

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



RECIPIENT: Cube Yadkin Generation, LLC

STATE: NC

PROJECT TITLE : Increasing Hydropower's Operational Flexibility through tri-hybridization and optimization

Notice of Funding Opportunity Number
DE-FOA-0003103

Procurement Instrument Number
DE-EE0011652

NEPA Control Number
GFO-0011652-001

CID Number
GO11652

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:

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.

B4.14 Construction and operation of electrochemical-battery or flywheel energy storage systems

Construction, operation, upgrade, or decommissioning of an electrochemical-battery or flywheel energy storage system within a previously disturbed or developed area or within a small (as discussed at 10 CFR 1021.410(g)(2)) area contiguous to a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as land use and zoning requirements) in the proposed project area and the integral elements listed at the start of appendix B of this part, and would incorporate appropriate safety standards (including the current National Fire Protection Association 855, Standard for the Installation of Energy Storage Systems), design and construction standards, control technologies, and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Cube Yadkin Generation, LLC (New London, NC) to develop and demonstrate an integrated control solution for a photovoltaic (PV) battery energy storage system (BESS) within the existing PV-Hydro Hybrid System at the Tuckertown Hydropower Facility ("Tuckertown"; New London, NC) to create a PV-BESS-Hydro tri-hybrid system.

Award activities would include planning, design, simulation, hardware-in-the-loop development, analyses, permitting, BESS procurement, lab testing, field installation and testing. Eagle Creek Renewable Energy (Bethesda, MD) and GE Verona (Niskayuna, NY) would provide engineering input. GE Verona would also analyze data and develop low voltage controls. Field work would take place at Tuckertown where the BESS system would be integrated into the existing hybrid energy system and tested.

Field installation and testing activities at Tuckertown would not involve modifications to the existing hydropower facility or solar array. A concrete pad would be placed to house the prefabricated BESS system outside of the powerhouse. The installation area is located less than 350 feet from the Winston-Salem Southbound Railway and is actively mowed and maintained with some trees next to the substation located on-site. The exact dimensions of the concrete pad and BESS are currently unknown but are anticipated to be less than 1200 square feet.

The U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) database identifies Monarch Butterfly (Proposed Threatened) and Schweinitz's Sunflower (Endangered) as possibly occurring in or near the project area. Bald Eagle and seven other migratory bird species of conservation concern, as identified in IPaC, may be present seasonally within the project area. The location where the BESS would be installed is a developed area that is actively mowed and maintained next to the existing substation at the Tuckertown facility so does not provide suitable habitat for either Monarch Butterfly or Schweinitz's Sunflower. Due to the breeding schedules of migratory birds, any tree cutting must occur between November 1st and March 31st, per U.S. Fish and Wildlife Guidelines. Considering the lack of suitable habitat, short installation timeframe, small area required for installation, and the above mitigation measure, DOE has determined that there would be no effect to special status species as a result of project activities.

Waste generated during the project would be reused, recycled, or disposed of in accordance with applicable requirements. Air emissions resulting from project activities is expected to be de minimis. Project activities would result in a short-term, intermittent elevation in noise levels during construction.

Individuals working on this project could be exposed to various physical and electrical hazards during construction. Workers would adhere to health and safety policies and procedures. An installation permit would be required locally to install the BESS, prior approval from FERC would be needed before authorizing a non-project use, as well as any permits for any wildlife encountered.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult further with other agencies or stakeholders.

For Categorical Exclusion Determinations:

- The proposal fits within a class of actions that is listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE's NEPA Implementing Procedures (June 30, 2025). To fit within the classes of actions listed in Appendix B to 10 CFR Part 1021, or Appendix B of DOE's NEPA Implementing Procedures, a proposal must satisfy the conditions that are integral elements of the classes of actions in Appendix B of both 10 CFR Part 1021 and DOE's NEPA Implementing Procedures.
- 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.
- The proposed action is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

Any tree cutting must occur between November 1st and March 31st, per U.S. Fish and Wildlife Guidelines for protection of migratory birds.

Notes:

Water Power Technologies Office (WPTO)
NEPA review completed by Alex Colling on 9/25/2025.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



Casey Strickland

NEPA Compliance Officer

Date: 9/26/2025

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: _____