



U.S. Department of Energy Categorical Exclusion Determination Form

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Proposed Action Title: Pacific Northwest National Laboratory - Multi-scale Incentive-Based Control of Distributed Assets

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Richland, WA; East Hartford, CT; Redmond, WA; Rosemead, CA

Proposed Action Description:

Funding will support the project team's small-scale, research and development activities to develop a hierarchical control framework for coordinating the flexibility of a full range of distributed energy resources (DERs), including flexible building loads, to supply reserves to the electric power grid. Specifically, the project team will: (1) model and characterize flexibility and design for all classes of DERs (e.g., commercial building HVAC, appliances, rooftop PV); (2) design control mechanisms at the distribution reliability coordinator-level; (3) develop a simulation environment and hardware-in-the loop (HiL) platform capable of evaluating an integrated control system; and (4) conduct HiL testing and validation for control system performance. If successful, the incentive-based mechanism would enable each DER to communicate its ability to provide flexibility and the time scale over which it can provide the service, therefore cost-effectively and reliably manage dynamic changes in the grid while maintaining customer quality of service.

Project tasks will be conducted in dedicated laboratory and testing facilities at Pacific Northwest National Laboratory (Richland, WA); United Technologies Research Center (East Hartford, CT); Alstom Grid/GE (Redmond, WA); and Southern California Edison (Rosemead, CA). Project tasks will be conducted in accordance with established safety and materials/waste management protocols and pursuant to applicable Federal, State, and local regulatory requirements. Minor modifications will be made to the existing facilities at PNNL to accommodate the proposed work

Categorical Exclusion(s) Applied:

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal 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 proposal that may affect the significance of the environmental effects of the proposal.

The proposal 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.

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer:

Date Determined: 04/27/2016

(This form will be locked for editing upon signature)