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

**RECIPIENT:** University of Washington **STATE:** WA

**PROJECT TITLE:** DAISY: A Rapid Approach to Evaluating Marine Energy Converter Sound

| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
|---|---|---|---|
| DE-FOA-0001418 | DE-EE0007823 | GFO-0007823-002 | GO7823 |

**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:

| | |
|---|---|
| **A9 Information gathering, analysis, and dissemination** | Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.) |
| **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 (DOE) is proposing to provide funding to the University of Washington (UW) to improve the quality of acoustic information collected from drifting hydrophones known as the Acoustic Surface Wave Instrumentation Float with Tracking (A-SWIFT), while reducing the costs of deployment and analysis.

The proposed project would be divided into three Budget Periods with a Go/No Go decision point between each Budget Period. DOE previously completed a NEPA review for Budget Period 1 (BP1) (GFO-0007823-001 CX A9 and B3.16, 12/02/2016). In BP1 UW developed software improvements for the A-SWIFT system, conducted field tests of the system, and analyzed information from those field tests (Tasks 1-3). This review is for BP2 activities only (Tasks 4-6). In BP2, UW would make upgrades to the A-SWIFT system and field test those upgrades.

Task 4 would involve developing software and hardware upgrades for the A-SWIFT system. Task 5 would involve developing upgraded post processing software for better analysis of field test data. Task 6 would involve field testing of the upgraded A-SWIFT. Activities associated with Task 4 and 5 would be completed at the University of Washington at office and laboratory facilities. Field testing in Task 6 would be conducted at the Pacific Northwest National Lab (PNNL) Marine Science Laboratory (MSL), specifically in in Sequim Bay, WA..

The A-SWIFT is a passive acoustic hydrophone system that consist of a spar buoy approximately 2 meters in length

with a hydrophone at the base and instrumentation at the surface. The A-SWIFT is a passive acoustic device and generates no sound. The A-SWIFT would be lowered into the water from a small vessel, or from the MSL dock, allowed to float, and then retrieved. During testing two types of noise would be produced for the A-SWIFT to monitor. One would be a benchmark signal qualitatively similar to a marine energy converter, with a broadband source level < 120 dB re 1uPa. The signal would be a relatively constant intensity from 30 Hz to 1 kHz, then rolls off at 10 dB/decade from 1 kHz to 10 kHz. Second, would be an acoustic Doppler velocimeter (ADV) which would be used to evaluate the velocity of the DAISYs relative to the surrounding water. This would produce sound at 6 MHz.

In October 2015, DOE (through PNNL) completed a Biological Assessment (BA) and Essential Fish Habitat Assessment, and consulted with SHPO, NMFS, and USFWS regarding a five year scientific research plan for the MSL (which includes the area in and around Sequim Bay). The five year plan covers the period from January 2016 through September 2020.

PNNL completed a Section 106 cultural resource review of the proposed project areas and found that there would be no impact to such resources. In January of 2016, the State Department of Archaeology and Historic Preservation concurred with that conclusion.

The BA identified and analyzed eight different types of research that could occur at the site. These include: installation of equipment or cables on the seabed; installation of floating platforms or moored buoys; installation of equipment on the existing dock/pier; deployment and operation of autonomous underwater vehicles; habitat and species survey and sediment sampling; vessel use; operation of acoustic detection or emitting devices including light and sound emission; and electromagnetic field emissions. The BA examined the impacts of these potential activities in five distinct research areas in and around Sequim Bay. These areas are: Sequim Bay 1 (SB1), the area near the inlet just south of Travis Spit and comprising of 6.88 acres; Sequim Bay 2 (SB2), an area located in the middle of the bay comprising of 2.47 acres; Sequim Bay general area (SBa), which is an area from the mouth of the bay from shore to shore down the bay being approximately 46% of the bay and comprising of 2258 acres; Marine Science Laboratory dock and channel (MSL dock), an area at the entrance to the bay that includes the MSL dock and pier and comprising of 3 acres; and, Gibson Spit (GSa), a general ocean area outside of Sequim Bay and comprising of 1900 acres. Together, these five research areas are known as MSL. Finally, the BA examined impacts the proposed research activities would have to the thirteen threatened or endangered (T&E) species, to protected marine mammals, and to essential fish habitat (EFH) found in the MSL area.

The BA found that the proposed research activities would not likely adversely affect (NLAA) all T&E and protected species, except two species for which there would be no effect, and that there would be no or minimal adverse impacts to EFH. On January 27, 2016, NMFS concurred with PNNL that the proposed research activities that would occur during the five year period would not likely adversely affect EFH, marine mammals, and T&E species under their jurisdiction. On February 18, 2016 the USFWS concurred that the proposed research activities that would occur during the five year period would not likely adversely affect T&E species under their jurisdiction. Both NMFS and USFWS concluded that no further consultation would be needed for any additional research conducted within the five year period if PNNL determines it fits within the bounds of the BA. If PNNL were to determine that research would not fit within the bounds of the BA, then further consultation with NMFS and USFWS would be required.

In March of 2016, DOE/EERE contacted both NMFS and USFWS regarding the completed consultations. DOE/EERE concurred with the analysis and finding in the previously submitted BA. On March 21, 2016 both NMFS and USFWS notified EERE that the analysis and concurrence previously provided to PNNL regarding projects under the scope of the BA would apply to EERE in the same manner as it applies to PNNL.

Task 6 for this proposed project would include field testing the upgraded A-SWIFT device at MSL. All components of the A-SWIFT device would be within the parameters of the consultations previously conducted. In addition, all sounds produced during testing would be within the parameters of the consultations previously conducted. Therefore, DOE is not required to conduct further consultations for the activities proposed in BP2.

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Based on the review of the proposal, DOE has determined that Budget Period 2, and specifically Tasks 4, 5, and 6, , fit within the class of actions and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusions 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. Tasks 4, 5, and 6 are categorically excluded from further NEPA review.

**NEPA PROVISION**

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:
All Budget Period 3 Tasks as identified in the approved SOPO
This restriction does not preclude you from:
All Budget Period 2 Tasks as identified in the approved SOPO
If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are 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 require a tailored provision
Water Power Technology Office
NEPA review completed by Roak Parker 09.13.17

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: _____ Date: 9/14/2017
NEPA Compliance Officer

**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: _____ Date: _____
Field Office Manager