

**NEPA Categorical Exclusion Determination for
Nonproliferation Research and Development for Proliferation Detection
Funding Opportunity Number: DE-PS52-09NA29330**

The U.S. Department of Energy (DOE) National Nuclear Security Administration's (NNSA) Office of Nonproliferation Research and Development (NA-22) has the responsibility to improve national capabilities to detect indicators of weapons of mass destruction (WMD) proliferation. NA-22 applies the unique skills and capabilities of the NNSA and DOE national laboratories and facilities to meet the nonproliferation research and development (R&D) requirements necessary to close nonproliferation technology gaps identified through close interaction with other U.S. government agencies and in support of US government policy. NA-22 develops the tools, technologies, techniques, and expertise to address the most challenging problems related to detection, localization, and analysis of the global proliferation of WMD with special emphasis on nuclear weapon technology and the diversion of special nuclear materials. In addition, NA-22 funds research that supports counter-proliferation and counter-terrorism missions where there is synergy with the nonproliferation mission. The objective of this program is to increase the participation of academia in NA-22 programs thereby broadening NA-22's R&D sources and diversifying the types of organizations working on its programs.

This program supports research in the following topic areas:

- Remote Sensing – Hardware, Software/Algorithm; and System Development;
- Simulation, Modeling, and Algorithms
- Radiation Sensors and Advanced Materials Research;
- Radiological Source Replacement; and
- Global Safeguards.

The application packages submitted in response to funding opportunity number DE-PS52-09NA29330 and the technical reviews for these research proposals performed for the Nonproliferation Research and Development for Proliferation Detection Program did not reveal any extraordinary related circumstances that might affect the significance of the environmental effects of these proposals. The proposals are not “connected” to other actions with potentially significant impacts, or to other proposed actions with cumulatively significant impacts, and are not precluded by 40 CFR 1506.1 or 10 CFR 1021.211. The proposals do not result in adverse effects to historic properties included or eligible for inclusion in the National Register of Historic Places (National Register) and would not impact sensitive resources (e.g., threatened and endangered (T/E) species, wetlands and floodplains). Nor do these proposals threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE and/or Executive Orders; require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators and facilities for treating wastewater, surface water, and groundwater; or disturb hazardous substances, pollutants, contaminants, or petroleum and natural gas products excluded from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that pre-exist in the environment such that there would be uncontrolled or unpermitted releases.

Accordingly, and pursuant to the DOE NEPA Implementing Procedures at 10 CFR 1021, Subpart D, Appendix A and Appendix B, the categorical exclusion (CX) determination applies to the following

proposals submitted in response to the joint solicitation for applications issued by the National Nuclear Security Administration.

Proposed Project Title	Institution
Single Pixel Studies of Magnetic Microcalorimetry for Gamma-ray Spectroscopy, PDP10-68	University of New Mexico
Strengthening Materials Accountability in Reprocessing Plants: Rapid, In-line Monitoring of Actinide Isotopes and Species During Reprocessing, PDP10-91	Washington State University
Development of a Thin-film Boron Phosphide Solid State Neutron Detector, PDP10-71	University of Tennessee
High Sensitivity Laser-Ablation Inductively-Coupled-Plasma TOF Mass-Spectrometry for Nuclear Material Detection, PDP10-38	Purdue University
Modeling of SNM Fission Signatures and Cosmic-ray Induced Neutron Backgrounds, PDP10-37	Purdue University
Digital 3-Dimensional Position-Sensitive Semiconductor Radiation Detectors, PDP10-45	University of Michigan
Ultrafast Large Area ZnO Thermal Neutron Scintillators Near-Term Replacement of ^3He , PDP10-18	Georgia Institute of Technology
Super-Resolution in Remote Sensing by Quantum Phase Amplification, PDP10-36	Purdue University
Compressive Sensing and Super-Resolution of Passive Millimeter Wave Images, PDP10-32	Northwestern University
Modeling and Radiation Transport for Simulating Input to Remote Sensing Algorithms, PDP10-41	Regents of the University of California (UC Davis)
Enhancing Energy Migration and Proportionality in Scintillation Materials, PDP10-74	University of Tennessee
Purification and Growth InI and InXTl1-X Crystals for Nuclear Detection Applications, PDP10-22	Illinois Institute of Technology
Perceptual Data Analysis and Semantic Information Extraction for Geospatial Intelligence, PDP10-33	Northwestern University
Multi-Element Polarimetric Millimeter Wave Radiometer Utilizing Optical Up-Conversion, PDP10-80	University of Delaware
Compact, Highly Specific and Selective Mid-Infrared (MIR) Chemical Sensors, PDP10-11	Clemson University Research Foundation
Enhanced Radiometric Scene Simulation Through Incorporation of Process Models, PDP10-50	Rochester Institute of Technology

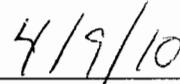
Global Atmospheric Profiling Techniques for the Improvement and Increased Utility of Atmospheric Compensation Methods, PDP10-19	Hampton University, Brigham Young University, and Utah State University
A Particle Accelerator on a Chip for Radionuclide Replacement in Industrial Applications, PDP10-65	Regents of the University of California (UCLA)
Smart Data Embedding and Inverse Solution Algorithms, Modeling and Simulation for Nonproliferation, PDP10-39	Purdue University
Solids Identification Using Hyperspectral Imagery: Extracting Reliable Signatures from a Sea of Variability, PDP10-08	Brigham Young University
Critical Analysis for Model Selection for Nuclear Proliferation Predictions, PDP 10-04	North Carolina State University / UNC Chapel Hill
Production of Gamma-ray Spectral Libraries for Nuclear Cargo Monitoring, PDP 10-31	North Carolina State University

Based on my review, I have determined that the proposed actions are categorically excluded from further NEPA review and documentation.

A9, A 11 and B3.6 are the applicable CXs that cover the proposed actions in the DOE NEPA Implementing Procedures, 10 CFR 1021, Subpart D, Appendix A and Appendix B.



Mary E. Martin, NNSA HQ NEPA Compliance Officer



Date