PMC-EF2a
(2.04.02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT: Scientific Solutions, Inc. **STATE:** NH

PROJECT TITLE : Underwater Active Acoustic Monitoring Network for Marine and Hydrokinetic Energy Projects

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-000293	DE-EE0003639	GFO-0003639-002	GO3639

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:

B3.3 Research related to conservation of fish, wildlife, and cultural resources Field and laboratory research, inventory, and information collection activities that are directly related to the conservation of fish and wildlife resources or to the protection of cultural resources, provided that such activities would not have the potential to cause significant impacts on fish and wildlife habitat or populations or to cultural resources.

Rational for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Science Solutions, Inc. (SSI) to temporarily install a real-time underwater active acoustic monitoring (AAM) system in Cobscook Bay, Eastport, Maine. SSI proposes to develop a six sonar node prototype Swimmer Detection Sonar Network (SDSN) system to advance AAM. The system would be installed onto Ocean Renewable Power Company's (ORPC) tidal generation unit (TidGen™).

DOE funding would be used to fully develop, integrate, test and operate a full-scale SDSN system for Marine Hydrokinetics (MHK) and other offshore renewable energy projects; specifically for monitoring the area surrounding a tidal turbine. The monitoring system would be designed to detect, track and identify fish, marine mammals and debris.

Previous NEPA determination GFO-0003639-001 (CX A9 and B3.6), signed 4/6/2011, reviewed the proposed project prior to an Environmental Assessment (EA) for ORPC and consultation with the National Oceanic and Atmospheric Administration (NOAA). The previous determination categorically excluded preliminary design and development, laboratory testing and evaluation, software development and project management.

This NEPA determination applies to these revised proposed project tasks:
Task 5 (Previously Task 6)- System Build and Installation
Task 6 (Previously Task 7)- Software and Signal Processing Development, Testing and Reporting

The system would be built and installed on a 98.5 ft. long TidGen™ prototype in Cobscook Bay, Maine. The six sonar node system would have a field of view of 108 degrees and would be pointed upstream during ebb or flood tide. Each node would include four channels that transmit a 4.5 degree horizontal beam width and 10 degree vertical beam width in the overall frequency range of 90 to 120 kHz with a maximum source level of 215 decibels (dB). The length of the transmission would be no more than 0.04 seconds and the repetition rate no faster than one ping every 0.5 seconds. ORPC and SSI would conduct a maximum of 40 hours of non-continuous sonar system operation per week for a maximum of two years.

Threatened or Endangered Species (TES) known to occur in the area include the Atlantic Salmon and Atlantic Sturgeon. The hearing range of non-mammalian marine life is below the operating range of this system. The two listed fish have limited hearing ranges, below 1 kHz, and the frequency of the sonar being used is between 90 - 120 kHz, which is significantly above the detectable range. In a letter dated August 27, 2012, the National Marine Fisheries Services (NMFS) determined, based on the limited operating range and hours; and the high frequency of the system outside of the hearing range of listed species, NMFS finds that this project is not likely to adversely affect ESA listed Atlantic salmon and Atlantic sturgeon.

A number of whale species, including Minke, Fin, Sei, Humpback, Northern Right and Sperm Whale, are rare but are known to occur in Cobscook Bay with the Minke Whale being the most likely. The low number of operational hours, 40 hours per week, combined with the relative scarcity of many whale species occurring in the operational area would result in a low likelihood of operating in the presence of endangered marine mammals and whales. Non-endangered marine mammals including the Gray Seal, Harbor Seal, Harbor Porpoise, and Atlantic White-Sided Dolphin, may be present near the operating area and are more likely to be present than the whale species listed above.

In an additional consultation letter from NMFS dated February 15, 2012, regarding the Marine Mammals Protection Act (MMPA), NMFS concluded that the taking of marine mammals incidental to the temporary deployment and testing of the SDSN is unlikely and an MMPA incidental take authorization is not necessary. To avoid harassment to marine mammals and receive NMFS' concurrence regarding no take of marine mammals incidental to the proposed project, SSI is required to follow the mitigation and monitoring measures as laid out in the consultation letter.

The Minke, Fin, Sei, Humpback and Northern Right whales have an estimated functional hearing frequency of 7 Hz to 22 kHz. The Grey Seal and the Harbor Seal have an estimated frequency hearing range of 75 Hz to 75 KHz. Sperm Whale, Harbor Porpoise and Atlantic White-Sided Dolphin have an estimated frequency hearing range of 200 Hz to 180 kHz, the highest of the listed marine mammals. The temporary deployment of the SDSN system, the minimal hours of operation and the mitigation measures in place, would reduce and minimize any impact on marine mammals.

Based on review of the project information and the above analysis, DOE has determined the installation of an underwater active acoustic node prototype Swimmer Detection Sonar Network system would not have significant individual or cumulative impact to human health and/or environment. DOE has determined that the work proposed (subject to the NMFS directed mitigation) is consistent with the actions identified in Categorical B3.3 "research related to conservation of fish, wildlife, and cultural resources" and is categorically excluded from further NEPA review under B3.3.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Insert the following language in the award:

You are required to:
SSI is required to follow the mitigation and monitoring measures as laid out in two consultation letters from NOAA on February 15, 2012 and August 27, 2012. If SSI does not implement the mitigation and monitoring measures, then NMFS' concurrence is invalid, as is this NEPA determination.

Should it be determined that, during the project, harassment to marine mammals does occur despite implemented mitigation, NMFS recommends operations be suspended and SSI notify and consult with DOE and NMFS to implement further mitigation to avoid take or apply for an incidental harassment authorization under section 101(a)(5)(D) of the MMPA.

Further consultation with DOE and NMFS is required if new information reveals effects to the listed species or critical habitat, if any modifications occur that would effect a listed species or critical habitat, or if a new species is listed or a critical habitat is designated that may be affected by SSI actions.

Note to Specialist :

Kelly Daigle 9.20.2012

DOE Share: $600,000
Cost Share: $400,000
Total Project Cost: $1,000,000

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Kristin Kerr
NEPA Compliance Officer

Date: 9/24/2012