



U.S. Department of Energy
Office of Nuclear Energy
National Environmental Policy Act
Determination

NEPA Identification: DOE-ID-INL-17-034

Proposed Action Title: Radiological Dispersal Device (RDD)/Improvised Nuclear Device (IND) Material Training Activities and Evaluations Using Radiation Emitting Sources/Material/Devices R4

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

Proposed Action Description:

Revision 4

The U.S. Department of Energy (DOE), through Idaho National Laboratory (INL), proposes to add radium-223 (Ra-223), a short-lived radionuclide, to the approved inventory of radiological materials used for emergency response training activities at the Radiological Response Training Range (RRTR) and the National Security Test Range (NSTR). The purpose of this proposed action is to support realistic radiological response training by allowing controlled dispersal of Ra-223 to establish contamination areas at RRTR and NSTR. These areas would allow trainees to practice emergency response protocols, improve proficiency using radiological survey equipment, identify contamination, and implement contamination-control techniques.

Training activities would occur at the RRTR and NSTR and may include both indoor and outdoor training scenarios. Indoor or otherwise contained scenarios may occur within controlled environments such as Conex containers, buildings, containment tents, or similar structures designed to limit the spread of contamination. Outdoor scenarios may include controlled mechanical dispersal of Ra-223 directly to the ground or soil outside of containment within approved RRTR and NSTR training areas.

Ra-223 would be applied or dispersed in a controlled manner to create defined contamination areas. For outdoor training scenarios, Ra-223 may be mechanically dispersed onto ground or soil surfaces outside of containment using approved dispersal methods and equipment, such as mechanical spreaders, sprayers, or other approved devices. Dispersal would be limited to approved RRTR and NSTR training areas and conducted under established radiological controls.

The Ra-223 inventory and activity would be well characterized prior to use and would include consideration of associated daughter products and minor impurities, as applicable. Training events would continue to be conducted within the operational and environmental assumptions previously evaluated for RRTR and NSTR activities, including assumptions regarding event frequency, duration, release fractions, receptor locations, and environmental transport pathways. Assessments of potential dose and environmental impacts from operational training and testing activities at the Radiological Response Training Range (RRTR) and National Security Test Range (NSTR) at the INL Site are documented in ECAR-3533 and ECAR-3565 respectively. These assessments consider the potential release of radioactive and non-radioactive hazardous constituents to the environment from operational activities and evaluate potential impacts to human receptors via the air, groundwater and soil pathways. The assessments were and continue to be conducted to support the Environmental Assessment (EA) (DOE/EA-2063) in accordance with the National Environmental Policy Act of 1969 (NEPA) (42 USC § 4321 et. seq., 1970).

The analyses performed in the assessments do not consider the method of dispersal, nor the magnitude of the explosive charge. For the atmospheric pathway, calculations conservatively do not take any credit for reduction in dispersal from use of containment techniques; rather, they assume full release to the atmosphere with no plume deposition, depletion, or radioactive decay during transport. For the groundwater and soil pathways, the full inventory is assumed to be released into the soil in an area the size of a containment tent.

It is highly unlikely the training and testing scenarios evaluated in the latest assessments (ECAR-3533 Rev 5 and ECAR-3565 Rev 4) will adversely impact human health based on comparisons of calculated dose and concentration against regulatory standards and risk-based screening levels. Conservative estimates of dose to workers and the public from atmospheric transport of possible radionuclide releases are far below federal radiation-protection standards. The maximum potential dose to the public for the air pathway from the latest assessment is 0.041 mrem/yr.

Conservative estimates of potential contaminant concentrations in groundwater are less than federal drinking-water standards or risk-based screening levels. Predicted radionuclide concentrations in surface soils are below risk-based screening levels. Actual radiation doses and groundwater and surface-soil concentrations are likely to be much less than those calculated because of the conservative assumptions and parameters employed in the analyses.

This revision explicitly allows for the mechanical dispersal of Ra-223 to the soil at NSTR and RRTR, and does not condone explosive dispersal of Ra-223.

Revision 3



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Scope for Isotopes

The Radiological Response Training Range (RRTR) was established to allow first response entities to exercise tactics, techniques, and procedures in as realistic training environments. When creating training environments range operations staff explosively disperse short-lived radionuclide activity within close proximity at or near the actual detonation site. The realism of the training environment provides opportunity for the teams to prepare for real-world threat events and to deploy and test their tools or new technologies while also maintaining ALARA.

A description of the RRTR and potential environmental consequences are provided in the Environmental Assessment (EA) for the National Security Test Range (NSTR) and RRTR (DOE/EA-2063). In order to facilitate more realistic training environments, DOE needs to use shorter lived radioisotopes at different rates in addition to those that were described in the EA. The additional activities are described as follows:

- The initial activity limit for KBr dispersal at both RRTR and NSTR as described in the EA identifies 60 Ci of KBr per year total (12 Ci/year at RRTR and 48 Ci/year at NSTR). It is proposed to maintain the overall activity limit of 60 Ci of KBr annually between both ranges, but to remove the 12 Ci/year restriction at RRTR.
- Use of three new isotopes have been developed with shorter half-lives. Due to the current need of the RRTR, it is important to develop isotopes that have a shorter half-life than the current 36 hours found with KBr. In conjunction with Washington State University three new isotopes have been developed that have a 16-hour half-life which will help with work efficiency at RRTR. The Isotopes are Sodium Nitrate (NaNO_3), Gallium Metal (Ga), and Gallium Oxide (Ga_2O_3). It is proposed to use the three isotopes 12 times a year at 1 Ci each time.
- Language in DOE/EA-2063 specifies that two radioisotopes - Ga-68 and Technetium (Tc)-99m - are only approved for dispersal in a contained environment (e.g., conex containers, buildings, etc.) to create contamination area(s). Trainees enter these contamination areas to practice emergency response protocol and increase proficiency using survey equipment. It is requested that both radioisotopes be evaluated for dispersal in outdoor environments, including establishment of activity limit and frequency of deposition. It is proposed that these radioisotopes are tested 6 times a year with Ga-68 using 40 mCi each test and 12 times a year 200 mCi per test for the Tc-99m.
- It is proposed that the CFA Gun Range B21-626 (Old shoot house) be used as an additional training location. CFA is already listed in ECP INL-17-069 as an approved training location. This facility provides a more realistic training environment for assault and breacher training. This building is a set of 8-foot panels that can be rearranged or reconfigured. The building is open to the atmosphere. Proposed activities would include Ga-68 or Tc-99m to be spray on the panels and concrete pad that they sit on. These will not be detonated only sprayed from a spray bottle.

In order to determine if the proposed changes are significantly different from what was analyzed in the EA, the changes were re-evaluated against the bounding conditions, and the potential impacts have been identified. Variances from the analysis provided in the EA were recalculated with CAP88 EPA-approved program, databases, and associated programs to estimate dose and risk from radionuclide air emissions.

Radiation Exposure and Risk:

The revisions to Engineering Calculations and Analysis (ECAR) for the assessment of potential dose and environmental impacts for RRTR (ECAR-3533 R3) and NSTR (ECAR-3565 R2) included an evaluation of five additional material types (Ga, Ga_2O_3 , NaNO_2 , Ga-68, and Tc-99m) combined with the six material types evaluated from the previous ECAR revisions. In addition, dose coefficients and lung absorption types for radionuclides were updated with the most recent values, and regional screening levels for nonradionuclides and preliminary remediation goals (PRGs) for radionuclides were also updated to the most recent values.

It is highly unlikely the test scenarios evaluated in the two ECARs will adversely impact human health based on comparisons of calculated dose and concentration against regulatory standards and risk-based screening levels. Conservative estimates of dose to workers and the public from atmospheric transport of possible radionuclide releases are far below federal radiation protection standards. Conservative estimates of potential contaminant concentrations in groundwater are less than the federal drinking water standards or screening levels. Predicted radionuclide concentrations in surface soils are below risk-based screening levels, except for Ge-68 (material Ga-68) for the worker. The Ge-68 soil concentration can be made less than the worker PRG, if the number of annual tests using Ga-68 is reduced from 12 to 6. Actual radiation doses and groundwater and surface-soil concentrations are likely to be much less than those calculated because of the conservative assumptions and parameters employed in the modeling. For example, atmospheric-transport



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calculations assume the entire inventory of each material type is readily released to the atmosphere and no plume deposition, depletion, or radioactive decay occurs during transport. The calculations also assume the same meteorological conditions (e.g., wind velocity, wind direction, stability class) that produce the maximum 95th percentile concentration (i.e., concentration representing the 95th percentile of a distribution of concentrations derived from 3 years of hourly meteorological data) at each receptor location are the same for all 12 tests during the year, and each receptor is assumed to be present during all 12 tests.

The surface-soil assessment assumes the entire inventory of each test is deposited in the top 5 cm of soil. No atmospheric dispersal is assumed, and the radionuclides are subject only to leaching and radioactive decay. The groundwater-pathway modeling is conservative in that it is one-dimensional in the unsaturated zone (no lateral spreading/dilution) and assumes the entire inventory of contaminants infiltrates into the ground at the same location for every test. This is especially conservative for particulate radionuclides because they would have to dissolve or corrode first and some would be dispersed into the atmosphere. The groundwater receptor is also assumed to consume water directly from a hypothetical well positioned in the location of maximum concentration. In addition, conservative degradation rates were used, and volatilization was not considered for the nonradioactive chemicals modeled. And finally, the calculations assume all 12 tests will be performed at the same place at both locations, and all 11 radioactive material types will be used for each test. This is conservative because it is anticipated that no more than two material types will be used per test.

Given the results and the conservative assumptions employed in the atmospheric-pathway modeling, actual doses are expected to be far less than regulatory dose limits.

Based on the nature of the proposed changes, other resource areas (i.e., accident analysis, ecological resources, infrastructure, air quality, etc.) would not likely be impacted because the methods for applying radioactive material or training methods would not change from what is currently analyzed in the EA; therefore, additional analysis is not warranted.

Based on this supplement analysis, the proposed changes do not constitute a substantial change from what was previously analyzed, and there are no significant circumstances for information relevant to environmental concerns. Therefore, the EA, as presently published, provides the environmental and bounding analysis for the proposed actions.

Revision 2

The purpose of this revision is to expand the use of short-lived isotopes in unsealed forms to support Idaho National Laboratory (INL) radiological and contamination control training at both on- and off-Site locations. This revision will specifically address changes to the use of Tc-99m and Ga-68, and does not change the use of the other short-lived radionuclides addressed in Revision 1 to this EC.

As described in Revision 1 to this EC, liquid Tc-99m is currently used to support on-Site training activities, and limited off-Site use at Kirtland Air Force Base. The current project activities allow for dispersal of the Tc-99m in liquid form only inside containment (i.e., inside a building, CONEX container, or other closeable structure). This revision (Revision 2) expands the use of Tc-99m and Ga-68 for radiological and contamination control training at on- and off-Site locations by allowing the liquid material to be dispersed on smooth, non-porous surfaces that are accessible, and easily decontaminated and surveyed for removable and fixed contamination (i.e., residual Tc-99m and Ga-68). INL personnel will use non-fixed items (training props) such as desks, tables, vehicle surfaces and training aids to assist with the contamination training. Use of smooth, non-porous surfaces will facilitate proper and thorough decontamination of the items at the end of the exercise. These training props may, or may not be located inside closed structures. In the event that the training props selected for contamination by the short-lived Tc-99m and Ga-68 are not located inside closed structures, or are placed on porous surfaces (such as a wooden floor) non-permeable material such as plastic sheeting will be placed underneath the items to prevent the radioactive materials coming into contact with the ground, porous surface or equipment and instrumentation.

Any surface that is contaminated with the short-lived isotopes Tc-99m or Ga-68 will be decontaminated and surveyed for free release at the conclusion of the training event in accordance with the INL Radiological Protection Program (RPP). Any item that cannot be free-released in accordance with the INL RPP will be returned to INL (if at an off-Site location) for appropriate disposition under the direction of Waste Generator Services (WGS).

Revision 1

This revision incorporates additional activities to those described in the original environmental checklist (EC) as identified below:

- Production of contamination areas (inside and outside facilities) to facilitate instruction on training objectives such as contamination control, donning and doffing, sampling techniques, etc.
- Conduct render-safe exercises using gel-block and foam-tent containment.



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Radioactive contamination may NOT be released at off-INL locations other than Kirtland Air Force Base. Isotopes used to generate specific radiation signatures at off-INL locations will be from sealed sources only. The containers will not be opened.

Radioactive contamination may be released at indoor locations or in outdoor containment where contaminated materials and structures can be controlled and allowed to decay or disposed as appropriate. Potassium bromide and activated Cu-64 (using containment) will be used at outdoor locations and will remain within the controlled/posted detonation area until the materials have decayed. Liquid technetium-99m and sol-gel glasses containing Ba-140, Zr-95, Te-132, Nd-147, Mo-99, Th-232, U-235 and U-238 will be used in indoor or containment locations. Indoor locations include tents, conex containers and similar structures.

Containment will be used to prevent the spread of Tc-99m, Cu-64, and sol-gel contamination to the environment.

Containment may consist of plastic ground cover and covered pick-up beds or similar items. Sol-gel glasses containing Ba-140, Zr-95, Te-132, Nd-147, Mo-99, Au-196, Ca-47, Ge-69, and Sc-44m will be dispersed to the surface of a vehicle bed or similar feature and collected for analysis. Once testing or training is complete, the containment or vehicle covering will be closed and the materials will be allowed to decay. Long lived materials will be disposed according to laboratory procedures. It should be noted that sol-gel glasses containing Th-232, U-235 and U-238 will be handled within a glove box and will not be open to the environment.

Training exercises at the RRTR may utilize the use of gel-block and foam-tent containment technologies. These technologies are used as a method of minimizing dispersal of radioactive materials and ballistic projectiles during disablement activities and are specific to national and international stabilization teams. One hundred gel blocks (8" x 9" x 16") are typically used for a single training event. It should be noted that ballistic projectiles (particles) may be used in conjunction with gel-block containment technologies. Ballistic particles will consist of Cu-64 beads 1mm x 1mm in size. Due to the size, particles are not expected to travel more than 100 ft from ground zero. In the case where gel-blocks are used, little to no particles will travel beyond ground zero. Foam containment will include the use of 8ft fabric cubes and/or 16ft diameter fabric domes filled with foam. The use of foam and gel blocks was analyzed in EC INL-16-038, and the conditions, instructions, and mitigation measures identified in EC INL-16-038 also apply to use of the materials described in this EC as follows:

"A review of the foam, including modeling the potential impact of both radiological and chemical components of the work, indicates a potential long-term impact to soil and groundwater. The potential impact will be ameliorated and investigated as part of this demonstration. The air and groundwater dispersal modeling performed as part of DOE/EA-1776 remains valid for the radioactive KBr used in the demonstration. However, a simple model of soil contamination indicates that one chemical has the potential to exceed the concentration which would result in a Hazard Quotient (HQ) of 1. If this is correct, investigation under Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA) may be required. In addition, GWScreen modeling indicates that repeated use of the foam over time may result groundwater concentrations which may require CERCLA investigation.

"The following measures will be taken to investigate and mitigate these modeling indicators:

1. Soil contaminated with dispersed/collapsed foam will be sampled over a period of 30 days to identify the actual initial chemical concentration and any reduction in concentration over time due to environmental or biological degradation.
2. After 30 days of radioactive decay and sampling, contaminated soil may be left in place if actual soil concentrations do not exceed a CERCLA HQ of 1. If the HQ exceeds 1, all contaminated soil will be excavated and disposed as non-radioactive waste.
3. GWScreen modeling indicates that a single use of the foam does not result in groundwater contamination. This EC approves only one use of the foam. This EC will be revised to address additional use of foam IF data on the actual soil concentration results in GWScreen modeling which demonstrates groundwater contamination is not an issue. If potential groundwater contamination remains an issue, preventive measures such as use of secondary containment for the foam may allow additional future use of the foam.



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4. Soil sampling results will be used to determine if future or repeated use of foam would require soil excavation and disposal. If soil contamination remains an issue, preventive measures such as use of secondary containment for the foam may allow additional future use of the foam.
5. During the 30-day decay and sampling period, the area around the contamination will be fenced to exclude stock and small animals. It should be noted that use of the foam material at off-INL locations showed that wildlife (rodents/mammals/birds) was not attracted to the dispersed foam."

Secondary containment will be used when the use of Cu-64 with gel-block or foam containment is proposed. The use of training aides will be used to support RDD/IND training courses. Training aides include various real-world props such as vehicles (cars, trucks, buses, planes, trailers, etc.), external vehicle parts, concrete barriers and blocks, steel beams, walls and buildings and materials of various construction. All vehicles will be drained of fluids and hazardous materials removed prior to use. A combination of these training aides may be used to create a rubble pile to mimic a collapsed structure.

On occasion, testing of detection equipment (vehicle and drone mounted, air-samplers) and techniques is performed in concert with RRTR training activities. For vehicle mounted systems, the external RRTR activities will be conducted on established two-track roads. Testing will include the use of sealed sources to produce radiation fields of post RDD and IND radiation environments. This work will be conducted under LI-344 "RDD Material Training Activities and Evaluations using Radiation Emitting Sources and/or Devices."

Training Exercises at the off-INL non-Federal Locations

Off-INL locations in Eastern Idaho that have been used in the past include Melaleuca Field in Idaho Falls, Eastern Idaho Fairgrounds in Blackfoot, Sandy Downs racetrack in Idaho Falls, and Holt Arena in Pocatello. Other locations in the western region may include locations such as Snowbird Ski Resort in Utah. Work at off-INL non-federal locations will only occur with the approval of the lease holder (or similar) and/or property owner.

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 supply a source of fission products. The project will limit Special Nuclear Materials to Category IV or less and manage, use, and store the material in compliance with INL and BEA procedures.

Isotopes used to generate specific radiation signatures may be commercially available medical isotopes in sealed containers. The containers will not be opened.

There will be no dispersals of radioactive material at off-INL locations in Eastern Idaho. Dispersal off of the INL Site will only occur at federal installations (e.g., Department of Defense sites, military bases, etc.). Those installations would conduct their own NEPA reviews.

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

Original EC

This Environmental Checklist (EC) will cover future training as described in this EC.

The purpose of this 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, off-INL locations in Eastern Idaho, and off-INL Federal customer-hosted locations (such as Armed Forces installations). This EC covers work performed at the INL and off-INL Eastern Idaho locations. Training at off-INL customer-hosted locations may be subject to additional National Environmental Policy Act of 1969 (NEPA) review performed by the customer. The term "INL locations" includes site and in-town facilities, such as EIL, where there is approval to use sealed sources. Off-INL locations in Eastern Idaho include Melaleuca Field in Idaho Falls, Eastern Idaho Fairgrounds in Blackfoot, Sandy Downs racetrack in Idaho Falls, and Holt Arena in Pocatello. Work at off-INL area will only occur with the approval of the property owner.

The INL conducts training activities using radiological and nuclear materials to support programs both on- and off-site as part of the INL, Homeland Security (N&HS), Nuclear Nonproliferation Division (NND) activities. 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.
- Creating radiation fields for training and exercises that emulate pre- and post-RDD and IND radiation environments.
- Creating contamination areas (inside facilities) to facilitate instruction on training objectives such as contamination control, donning/doffing, sampling techniques, etc.



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- Examining the effects and influence of radiation on equipment and measurement devices.
- Validating 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.
 - Following INL and Battelle Energy Alliance, LLC (BEA) procedures for using fissionable material.
 - Storing and transferring nuclear materials in compliance with INL and BEA procedures.
 - Supplying the resources to receive, transport, and return radiological/nuclear materials for INL locations.
 - Supplying the resources to receive, transport, and return radiological/nuclear materials for off-INL locations in compliance with NRC requirements.
 - Handling and staging radioactive materials and sources.
 - Operating radiation generating devices/equipment.
 - Achieving training and exercise objectives through demonstrating equipment and supervising activities in a controller/evaluator position.
 - Supervising, through Health Physics/Radiation Control, 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.
 - Supplying radioactive sources to set up radiation fields for the exercise and emulate radioactive samples collected from the field.
 - Conducting dosimetry training for 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 do 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 do 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 training venues. At INL locations and at Kirtland Air Force Base, radioactive contamination may be released at indoor locations where contaminated materials/structures can be controlled and allowed to decay or disposed as radioactive waste; radioactive contamination may NOT be released at other off-INL locations. 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 or specific radiation signatures may be generated on-site or may be commercially available medical isotopes.

Training Exercises at the INL

The term “INL locations” includes site and in-town facilities, such as EIL, where there is approval for using sealed sources. 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. Project personnel will review solutions before application, to identify management requirements for subsequent waste such as rags and excess decontamination 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 supply a source of fission products. The project will limit Special Nuclear Materials to Category IV or less manage, use, and store the material 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 already disturbed facilities rather than undisturbed areas of the INL. An



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exercise in an otherwise undisturbed INL location is not covered under this EC and requires 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 INL Site areas such as the CITRC facility will generally stay on paved areas and in structures/buildings. Minor work in adjoining vegetated areas may take place subject to more 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.

Solid and liquid wastes will be collected in containers. Low-Level Radioactive waste may be stored for a time 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.

Training Exercises at the off-INL Eastern Idaho Locations

Off-INL locations in Eastern Idaho include Melaleuca Field in Idaho Falls, Eastern Idaho Fairgrounds in Blackfoot, Sandy Downs racetrack in Idaho Falls, and Holt Arena in Pocatello. Work at off-INL area will only occur with the approval of the property owner.

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 supply a source of fission products. The project will limit Special Nuclear Materials to Category IV or less manage, use, and store the material in compliance with INL and BEA procedures.

Isotopes used to generate specific radiation signatures may be commercially available medical isotopes in sealed containers. The containers will not be opened.

There will be no dispersals of radioactive material at off-INL locations in Eastern

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

locations.

Training Exercises at Other Federal Facilities

Training at off-INL customer-hosted locations may be subject to additional National Environmental Policy Act of 1969 (NEPA) review performed by the customer.

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 supply a source of fission products. The project will limit Special Nuclear Materials to Category IV or less manage, use, and store the material in compliance with INL and BEA procedures.

Dispersals of radioactive material (including medical isotopes) may only take place at Kirtland AFB. These dispersals will be inside of a conex container.

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

Environmental Aspects and Impacts:

Air Emissions

Project activities may create fugitive dust during project activities that disturb soil.

Air emissions from engines are expected to be the primary air pollutant, including exhaust from portable/mobile electrical generators, and ATVs. Generators are temporary and will be in place for periods of much less than a year.

These combustions sources are exempt from permitting requirements. Emissions from explosives are expected.

Radioactive emissions from short lived isotopes are expected, and will be considered in the annual Rad NESHAPS report.



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Discharging to Surface, Storm, or Ground

Water

N/A

Disturbing Cultural or Biological Resources

There is the potential for this work to impact vegetation and for project personnel to interact with various wildlife species. A Biological Resource Review will be arranged within two weeks prior to the initiation of any activities that might disturb soil or vegetation and again following completion of project activities. A nesting bird survey is included with the Biological Resource Review for actions occurring between April 1 - October 1 per compliance with the Migratory Bird Treaty Act. Bat surveys are also included with the Biological Resource Review in accordance with the INL Bat Protection Plan.

CULTURAL: A Section 106 review was completed under CRMO project number (BEA-26-058) and resulted in No Historic Properties Affected. [optional] Please refer to Holds Points and Project Specific Instructions.

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. All waste will have a path for disposition prior to being generated.

Industrial waste includes 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 decontamination 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 before disposal in an off-site 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.

Activities at off-INL locations in Eastern Idaho are expected to generate only industrial waste as only sealed sources will be used at those locations. That waste will be transported back to INL facilities for disposal.

Releasing Contaminants

When chemicals are used during the project there is the potential for spills that could impact the environment (air, water, soil).

Using, Reusing, and Conserving Natural Resources

N/A

References:

References: B1.2 "Training exercises and simulations", DOE/EA-1776 "Idaho National Laboratory Radiological Response Training Range, Idaho", DOE/EA-2063 "Final Environmental Assessment for Expanding Capabilities at the National Security Test Range and the Radiological Response Training Range at Idaho National Laboratory "

B1.2 Training exercises and simulations. Training exercises and simulations (including, but not limited to, firing-range training, small-scale and short-duration force-on-force exercises, emergency response training, fire fighter and rescue training, and decontamination and spill cleanup training) conducted under appropriately controlled conditions and in accordance with applicable requirements.

DOE/EA-1776 Idaho National Laboratory Radiological Response Training Range Environmental Assessment

DOE/EA-2063 Final Environmental Assessment for Expanding Capabilities at the National Security Test Range and the Radiological Response Training Range at Idaho National Laboratory.



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For Categorical Exclusion Determinations:

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, 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); (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, Appendix B. The proposal has not been segmented to meet the definition of a categorical exclusion. Segmentation can occur when a proposal is broken down into small parts in order to avoid the appearance of significance of the total action. However, segmentation does not include proposals that are developed and potentially implemented over multiple phases where each phase results in a decision whether to proceed to the subsequent phase. There is no extraordinary circumstance related to the proposal that is likely to cause a reasonably foreseeable significant adverse effect or for which DOE does not know the environmental effect. Extraordinary circumstances are unique situations presented by specific proposals, including, but not limited to, scientific controversy about the environmental effects of the proposal; uncertain effects or effects involving unique or unknown risks; and unresolved conflicts concerning alternative uses of available resources.

: The proposal fits within the classes of actions listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE's NEPA Implementing Procedures and satisfies the conditions that are integral elements of the classes of actions therein. The proposal does 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, 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, Appendix B.

There is no extraordinary circumstance related to the proposal that is likely to cause a reasonably foreseeable significant adverse effect or for which DOE does not know the environmental effect. Extraordinary circumstances are unique situations presented by specific proposals, including, but not limited to, scientific controversy about the environmental effects of the proposal; uncertain effects or effects involving unique or unknown risks; and unresolved conflicts concerning alternative uses of available resources.

The proposal has not been segmented to meet the definition of a categorical exclusion. Segmentation can occur when a proposal is broken down into small parts in order to avoid the appearance of significance of the total action. However, segmentation does not include proposals that are developed and potentially implemented over multiple phases where each phase results in a decision whether to proceed to the subsequent phase.

The activities described in this scope have been analyzed in the DOE /EAs 1776 and 2063. The activities are bounded by these documents and the ECARS found in the scope.



**U.S. Department of Energy
Office of Nuclear Energy
National Environmental Policy Act
Determination**

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NEPA Compliance Officer

Signed by: Robert Douglas Herzog, NEPA Compliance

Officer Date Signed: 7/20/2026