



# U.S. Department of Energy

## Categorical Exclusion Determination Form

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Proposed Action Title:

Program or Field Office:

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

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Proposed Action Description:

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Categorical Exclusion(s) Applied:

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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:

**Attachment A: Projects in the GOPHURRS (FOA Nos. DE-FOA-0003047 and DE-FOA-0003048)  
Program**

<b>Prime Recipient (Control No.)</b>	<b>Project Title</b>	<b>Categorical Exclusion</b>
<b>Pacific Northwest National Laboratory/ Exodigo (3047-1514)</b>	<b>Subsurface Intelligence for Undergrounding Operations: Rapid AI-Based Geophysical Imaging and Advanced Visualization</b>	<b>A9, B3.6, B3.11</b>
<b>Cornell University (3047-1535)</b>	<b>Mini-Mole: Combustion Powered Tip Fracturing and Undulatory Locomotion Robot</b>	<b>A9, B3.6,</b>
<b>Arizona State University (3047-1523)</b>	<b>High Speed Installation of Buried Medium Voltage Electrical Distribution Lines Using a Single Pass Systems</b>	<b>A9, B3.6, B3.11</b>
<b>Sandia National Laboratories (3047-1517)</b>	<b>Advancing Horizontal Directional Drilling for Rapid Undergrounding of Electrical Utilities</b>	<b>A9, B3.6, B3.11</b>
Arcbyt, Inc. (3048-1502)	Integrated Thermal Spallation Drill for Heterogeneous Ground Conditions	A9, B3.6
Case Western Reserve University (3047-1533)	Peristaltic Conduits with Stiff Skeletons and Compliant Skins	A9, B3.6
General Electric Vernova Advanced Research (3047-1503)	SPEEDWORM: Swift, Portable and Efficient Electrical undergrounding using a Waterfree, cOmpact and Reliable Machine	A9, B3.6, B3.11
Melni Technologies (3048-1514)	Enhancing Reliability and Resilience of Underground Distribution System using Innovative Splicing	A9, B3.6
Oceanit Laboratories, Inc. (3048-1510)	Artificial Intelligence and Unmanned Aerial Vehicle Real-Time Advanced Look-Ahead Subsurface Sensor (AURALSS)	A9, B3.6, B3.11
Prysmian Cables and System USA, LLC (3047-1509)	Error-Free Splicing Machine for Underground Power Cables	A9, B3.6
RTX Technology Research Center (3047-1505)	UNderground Imaging with QUantum sEnsors (UniQue)	A9, B3.6, B3.11
Virginia Polytechnic Institute and State University (3047-1515)	Multi-physics, Intelligent Sensing System (MISS) For Real-Time, Look-Ahead While Drilling	A9, B3.6

**Bold text indicates the four projects included in the First Amended CX.**



# U.S. Department of Energy

## Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: Grid Overhaul with Proactive, High-speed Undergrounding for Reliability, Resilience, and Security Program -- GOPHURRS and GOPHURRS SBIR/STTR (FOA Nos. DE-FOA-0003047 and DE-FOA-0003048)

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): AL, CA, CO, CT, FL, GA, HI, ID, IL, IN, KY, MA, NY, OH, TN, TX, UT, VA

Proposed Action Description:

The Grid Overhaul with Proactive, High-speed Undergrounding for Reliability, Resilience, and Security (GOPHURRS) program seeks to simplify the construction of underground medium voltage (MV, 5 – 46 kilovolt) power distribution grids by adopting a concurrent drilling and conduit installation method of construction to reduce costs, increase speed, and improve the safety of undergrounding operations. Specifically, GOPHURRS projects will develop technology and methodology to reduce or prevent surface disturbance from underground utility installation and apply autonomous and other technology for drilling, splicing, and installation to increase safety and reduce errors, with an overall goal of locating the power grid below ground to prevent or reduce outages from above-ground threats such as weather. If successful, the GOPHURRS program will enable a clean energy transition toward decarbonization through upgrading and expanding the grid infrastructure in support of increasing renewable energy production and reducing greenhouse gas emissions.

The GOPHURRS program is composed of 12 small-scale research and development projects that will be conducted by universities, non-profit and for-profit entities, small businesses, and federal laboratories. This Determination covers 8 of the 12 projects (listed in Attachment A). The 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:

A9 - Information gathering, analysis, and dissemination

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

B3.11 - Outdoor tests and experiments on materials and equipment components

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.

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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: 2024.03.19 14:05:07 -04'00'

Date Determined:

**Attachment A: Projects in the GOPHURRS (FOA Nos. DE-FOA-0003047 and DE-FOA-0003048)  
Program**

Prime Recipient (Control No.)	Project Title	Categorical Exclusion
Arcbyt, Inc. (3048-1502)	Integrated Thermal Spallation Drill for Heterogeneous Ground Conditions	A9, B3.6
Case Western Reserve University (3047-1533)	Peristaltic Conduits with Stiff Skeletons and Compliant Skins	A9, B3.6
General Electric Vernova Advanced Research (3047-1503)	SPEEDWORM: Swift, Portable and Efficient Electrical undergrounding using a Waterfree, cOmpact and Reliable Machine	A9, B3.6, B3.11
Melni Technologies (3048-1514)	Enhancing Reliability and Resilience of Underground Distribution System using Innovative Splicing	A9, B3.6
Oceanit Laboratories, Inc. (3048-1510)	Artificial Intelligence and Unmanned Aerial Vehicle Real-Time Advanced Look-Ahead Subsurface Sensor (AURALSS)	A9, B3.6, B3.11
Prysmian Cables and System USA, LLC (3047-1509)	Error-Free Splicing Machine for Underground Power Cables	A9, B3.6
RTX Technology Research Center (3047-1505)	UNderground Imaging with QUantum sEnsors (UniQue)	A9, B3.6, B3.11
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