PMC-ND
(1.08.09.13)

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

RECIPIENT: Florida Atlantic University **STATE:** FL

PROJECT TITLE: Unobtrusive Multi-static Serial LiDAR Imager (UMSLI) for Wide-area Surveillance and Identification of Marine Life at MHK Installations

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000971	DE-EE0006787	GFO-0006787-002	

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.)
B3.3 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.
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 federal funding to Florida Atlantic University (FAU) to develop and test an optical monitoring system known as an UMSLI, that is suitable for marine and hydrokinetic (MHK) full-project lifecycle observation (baseline, commissioning, and decommissioning), with automated real-time classification of marine animals.

DOE completed a previous NEPA review (GFO-0006787-001, CX A9, 09/16/2014) that included project management

(Task 5); system design, specification, and assembly (Task 1); in-lab demonstration (Task 2); and development of video imaging software and classification systems (Subtasks 4.1-4.5).

This NEPA determination applies to activities associated with prototype demonstration in an operational environment (Task 3) and software integration, validation, hardening, and review (Subtasks 4.6-4.9). Some administrative work such as project planning, tracking and reporting would be completed from FAU's Boca Raton, Florida campus. Software development work would be undertaken at the University of Florida's (UF's) Gainesville, Florida campus. In-water demonstration would mobilize from FAU's Harbor Branch Oceanographic Institute Campus in Ft. Pierce, FL and would occur in a 70 square km area of the Atlantic Ocean, 22 km (11.8 nm) east of the Fort Pierce inlet (map available in the project management center (PMC)). Some project activities would take place in marine navigable waters, but would not require permits from either the U.S. Coast Guard or the U.S. Army Corps of Engineers.

The UMSLI device is an iteration of previously developed LiDAR technology. LiDAR, or Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. This device is a camera that would consist of a receiver, transmitter, and digitizer constructed of aluminum and stainless steel. The UMSLI emits no sound and would contain no fluids that may leak. The device would be lowered in a frame made of aluminum tubing via a towline attached to a research vessel. The rigid towline would be of variable length, from 20 ft. to 125 ft. and would consist of two lines–one for mechanical support of the equipment and one for power and data. Lines would be joined together by either tie wraps or with adhesive tape, every 0.5-1 meters. The mechanical support line would either be synthetic or wire rope and the data cable would be a 3/8" diameter shielded and insulated standard wet cable used for offshore instrumentation.

The proposed project would involve deploying the device in water less than 150ft deep on two separate occasions over a period of a few days each. The entire in-water portion of this study would be completed within a span of two months near the end of 2016. The system would be tested in this manner at several locations (either temporarily anchoring the vessel or drifting with the equipment in the water, or both) for a few hours at a time. The goal is to evaluate mid-water, top-water, and bottom-water performance. This testing would it necessitate any disturbance of the sea bottom.

Sensitive species (threatened/endangered and migratory) were identified at both the launch site and the in-water testing site related to this project. However, due to the unobtrusive nature of the device being tested and the fact that activities associated with testing are no more impactful than daily marine activity in the area, DOE has concluded that in-water testing is not likely to adversely affect (NLAA) any of those sensitive species. The U.S. Fish and Wildlife Service (FWS) was consulted regarding migratory birds and other sensitive species found at the launch site and has concurred with DOE's finding of NLAA via document # 04EF2000-2016-TA-0201 which can be found in the PMC. The National Marine Fisheries Service (NMFS) was consulted regarding all sensitive marine species present at the in-water testing site and has concluded that the device has no potential to affect.

Safety protocols would be implemented for both offshore and onshore activities. Onshore activities taking place in university facilities and laboratories would be governed by FAU and UF's Environmental Health & Safety departments. Protocols relating to laboratory and chemical safety, occupational safety, diving and boating, and lasers would be observed at all times. Offshore activities involve commercially-chartered vessels and crews. Southeast National Marine Renewable Energy Center (SNMREC) staff would provide oversight, deck, and configuration support of project details while contractors would be responsible for vessel handling, crane operation, and similar activiteis. This project would generate only conventional waste such as shipping and packaging materials which would be disposed of in accordance with local, state, and federal regulations.

Based on review of the project information and the above analysis, DOE has determined the activities associated with Task 3 and Subtasks 4.6-4.9 as described in the Statement of Project Objectives would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that these activities are consistent with actions outlined in DOE categorical exclusions A9 "Information gathering, analysis, and dissemination", B3.3 "Research related to conservation of fish, wildlife, and cultural resources", and B3.16 "Research activities in an aquatic environment" and is therefore 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:

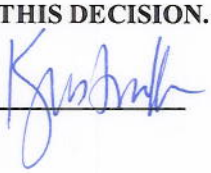
If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior 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 :

Water Power Program
This NEPA determination does not require a tailored NEPA provision.
Review completed by Rebecca McCord 05/10/2016.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin  Date: 5/19/2016

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