PMC-ND

(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

RECIPIENT: NREL **STATE:** CO

PROJECT TITLE : NREL-23-013 PacWave South Buoys

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	GFO-NREL-23-013	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B3.16 Research activities in aquatic environments	Small-scale, temporary surveying, site characterization, and research activities in aquatic environments, limited to: (a) Acquisition of rights-of-way, easements, and temporary use permits; (b) Installation, operation, and removal of passive scientific measurement devices, including, but not limited to, antennae, tide gauges, flow testing equipment for existing wells, weighted hydrophones, salinity measurement devices, and water quality measurement devices; (c) Natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research, excluding (1) large-scale vibratory coring techniques and (2) seismic activities other than passive techniques; and (d) Surveying and mapping. These activities would be conducted in accordance with, where applicable, an approved spill prevention, control, and response plan and would incorporate appropriate control technologies and best management practices. None of the activities listed above would occur within the boundary of an established marine sanctuary or wildlife refuge, a governmentally proposed marine sanctuary or wildlife refuge, or a governmentally recognized area of high biological sensitivity, unless authorized by the agency responsible for such refuge, sanctuary, or area (or after consultation with the responsible agency, if no authorization is required). If the proposed activities would occur outside such refuge, sanctuary, or area and if the activities would have the potential to cause impacts within such refuge, sanctuary, or area, then the responsible agency shall be consulted in order to determine whether authorization is required and whether such activities would have the potential to cause significant impacts on such refuge, sanctuary, or area. Areas of high biological sensitivity include, but are not limited to, areas of known ecological importance, whale and marine mammal mating and calving/pupping areas, and fish and invertebrate spawning and nursery areas recognized as being limited or unique and vulnerable to perturbation; these areas can occur in bays, estuaries, near shore, and far offshore, and may vary seasonally. No permanent facilities or devices would be constructed or installed. Covered actions do not include drilling of resource exploration or extraction wells.

Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) is proposing to provide two Datawell Waverider MKIII buoys to Oregon State University (OSU) to deploy at the PacWave South site. The purpose of the project is to characterize waves at the PacWave South site, which is a pre-permitted, grid-connected wave energy testing facility operated by OSU.

The proposed deployment site is located approximately six nautical miles off the coast of Newport, Oregon (approximate location: 44.583333°N, -124.241667°W) in waters approximately 75 meters deep. The buoys would be deployed and retrieved using either an OSU-owned research vessel, the 84' R/V Pacific Storm, or a commercial research vessel, the 56' R/V Pacific Surveyor, depending on availability. Both vessels are equipped to deploy the buoys. The deployment period would be for approximately 12 months, and deployment of the buoys would occur in late summer or early fall 2023. NREL would maintain ownership of the buoys and OSU would deploy, maintain, and recover the buoys.

BUOY PREPARATION

The buoys, anchors, and mooring lines would be shipped from NREL in Golden, CO, to OSU's facility in Corvallis, OR. The buoys and associated instrumentation would be prepared, inspected, and assembled in accordance with manufacturer recommendations at the OSU marina. Once assembled, the buoys would be loaded onto the vessel at the OSU marina before traversing to the project location.

BUOY COMPONENTS

Each buoy is 0.9 m (~3 ft) in diameter and weighs nearly 200 kg (~440 lbs). The buoy floats on the ocean's surface, half-submerged, and is mounted with an anti-spin triangle (each side of the triangle is approximately 1.5 m (5 ft) in

length), an HF whip antenna extending 1.95 m (6.4 ft) upward from the top of the buoy for data transmission, and an LED flasher at the end of the antenna. Each buoy would be anchored to the seafloor with a 700-pound Dor-Mor Pyramid mooring anchor and ground chain. The anchor would a footprint of approximately 1 m² (10.8 ft²) on the seafloor. Once deployed, the buoy remains in a 'watch circle' about its mooring and can move only 10 m (33 ft) horizontally in any direction from its position directly above the anchor. The buoy houses sensors to measure waves, surface currents, and water temperature. The buoy also contains components that provide power, communications, and data storage.

BUOY DEPLOYMENT

The deployment vessel would depart from Newport, OR and would follow the channel past the channel marker sea buoy. At that point, the vessel would make a heading of about 245 degrees and would travel to the deployment location. The total distance is approximately 9.5 miles.

Upon arrival at the project location, the team would conduct a visual scan of the area to verify that there are no obstacles that could complicate the deployment of the buoys, such as crab pots or other debris. Once verified, each buoy and mooring line would be paid out from the stern of the vessel using the deck winch, A-frame, and controlled release system, and followed by the anchor. The round-trip deployment effort would be completed in one day, with an approximately 6-hour round-trip travel time and 2-hour deployment. All work would occur during daylight.

The buoys would be monitored remotely to ensure the buoys do not move beyond the limits of the PacWave South site. Should the buoys break free, OSU would retrieve them and re-secure them at the test site.

BUOY RETRIEVAL

At the conclusion of the deployment period, the retrieval vessel would use the same route of transit to recover the buoys and mooring system. Once at the deployment site, a crane or A-frame would lift each buoy from the water and onto the deck where they would be secured. Once secured, the anchors would be removed. The mooring line was chosen specifically to have the strength needed to retrieve the anchors.

The retrieval vessel would return to the OSU marina. Equipment retrieval would take one day and would occur during daylight hours. The equipment would be packed and shipped back to NREL for use in future research.

PERMITTING

Prior to commencing project activities, the team would obtain all required permits. Permits that could be required include a U.S. Army Corps of Engineers Nationwide Permit #5, Scientific Measurement Devices, and a U.S. Coast Guard Private Aids to Navigation or Notice to Mariners. Project activities shall not commence until all required permits have been obtained.

CONSULTATION HISTORY AND ENVIRONMENTAL ASSESSMENT

In May 2019, OSU filed an application with the Federal Energy Regulatory Commission (FERC) for a license to construct and operate a wave energy test facility at the PacWave South site. The site is approximately 2.65 square miles in size and would be administered through a lease by the Bureau of Ocean Energy Management (BOEM) and would be funded in part by the DOE. FERC conducted an Environmental Assessment (EA) and served as lead agency with BOEM and DOE serving as cooperating agencies.

The purpose of the proposed project was to provide funding to Oregon State University to develop and construct the PacWave South Hydrokinetic Project, a 20-megawatt open ocean marine hydrokinetic testing location designed to test and validate marine hydrokinetic devices, located approximately six nautical miles off the coast of Newport, Oregon.

As part of the EA, effects to Threatened and Endangered Species were considered.

OSU determined that there are 40 federally listed species within the PacWave South site. OSU determined the project may effect, but is not likely to adversely affect, 36 of those species. OSU also determined that the project would not adversely affect critical habitat. Lastly, OSU determined that the project may effect, and is likely to adversely effect, four species, but would not result in jeopardy for any of those species (the euchalon, the green sturgeon, the chinook salmon, and the Coho salmon). FERC, as lead agency, engaged in formal consultation with National Marine Fisheries Service (NMFS) regarding marine species, including the four species that would be adversely effected. FERC also engaged in informal consultation with the United State Fish and Wildlife Service (USFWS). NMFS concurred with the determination and issued a Biological Opinion and Incidental Take Statement in December of 2019 which outlined specific terms and conditions that must be followed; the terms and conditions are contained within the EA. USFWS concurred with the determination regarding species under their jurisdiction in October of 2019.

In October of 2021, DOE requested confirmation from NMFS that it could rely on the 2019 Opinion and Incidental Take Statement for future Wave Energy Converter (WEC) deployments at PacWave South. In May 2022, NMFS concurred that the reasonable and prudent measures outlined in the Opinion and Statement are applicable to future DOE-funded WEC deployments and no additional measures or conditions are necessary; as such, DOE could rely on the 2019

Opinion and Statement given that the WEC devices are consistent with those considered in their review, that they would not create new stressors, or would not cross stressor thresholds described in the Opinion.

In May 2022, DOE requested confirmation from USFWS that DOE could rely on the finding issued to FERC for future DOE-funded WEC deployments. In June of 2022, USFWS concurred that the conclusions reached in their October 2019 letter of concurrence to FERC are applicable to DOE-funded WEC deployments given that the deployments are consistent with those already analyzed through the initial consultation.

As part of the EA, impacts to cultural resources were assessed.

The PacWave South site was investigated for cultural resources. Cultural resources were not identified within the marine portion of the APE. A cultural resources inventory report was completed for the terrestrial portion of the APE noting that no historic or prehistoric cultural resources were encountered. The findings were shared with Native American tribes, agencies, and the Oregon SHPO. The Oregon SHPO concurred with the report findings in December 2019.

Based on the analysis conducted in the EA and consultations described above, FERC issued a Finding of No Significant Impact (FONSI) in June 2020. In July 2020, DOE also issued a FONSI for the proposed action.

THREATENED AND ENDANGERED SPECIES AND CULTURAL RESOURCE IMPACTS
The subject proposed deployment of two buoys is consistent with the scope of deployments analyzed during the initial consultations with NMFS and USFWS. As such, the OSU team is bound by the reasonable and prudent measures outlined in the 2019 Opinion and Statement and will ensure compliance with all measures for the subject proposed project.

The proposed project would not affect cultural resources.

ADDITIONAL IMPACTS
The chain pile anchor would disturb approximately 1 square meter (10.8 square feet) of the seafloor, which would not affect the use of the area by marine life or human activity. Temporary deployment of project equipment and operation of the vessel would not affect the use, availability, or quality of water resources, or planned or ongoing land uses. Vessel use would result in de minimus air emissions, and noise generated from the vessel during transit to and from the project locations would be short-term and intermittent.

Individuals working on this project could be exposed to various hazards during equipment and instrument assembly, testing, deployment, and retrieval. Existing corporate health and safety policies and procedures would be followed, including employee training, proper protective equipment, and engineering controls; additional policies and procedures would be implemented as new health and safety risks are identified. A Marine Safe Work Plan would be developed prior to commencing project activities. Project activities would be conducted in accordance with all applicable policies, procedures, and safety requirements.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

All required permits, permissions, notifications, and approvals shall be received prior to commencing project activities. The research team shall abide by all of the mitigation measures resulting from consultation with NMFS and FWS.

Notes:

NREL
Nicole Serio, 7/18/2023

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit

requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Lisa Jorgensen Date: 7/20/2023

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- [x] Field Office Manager review not required
- [ ] Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____

Field Office Manager