

PMC-ND

(1.08.09.13)

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

**RECIPIENT:**Dresser-Rand Company**STATE:** NY**PROJECT TITLE** : HydroAir Power Take Off System

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0000848	DE-EE0006609	GFO-0006609-003	GO6609

**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.)
- 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 Dresser Rand Company to demonstrate the effectiveness of the HydroAir radial turbine, increase the turbine's power-to-weight ratio, improve design life and overall system performance, as well as reducing manufacturing and operations and maintenance (O&M) costs.

The project has been divided into 13 Tasks:

- Task 1.0: Detailed Implementation Planning
- Task 2.0: Conceptual Turbine Design
- Task 3.0: Detailed Turbine Design
- Task 4.0: Electrical Design
- Task 5.0: Structural Design
- Task 6.0: Design Shut Off Valve (SOV)
- Task 7.0: Value Analysis / Value Engineering (VA/VE) – Supply Chain Optimization
- Task 8.0: Construction
- Task 9.0: Installation and Commissioning
- Task 10.0: Testing



Task 11.0: System Integration Plan

Task 12.0: Impact Analysis

Task 13.0: Project Management

This award previously received two NEPA determinations (GFO-0006609-001; GFO-0006609-002; CX-A9, CX-B3.6) for activities associated with Tasks 1 – 8, Subtasks 9.1, 9.2, and 9.3, and Task 13. The purpose of this NEPA determination is to review and release activities associated with Tasks 9.4 – 9.7, and Tasks 10 – 12. These tasks include delivery of the turbine to a field site, installation within a wave energy device, dockside field testing, and in-water testing, maintenance and repair at the field site.

The proposed turbine would be installed within the Ocean Energy Wave Energy Buoy (OE Buoy). The OE Buoy would be a floating barge like structure approximately 123 feet in length, 57 feet in width, and 50 feet tall, with the bottom 29 feet protruding into the water. The OE Buoy would be an Oscillating Water Column (OWC) device that would create electricity using an air plenum (air forced through a turbine by a water column). The Dresser Rand turbine would be up to 25 feet in length and 21 feet in diameter, and would be installed within the OE Buoy, above the water line. The OE Buoy would then be deployed for field testing at the Wave Energy Test Site (WETS) located offshore of Marine Corps Base Hawaii (MCB Hawaii) at Kaneohe, Hawaii. Deployment would occur in the fall of 2016 and the OE Buoy would remain in the water for approximately one year.

Deployment of the OE Buoy is a DOE funded project (DE-EE00006924) and was subject to separate NEPA review. As part of that review, consultation regarding deployment, testing and decommissioning of the OE Buoy and all components (including the turbine) was completed with the National Marine Fisheries Service (NMFS). That consultation resulted in a determination of not likely to adversely affect (NLAA) endangered or threatened species, migratory birds, and essential fish habitat. Because the Dresser Rand turbine would be integrated into the OE Buoy, the consultation with NMFS for the OE Buoy is being applied to the Dresser Rand turbine in this determination. (See the OE NEPA review referenced above for additional information on deployment and testing of the OE Buoy).

The proposed project activities relevant to this review would include installation of the turbine within the OE Buoy, as well as testing the turbine at WETS, performing appropriate maintenance during the test period, and analyzing results. Installation of the turbine within the OE Buoy would occur at the location of the OE Buoy fabrication (specifically a ship building facility in Tacoma, WA) and would occur concurrently with that fabrication. Installation would involve the use of steel and welding to secure the turbine in place.

Metal shavings, machine oil, and general packaging would be used in the performance of this project and would be recycled when appropriate. All non-recyclable waste would be disposed of in accordance with federal, state, and local environmental regulations. No siting, construction or major expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required. Existing health and safety policies and procedures would be followed at all times.

In January 2014, the Naval Facilities Engineering Command (NAVFAC PACIFIC) published a Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) regarding the construction of WETS and deployment of devices at WETS. That EA identified Best Management Practices (BMPs) for all in-water work at WETS. Dresser Rand would be required to comply with all BMPs when conducting any in-water work, including maintenance, on the turbine.

Based on the information above, DOE has determined that Task 9.4 – 9.7, and Task 10 - 12 are consistent with actions outlined in DOE categorical exclusions A9 "Information gathering, data analysis, and information dissemination" and B5.25 "Small-scale renewable energy research and development and pilot projects in aquatic environments" and are 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.

Insert the following language in the award:



You are required to:

Dresser Rand is required to follow the Best Management Practices (BMPs) identified in section 2.2.4 (pages 2-22 to 2-24) of the WETS EA.

Note to Specialist :

This review does require a tailored NEPA provision.

Review completed by Roak Parker 4/1/2016

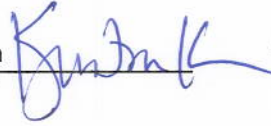
Water Power Program

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

NEPA Compliance Officer Signature: \_\_\_\_\_

Electronically  
Signed By: Kristin Kerwin

NEPA Compliance Officer



Date: 4/6/2016

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