

EPMC-ND

(1.08.09.13)

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



RECIPIENT:Dehlsen Associates, LLC

STATE: CA

PROJECT TITLE Numerical Modeling and Experimental Validation of Extreme Conditions Response for the Centipod  
: WEC

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001310	DE-EE0007344	GFO-0007344-001	

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.)
- B3.6 Small-scale research and development, laboratory operations, and pilot projects** Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

## Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Dehlsen Associates, LLC. (DA) to advance the design of their "Centipod" Wave Energy Converter (WEC) for survivability while improving the understanding of mid- and high-fidelity tools as they pertain to Extreme Condition Modeling (ECM). This work would result in a more appropriate structural design of "Centipod" and a greater understanding of the accuracy and reliability of mid- and high-fidelity design for estimating extreme loads.

Activities associated with the proposed project would include numerical and computer modeling, and design, fabrication and testing of models. Numerical modeling and design of the Centipod WEC device would occur at DA offices in Santa Barbara, CA. Additional computer modeling and design work would be completed by the National Renewable Energy Laboratory (NREL) in Golden, CO, Sandia National Laboratories (SNL) in Albuquerque, NM, and DNV-GL in San Diego, CA. Laboratory model fabrication and wave tank testing would be carried out by the Naval Surface Warfare Center-Carderock in Bethesda, MD. The facilities in which lab work would occur have been purpose-built for the type of activities being proposed; therefore, no adverse impacts to sensitive resources are expected as a result of the proposed project. No change in the use, mission or operation of existing facilities would arise out of this effort. The facilities have all applicable permits in place, and would not need additional permits for the proposed activities.

The Centipod device to be fabricated at Carderock would be a 1/30th scale device comprised of two major subsystems. The pods would measure 0.3m in diameter and would be connected to a "backbone" measuring 2.5m in length, with a 0.4m draft and a tube diameter of 0.13m. Tension leg moorings will be used for securing the backbone to the wave basin floor. Moorings will be attached to the backbone through four mooring arms extending from the backbone axis.

No hazardous materials would be utilized during the course of this project and none of the utilized technologies/processes create emissions. Only non-hazardous wastes such as small quantities (<10kg) of scrap material such as aluminum and/or steel, are expected. This scrap material would be discarded or recycled according to Naval Surface Warfare Center Carderock Division's existing procedures. No siting, construction or major expansion



of waste storage, disposal, recovery, or treatment actions/facilities would be required.

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 review of the project information and the above analysis, DOE has determined that the proposed project would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined these tasks are consistent with actions contained in DOE categorical exclusion A9 "information gathering, analysis, and dissemination," and, B3.6 "small scale research and development, laboratory operations, and pilot projects," and are 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.

Insert the following language in the award:

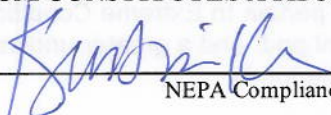
You are required to:

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.

Note to Specialist :

Water Power Technologies Office  
This NEPA determination requires a tailored NEPA provision.  
Review completed by Rebecca McCord on 03/16/2016

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

NEPA Compliance Officer Signature:   
NEPA Compliance Officer

Date: 3/18/2016

**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: \_\_\_\_\_