

# DOE-ID NEPA CX DETERMINATION

## Idaho National Laboratory

**SECTION A. Project Title:** Test and Evaluation Support - United States (U.S.) Department of Homeland Security (DHS) Domestic Nuclear Detection Office (DNDO) Assessments Directorate (ASD)

### **SECTION B. Project Description and Purpose:**

The potential smuggling of special nuclear materials (SNM) and other radiological materials poses a significant threat to national security. To address these threats, critical technologies need to be researched, developed, and evaluated to secure the borders of the United States (U.S.). The Idaho National Laboratory (INL) maintains Subject Matter Experts (SMEs) and the capabilities to research and test radiological and nuclear detection equipment and facilities to handle radiological and nuclear materials in quantities and configurations specified by Domestic Nuclear Detection Office (DNDO) testing needs. Under the proposed action, INL would provide consulting, modeling, technical support, and Testing and Evaluation (T&E) support (including research activities such as test plan development, test execution, radiological and nuclear material handling, operation and maintenance of test bed venues, and test data management) to the U.S. Department of Homeland Security (DHS) DNDO Assessments Directorate (ASD).

In addition to basic program management oversight and reporting, INL would provide SME support to DNDO's T&E efforts - including development of test plans, collecting and assessing scientific data, assessing data quality and providing data analysis and supporting reports to DNDO. T&E support may also require planning and execution of technical and operational demonstrations to assess the feasibility, utility, and suitability of select candidate systems as potential solutions for radiological and nuclear interdiction operations. These tasks may require travel to testing locations and handling of nuclear and radioactive materials (e.g., SNM, sealed sources and Radiation Signature Training Devices). Operational demonstrations located on the INL would be conducted using current infrastructure and may require the temporary assembly of equipment and structures on previously disturbed sites to provide a realistic demonstration of possible responses to challenges. The results of the technical and operational demonstrations would be used in combination with theoretical, programmatic, and feasibility assessments to make final large-scale deployment decisions.

In order to meet specialized requirements of DNDO's research and testing needs, INL would maintain current test bed infrastructure to provide the following features:

- Capabilities to conduct testing of radiological and nuclear detection equipment
- Facilities to handle SNM in specified quantities (not to exceed Category 1) and specialized configurations
- Qualified experts to handle fissile and radiological material
- Computing equipment and expert personnel.

The T&E of detection capabilities described in this Environmental Checklist (EC) will utilize various detection systems. These systems may include, but are not limited to the following:

- Gross count gamma-ray and neutron radiation detection systems
- Spectroscopic gamma-ray and neutron radiation detection systems
- Handheld radionuclide identifiers and neutron detectors
- Personal radiation detectors, including spectroscopic personal radiation detectors
- Transportable and mobile radiation detection systems
- Active interrogation systems for the identification of nuclear material
- Non-intrusive imaging systems capable of detecting nuclear or radiological materials.

Further, DNDO occasionally establishes testing operations at both Department of Energy (DOE) and non-DOE sites to support test campaigns, research and development of products, and development of procedures and other services. DNDO projects that require source containment vessel or packaging support beyond the DOE laboratory complex would utilize INL to receive and ship materials to and from non-DOE Nuclear Regulatory Commission (NRC) and Agreement States to establish temporary capabilities at operational locations for which no licenses currently exist.

SME support for this research and development activity may also include 1) technical support to DNDO's Pilot programs in which research campaigns are planned to evaluate radiation detection system technologies and concepts of operations (CONOPS) within the different operational environments; 2) the DNDO Captured Material (CAPMAT) Program; 3) assisting in modeling and designing test objects and prediction of U.S. Customs and Border Protection (CBP) Ports of Entry (POE) detection system response; 4) supporting the Rapid Response Testing (R2T) program, which enables DNDO to quickly measure and analyze the behavior of fielded radiation detection capabilities under certain conditions, detection scenarios, or concerns for emerging radiological threat sources, non-threat sources and surrogates; and 5) the development of radiological and nuclear standards - including both U.S./international standards and the GRaDER® Program managed in accordance with separate rules set by DNDO. INL may also support the design and assembly of source test objects in coordination with other National Laboratories for DNDO.

Phase 1 of the proposed action, known as The Vendor Data Collection Event (VDCE), would be conducted at the Nevada National Security Site (NNSS). Specific INL tasks for this event include 1) participation in teleconferences and planning meetings, 2) packaging and shipping plutonium reference sources to support T&E measurements, 3) providing on-site support to the data collection event including SME knowledge and handling of INL-supplied sources, and 4) packaging and returning the plutonium reference sources to INL-storage.

As these broad activities become better defined, this EC will be revised or new ECs completed as work arises.

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**SECTION C. Environmental Aspects or Potential Sources of Impact:**

**Air Emissions**

This work has the potential to generate chemical and radiological emissions as well as fugitive dust. Specific activities, such as creating or maintaining infrastructure must be evaluated for potential air emissions prior to initiating work. The Program Environmental Lead will determine if the proposed work falls under an existing air permit applicability determination (APAD) or if a new APAD or air emissions permit is required. Radioactive emissions at INL facilities will be reported under the Radioactive NESHAPS report.

Project activities have the potential to generate fugitive dust.

Work has the potential to result in the disturbance or removal of asbestos.

**Disturbing Cultural or Biological Resources**

It is not evident that a potential to disturb Cultural or Biological resources exists. However, specific activities, such as temporary assembly of equipment and portable structures, have the potential to disturb cultural and biological resources.

**Generating and Managing Waste**

Radioactive, Industrial, Hazardous, and Mixed Waste may be generated at INL facilities. Transuranic (TRU) waste, High Level Waste, and Spent Fuel are not anticipated. Waste will be managed by Waste Generator Services (WGS).

**Releasing Contaminants**

While not expected, generator refueling activities have the potential to spill petroleum to the ground. Any spills will be immediately cleaned up, reported to the Battelle Energy Alliance, LLC (BEA) Spill Notification Team at 241-6400, and spill residues will be transferred to WGS for disposal.

**Using, Reusing, and Conserving Natural Resources**

All applicable waste will be diverted from disposal in the landfill when possible.

**SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification:** Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

For projects checked above as "CX," the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

**References:** 10 CFR 1021, Appendix B, B3.6, "Small-scale research and development, laboratory operations, and pilot projects" and B1.30 "Transfer actions"

**Justification:** Project activities are consistent with 10 CFR 1021, Appendix B, B3.6, "Siting, construction, modification, operation, and decommissioning of facilities for small-scale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment;" and B1.30 "Transfer actions, in which the predominant activity is transportation, provided that (1) the receipt and storage capacity and management capability for the amount and type of materials, equipment, or waste to be moved already exists at the receiving site and (2) all necessary facilities and operations at the receiving site are already permitted, licensed, or approved, as appropriate. Such transfers are not regularly scheduled as part of ongoing routine operations."

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act)       Yes     No

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on: 5/10/2016