



U.S. Department of Energy

Categorical Exclusion Determination Form

Proposed Action Title:

Program or Field Office:

Location(s) (City/County/State):

Proposed Action Description:

Categorical Exclusion(s) Applied:

For the DOE procedures regarding categorical exclusions, including the full text of each categorical exclusion, see 10 CFR 1021.102 and Appendix B to [10 CFR Part 1021](#), and also Section 5.4 (Applying one or more categorical exclusions to a proposal) and Appendices B and C of [DOE's National Environmental Policy Act Implementing Procedures](#) (June 30, 2025).

Requirements and guidance in 10 CFR 1021.102 and DOE's NEPA Implementing Procedures: (See full text in regulation and in Implementing Procedures)

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 proposal that may affect the significance of the environmental effects of the proposal. DOE or an applicant may modify the proposal to avoid reasonably foreseeable adverse significant effects such that the categorical exclusion would apply.

The proposal has not been segmented to meet the definition of a categorical exclusion.

[Note: For proposals that fit within the categorical exclusions listed in Appendix C of DOE's NEPA Implementing Procedures, see DOE's notice of adoption for the subject Appendix C categorical exclusion for additional considerations. DOE notices of adoption for other agency categorical exclusions may be found on [DOE's Section 109 webpage](#).]

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

NEPA Compliance Officer:

Date Determined:



U.S. Department of Energy

Categorical Exclusion Determination Form

Proposed Action Title:

Program or Field Office:

Location(s) (City/County/State):

Proposed Action Description:

Categorical Exclusion(s) Applied:

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:



U.S. Department of Energy Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: Optimizing Nuclear Waste and Advanced Reactor Disposal Systems (ONWARDS) Program (FOA No. DE-FOA-0002530 and FOA No. DE-FOA-0002531 (SBIR/STTR))

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): UT, ID; CA; TX; WA; NY; TN; MA; NJ; MO; SC; NC; IL; GA

Proposed Action Description:

AMENDED NEPA DETERMINATION (See the attached original Programmatic Determination, dated March 9, 2022)
 This Amended Determination follows ARPA-E's receipt of required information and certifications from four (4) Prime Recipients (See Attachment A, in bold) that were not covered under the original Determination. These projects fit within the class of actions identified under the DOE Categorical Exclusion(s) identified below and do 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 projects. 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.

The ONWARDS Program is composed of 11 small-scale research and development projects that will be conducted by universities, non-profit entities, for-profit entities, and federal laboratories. This Amended Determination and the original Programmatic Determination cover all 11 projects (listed in Attachment A). Three Prime Recipients (Deep Isolation, GE Research and TerraPower, LLC) have not yet obtained all necessary permits or approvals (or confirmed there are none), or have not yet identified all locations necessary to perform the contemplated work. Each such recipient is prohibited from commencing applicable project work before (1) obtaining the necessary permits and approvals (or confirming none are necessary) and (2) providing written assurances to ARPA-E of the same.

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: **GEOFFREY GOODE** Digitally signed by GEOFFREY GOODE
Date: 2022.05.24 23:16:09 -04'00'

Date Determined:

**Attachment A: Projects in the ONWARDS (FOA No. DE-FOA-0002530 and DE-FOA-0002531)
Program**

| Prime Recipient (Control No.) | Project Title | Categorical Exclusion |
|---|--|--------------------------|
| GE Research (2530-1501) | Resonance Absorption Densitometry for Materials Assay Security Safeguards (RADMASS) | A9; B3.6 |
| TerraPower, LLC (2530-1515) | Chloride-Based Volatility for Waste Reduction and/or Reuse of Metallic-, Oxide- and Salt-Based Reactor Fuels | A9; B3.6 |
| Citrine Informatics (2530-1528) | Novel Phosphate Waste Forms to Enable Efficient Dehalogenation and Immobilization of Salt Waste | A9; B3.6 |
| Rutgers, the State University of New Jersey (2530-1532) | Pioneering a Cermet Waste Form for Disposal of Waste Streams from Advanced Reactors (PACE-FORWARD) | A9; B3.6 |
| Rensselaer Polytechnic Institute (2530-1533) | Metal-Halide Perovskites as Innovative and Cost-Effective Fluoride Salt Waste Forms | A9; B3.6 |
| Orano Federal Services LLC (2530-1539) | Off-Gas Treatment Process for Conditioning and Recycling Facilities | A9; B3.6 |
| Brigham Young University (2530-1540) | Two-Step Chloride Volatility Process for Reprocessing Used Nuclear Fuel from Advanced Reactors | A9; B3.6 |
| Idaho National Laboratory (2530-1554) | Traveling Molten Zone Refining Process Development for Innovative Fuel Cycle Solutions | A9; B3.6 |
| Oklo Inc. (2530-1563) | Enabling the Near Term Commercialization of an Electrorefining Facility to Close the Metal Fuel Cycle | A9; B3.6 |
| Stony Brook University (2530-1567) | MATRICY: Matrix Engineered TRISO Compacts Enabling Advanced Reactor Fuel cycles | A9; B3.6 |
| Deep Isolation US LLC (2531-1505) | UPWARDS: Universal Performance Criteria and Canister for Advanced Reactor Waste Form Acceptance in Borehole and Mined Repositories Considering Design Safety | A9; B3.6 |