



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:

**Attachment A: Projects in the NEWTON (NOFO Nos. DE-FOA-0003418 and DE-FOA-0003419)
Program**

Prime Recipient (Control No.)	Project Title	Categorical Exclusion
Thomas Jefferson National Accelerator Facility (3418-1520)	High-Efficiency Continuous-Wave RF Sources for High- Power Particle Accelerators	B3.6
Transmutex Inc. USA (3418-1514)	Highly Reliable Ion Source and Injection Beamline to Maximize Proton Beam Availability	B3.6
Thomas Jefferson National Accelerator Facility (3418-1507)	Superconducting Nb3Sn Cavities for Efficient and Reliable 10 MW Proton Linacs	B3.6
Argonne National Laboratory (3418-1534)	Nb3Sn Proton Driver Linac for Accelerator Driven Systems	B3.6
Stony Brook University (3418-1528)	Technical Approach to Achieving Attractive Ads Economics Based on Near-Term High Current Cyclotrons	B3.6
Argonne National Laboratory (3418-1521)	Liquid Lead Suspended Fuel Subcritical Fission Blanket for Nuclear Waste Transmutation	B3.6, B3.15
SHINE Technologies, LLC (3418-1502)	REDUCE: Recover Elements - Destroy Undesirables - Create Energy	B3.6
Board of Trustees of the University of Illinois (3418-1519)	EINSTEIN: Enhanced Integrated Nuclear Systems for Transmutation and Efficient Isolation of Nuclides	B3.6
Oak Ridge National Laboratory (3418-1522)	SMART-OPS: Self-learning Machine intelligence for Accelerator Reliability, Trip Optimization, and Performance Stabilization	B3.6
Omega-P R&D, Inc (3419-1503)	Compact Deuteron Accelerator to Produce Neutrons for Transmutation of Used Nuclear Fuel	B3.6

Bold text indicates the two projects included in the Second Amended CX.



U.S. Department of Energy

Categorical Exclusion Determination Form

Proposed Action Title: Nuclear Energy Waste Transmutation Optimized Now -- NEWTON and NEWTON SBIR-STTR (NOFO Nos. DE-FOA-0003418 and DE-FOA-0003419)

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): CA, CO, CT, IL, IN, MA, MI NY, NC, TN, VA, WI

Proposed Action Description:

FIRST AMENDED PROGRAMMATIC NEPA DETERMINATION (See attached original Determination, dated August 8, 2025). The Nuclear Energy Waste Transmutation Optimized Now (NEWTON) program will support the research and development of technologies that enable the transmutation of used nuclear fuel to reduce the impact of storage in permanent disposal facilities. Specifically, the projects focus on three technical categories: (A) generating and accelerating particle beams that can initiate transmutation reactions; (B) modeling, designing, and fabricating target materials for transmutation of used nuclear fuel, incorporating transmutable materials into a target, and processing transmuted material for waste or isolation; and (C) integrating the technologies developed in Categories A and B into a techno-economic analysis and life-cycle assessment of a transmutation facility and maintaining a materials and components database for transmutation facilities. If successful, NEWTON projects would enable the economic viability of transmutation at a scale that will significantly reduce the mass, volume, activity, and effective half-life of the existing stockpile of commercial used nuclear fuel to be disposed of in a geological repository, improving safety, and reducing energy-related emissions, thereby increasing U.S. energy security.

The NEWTON Program is composed of 11 small-scale research and development projects that will be conducted by universities, large businesses, small businesses, and national laboratories. This First Amended Determination adds 2 projects to the original Determination (see Attachment A). All 8 projects fit within the class of actions identified under the DOE Categorical Exclusions identified below. This assessment was based on a review of the proposed scope of work and the potential environmental impacts of each 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.

Categorical Exclusion(s) Applied:

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

B3.15 – Small-scale indoor research and development projects using nanoscale materials

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: **GEOFFREY
GOODE**

Digitally signed by GEOFFREY
GOODE
Date: 2026.02.11 12:30:31 -05'00'

Date Determined:

**Attachment A: Projects in the NEWTON (NOFO Nos. DE-FOA-0003418 and DE-FOA-0003419)
Program**

Prime Recipient (Control No.)	Project Title	Categorical Exclusion
Thomas Jefferson National Accelerator Facility (3418-1507)	Superconducting Nb₃Sn Cavities for Efficient and Reliable 10 MW Proton Linacs	B3.6
Argonne National Laboratory (3418-1534)	Nb₃Sn Proton Driver Linac for Accelerator Driven Systems	B3.6
Stony Brook University (3418-1528)	Technical Approach to Achieving Attractive Ads Economics Based on Near-Term High Current Cyclotrons	B3.6
Argonne National Laboratory (3418-1521)	Liquid Lead Suspended Fuel Subcritical Fission Blanket for Nuclear Waste Transmutation	B3.6, B3.15
SHINE Technologies, LLC (3418-1502)	REDUCE: Recover Elements - Destroy Undesirables - Create Energy	B3.6
Board of Trustees of the University of Illinois (3418-1519)	EINSTEIN: Enhanced Integrated Nuclear Systems for Transmutation and Efficient Isolation of Nuclides	B3.6
Oak Ridge National Laboratory (3418-1522)	SMART-OPS: Self-learning Machine intelligence for Accelerator Reliability, Trip Optimization, and Performance Stabilization	B3.6
Omega-P R&D, Inc (3419-1503)	Compact Deuteron Accelerator to Produce Neutrons for Transmutation of Used Nuclear Fuel	B3.6

Bold text indicates the two projects included in the First Amended CX.



U.S. Department of Energy

Categorical Exclusion Determination Form

Proposed Action Title: Nuclear Energy Waste Transmutation Optimized Now -- NEWTON and NEWTON SBIR-STTR (NOFO Nos. DE-FOA-0003418 and DE-FOA-0003419)

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): CA, CT, IL, IN, MA, MI, NY, NC, TN, VA, WI

Proposed Action Description:

The Nuclear Energy Waste Transmutation Optimized Now (NEWTON) program will support the research and development of technologies that enable the transmutation of used nuclear fuel to reduce the impact of storage in permanent disposal facilities. Specifically, the projects focus on three technical categories: (A) generating and accelerating particle beams that can initiate transmutation reactions; (B) modeling, designing, and fabricating target materials for transmutation of used nuclear fuel, incorporating transmutable materials into a target, and processing transmuted material for waste or isolation; and (C) integrating the technologies developed in Categories A and B into a techno-economic analysis and life-cycle assessment of a transmutation facility and maintaining a materials and components database for transmutation facilities. If successful, NEWTON projects would enable the economic viability of transmutation at a scale that will significantly reduce the mass, volume, activity, and effective half-life of the existing stockpile of commercial used nuclear fuel to be disposed of in a geological repository, improving safety, and reducing energy-related emissions, thereby increasing U.S. energy security.

The NEWTON Program is composed of 11 small-scale research and development projects that will be conducted by universities, large businesses, small businesses, and national laboratories. This Determination covers 6 of the 11 projects (listed in Attachment A). The 6 projects fit within the class of actions identified under the DOE Categorical Exclusions identified below. This assessment was based on a review of the proposed scope of work and the potential environmental impacts of each 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.

Categorical Exclusion(s) Applied:

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

B3.15 – Small-scale indoor research and development projects using nanoscale materials

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: **GEOFFREY
GOODE**

Digitally signed by GEOFFREY
GOODE
Date: 2025.08.20 10:56:05 -04'00'

Date Determined:

**Attachment A: Projects in the NEWTON (NOFO Nos. DE-FOA-0003418 and DE-FOA-0003419)
Program**

Prime Recipient (Control No.)	Project Title	Categorical Exclusion
Stony Brook University (3418-1528)	Technical Approach to Achieving Attractive Ads Economics Based on Near-Term High Current Cyclotrons	B3.6
Argonne National Laboratory (3418-1521)	Nb ₃ Sn Proton Driver Linac for Accelerator Driven Systems	B3.6, B3.15
SHINE Technologies, LLC (3418-1502)	REDUCE: Recover Elements - Destroy Undesirables - Create Energy	B3.6
Board of Trustees of the University of Illinois (3418-1519)	EINSTEIN: Enhanced Integrated Nuclear Systems for Transmutation and Efficient Isolation of Nuclides	B3.6
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Omega-P R&D, Inc (3419-1503)	Compact Deuteron Accelerator to Produce Neutrons for Transmutation of Used Nuclear Fuel	B3.6