannot visually monitor the minimum visibility zone at all times using the equipment described in paragraphs (b)(3) and (4) of this section, pile driving operations must not commence or must shutdown if they are currently active; 4. All PSOs must begin monitoring 60 minutes prior to pile driving, during, and for 30 minutes after the activity. Pile driving must only commence when the minimum visibility zone is fully visible (*e.g.,* not obscured by darkness, rain, fog,) and the clearance zones are clear of marine mammals for at least 30 minutes, as determined by the Lead PSO, immediately prior to the initiation of pile driving. PAM operators must assist the visual PSOs in monitoring by conducting PAM activities 60 minutes prior to any pile driving, during, and after for 30 minutes for the appropriate size PAM clearance zone (dependent on season). The entire minimum visibility zone must be clear for at least 30 minutes, with no marine mammal detections within the visual or PAM clearance zones prior to the start of pile driving; 5. For North Atlantic right whales, any visual or acoustic detection must trigger a delay to the commencement of pile driving. In the event that a large whale is sighted or acoustically detected that cannot be confirmed by species, it must be treated as if it were a North Atlantic right whale; 6. Dominion Energy must conduct PAM for at least 24 hours immediately prior to pile driving activities; 7. During use of any real-time PAM system, at least one PAM operator must be designated to monitor each system by viewing data or data products that would be streamed in real-time or in near real-time to a computer workstation and monitor; 8. Dominion Energy must use a minimum of one PAM operator to actively monitor for marine mammals before, during, and after pile driving activities. The PAM operator must assist visual PSOs in ensuring full coverage of the clearance and shutdown zones. The PAM operator must inform the Lead PSO(s) on duty of animal detections approaching or within applicable ranges of interest to the pile driving activity via the data collection software system (i.e., Mysticetus or similar

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	system) who will be responsible for requesting that the designated crewmember implement the necessary mitigation procedures (i.e., delay or shutdown); 9. PAM operators must be on watch for a maximum of four consecutive hours, followed by a break of at least two hours between watches, and may not exceed a combined watch schedule of more than 12 hours in a single 24-hour period; 10. Dominion Energy must prepare and submit a Pile Driving and Marine Mammal Monitoring Plan to NMFS for review and approval at least 180 days before the start of any pile driving. The plan must include final pile driving project design (*e.g.,* number and type of piles, hammer type, noise abatement systems, anticipated start date,) and all information related to PAM PSO monitoring protocols for pile-driving and visual PSO protocols for all activities; and 11. A Passive Acoustic Monitoring (PAM) Plan must be submitted to NMFS for review and approval at least 180 days prior to the planned start of WTG or OSS installation. The authorization to take marine mammals would be contingent upon NMFS' approval of the PAM Plan.
10	*PSO requirements during cable landfall construction.* The following measures apply to PSOs during pile driving associated with cable landfall construction activities and must be implemented by Dominion Energy: 1. At least two PSOs must be on active duty during all activities related to the installation and removal of cofferdams, goal posts, and casing pipes; 2. The PSOs must be located at the best vantage points on the pile driving platform or secondary platform in the immediate vicinity of the pile driving; and 3. PSOs must monitor the clearance zone for the presence of marine mammals for 30 minutes before, throughout the installation of the sheet piles and casing pipes, and for 30 minutes after all pile driving activities have ceased. Pile driving must only commence when visual clearance zones are fully visible (*e.g.,* not obscured by darkness, rain, fog,) and clear of marine mammals, as determined by the Lead PSO, for at least 30 minutes immediately prior to initiation of impact or vibratory pile driving.
11	*PSO requirements during HRG surveys.* The following measures apply to PSOs during HRG surveys using SBPs and must be implemented by Dominion Energy: 1. Between four and six PSOs must be present on every 24-hour survey vessel and two to three PSOs must be present on every 12-hour survey vessel; 2. At least one PSO must be on active duty monitoring during HRG surveys conducted during daylight (i.e., from 30 minutes prior to civil sunrise through 30 minutes following civil sunset) and at least two PSOs must be on activity duty monitoring during HRG surveys conducted at night; 3. PSOs on HRG vessels must begin monitoring 30 minutes prior to activating SBPs during the use of these acoustic sources, and for 30 minutes after use of these acoustic sources has ceased; 4. During daylight hours when survey equipment is not operating, Dominion Energy must ensure that visual PSOs conduct, as rotation schedules allow, observations for comparison of sighting rates and behavior with and without use of the specified acoustic sources. Off-effort PSO monitoring must be reflected in the monthly PSO monitoring reports; and 5. Any acoustic monitoring would complement visual monitoring efforts and would cover an area of at least the Level B

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	harassment zone around each acoustic source.
12	*Reporting.* Dominion Energy must comply with the following reporting measures: 1. Prior to initiation of project activities, Dominion Energy must demonstrate in a report submitted to NMFS Office of Protected Resources that all required training for Dominion Energy personnel (including the vessel crews, vessel captains, PSOs, and PAM operators) has been completed. 2. Dominion Energy must use a standardized reporting system during the effective period of this subpart and LOA. All data collected related to the CVOW–C project must be recorded using industry-standard softwares (*e.g.,* Mysticetus or a similar software) that is installed on field laptops and/or tablets. Dominion Energy must submit weekly (during foundation installation only), monthly, and annual reports as described in paragraphs (f)(5) through (8) of this section. For all monitoring efforts and marine mammal sightings, the following information must be collected and made available to NMFS: i. Date and time that monitored activity begins or ends; ii. Construction activities occurring during each observation period; iii. Watch status (i.e., sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform); iv. PSO who sighted the animal; v. Time of sighting; vi. Weather parameters (*e.g.,* wind speed, percent cloud cover, visibility); vii. Water conditions (*e.g.,* sea state, tide state, water depth); viii. All marine mammal sightings, regardless of distance from the construction activity; ix. Species (or lowest possible taxonomic level possible); x. Pace of the animal(s); xi. Estimated number of animals (minimum/maximum/high/low/best); xii. Estimated number of animals by cohort (*e.g.,* adults, yearlings, juveniles, calves, group composition,); xiii. Description (i.e., as many distinguishing features as possible of each individual seen, including length, shape, color, pattern, scars or markings, shape and size of dorsal fin, shape of head, and blow characteristics); xiv. Description of any marine mammal behavioral observations (e.g., observed behaviors such as feeding or traveling) and observed changes in behavior, including an assessment of behavioral responses thought to have resulted from the specific activity; xv. Animal's closest distance and bearing from the pile being driven or specified HRG equipment and estimated time entered or spent within the Level A harassment and/or Level B harassment zones; xvi. Activity at time of sighting (*e.g.,* vibratory installation/removal, impact pile driving, construction survey), use of any noise attenuation device(s), and specific phase of activity (*e.g.,* ramp-up of HRG equipment, HRG acoustic source on/off, soft-start for pile driving, active pile driving,); xvii. Marine mammal occurrence in Level A harassment or Level B harassment zones;

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	xviii. Description of any mitigation-related action implemented, or mitigation-related actions called for but not implemented, in response to the sighting (*e.g.,* delay, shutdown,) and time and location of the action; and xix. Other human activity in the area. 3. If a marine mammal is acoustically detected during PAM monitoring, the following information must be recorded and reported to NMFS: i. Location of hydrophone (latitude & longitude; in Decimal Degrees) and site name; ii. Bottom depth and depth of recording unit (in meters); iii. Recorder (model & manufacturer) and platform type (i.e., bottom-mounted, electric glider,), and instrument ID of the hydrophone and recording platform (if applicable); iv. Time zone for sound files and recorded date/times in data and metadata (in relation to Universal Coordinated Time (UTC); i.e., Eastern Standard Time (EST) time zone is UTC–5); v. Duration of recordings (start/end dates and times; in International Organization for Standardization (ISO) 8601 format, yyyy–mm–ddTHH:MM:SS.sssZ); vi. Deployment/retrieval dates and times (in ISO 8601 format); vii. Recording schedule (must be continuous); viii. Hydrophone and recorder sensitivity (in dB re. 1 microPascal (µPa)); ix. Calibration curve for each recorder; x. Bandwidth/sampling rate (in Hz); xi. Sample bit-rate of recordings; and, xii. Detection range of equipment for relevant frequency bands (in meters). 4. Information required for each detection, the following information must be noted: i. Species identification (if possible); ii. Call type and number of calls (if known); iii. Temporal aspects of vocalization (date, time, duration,; date times in ISO 8601 format); iv. Confidence of detection (detected, or possibly detected); v. Comparison with any concurrent visual sightings; vi. Location and/or directionality of call (if determined) relative to acoustic recorder or construction activities; vii. Location of recorder and construction activities at time of call; viii. Name and version of detection or sound analysis software used, with protocol reference; ix. Minimum and maximum frequencies viewed/monitored/used in detection (in Hz); and x. Name of PAM operator(s) on duty. 5. Dominion Energy must compile and submit weekly reports to NMFS Office of Protected Resources that document the daily

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	start and stop of all pile driving and HRG survey, the start and stop of associated observation periods by PSOs, details on the deployment of PSOs, a record of all detections of marine mammals (acoustic and visual), any mitigation actions (or if mitigation actions could not be taken, provide reasons why), and details on the noise attenuation system(s) used and its performance. Weekly reports are due on Wednesday for the previous week (Sunday–Saturday) and must include the information required under this section. The weekly report must also identify which turbines become operational and when (a map must be provided). Once all foundation pile installation is completed, weekly reports are no longer required. 6. Dominion Energy must compile and submit monthly reports to NMFS (at itp.potlock@noaa.gov and PR.ITP.monitoringreports@noaa.gov) that include a summary of all information in the weekly reports, including project activities carried out in the previous month, vessel transits (number, type of vessel, and route), number of piles installed, all detections of marine mammals, and any mitigative action taken. Monthly reports are due on the 15th of the month for the previous month. The monthly report must also identify which turbines become operational and when (a map must be provided). Once foundation installation is complete, monthly reports are no longer required. 7. Dominion Energy must submit a draft annual report to NMFS Office of Protected Resources no later than 90 days following the end of a given calendar year. Dominion Energy must provide a final report within 30 days following resolution of comments on the draft report. The draft and final reports must detail the following information: i. The total number of marine mammals of each species/stock detected and how many were within the designated Level A harassment and Level B harassment zones with comparison to authorized take of marine mammals for the associated activity type; ii. Marine mammal detections and behavioral observations before, during, and after each activity; iii. What mitigation measures were implemented (i.e., number of shutdowns or clearance zone delays,) or, if no mitigative actions was taken, why not; iv. Operational details (i.e., days of impact and vibratory pile driving, days/amount of HRG survey effort,); v. Any PAM systems used; vi. The results, effectiveness, and which noise attenuation systems were used during relevant activities (i.e., impact pile driving); vii. Summarized information related to situational reporting; and viii. Any other important information relevant to the CVOW–C project, including additional information that may be identified through the adaptive management process. ix. The final annual report must be prepared and submitted within 30 calendar days following the receipt of any comments from NMFS on the draft report. If no comments are received from NMFS within 60 calendar days of NMFS' receipt of the draft report, the report must be considered final. 8. Dominion Energy must submit its draft final report to NMFS Office of Protected Resources on all visual and acoustic monitoring conducted under the LOA within 90 calendar days of the completion of activities occurring under the LOA. A final report must be prepared and submitted within 30 calendar days following receipt of any NMFS comments on the draft report. If no comments are received from NMFS within 30 calendar days of NMFS' receipt of the draft report, the report shall be considered final.

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	9. Dominion Energy must submit a SFV plan at least 180 days prior to the planned start of vibratory and/or impact pile driving. The plan must describe how Dominion Energy would ensure that the first three WTG monopile and OSS jacket (using pin piles) foundation installation sites selected for SFV are representative of the rest of the monopile and pin pile installation sites. In the case that these sites/scenarios are not determined to be representative of all other monopile/pin pile installation sites, Dominion Energy must include information on how additional sites/scenarios would be selected for SFV. The plan must also include methodology for collecting, analyzing, and preparing SFV data for submission to NMFS. The plan must describe how the effectiveness of the sound attenuation methodology would be evaluated based on the results. Dominion Energy must also provide, as soon as they are available but no later than 48 hours after each installation, the initial results of the SFV measurements to NMFS in an interim report after each monopile for the first three piles and after each OSS jacket foundation using pin piles are installed. i. The SFV plan must also include how operational noise would be monitored. Dominion Energy must estimate source levels (at 10 m from the operating foundation) based on received levels measured at 50 m, 100 m, and 250 m from the pile foundation. These data must be used to identify estimated transmission loss rates. Operational parameters (*e.g.,* direct drive/gearbox information, turbine rotation rate) as well as sea state conditions and information on nearby anthropogenic activities (*e.g.,* vessels transiting or operating in the area) must be reported. ii. Dominion Energy must provide the initial results of the SFV measurements to NMFS in an interim report after each monopile and pin pile foundation installation for the first three monopiles piles and/or two full OSS foundations (consisting of 8 total pin piles) as soon as they are available, but no later than 48 hours after each installation. Dominion Energy must also provide interim reports on any subsequent SFV on foundation piles within 48 hours. The interim report must include hammer energies used during pile driving, peak sound pressure level (SPL_{pk}) and median, mean, maximum, and minimum root-mean-square sound pressure level that contains 90 percent of the acoustic energy (SPL_{rms}) and single strike sound exposure level (SEL_{ss}). iii. The final results of SFV of foundation installations must be submitted as soon as possible, but no later than within 90 days following completion of pile driving of monopiles and pin piles. The final report must include, at minimum, the following: A. Peak sound pressure level (SPL_{pk}), root-mean-square sound pressure level that contains 90 percent of the acoustic energy (SPL_{rms}), single strike sound exposure level (SEL_{ss}), integration time for SPL_{rms}, spectrum, and 24-hour cumulative SEL extrapolated from measurements at specified distances (*e.g.,* 750 m); B. All these levels must be reported in the form of: 1. Median; 2. Mean; 3. Maximum; and 4. Minimum; C. The SEL and SPL power spectral density and one-third octave band levels (usually calculated as decidecade band levels) at the receiver locations should be reported;

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	D. The sound levels reported must be in median and linear average (i.e., average in linear space), and in dB; E. A description of depth and sediment type, as documented in the Construction and Operation Plan (COP), at the recording and pile driving locations; F. Hammer energies required for pile installation and the number of strikes per pile; G. Hydrophone equipment and methods (i.e., recording device, bandwidth/sampling rate, distance from the pile where recordings were made; depth of recording device(s)); H. Description of the SFV PAM hardware and software, including software version used, calibration data, bandwidth capability and sensitivity of hydrophone(s), any filters used in hardware or software, any limitations with the equipment, and other relevant information; I. Local environmental conditions, such as wind speed, transmission loss data collected on-site (or the sound velocity profile), baseline pre- and post-activity ambient sound levels (broadband and/or within frequencies of concern); J. Spatial configuration of the noise attenuation device(s) relative to the pile; K. He extents of the Level A harassment and Level B harassment zones; and L. A description of the noise abatement system and operational parameters (*e.g.,* bubble flow rate, distance deployed from the pile,) and any action taken to adjust the noise abatement system. 10. Dominion Energy must submit situational reports if the following circumstances occur: i. If a North Atlantic right whale is observed at any time by PSOs or personnel on or in the vicinity of any project vessel, or during vessel transit, Dominion Energy must immediately report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System (866) 755–6622, through the WhaleAlert app (*https://www.whalealert.org/*), and to the U.S. Coast Guard via channel 16, as soon as feasible but no longer than 24 hours after the sighting. Information reported must include, at a minimum: time of sighting, location, and number of North Atlantic right whales observed. ii. When an observation of a large whale occurs during vessel transit, the following information must be recorded and reported to NMFS: A. Time, date, and location (latitude/longitude; in Decimal Degrees) B. The vessel's activity, heading, and speed; C. Sea state, water depth, and visibility; D. Marine mammal identification to the best of the observer's ability (*e.g.,* North Atlantic right whale, whale, dolphin, seal); E. Initial distance and bearing to marine mammal from vessel and closest point of approach; and F. Any avoidance measures taken in response to the marine mammal sighting. iii. If a North Atlantic right whale is detected via PAM, the date, time, location (i.e., latitude and longitude of recorder)

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	of the detection as well as the recording platform that had the detection must be reported to *nmfs.pacmdata@noaa.gov* as soon as feasible, but no longer than 24 hours after the detection. Full detection data and metadata must be submitted monthly on the 15th of every month for the previous month via the webform on the NMFS North Atlantic right whale Passive Acoustic Reporting System website at *https://www.fisheries.noaa.gov/resource/document/passive-acoustic-reporting-system-templates*. iv. In the event that the personnel involved in the activities defined in § 217.290(a) discover a stranded, entangled, injured, or dead marine mammal, Dominion Energy must immediately report the observation to the NMFS Office of Protected Resources (OPR), the NMFS Greater Atlantic Stranding Coordinator for the New England/Mid-Atlantic area (866–755–6622), and the U.S. Coast Guard within 24 hours. If the injury or death was caused by a project activity, Dominion Energy must immediately cease all activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the LOA. NMFS may impose additional measures to minimize the likelihood of further prohibited take and ensure MMPA compliance. Dominion Energy may not resume their activities until notified by NMFS. The report must include the following information: A. Time, date, and location (latitude/longitude; in Decimal Degrees) of the first discovery (and updated location information if known and applicable); B. Species identification (if known) or description of the animal(s) involved; C. Condition of the animal(s) (including carcass condition if the animal is dead); D. Observed behaviors of the animal(s), if alive; E. If available, photographs or video footage of the animal(s); and F. General circumstances under which the animal was discovered. v. In the event of a vessel strike of a marine mammal by any vessel associated with the CVOW–C project, Dominion Energy must immediately report the strike incident to the NMFS OPR and the NMFS Greater Atlantic Regional Fisheries Office (GARFO) within and no later than 24 hours. Dominion Energy must immediately cease all on-water activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the LOA. NMFS may impose additional measures to minimize the likelihood of further prohibited take and ensure MMPA compliance. Dominion Energy may not resume their activities until notified by NMFS. The report must include the following information: A. Time, date, and location (latitude/longitude; in Decimal Degrees) of the incident; B. Species identification (if known) or description of the animal(s) involved; C. Vessel's speed leading up to and during the incident; D. Vessel's course/heading and what operations were being conducted (if applicable); E. Status of all sound sources in use; F. Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;

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	G. Environmental conditions (*e.g.,* wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike; H. Estimated size and length of animal that was struck; I. Description of the behavior of the marine mammal immediately preceding and following the strike; J. If available, description of the presence and behavior of any other marine mammals immediately preceding the strike; K. Estimated fate of the animal (*e.g.,* dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and L. To the extent practicable, photographs or video footage of the animal(s).

H.1. References

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