



# U.S. Department of Energy Categorical Exclusion Determination Form

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Proposed Action Title: Modeling-enhanced Innovations Trailblazing Nuclear Energy Reinvigoration (MEITNER) (FOA No. DE-FOA-0001798)  
Program

Program or Field Office: Advanced Research Projects Agency - Energy (ARPA-E)

Location(s) (City/County/State): Urbana, Illinois

Proposed Action Description:

The MEITNER Program (hereinafter "Program") seeks to fund the development of innovative technologies that enable designs for lower cost, safer, advanced nuclear reactors. If successful, MEITNER projects will support advanced reactor designs that achieve lower construction cost, enable autonomous operations while also improving safety, and increase the competitiveness of nuclear power.

The Program is composed of 9 small-scale research and development projects that will be conducted by universities, non-profit entities, for-profit entities, and federal laboratories. This Determination covers 1 of the 9 projects (University of Illinois at Urbana-Champaign) and will be amended to address the remaining projects seriatim or simul (see Attachment for more information on the selected projects). This project is covered by and fits within the class of actions identified under the DOE Categorical Exclusions identified below and does not involve any extraordinary circumstances that may affect the significance of the environmental effects of the project. This assessment was based on a review of the proposed scope of work and the potential environmental impact of the project. All 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. No modifications will be made to the existing facilities to accommodate the proposed work.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

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: 06/26/2018

**Attachment: Projects in the MEITNER (FOA No. DE-FOA-0001798) Program**

Prime Recipient (Control No.)	Project Title	Categorical Exclusion
General Atomics (1798-1602)	Reducing Nuclear Plant Capital Costs Using Pre-Cast Fiber-Reinforced Concrete	TBD (pending final review)
HolosGen, LLC (1798-1595)	Transportable Modular Reactor by Balance of Plant Elimination	TBD (pending final review)
University of Illinois at Urbana-Champaign (1798-1576)	Enabling Load Following Capability in the Transatomic Power MSR	A9, B3.6
General Atomics (1798-1557)	Improved Load Following in an Advanced Nuclear Plant Using a High-Efficiency Brayton Cycle with Variable-Speed Generator	TBD (pending final review)
Terrestrial Energy USA, Inc. (1798-1546)	Magnetically Suspended Canned Rotor Pumps for the Integral Molten Salt Reactor	TBD (pending final review)
Yellowstone Energy (1798-1526)	Reactivity Control Device for Advanced Reactors	TBD (pending final review)
Westinghouse Electric Co., LLC (1798-1520)	Self-Regulating, Solid Core Block "SCB" for an Inherently Safe Heat Pipe Reactor	TBD (pending final review)
SUNY University at Buffalo (1798-1517)	Reducing Overnight Capital Cost of Advanced Reactors Using Equipment-Based Seismic Protective Technologies	TBD (pending final review)
North Carolina State University (1798-1512)	Development of a Nearly Autonomous Management and Control System for Advanced Reactors	TBD (pending final review)