CX Posting No.: DOE-ID-INL-12-022

SECTION A.	**Project Title:** Radiological Dispersal Device (RDD)/Improvised Nuclear Device (IND) Material Training Activities and Evaluations Using Radiation Emitting Sources/Material/Devices - Overarching

SECTION B. Project Description

This Environmental Checklist (EC) will be an overarching EC for future training as described in this EC.

Work Description
The purpose of this overarching EC is to plan, prepare, coordinate, ship materials off-site, observe, and conduct training for response to radiological incidents at the Idaho National Laboratory (INL) locations and non-INL customer-hosted locations (such as Armed Forces installations). Only work performed at the INL is covered under this EC. Training at non-INL customer-hosted locations may be subject to separate National Environmental Policy Act of 1969 (NEPA) review performed by the customer. Each training exercise at the INL will be reviewed and documented in an exercise-specific INL EC.

The INL conducts training activities to support numerous programs both on- and off-site as part of the INL, Homeland Security (N&HS), Nuclear Nonproliferation Division (NND), where the use of numerous radiological and nuclear materials are employed. The work activities may include the following:

- Performing measurements on targets using x ray, and gamma ray radiation producing equipment such as portable x-ray generators, Betatrons and radioisotope sources.
- Production of radiation fields for training and exercises that emulate pre- and post-RDD and IND radiation environments.
- Production of contamination areas (inside facilities) to facilitate instruction on training objectives such as contamination control, donning/doffing, sampling techniques, etc.
- Examination of the effects and influence of radiation on equipment and measurement devices.
- Validation of techniques, procedures and processes that respective teams use in response to events involving radioactive materials.

Activities that are performed to support the above objectives include:

- Using only Category IV or less quantity of Special Nuclear Materials.
- Use of fissionable material in accordance with INL and Battelle Energy Alliance, LLC (BEA) procedures.
- Storing, and transferring nuclear materials in compliance with INL and BEA procedures."
- Providing the resources to receive, transport and return radiological/nuclear materials both on- and off-site.
- Handling and staging radioactive materials and sources.
- Operating radiation generating devices/equipment.
- Provide assistance to achieve training and exercise objectives. This includes demonstration of equipment and supervising activities in a controller/evaluator position.
- Provide Health Physics/Radiation Control supervision for the handling of radiological/nuclear materials and work in radiologically controlled areas that include both staging and supporting the exercise and training and participating in the exercise and training.
- Provide radioactive sources to establish radiation fields for the exercise and emulate radioactive samples collected from the field.
- Provide dosimetry for training participants, as needed.

The project approach is to assemble the equipment, personnel, radiological/nuclear materials and sources, and procedures to be able to conduct the training at the INL or to transport a training activity or exercise event to locations that are not equipped to otherwise perform such activities. At the end of each off-INL training activity the equipment and sources will be returned to the INL or transferred to the next training activity.

The RDD/IND Material Training Course is designed to allow participants to train and exercise in near real life radiological environments where they are expected to use their training to perform measurements, interrogate materials, perform radiation/contamination surveys and collect radioactive, potentially contaminated samples that might be associated with an IND or RDD. Sealed sources may be used at all training venues. Radioactive contamination may be released at indoor locations where contaminated materials/structures can be controlled and allowed to decay or disposed as radioactive waste. Isotopes used to generate indoor contamination areas will be short-lived such that decay to unregulated levels can be expected in less than 60 days. Isotopes used to generate indoor contamination areas may be generated on-site or may be commercially available medical isotopes.

Training exercises at the INL may include material/surface decontamination using basic methods such as wipes and application of less than 25 gallons of decontamination solution. Solutions will be reviewed, before application, to identify management requirements for subsequent waste such as rags and excess decon solution.

The major equipment used in this activity include: radiation producing equipment such as radioisotopes, x-ray and gamma ray generating equipment and irradiated materials, such as, uranium and plutonium sources that have been irradiated to provide a source of fission products. Special Nuclear Materials used in this activity will be limited to Category IV or less and will be managed, used, and stored in compliance with INL and BEA procedures.

Training activities at the INL may take place at a variety of locations such as Zero Power Physics Reactor (ZPPR), Transient reactor Experiment and test Facility (TREAT), Central Facilities Area (CFA), and (CITRC). This work may be combined with exercises at the Radiological Response Training Ranges (RRTR) and the National Security Test Range (NSTR). Training will typically take place at existing facilities rather than undisturbed areas of the INL. An exercise in an otherwise undisturbed INL location is not covered under

this overarching EC and will require a separate EC. RDD/IND "defeat" devices using thermites, kinetic or explosive energy will be used only at the NSTR. Defeat devices will not result in the release of radioactive material or contamination.

Training at areas such as the CITRC facility will generally remain on paved areas and in structures/buildings. Minor work in adjoining vegetated areas may take place subject to additional review and approval by Cultural and Biological personnel. "Minor work" is defined as foot travel or work in which mowing or vegetation destruction/removal is not required. Soil disturbance may include taking samples at depths up to six inches. If Cultural artifacts are discovered during sampling, the soil will be left in place and the sample will be taken at a different location. Notify the INL Cultural Resource Management Office (CRM) of the discovery.

The CITRC (Power Burst Facility [PBF]) area is known for its richness in cultural artifacts. All personnel participating in training exercises at PBF will be required to read a short training document regarding cultural artifacts prior to the training exercise. In addition, Figure 1 shows a map of one particularly sensitive area adjacent to PBF-622 and -623 that must be excluded from ALL ground disturbances such as offroad vehicles, soil sampling and even casual foot traffic.

Figure 1:

Use of vehicles, including all-terrain vehicles (ATVs), off of paved areas and road shoulders during the Nesting Bird season will require a Nesting Bird survey no more than two weeks prior to beginning the exercise. Use of vehicles, including ATVs, off of paved areas or road shoulders at any time will require review and approval from Biological personnel.

Solid and liquid wastes will be collected in appropriate containers. Low-Level Radioactive waste may be stored for a time sufficient to allow radioactive decay followed by disposal as non-radioactive waste. Portable sanitary facilities may be staged in support of a training exercise. Effluent may be disposed at the CFA sewage treatment plant or at an off-site municipal sewer system. As an alternative to portable sanitary facilities, permanent facilities may also be used.

Portable/mobile electrical generators may be used to support temporary work locations.

SECTION C. Environmental Aspects / Potential Sources of Impact:

Air Emissions - Air Emissions may occur from mobile/portable electrical generators; all generators will be in place for periods much less than one year so no permitting is required. Air emissions may also occur from ATVs and other mobile sources.

Releases of radioactive contamination indoors may result in release to the environment. All indoor releases of contamination will be considered in annual Rad NESHAPS reporting.

Disturbing Cultural/Biological Resources - Use of vehicles, including ATVs, off of paved areas or road shoulders at any time will require review and approval from the INL CRM. A written approval letter must be in project files prior to beginning the exercise.

The CITRC (PBF) area is known for its richness in cultural artifacts. All personnel participating in these training exercises will be required to read a short training document regarding cultural artifacts prior to the training exercise. In addition, Figure 1 shows a map of one particularly sensitive area that must be excluded from ALL ground disturbances such as offroad vehicles, soil sampling and even casual foot traffic.

Cultural reviews must be conducted for all proposed soil disturbance (i.e., soil samples at depths up to six inches) and use of vehicles off of paved areas or road shoulders (i.e., mowers, 4x4s, ATVs). A written clearance recommendation must be in the project files prior to beginning the exercise. If cultural artifacts or bones are unexpectedly encountered during soil disturbance or offroad travel, activities must be re-directed and the INL cultural resource office must be notified.

Figure 1:

Use of vehicles, including ATVs, off of paved areas or road shoulders during the Nesting Bird season will require a Nesting Bird survey no more than two weeks prior to beginning the exercise. Use of vehicles, including ATVS, off of paved areas at any time will require review and approval from Biological personnel. A written approval letter must be in project files prior to beginning the exercise. Damage to vegetation may require revegetation - an effort which may require several years to complete.

Generating and Managing Waste - This work is expected to generate industrial waste, Low-Level radioactive waste, and sanitary waste. Hazardous or mixed waste is not expected. Industrial waste will include common office trash and non-radioactive sample materials. Common wash water may also be generated. Wash water may be discharged to a local septic system or at the CFA sewage treatment plant. Low-Level Radioactive waste will include personal protective equipment (PPE) and sample materials. Indoor materials such as furniture, carpet, and similar materials may also be contaminated and disposed as radioactive waste if not left in place for decay. Radioactive PPE and decon solution may be disposed as radioactive waste or stored for decay until cleared by RadCon personnel for disposal as non-radioactive. Liquid radioactive waste may be solidified prior to disposal in a landfill. Sanitary waste may be disposed at the CFA sewage treatment plant or at a permitted off-INL sewage treatment plant such as the Idaho Falls system. Industrial and Low-Level radioactive waste will be managed by WGS.

Releasing Contaminants - Air emissions are expected to be the primary air contaminant. Air emissions are expected to include exhaust from portable/mobile electrical generators, ATVs, and potential radioactive emissions to the air from buildings. Exhaust emissions are not regulated. Potential radioactive emissions will be considered in the annual Rad NESHAPS report.

SECTION D. Recommended Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

Note: For Categorical Exclusions (CXs) the proposed action must not: 1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, including requirements of DOE orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) adversely affect environmentally sensitive resources. In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not “connected” nor “related” (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

References: 10 CFR 1021, Appendix B to Subpart D categorical exclusion B1.2 "Training exercises and simulations", Idaho National Laboratory Radiological Response Training Range EA/FONSI (DOE/EA-1776) [October 2010], National Security Test Range EA/FONSI (DOE/EA-1157) [April 2007].

Justification: The proposed action is consistent with 10 CFR 1021, Appendix B to Subpart D categorical exclusion B1.2 "Training exercises and simulations (including, but not limited to, firing-range training, small-scale short-durtion force-on-force exercises, emergency response training, fire fighter and rescue training, and decontaminationand spill cleanup training) conducted under appropriately controlled conditions and in accordance with applicable requirements."

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: 8/30/2012