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

RECIPIENT: Hydro Research Foundation - Duke **STATE:** CO

PROJECT TITLE : Hydro Research Foundation University Research Awards

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000832	DE-EE0006506	GFO-0006506-015	GO6506

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.
B3.16 Research activities in aquatic environments	Small-scale, temporary surveying, site characterization, and research activities in aquatic environments, limited to: (a) Acquisition of rights-of-way, easements, and temporary use permits; (b) Installation, operation, and removal of passive scientific measurement devices, including, but not limited to, antennae, tide gauges, flow testing equipment for existing wells, weighted hydrophones, salinity measurement devices, and water quality measurement devices; (c) Natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research, excluding (1) large-scale vibratory coring techniques and (2) seismic activities other than passive techniques; and (d) Surveying and mapping. These activities would be conducted in accordance with, where applicable, an approved spill prevention, control, and response plan and would incorporate appropriate control technologies and best management practices. None of the activities listed above would occur 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the Hydro Research Foundation (HRF) to award grants to individual research projects through its University Research Awards Program. The intent of the grants is to support innovative research related to conventional or pumped-storage hydropower, stimulate interest among students and universities in this research arena, and provide students with a foundation for productive careers related to the hydropower industry.

DOE has completed two previous NEPA determinations for this award. The first NEPA determination (GFO-0006506-001 CX A9 2/7/2014) included development of a Hydro Fellowship Program that would provide 8-10 competitively awarded, hydropower-related, graduate-level research awards for one to two-year periods of study. The second NEPA

determination (GFO-0006506-006 CX A9 8/26/2014) focused on the HRF program awardee at Duke University and included funding of basic living expenses, tuition, project planning, and acquisition of necessary permits. This NEPA determination applies to field work and laboratory activities associated with the proposed Duke University project that were prohibited in NEPA determination GFO-0006506-006.

The award recipient would use HRF grant funding provided by DOE to quantify genetic connectivity within river networks and then use that data to identify locations (dam sites or natural barriers) that disproportionately restrict dispersal of aquatic organisms. Activities include collection of DNA samples from a non-federally listed fresh water mussel species of the Elliptio genus, and analysis of mussel DNA in a Duke University laboratory. The proposed project would target species within the Elliptio complex due to their abundance and their physical characteristics which allow for comparatively easy identification. Sampling of 30-40 individuals at each of 28 sites would take place within the Neuse River basin and all sites would be intentionally selected to avoid contact with federally-listed mussel species. Each site would be visited a maximum of two times. DNA sampling techniques are not expected to cause permanent damage to, or mortality of, the mussels, and all mussel specimens would be returned to the water immediately after DNA sampling is complete. The project lead would collect DNA samples from mussels and would be certified in mussel identification by a recognized expert to ensure that federally listed species are not collected. Permits for the proposed project activities are required from the North Carolina Wildlife Resources Commission (WRC) and the North Carolina Division of Parks and Recreation prior to beginning work. Through coordination with WRC and US Fish and Wildlife Service (USFWS), the project lead has been granted permission to conduct sampling activities. Due to the choice of target species, avoidance of listed species habitat, non-lethal sampling techniques, and permit requirements for the project lead, DOE has determined that there would be no effect to federally-listed, threatened and endangered species or critical habitat. Per agreement between the recipient and USFWS, the recipient will contact both USFWS and NCWRC in the event that a federally-listed species is encountered during the field work.

Lab work would take place primarily at the River Center Laboratory on Duke University's West Campus in Durham, NC. However, genetic samples would be processed at Duke University's Marine Lab Molecular Facility in Beaufort, NC. Lab safety training would be conducted to ensure proper safety protocols are followed.

Based on a review of the project information and the above analysis, DOE has determined that the field work and laboratory activities included in the proposed Duke project would not have a significant individual or cumulative impact to human health and/or environment. The work outlined is consistent with the actions identified in categorical exclusion A9 "information gathering," B3.6 "laboratory operations" and "B3.16 "Research activities in aquatic environments" and is 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 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 :

Water Power Program

This NEPA determination does not require a tailored NEPA provision.

Review completed by Logan Sholar, 11/20/14

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 12/1/2014

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