



Department of Energy
National Nuclear Security Administration
Categorical Exclusion Determination Form



Categorical Exclusion ID#: NA-24-0007

Proposed Action Title: Defense Nuclear Nonproliferation's Enabling Capabilities in Technology Consortium Award – Lead Institution, University of Tennessee

Program or Field Office: Office of Projects & Acquisition (NA-20)

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

Proposed Action Description:

DNN's Enabling Capabilities in Technology (TECH) Consortium aims to create new scientific knowledge in areas critical to their nuclear nonproliferation mission, to apply new knowledge to enable new nuclear nonproliferation capabilities, and to generate the human capital needed for the US national laboratories to address emerging challenges in nuclear nonproliferation. The University of Tennessee Knoxville (UTK) is the lead institution, joined by the Colorado School of Mines, Air Force Institute of Technology, Clemson University, University of California at Santa Barbara, University of Hawai'i, Louisiana State University, Massachusetts Institute of Technology, North Carolina State University, University of Oklahoma, Oregon State University, Texas A&M University, University of Texas at San Antonio, University of Utah, and Virginia Tech, in collaboration with national laboratory partners. Project objectives include:

1. Develop new technologies and methods to detect, locate and characterize production of special nuclear material and others, such as tritium. The fate and transport in the environment of relevant effluents is an important consideration.
2. Develop new technologies and methods for nuclear incident response.
3. Develop new methods and technologies to safeguard nuclear material and detect diversion of it from civilian nuclear power purposes.
4. Develop new remote sensing tools and applications in support of nuclear nonproliferation. DNN R&D defines remote sensing as sensing at distances greater than 100 meters, both terrestrial and space based.
5. Develop new or improved laboratory measurement capabilities of environmental samples, both gas and particulate.
6. Develop data science, machine learning, and artificial intelligence methods and applications in support of these objectives. This also includes the development of digital twins relevant to nuclear nonproliferation as well as the incorporation of computer vision and augmented/virtual reality capabilities to enhance mission planning and effectiveness.
7. Develop solutions to future nuclear nonproliferation priorities by identifying and leveraging or countering emerging and disruptive technologies.

Research would be conducted in existing research facilities. This determination would cover minor equipment modifications, upgrades, and/or purchases at existing research facilities. This determination does not include facility upgrades that require new construction, the installation of major stationary sources or equipment, or the interior/exterior renovation of a historic or potentially historic building. If federal funds are proposed to be used for these purposes or the scope of the awards changes, a new environmental checklist is required to be submitted to NNSA for additional NEPA analysis.



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Categorical Exclusion(s) Applied:

- A 9 Information gathering, analysis, and dissemination
 - B 1.31 Installation or relocation of machinery and equipment
 - B 3.6 Small-scale research and development, laboratory operations, and pilot projects
 - B 3.11 Outdoor tests and experiments on materials and equipment components
 - B 3.12 Microbiological and biomedical facilities
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Regulatory Requirements in 10 CFR 1021

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 1021.

To find that a proposal is categorically excluded, DOE shall determine the following:

- (1) The proposal fits within a class of actions listed in Appendix A or B to 10 CFR Part 1021, Subpart D;
- (2) There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal; and
- (3) The proposal has not been segmented to meet the definition of a categorical exclusion. The 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.

The classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, include the following conditions as integral elements of the classes of actions. To fit within the classes of actions in 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 of the Department of Agriculture, the Environmental Protection Agency, and the National Institutes of Health.

NEPA Compliance Officer Determination:

Based on my review of information conveyed to me and in my possession concerning the proposed action, as NEPA Compliance Officer (as authorized under NNSA NAP 451.1 and DOE P 451.1), I have determined that the proposed action fits within the specified class(es) of action and I have reviewed the proposal for integral elements. I have determined that there are no extraordinary circumstances present and that the proposal has not been segmented to meet the definition of a



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categorical exclusion. Therefore, the application of a categorical exclusion is appropriate.

NEPA Compliance Officer:

Date Determined: