

PMC-ND
(1.08.09.13)

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



RECIPIENT: University of Minnesota

STATE: MN

PROJECT TITLE: A Novel Sediment Passage Module Design in Support of Standard Modular Hydropower

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002080	DE-EE0008947	GFO-0008947-001	GO8947

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 the University of Minnesota (UM) to design, develop, fabricate, and test components making up a sediment passage module for modular hydropower.

Initial design work would be conducted by UM (Minneapolis, MN) as well as project partners, Barr Engineering (Minneapolis, MN), Voight Consultant (St. Paul, MN) and Utah State University (Logan, UT).

Initial fabrication and testing would take place at UM St. Anthony Falls Laboratory (SAFL) in Minneapolis, MN. SAFL is a preexisting University lab facility located adjacent to the Mississippi River. Fabrication would be conducted in SAFL using off the shelf components, including lumber and sensors. A preexisting interior flume system which receives water from the Mississippi River would be utilized to test sediment passage. Six initial tests would be conducted.

These would include:

- Submerged permeable vanes/grids
- Coarse sediment inlet with distributed inlet manifold
- Sediment passage conduit
- Fine sediment inlet with distributed inlet manifold
- Dam section design for sediment passage conduit(s)
- Sediment discharge and distribution apron

Tests would be conducted wholly within the SAFL. Tests would utilize sediment purchased from suppliers.

After initial testing additional analysis and design work would be conducted by project partners in an effort to produce advanced design for additional validation and testing. The additional validation and testing would occur at SAFL.

The SAFL is a preexisting University facility adjacent to the Mississippi River. The facility is within a historic district. All research activities would take place inside the laboratory; no installation of equipment will take place outside of the laboratory. The project would use water from the Mississippi River. However, the project would not use sediment from the river or disturb the river bottom. Three endangered clams (the Higgins Eye, The Snuffbox Mussel, and the Winged Mapleleaf) live in Mississippi River near the project site. Because the project will use preexisting water intakes to

utilize Mississippi River water, will not use sediment from the river, and will not disturb the river bottom DOE has determined that the project would have No Effect on the three listed species.

The project would involve the use and handling of various hazardous materials, including metals and industrial solvents. All such handling would occur in-lab. All hazardous materials would be managed in accordance with Federal, state, and local environmental regulations. Existing University health and safety policies and procedures would be followed, including employee training, proper protective equipment (PPE), engineering controls, monitoring, and internal assessments. Additional policies and procedures would be implemented as necessary as new health and safety risks are identified.

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.

Include the following condition in the financial assistance agreement:

1. All equipment must remain indoors; no equipment may be installed outside of the St. Anthony Falls Laboratory.
2. The project may not use sediment from the river or disturb the river bottom.

Notes:

Water Power Technologies Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Roak Parker, 4/6/2020

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**

NEPA Compliance Officer

Date:

4/6/2020

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: _____
Field Office Manager

Date: _____