PMC-ND

U.S. DEPARTMENT OF ENERGY (1.08.09.13) OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY NEPA DETERMINATION



RECIPIENT:Oscilla Power

STATE: WA

PROJECT TITLE: Performance Optimization and System Demonstration of a Multi-Mode Point Absorber

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001837	DE-EE0008625	GFO-0008625-001	GO8625

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:

A9	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data
Information	analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to,
gathering,	conceptual design, feasibility studies, and analytical energy supply and demand studies), and information
analysis, and	dissemination (including, but not limited to, document publication and distribution, and classroom training and
dissemination	informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
B3.6 Small-	Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and
scale	development projects; conventional laboratory operations (such as preparation of chemical standards and
research and	sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a
development,	concept before demonstration actions, provided that construction or modification would be within or
laboratory	contiguous to a previously disturbed or developed area (where active utilities and currently used roads are
operations,	readily accessible). Not included in this category are demonstration actions, meaning actions that are
and pilot	undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for
projects	commercial deployment.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Oscilla Power to design, develop, fabricate, and test a novel ocean wave energy converter (WEC). This project would build upon previous work conducted by Oscilla Power and would seek to further the conceptual design of the WEC. A scale prototype, "Triton." would be developed and tested in ocean waters near the University of Maine.

This NEPA determination is reviewing Tasks 1-8. Tasks 9-15 are dependent, in part, on the information gathered in Tasks 1-8 and thus are not yet fully defined. DOE will complete additional NEPA review once all necessary information has been provided to DOE by the recipient. Tasks 9-15 are restricted until further NEPA review is completed.

Task 1-8 would focus on design work and hydrodynamic/performance modeling, as well as fabrication and testing of a prototype drivetrain. Proposed activities would include the following:

Task 1 would consist of project management activities. These would include the development and maintenance of project documents, management of tasks and work packages, and planning/organizing meetings and design reviews. This task would be ongoing throughout the life of the project.

Task 2 would focus on WEC optimization through hydrodynamic modeling. Existing concept designs would be developed to improve power performance. Power take off (PTO) control methods would also be developed. Cost modeling would also be performed to identify optimum fabrication options and processes.

Task 3 would center on the development of a prototype drivetrain and drivetrain testing. The drivetrain components would be fabricated by Machinists Inc., a third-party manufacturer, at its manufacturing facility in Seattle, WA. Assembly of the drivetrain would either be performed by Oscilla Power, at its laboratory facility in Seattle, WA, or by Janicki Industries at its manufacturing facility in Woolley, WA. All fabrication and assembly activities would be

performed at existing, purpose-based facilities. No physical modifications to existing facilities, ground disturbing activities, or changes in the use, mission, or operation of existing facilities would be required for this project. Likewise, no additional permits or authorizations would be required.

Fabrication and assembly activities would involve the use of various metals, industrial solvents, and electric machinery with moving parts. Risks associated with the completion of project activities would be mitigated through adherence to established corporate health and safety policies. Oscilla Power and its project partners would observe all applicable Federal, State, and local health, safety and environmental regulations.

Task 4 would consist of full-scale concept design development. This would include a design, failure, mode, and effect analysis, as well as utility scale system design review/optimization.

Task 5 would consist of Front End Engineering Design (FEED) of a scale prototype. Activities would include numerical analysis to confirm the WEC's structural design, development of load cases, a testing plan, and the instrument layout, and design review/optimization.

Task 6 would entail detailed design work of the prototype. Activities would include the development of a detailed design of the surface float, reinforced concrete reaction structure, PTO, instrumentation/control systems, and SCADA system. A Manufacturing Plan and Installation, Operation and Maintenance (IO&M) Plan would also be drafted.

Task 7 would focus on identifying permits and applications necessary for WEC deployment and initiating required permitting/authorization processes with relevant Federal, State and local government agencies. Preparations would be made to initiate the NEPA review of BP2 work, including any necessary consultations.

Task 8 would center on finalization of the IO&M Plan initiated in Task 6 and the testing plan initiated in Task 5, as well as the development of a safety management plan.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

- Task 1: Project management Task 2: WEC optimization through detailed hydrodynamic modeling Task 3: Development of scale prototype drivetrain and testing Task 4: Full scale concept design development Task 5: Front End Engineering Design (FEED) of scale prototype Task 6: Detailed design of Triton scale prototype
- Task 7: Initiate Permitting Process
- Task 8: Marine procedure development

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

Task 9: Construction & Assembly of Triton scale prototype subsystems Task 10: WEC final assembly & Testing Task 11: Site Permitting Task 12: System Deployment at UMaine Site Task 13: System Operation at UMaine Site Task 14: System Recovery and Decommissioning Task 15: Post Deployment Analysis

Notes:

Water Power Technologies Office This NEPA determination requires a tailored NEPA provision. Review completed by Jonathan Hartman, 05/14/2019

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.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

NEPA Compliance Officer

Date: 5/17/2019

Date:

FIELD OFFICE MANAGER DETERMINATION

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:

Field Office Manager