

PMC-ND

(1.08.09.13)

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



RECIPIENT: University of New Hampshire

STATE: NH

PROJECT TITLE : Center for Ocean Renewable Energy (CORE) Infrastructure Enhancements

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0003263	GFO-0003263-003	GO3263

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

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B5.25 Small-scale renewable energy research and development and pilot projects in aquatic environments Small-scale renewable energy research and development projects and small-scale pilot projects located in aquatic environments. Activities would be in accordance with, where applicable, an approved spill prevention, control, and response plan, and would incorporate appropriate control technologies and best management practices. Covered actions would not occur (1) within areas of hazardous natural bottom conditions or (2) 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, use of large-scale vibratory coring techniques, or seismic activities other than passive techniques.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of New Hampshire (UNH) Center for Ocean Renewable Energy (CORE) to develop a tidal energy testing platform to be deployed at two sites in the Piscataqua River; specifically at the General Sullivan Bridge and at the Memorial Bridge. The purpose of the tidal energy testing site would be to deploy tidal energy devices that have been developed in the laboratory and are ready for field testing to optimize their performance and durability.

DOE completed two previous NEPA determinations for the proposed project. Tasks 2 and 3, which included laboratory upgrades and environmental monitoring buoy replacement were reviewed in NEPA determination GFO-0003263-001 (CX A9, B3.1 and B3.6 06/28/2011). Task 1, which included fabrication of the test platform, deployment of the test platform to the General Sullivan Bridge (GSB), and monitoring and testing of tidal energy devices (turbines) was reviewed in NEPA determination GFO-0003263-002 (CX B5.25 04/29/2015). UNH now proposes to add additional subtasks to Task 1. This NEPA review is for the new proposed subtasks 1.1.2, 1.3.2 and 1.4.2.

In Task 1, as previously reviewed, UNH proposed to fabricate a tidal energy platform. As originally proposed, the tidal energy test platform would be a pontoon-based barge that can be moved readily between shore and the testing site. The test platform would be placed at a site only when devices are being tested. Once each device testing period is completed, the platform would be removed from the site and towed back to UNH facilities. The test platform would have a deck area of 60 feet long x 30 feet wide. The platform would be designed for testing multiple turbine types including vertical and horizontal axis turbines, cross flow and parallel flow turbines and un-shrouded and shrouded turbines. The test platform was to be deployed at the General Sullivan Bridge site.

In the new subtasks, UNH proposes minor changes to the design of the test platform. Under subtask 1.1.2, the test platform would be approximately 50 feet long x 30 feet wide (as opposed to the 60 x 30 previously proposed) and include clamps on one side that could be attached to a bridge vertical guide post. Under subtask 1.3.2 UNH proposes to add an Acoustic Doppler Velocimeter (ADV) to the platform to measure flow entering and exiting turbines. The ADV would operate at 6MHz and have an effective range of 1 meter. The ADV would be mounted on the platform next to additional monitoring devices previously reviewed. Under subtask 1.4.2 the turbine deployment structure design would be slightly modified to include a horizontal access beam to increase torque available to enable a more controlled

rotational deployment of vertical access turbines.

The main reasons for the design changes identified above is so that the proposed platform could be deployed at the GSB site as well as an additional site, the Memorial Bridge site. While the proposed project would include altering the fabrication of the platform to include the above changes so that the platform could be deployed at the Memorial Bridge site, the proposed project does not include any actual deployment at the Memorial Bridge site, nor does the proposed project include any modification to the Memorial Bridge. However, because the proposed project is designed to allow for potential future deployment at the Memorial Bridge site, impacts of deployment at that site are evaluated.

The Memorial Bridge site is located in the Piscataqua River at Portsmouth, New Hampshire with the entrance to Great and Little Bays and the General Sullivan Bridge located approximately 4 miles upstream, and the Atlantic Ocean downstream. The water depth in the center of the channel at the Memorial Bridge is about 20 meters. The depth at the proposed turbine location is about 13 meters. The Memorial Bridge includes vertical guide posts that are connected to the bridge. The modification to the platform design in subtask 1.1.2 would allow the platform to be connected to the bridges vertical guides and float up and down with the tide, thus being moored without use of anchors or other mooring systems that would utilize cables or touch the river bottom (as is done at the GSB site). As such, deployment at the Memorial Bridge would not impact the benthic community.

DOE completed a Biological Evaluation analyzing impacts from potential deployments at the Memorial Bridge. DOE determined that such deployments would not likely adversely affect (NLAA) threatened or endangered species or their critical habitats and would not effect essential fish habitat. On December 12, 2017 DOE initiated informal consultation with the National Marine Fisheries Service (NMFS) to comply with Section 7 of the Endangered Species Act and the Magnuson-Stevens Act. On February 19, 2018 NMFS concurred with DOE's determination.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

This NEPA determination does not require a tailored NEPA provision.
NEPA review completed by Roak Parker 2.26.2018
Water Power Program

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically
Signed By: Kristin Kerwin
NEPA Compliance Officer

Date: 3/2/2018

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

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

Field Office Manager's Signature: _____
Field Office Manager

Date: _____