



New England Fishery Management Council

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March 16, 2020

A.J. Tiongson
Rear Admiral, U.S. Coast Guard
Commander, First Coast Guard District
408 Atlantic Ave.
Boston, MA 02110

Admiral Tiongson,

Please accept these comments from the New England Fishery Management Council on the draft Port Access Route Study for the areas offshore Massachusetts and Rhode Island.

The New England Fishery Management Council (Council) has primary management jurisdiction for 28 marine fishery species under nine FMPs in federal waters and is composed of members from Connecticut to Maine. In addition to managing these fisheries, the Council develops measures to identify and conserve essential fish habitats, protect deep sea corals, and manage forage fisheries sustainably. The Council also supports policies for U.S. wind energy development and operations that will sustain the health of marine ecosystems and fisheries resources. While we recognize the importance of domestic energy development to U.S. economic security, the marine fisheries in Southern New England are profoundly important to the social and economic well-being of coastal communities in the Northeast U.S. and provide numerous benefits to the nation, including domestic food security.

Our interest in the MARIPARS is a result of our mission. We have three main areas of interest: (1) the safe transit and operation of commercial and recreational fishing vessels, (2) the effective conduct of resource surveys conducted by the National Marine Fisheries Service and other entities, and (3) the conduct of search and rescue operations (SAR).

MARIPARS ultimately recommends that windfarms utilize a uniform grid pattern with at least three lines of orientation and standard spacing to accommodate marine activities. It is not clear whether a minimum width between turbines is being recommended. A width is not indicated on page 2, but widths of 0.6-0.8 NM and 1.0 NM for fishing vessel transit and fishing vessel operation/search and rescue, respectively, are provided on page 38. MARIPARS also recommends that mariners exercise caution when deciding to transit the WEA.

The Council previously submitted comments on May 28, 2019, during the scoping period, suggesting that the MARIPARS include the following:

- An evaluation of the specific 4 nm wide transit routes suggested by the Responsible Offshore Development Alliance (RODA);
- Use of all data available to understand patterns of fishing vessel activity in the area, including VMS and AIS, explicitly considering the limitations of such data;
- Recognition of fisheries survey and research vessels as a user of the wind energy areas and consultation with Northeast Fisheries Science Center staff on their needs relative to scientific operations and transit; and
- Use of the best available science to predict changes in vessel activity once wind turbines, cables, and substations are installed, in order to estimate areas of funneling/bottlenecks.
- The Council's letter included additional minor recommendations as well.

It does not appear that these recommendations were fully included in the study. While transit corridors developed by RODA and the Massachusetts Fisheries Working Group are presented in the report, there is no discussion on how the transit proposals identified by those groups align with existing transit patterns described on pages 11 and 12 of the reports, nor is there discussion of why additional wider lanes would not be desirable beyond the 0.6-0.8 NM and 1.0 NM corridors described above.

The study relies heavily on AIS data while acknowledging that it does not represent all vessels. For fishing vessels, why not use VMS data for vessels without AIS? What about plotter data, observer data, or Vessel Trip reports (VTRs)? To the comment on page 24, why not use VTR data to document charter vessel activity in the WEAs? In addition to fishing vessels, it is noted that traffic in the areas tends to increase in summer. How many small private vessels do not have AIS? Assuming these vessels will continue to use the area, primarily in the summer months, they will compete for space with fishing vessels working within or transiting the study area as well as other vessels transiting the area. It is noted that recreational activity could increase as has been observed for Block Island Wind Farm and European wind farms. Are smaller private vessels likely to cluster near WTGs, based on experiences at BIWF or elsewhere?

There is no indication that fisheries survey vessels and their needs for transit were considered as part of the study. We remain concerned about the ability of resource assessment to continue within the WEAs and feel that this use should be specifically evaluated. As we showed in a figure in our earlier letter, there are numerous survey tows in the proposed WEAs.

The report notes that it is difficult to predict future traffic characteristics, which we can appreciate as we often seek to predict patterns of activity in response to changes in management. However, we would argue that assessment of future traffic characteristics is not solely about estimating whether more or fewer vessels using the WEAs in the future, as discussed in the report. It is also about changes in the spatial concentration of current vessels and whether fishing operations, not only transit, might be affected by the placement of turbines. While fishing was acknowledged as the major activity within the WEAs, there was no effort to consider spatial patterns of fishing activity, for example tow lengths, turning radii, or how many vessels presently work in areas of a certain size under existing conditions. VMS data, combined with haul by haul data from plotters, at-sea monitors or fishery observers, and descriptions of their activities from fishermen might have been used to get at some of these questions. Plotter data provided by the Commercial Fishing Center of Rhode Island are provided as Appendix G, but it is not clear how

these data were used in preparation of MARIPARS, other than as a general indicator of commercial fishing activity. In addition, the USCG's at-sea assets can directly observe the activities of fishing and other vessels and those observations could be used in this analysis.

In addition to these issues related to our May 2019 scoping comments, the following sections of the report raise additional questions and concerns.

There is a discussion in the report about the state of knowledge regarding radar interference within wind turbine arrays (section III-H). The report notes that "USCG is not aware of an authoritative scientific study that confirms or refutes the concern that WTGs will degrade marine radar" (p. 24). Nonetheless, potential concerns are identified including cases where radar is not used properly. It seems that such concerns could be mitigated by providing opportunities for evaluation of vessel radar equipment and installation, and that it might be prudent to recommend on the water or simulation-based training for operators. In addition, based on this section of the report, it seems sensible to recommend that any vessels seeking to operate within the wind farm should employ AIS.

The section on search and rescue operations (III-J) states that "multiple orientations of 1 NM spacing between structures would provide more flexible options for search patterns", and that "in some cases weather and wind might be so severe as to not allow for USCG assets to go into the WEA altogether" (p. 29). Further, the report states that "1 NM spacing between WTG allows aircrews to safely execute turns to the adjacent lane using normal flight procedures and visual conditions" (p. 29). On page 30, it is noted that "in the event visibility significantly decreases while a helicopter is already operating within the WEA, space may be needed greater than 1 NM in order for a flight crew to safely exit". These comments, taken together, suggest that the study should be recommending spacing within the array of 1 NM at minimum, if not slightly larger. It is not stated whether select, wider transit lanes running across the WEAs in various orientations would further improve safety of aircrews during SAR operations or would allow for helicopters to operate within the WEA in more extreme weather. This need for additional space is indicated under item 9 on page 30, and it is stated that the amount of space required is unknown at this time. We suggest that the time is at hand to conduct such an evaluation. Projects are being designed now, and construction and operations plans for multiple wind farms in the MA-RI WEAs are either in development or under review. The window of opportunity to remove turbines from the array or to space all turbines further apart appears to be closing rapidly. Obviously, it will not be possible to relocate turbines once they are installed.

Based on conversations with developers, we understand that it will be possible to shut down turbines remotely if needed to promote safety during SAR operations. There should be discussion in MARIPARS about how SAR operations, specifically vessel and helicopter navigation, might be made safer by stopping the blades, and conditions under which turbine shutdowns would be requested. For example, will shutting down turbine blades eliminate turbulence caused by the WTGs that might make helicopter control more difficult? In addition, it would be helpful to discuss in greater detail the range of weather conditions that are likely to occur in the WEAs during different times of year, and how those relate to helicopter and vessel operations during search and rescue. It isn't clear what types of conditions are being assumed when making the statements quoted above. Are conditions where greater spacing might be

necessary for helicopter deployment very rare? Do they occur only during the severest winter weather, or during a major tropical storm? What about during heavy fog such as might occur in the spring?

In section IV-C, Types of Mitigation Measures, the rationale for recommending a standard spacing between arrays, with three straight lines of orientation throughout, is clearly justified in the report and the reasons why un-aligned adjacent arrays would be problematic are obvious. The wind developers with leases in the WEAs have agreed to a uniform array. Combining this agreement with the statements in MARIPARS, it seems obvious that a uniform array with three lines of orientation is the way to proceed. However, as noted in the next section, assessing the necessary spacing between rows and columns of the array is more challenging. Arguably though, this study is the place to objectively make such a recommendation based on the best available information.

Section IV-D describes criteria for determining appropriate distance between turbines in the array. The recommendations appear to be based on ship domain theory. It's notable that most theoretical discussions of ship domain theory relate safe passing distances to a multiple of vessel length, and most of these studies are based on work with large merchant vessels. It isn't clear that the rules of thumb developed from this work can be scaled down to the size of fishing vessels in this area. It's also not clear whether the length used should be based on the vessel's length or, in the case of a trawler or survey vessel, the length of the towed gear should be considered. More recent empirical studies using AIS cast doubt on whether the ship domain actually changes with vessel size.

MARIPARS seems to be recommending, where two vessels are transiting past one another in opposite directions, and last minute collision avoidance measures might be required, two 4x vessel length navigation paths, with a 1.5x collision avoidance margin and a 6x starboard safety margin along the starboard edge of each navigation path. This totals 23x the vessel length between turbines. Assuming the largest vessel transiting across the array is 144 ft long (the assumption made in the report), this leads to a total separation of 0.63 miles or 0.55 NM. Adding a 500 m (0.27 NM) UNCLOS safety zone on either side of both rows of turbines (a safety zone along only one row is shown in Figure 21 on page 36) results in a total separation of 1.09 NM, suggesting that this is an appropriate minimum spacing anywhere within the WEA where two vessels both with lengths of around 144 ft might pass one another and need to initiate collision avoidance measures. Should a large fishing vessel (~144 ft) encounter an even larger vessel with a larger turning radius within the array, the distance to facilitate passing and allow for potential avoidance measures would presumably be larger. The final transit recommendations are 0.6-0.8 NM (p. 38); it is not clear why UNCLOS safety zones are not being recommended.

Assuming the array orientation recommended by the leaseholders on November 19, 2019, the east-west and north-south corridors will approach this 1.09 NM spacing, while the northwest-southeast and northeast-southwest corridors will be smaller, only 0.7 NM wide. This smaller distance does not seem adequate to support helicopter operations. In order for the corridors in all four directions to be 1.0 NM wide, the turbines would need to be spaced 1.4 NM apart. Allowing for wider corridors in the northwest to southeast direction seems appropriate given the directionality of existing vessel transits through the area.

The margins are based on multipliers in the British guidance document MGN 543, which in turn refers to a 2015 study from the Netherlands. There should be further exploration in MARIPARS of why these multipliers are reasonable for use in the context of the MA-RI WEAs, for example comparing the types of vessel activity evaluated in the Netherlands and the United Kingdom to the activity seen here, and/or by ground truthing these multipliers with local fishermen and vessel operators. We also note that MGN 543 suggests that traffic lanes take into account that in bad weather, headings may deviate from the desired course by as much as 20 degrees. As a result, lanes should be wider to account for these errors. None of the MARIPARS recommendations seem to consider this.

Overall, the draft MARIPARS could be significantly improved with the addition of other sources of vessel activity data and a deeper exploration of the issues identified above. We hope these comments will be helpful to the USCG as additional revisions are made to the report. Please do not hesitate to contact us with any questions.

Sincerely,

A handwritten signature in cursive script that reads "Thomas A. Nies".

Thomas A. Nies
Executive Director