PMC-EF2a
(20402)

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

RECIPIENT: ORPC Alaska

STATE: AK

PROJECT TITLE : Abrasion Testing of Critical Components of Hydrokinetic DevicesD

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000293	DE-EE0003631	GFO-0003631-001	0

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 (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

B3.6 Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).

Rational for determination:

ORPC Alaska (ORPC) is proposing to use DOE funding to understand the impacts of sediment abrasion on marine hydrokinetic (MHK) device components. Testing would assess the vulnerability of technology components to sediment-induced abrasion; it would determine the impact and wear rate that sediment may have on bearings and seals; and it would identify which configurations best resist degradation from suspended sediment abrasion. By gathering data on comparative wear and performance rates in these high suspended sediment conditions, the proposed project would provide valuable information to the MHK industry.

ORPC would partner with a research laboratory to perform flume testing in laboratory-controlled high suspended conditions. The proposed project would take place at the University of Alaska Anchorage (UAA), School of Engineering, located at 3800 University Lake Dr., Anchorage, Alaska 99508. All safety protocols are subject to standards promulgated by the Alaska Occupational Safety and Health Section (AKOSH), US Environmental Protection Agency (EPA), Alaska Department of Environmental Conservation and the Municipality of Anchorage Fire Marshall. In addition to the safety protocols already in place, ORPC would adopt safety protocols specific to hazards that may be encountered while working on the project, including electric shock, flying debris, compressed air, and crush hazards. In the submitted R&D Lab Questionnaire, ORPC has appropriately addressed all issues pertaining to safety, permitting and waste management.

The scope of the proposed project would involve constructing a test flume to circulate water with high suspended sediment content. Test assemblies, including bearings, seals, actuators, motors, and data collection equipment would be integrated into the flume. The flume would be calibrated with fresh and saline waters. Data would be collected over a 12-month period. The focus would be on wear rate and performance of bearings and seals at regular intervals, taking destructive bearing measurements at the end of the test period to accurately quantify cumulative wear.

In view of the information provided by the State and the recipient, DOE has determined that the impacts related to the proposed project are anticipated to have negligible affects to the human and natural environment. The proposed project is consistent with actions outlined in A9 (information gathering) and B3.6 (indoor bench-scale and research and conventional laboratory operations).

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

EF2a prepared by Cristina Tyler on 11/29/2010.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 11/29/10

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