PMC-ND
(1.08.09.13)

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

RECIPIENT: Board of Trustees of the University of Illinois **STATE:** IL

PROJECT TITLE: New blade materials for marine energy converters operating in highly turbulent currents

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002234	DE-EE0009447	GFO-0009447-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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 funding to University of Illinois at Urbana-Champaign (UIUC) to engineer, fabricate, evaluate, and test, materials composite systems for marine and riverine turbines.

UIUC and project partner Sandia National Laboratory (SNL) would engineer and design potential composite systems. Work would include computational simulations, design, and economic evaluations of potential materials. This work would be limited to information gathering and data analysis.

Project partner ATSP Innovations would then fabricate materials for testing. Fabrication would take place at ATSP Innovations which is located within an incubator facility at UIUC. Materials fabricated would be small in size, approximately 1 foot by 1 foot coupons. Materials would then be evaluated and tested at both UIUC and SNL. Test would include abrasion and mechanical testing. All such testing would be bench scale and would be conducted within existing University and Government indoor lab facilities.

UIUC would also conduct environmental testing on composite samples. Up to nine samples would be places into Boneyard Creek. Boneyard creek is a small non-navigable creek that runs through the UIUC and is adjacent to the engineering building. The specific location of the testing would be a creek area approximately 5.5 meters across and which is bounded by masonry walls on each side. The coupons would be permanently affixed to a small support structure which would be lowered into the creek and affixed to the masonry wall. Access to the testing area would be on permanent hardened walkways. The testing would not disturb soil in or around the creek. Coupons would remain in the creek for approximately one year. There are no species of concern within the creek. Testing would not disturb soil. DOE has determined that the proposed testing would have no effect on any species or critical habitat listed under the Endangered Species Act.

Finally, after analysis of previously collected data by UIUC and SNL, ATSP would fabricate turbine blades out of the chosen material for additional testing. Blades would be shipped to project partner University of New Hampshire where they would be tested in the University’s indoor tank testing facility.

All work would occur in preexisting laboratories or fabrication facilities. No new permits would be required. Work would involve use of laboratory equipment for testing, and fabrication of materials under high temperatures. Existing corporate, university and government health and safety measures, including use of protective equipment, would be

followed.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Water Power Technologies Office
This NEPA determination does not require a tailored NEPA provision.
Review completed by Roak Parker, 05/17/2021

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Roak Parker Date: 5/18/2021

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☑ Field Office Manager review not required
☐ Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____

Field Office Manager