



Search and Rescue Operations Near Offshore Wind Energy Projects

June 16, 2021

Fiscal Year 2020 Report to Congress



**Homeland
Security**

United States Coast Guard

Foreword

June 16, 2021

I am pleased to present the following report, “Search and Rescue Operations Near Offshore Wind Energy Projects,” as prepared by the U.S. Coast Guard.

Senate Report 116-125 accompanying the Fiscal Year 2020 Department of Homeland Security Appropriations Act (P.L. 116-93) directs the Coast Guard to provide a study of its policies and authorities for operations near offshore wind energy projects. The study shall recommend appropriate procedures to ensure that the Coast Guard can carry out its missions effectively, particularly search and rescue missions in proximity to offshore wind farms, and shall include an assessment of the types and positioning of Coast Guard assets and equipment in this maritime environment.



Pursuant to congressional requirements, this report is being provided to the following Members of Congress:

The Honorable Lucille Roybal-Allard
Chairwoman, House Appropriations Subcommittee on Homeland Security

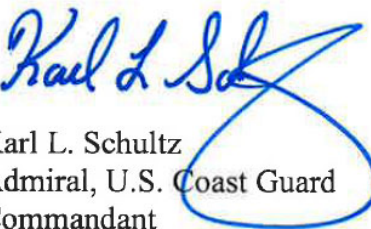
The Honorable Chuck Fleischmann
Ranking Member, House Appropriations Subcommittee on Homeland Security

The Honorable Chris Murphy
Chair, Senate Appropriations Subcommittee on Homeland Security

The Honorable Shelley Moore Capito
Ranking Member, Senate Appropriations Subcommittee on Homeland Security

I am happy to answer any further questions that you may have, or your staff may contact my Senate Liaison Office at (202) 224-2913 or House Liaison Office at (202) 225-4775.

Sincerely,


Karl L. Schultz
Admiral, U.S. Coast Guard
Commandant



Search and Rescue Operations Near Offshore Wind Energy Projects

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I. Legislative Language

This document responds to language set forth in Senate Report 116-125 accompanying the Fiscal Year 2020 Department of Homeland Security Appropriations Act (P.L. 116-93).

Senate Report 116-125 states:

Search and Rescue Study.—Within 1 year of the date of enactment of this act, the Coast Guard is directed to complete and submit to the Committee a study of its policies and authorities for operations near offshore wind energy projects. The study shall recommend appropriate procedures to ensure the Coast Guard can effectively carry out its missions, particularly search and rescue missions in proximity to offshore wind farms, and shall include an assessment of the types and positioning of Coast Guard assets and equipment in this maritime environment. The Coast Guard shall consult with relevant Federal and State agencies and other stakeholders, including developers and commercial and recreational fishermen.

II. Coast Guard Search and Rescue Mission

The Coast Guard's statutory authority to conduct search and rescue (SAR) is outlined in Title 14, Sections 102, 521, and 701 of the U.S. Code. The Code states that the Coast Guard "shall develop, establish, maintain and operate SAR facilities and may render aid to distressed persons and protect and save property on and under the high seas and waters subject to the jurisdiction of the United States." The existence of offshore renewable energy installations (OREI) within that jurisdiction will not affect the Coast Guard's authority to conduct SAR.

The *U.S. Coast Guard Addendum to the United States National Search and Rescue Supplement to the International Aeronautical and Maritime Search and Rescue Manual*, Commandant Instruction M16130.2F, prescribes policy as it pertains to the Coast Guard's statutory authority to conduct SAR. The ultimate goal of the SAR program is to prevent loss of life in every situation where Coast Guard actions and performance possibly could be brought to bear. The Coast Guard's success in meeting this goal is the result not only of how well the SAR system responds to maritime SAR incidents, but also the efforts of other maritime safety programs, including recreational boating safety and commercial vessel safety. These combined efforts ensure that mariners maintain seaworthy vessels; have the proper equipment, necessary knowledge, training, and information to operate safely in the maritime environment; and take the correct actions when faced with a distress situation.

In accordance with the *United States National Search and Rescue Supplement to the International Aeronautical and Maritime Search and Rescue Manual*, the Coast Guard is responsible for organizing available SAR facilities in U.S. Search and Rescue Regions (SRR). SRRs generally include all navigable waters subject to the jurisdiction of the United States and international waters stretching far into the Gulf of Mexico, Atlantic, and Pacific Oceans.

Coast Guard operations adhere to both deliberate and real-time risk management assessments prior to engaging in operations or activities that expose personnel to hazards, and conduct updates throughout execution phases. These assessments are governed by internal Coast Guard policy. The output of these risk assessment tools directly influences the Coast Guard's coordination of response to an incident. *Navigation and Vessel Inspection Circular (NVIC) 01-19* encourages transparency between OREI developers and the Coast Guard throughout each individual OREI layout design process to account for any impacts the OREI may have on navigation and response mission activities. Industry coordination with the Coast Guard is encouraged as early as possible as Navigation Safety Risk Assessments are developed, which should show that risks to surface and air assets are minimized and should propose mitigation measures.

The Coast Guard may respond to SAR incidents with organic resources, including aircraft, cutters, and/or boats, or may rely on other organizations and good Samaritans to assist persons in distress. The presence of OREIs (e.g., wind farms) in or near the location of a SAR incident may affect the Coast Guard's response if an asset is unable to operate in or transit through the area safely. Further study is required to determine what, if any, additions to the Coast Guard's capabilities will improve the ability of the Coast Guard to respond effectively and efficiently in these operating areas.

The Coast Guard uses the Search and Rescue Optimal Planning System (SAROPS) for drift modeling and SAR planning for distressed persons in the marine environment. This operating system accesses near real-time global and local environmental data to model the drift of thousands of simulated search objects to compute probabilistic search areas, which are used to create action plans. OREIs may affect SAR response planning since wind and ocean currents that are affected by the installation currently are not modeled or are not included in the environmental data retrieved by SAROPS for drift modeling simulations. The Coast Guard is involved actively with stakeholders, including academia, to discuss the effect that wind farms may have on mission execution. The ocean and atmospheric modeling community has been receptive to investigating how to address these impacts. The goal is to put in place modifications and mitigation strategies for accurate drift modeling to continue successful response missions. The Coast Guard also is participating in the federal Wind Turbine Radar Interference (WTRI) Mitigation Working Group, which includes members of federal agencies, universities, shipping industry partners, and the local maritime community. The WTRI Program was established to evaluate the impacts and to develop mitigation measures of offshore wind turbine interface on radar systems.

The Coast Guard does not have the authority to approve, disapprove, permit, nor in any way authorize an OREI application. The Coast Guard is a Cooperating Agency to the Lead Agency (LA) during its National Environmental Policy Act evaluation of a proposed project. The LA for OREIs located seaward of the established 3 nautical mile (NM) baseline is the Bureau of Ocean Energy Management. Inside of the 3 NM baseline, the U.S. Army Corps of Engineers is the LA. The Federal Energy Regulatory Commission is the LA in both areas for the issuing of licenses for hydrokinetic projects. The Coast Guard plays an important role in assisting the LA in evaluating potential impacts of an OREI on the marine transportation system, navigation safety, the traditional uses of waterways, and the 11 Coast Guard missions, including SAR. Through each individual OREI proposal assessment, the Coast Guard will develop recommendations that address navigation safety, will mitigate potential adverse impacts on other Coast Guard missions in and around the proposed installation, and will provide those recommendations to the LA for consideration. To this end, the Coast Guard's NVIC 01-19 provides current guidance on the Coast Guard's roles and responsibilities for OREIs, which includes wind farms, to members of industry, port safety and security stakeholders, and the general public.

When an OREI proposal is received by the LA, the LA provides it to the Coast Guard, which reviews and evaluates the proposal based on the criteria in NVIC 01-19. Applications are reviewed by the appropriate Coast Guard District and Sector Commanders in whose area of responsibility the proposed project will be built. This ensures that Coast Guard operational commanders with knowledge of their unique operating environments, available resources, and stakeholder interests are providing recommendations and proposed mitigations to Coast Guard Headquarters, Director of Marine Transportation Systems Management, who develops a final package of Coast Guard recommendations and proposed mitigations and forwards the package to the LA.

Under the Ports and Waterways Safety Act, the Coast Guard is required to conduct studies necessary to provide safe access routes for vessel traffic in the waters under the jurisdiction of the United States. These waters are defined in Title 33 of the Code of Federal Regulations (CFR) §

2.36 as the United States' territorial seas and internal waters subject and are not subject to tidal influence. Under current regulations, the Coast Guard's Captain of the Port (COTP) authority extends within the territorial seas, which includes the sea area up to 12 NMs from the baseline. Under these authorities, limited access areas such as safety and security zones can be established temporarily or permanently to protect lives, critical infrastructure, and the environment. Additionally, the COTP has the authority to regulate changes in the marine environment that may affect safe access to traditional marine traffic lanes, shipping lanes, and traffic separation schemes. OREIs may be located outside of 12 NM and do not meet the definition of Outer Continental Shelf Facilities under Title 33 CFR § 101.105, which are facilities that explore, develop, or produce oil, natural gas, or mineral resources. Under the current COTP authority, the Coast Guard does not regulate the safety and security risks associated with the construction and operation of OREIs beyond 12 NMs.

Every OREI project is unique; the Coast Guard assesses the risks of each proposal on a case-by-case basis. However, the Coast Guard does not provide specific standard recommendations and mitigation measures that would apply to all OREI proposals. Because of the lack of regulatory authority outside of 12 NMs, the Coast Guard can suggest best design practices only to minimize the impact and risk to Coast Guard operations. The guidance to develop these is contained in NVIC 01-19, which states in part, "in order to minimize risks to surface vessels and/or SAR helicopters transiting through an OREI, structures (turbines, substations etc.) should be aligned and in straight rows or columns. Multiple lines of orientation may provide alternative options for passage planning and for vessels and aircraft to counter the environmental effects on handling, that is, sea state, tides, currents, weather, visibility etc. Developers should plan for at least two lines of orientation unless they can demonstrate that fewer are acceptable." Further mitigating factors could be included in the design of the OREI by developers to minimize impact to Coast Guard operations and risk to assets operating within the OREI. Additional studies would be needed to assess fully the potential impacts of OREIs to Coast Guard operations.

The Coast Guard uses Command, Control, Communications, Computers, Cyber, and Intelligence systems on its aircraft, cutters, and boats and in the shoreside command centers to conduct missions. Wind farm structures and turbines may pose challenges with the existing electronic sensors and communication systems because of the potential for electro-magnetic reflections or interference in the close vicinity of or within the wind farm that may degrade the proper operation of sensors and communication systems. Further technical evaluations and studies must be conducted in the vicinity of and within constructed wind farms to assess the extent and impact of the wind farm projects on the electronic sensors and communication systems in use. Once the characterization and scope of any interference is determined, appropriate actions can be taken to mitigate or reduce the impacts on these systems.

III. Conclusion

The Coast Guard is committed to working closely with the Bureau of Ocean Energy Management, other lead federal agencies as applicable, and offshore wind industry partners to provide thorough assessments to OREI proposals. More important, the Coast Guard is committed to providing recommendations to minimize the impact to mission execution and to ensuring the safety and well-being of the entire maritime community.

Appendix: List of Abbreviations

Abbreviations	Definition
COTP	Captain of the Port
LA	Lead Agency
NM	Nautical Mile
NVIC	Navigation and Vessel Inspection Circular
OREI	Offshore Renewable Energy Installation
SAR	Search and Rescue
SAROPS	Search and Rescue Optimal Planning System
SRR	Search and Rescue Region
WTRI	Wind Turbine Radar Interference