



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Model Clearinghouse review of an alternative model application of AERCOARE in conjunction with AERMOD in Support of Outer Continental Shelf PSD air permitting of the Atlantic Shores Offshore Wind Project 3

FROM: George Bridgers, Model Clearinghouse Director
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TO: Brian Marmo, Regional Air Quality Modeler
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THROUGH: Rick Ruvo, Director
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INTRODUCTION

Atlantic Shores Offshore Wind Project 3, LLC has proposed the construction of an offshore wind energy generation project (Atlantic Shores P3Co) on the Outer Continental Shelf (OCS). The Atlantic Shores P3Co project will be located 8.4 miles off the coast of New Jersey in Lease Area OCS-A 0549 and will consist of up to 157 wind turbine generators and 8 small offshore substations within that lease area. The Atlantic Shores P3Co project is subject to Prevention of Significant Deterioration (PSD) permitting and is required to submit an OCS air permit application that includes a dispersion modeling demonstration that air emissions from the project will not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS) or PSD increments.

Atlantic Shores Offshore Wind Project 3, LLC has requested to use an alternative model, as provided in Section 3.2 of the *Guideline on Air Quality Models* (40 CFR Part 51, Appendix W), to conduct its OCS PSD air quality modeling analysis. Specifically, the company has requested to use the Coupled Ocean-Atmosphere Response Experiment (COARE) bulk flux algorithm, as implemented in the AERCOARE meteorological data preprocessor program, to prepare meteorological data for use in the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) dispersion program over the preferred Offshore and Coastal Dispersion (OCD) model to assess ambient impacts in a marine environment.

REGIONAL OFFICE REVIEW

The U.S. Environmental Protection Agency (EPA) Region 2 seeks concurrence from the EPA's Model Clearinghouse (Model Clearinghouse or MCH) regarding the prospective EPA Region 2 approval of an alternative model for the Atlantic Shores P3Co project OCS PSD air permitting effort. The AERCOARE meteorological data preprocessor program will be used in conjunction with AERMOD (AERCOARE-AERMOD) to conduct an air quality modeling analysis as part of the OCS air permit application for the proposed Atlantic Shores P3Co project. Atlantic Shores Offshore Wind Project 3, LLC is seeking approval to allow the use of the coupled AERCOARE-AERMOD model methodology or approach for their air quality modeling analysis, under the *Guideline*, Section 3.2.2(b), Condition (3), for the project's OCS air permit application.

EPA Region 2 has conducted a thorough review of the request and intends to approve the use of proposed coupled AERCOARE-AERMOD approach as an alternative model to conduct the air quality modeling analysis as part of the Atlantic Shores P3Co project OCS PSD air permit application. Based on their review, EPA Region 2 has found the proposed application of the model is satisfactory and addresses the requirements of the *Guideline*, Section 3.2.2(b), Condition (3) and the subsequent five elements contained in Section 3.2.2(e). As such, pursuant to Sections 3.0(b) and 3.2.2(a), Region 2 currently intends to approve the use of AERCOARE-AERMOD as an acceptable alternative model for the Atlantic Shores P3Co project.

MODEL CLEARINGHOUSE REVIEW

The specifics of the EPA Region 2 review and the basis for their intention to approve the proposed AERCOARE-AERMOD alternative modeling approach for the Atlantic Shores P3Co project are logically presented in the EPA Region 2 alternative model concurrence request memorandum submitted to the Model Clearinghouse on August 20, 2024¹. Given the similarities in scope and almost identical points of justification made by Atlantic Shores Offshore Wind Project 3, LLC to many other Model Clearinghouse actions² over the past several years regarding the use of the coupled AERCOARE-AERMOD alternative model approach, including the geographically adjacent Atlantic Shores South project³, we will not reiterate each aspect of the Regional Office review in this concurrence response memorandum. The Model Clearinghouse affirms the Region 2 conclusion that circumstances surrounding and the alternative model request package submitted for the Atlantic Shores P3Co project follows a nearly identical pathway to these previously EPA approved alternative models.

The Model Clearinghouse continues to agree with the technical merits of this common themed alternative model justification for the coupled AERCOARE-AERMOD approach, as long as there is an appropriate level of consultation with the Regional Office on the manner in which the alternative model will be applied in the air quality modeling analysis for the project's OCS PSD

¹ https://gaftp.epa.gov/Air/aqmg/SCRAM/mchisrs/24-II-01_Region2_MCHRequest_AtlanticShores_P3Co.pdf.

² Please reference the EPA Model Clearinghouse Information Storage and Retrieval System (MCHISRS) database for more information regarding recent AERCOARE-AERMOD alternative model reviews and approvals (<http://cfpub.epa.gov/oarweb/MCHISRS/>, text Search term "AERCOARE").

³ <https://cfpub.epa.gov/oarweb/MCHISRS/index.cfm?fuseaction=main.resultdetails&recnum=22-II-02>.

air permit application, including an assessment of potential concerns with platform downwash and shoreline fumigation. The Model Clearinghouse encourages reviewers of this alternative model concurrence to reference the EPA Region 2 alternative model concurrence request memorandum for specific details of EPA Region 2's review of the Atlantic Shores Offshore Wind Project 3, LLC alternative model request and justification.

CONCURRENCE SUMMARY

The Model Clearinghouse concurs with EPA Region 2's proposed approval of a coupled AERCOARE-AERMOD alternative modeling approach for the air quality modeling analysis required in the Atlantic Shores P3Co project based on the alternative model request package provided by Atlantic Shores Offshore Wind Project 3, LLC and the review documentation in the alternative model concurrence request memorandum provided by EPA Region 2. The Model Clearinghouse encourages EPA Region 2 to respond to Atlantic Shores Offshore Wind Project 3, LLC and to the docket for federal permitting actions related to the Atlantic Shores P3Co project with a letter of alternative model approval, as appropriate. The information associated with the EPA Region 2 alternative model approval and the Model Clearinghouse concurrence should be available for comment during the appropriate public comment period(s).

Given the possible importance of platform downwash and shoreline fumigation, the Model Clearinghouse continues to recommend caution and careful review before additional alternative model considerations of the coupled AERCOARE-AERMOD model methodology in other projects. This case-specific Model Clearinghouse concurrence does not constitute a generic approval of a coupled AERCOARE-AERMOD approach for other applications elsewhere. However, the scope of the technical assessment submitted here and with similar AERCOARE-AERMOD alternative model requests continue to provide a good basis for such considerations.

For any future projects considering the use of a coupled AERCOARE-AERMOD approach, including differing phases of a project to which those phases were not considered as part of a previous EPA alternative model approval, EPA Regional Office approval with Model Clearinghouse concurrence is required per the *Guideline*, Section 3.2. Early consultation with the appropriate reviewing authority and EPA Regional Office is always strongly recommended for any alternative model application other than the preferred OCD model approach for overwater or OCS sources.

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