PMC-EF2a
(2/04/02)

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

RECIPIENT: University of Minnesota **STATE:** MN

PROJECT TITLE : Turbine aeration design software for mitigating adverse environmental impacts resulting from conventional hydropower turbines

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000486	EE0005416	GFO-0005416-001	EE5416

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.

Rational for determination:

DOE is proposing to provide federal funding to the University of Minnesota (UM) to conduct laboratory research and development activities that advance hydropower technology. DOE funding would be used to develop software that models aeration capabilities of hydropower turbines.

All research and laboratory work would be conducted at UM's Saint Anthony Falls Laboratory (SAFL) located at 2 3rd Ave SE, Minneapolis, Minnesota 55414. UM has completed an R&D questionnaire addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal. UM complies with standard laboratory safety procedures and labs are inspected by university staff and safety personnel. Internally, the department is monitored by the project principal investigator. Externally, the department is monitored by the Saint Anthony Falls Research Safety Officer.

In the SAFL water tunnel, high-resolution cameras would collect data on wake velocity and bubble size distribution downstream of the hydrofoil at various operating conditions. Downstream oxygen concentration would also be measured to allow the team to calculate the mass transfer of oxygen from the bubbles to the water at various operating conditions.

UM has all applicable permits in place to conduct research on campus. Solid and liquid effluent, if determined to have a pollutant, is collected by using tail boxes from which the flow can re-circulate and eventually be collected and disposed. Chemical waste is stored in secondary containment and packed for disposal off site.

Based on this information, DOE has determined the work outlined is consistent with activities identified in categorical exclusion A9 (information gathering) and B3.6 (small-scale research and development, laboratory operations and pilot projects).

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of

approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

Cristina Tyler 1.13.2012

DOE Funding: $250,000
Cost Share: $312,969
Total Project Cost: $562,969

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: _____
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