

**SAFETY EVALUATION REPORT FOR THE PROPOSED USE OF SEALED RADIOACTIVE
SOURCES DURING A RADIOLOGICAL DISPERSION DEVICE TRAINING EXERCISE
IN YAPHANK, NY, ON NOVEMBER 3-7, 2014**

DATE: October 24, 2014

DOCKET NO.: Not applicable

LICENSE NO.: Not applicable

ENTITY: Battelle Energy Alliance, LLC (BEA), U.S. Department of Energy,
Idaho National Laboratory (INL)

TECHNICAL REVIEWER: John Miller, Health Physicist, RI

DESCRIPTION OF PROPOSED ACTIVITY:

The Battelle Energy Alliance LLC (BEA), the prime contractor for the U.S. Department of Energy (DOE) operating Idaho National Laboratory (INL), contacted the U.S. Nuclear Regulatory Commission (NRC) Region I office via letter dated September 26, 2014, regarding the proposed use of radioactive sealed sources during a joint training exercise with the Sandia National Laboratory, Federal Bureau of Investigation, and local law-enforcement bomb squads on November 3-7, 2014. The NRC contacted the New York State Department of Health, to initiate a joint technical review. The training event will include the transport, storage, and use of radioactive sealed sources owned and controlled by INL. The portion of the training involving the use of radioactive sources will be conducted in Yaphank, New York.

The proposed radiological dispersion device training will be conducted at the Suffolk County Fire Academy, 676 Maple Street in Yaphank, New York. Based on the provided information, the facility is enclosed with a fence and the public will not have uncontrolled access to these areas during use of the byproduct materials. The radioactive sources are expected to be shipped with an anticipated arrival date of November 3, 2014, at the storage location at the Suffolk County Emergency Services Office at 2173 Smithtown Ave., Ronkonkoma, New York. Idaho National Laboratory personnel will be on-site to receive the shipment. The training is scheduled for November 3 through November 7, 2014, to include field exercises at the Yaphank site involving the use of radioactive sources. The sources are expected to be shipped back to INL on November 7, 2014. The purpose of this training will be to practice, refine, and validate search and package interrogation techniques.

INL proposes to ship the radioactive sealed sources in accordance with the Department of Transportation regulations to the facility in Ronkonkoma, New York with an arrival date of November 3, 2014. INL radiological control personnel expect to be present to receive the shipment of sealed sources and perform the receipt radiological surveys. The sealed sources will be stored at the Suffolk County Emergency Services Office in a locked storage unit and access to the sources will be controlled by INL personnel. The facility is continuously manned with office personnel around the clock.

During the training exercise, INL personnel will move the material from the storage area to the training area and will perform staging of the sealed sources. At the conclusion of the training exercise each day, the material will be returned to the locked storage area. The INL personnel expect to establish radiological boundaries around the exercise area at exposure rates of 2 (two) millirem/hour. The INL radiological control personnel will monitor radiation levels, perform access control duties and control radiation exposure to the exercise participants. The INL plans to supply dosimetry for all INL personnel and exercise participants working on the INL Radiation Work Permit and entering the radiological boundary. The INL personnel and exercise participants will be controlled as radiation workers. The sealed sources are expected to be leak tested and transported back to the INL facility at the end of the training exercise.

In support of the proposed training, the INL has provided the following documents:

1. A list of radioactive sealed sources proposed for the exercise. Sources used for this training are well below threshold levels for increased controls requirements.
2. INL Procedure LWP-15006, "Radioactive Source Control," which describes the source control policy, including leak test and source inventory.
3. INL Procedure LI-344, "RDD Material Training Activities and Evaluations Using Radiation Emitting Sources and/or Devices," used by INL personnel to conduct on and off-site radioactive dispersal device training exercises using radioactive material.
4. INL Procedure LWP-15015, "Response to Abnormal Radiological Situations," which describes the response to abnormal conditions, including radiologically contaminated personnel and equipment.
5. Draft INL radiation work permit. All personnel entering an area of 2 millirem/hour or greater will sign in to the permit and must abide by the requirements of the permit.
6. A Letter of Intent to Conduct Training between the Department of Energy Stabilization Program and the Suffolk County Fire Academy acknowledging the use and storage of radioactive sources at the Fire Academy facility signed by their representatives.
7. Sealed Radioactive Source Leak Tests dated September 25, 2014 & October 9, 2014.

These documents are located in ADAMS at Accession No. ML14296A109.

BEA's contractual agreement with DOE involving the scope of INL work under the DOE contract is publically available at <http://www.id.doe.gov/doiid/INLContract/INL-Contract.htm>. The INL's contract agreement is for the management and operations of the Idaho National Laboratory. The contract states that INL will make available its unique scientific and technical capabilities, resources and services to DOE, other Federal agencies, state and local governments, academia, and the private sector.

SAFETY AND SECURITY REVIEW:

The NRC and the New York State Department of Health (NYSDH) evaluated the proposed use of sealed sources for the November 3 through November 7, 2014, radiological dispersion device training. The NRC reviewed information provided by INL in documents submitted via a letter dated September 26, 2014, and electronic communications on September 30, October 6, 7, & 9, 2014.

Assessment: The activity of the proposed sources to be used during the exercise ranges from two (2) nanocuries to 2.33 curies per source. All sources are encapsulated in certified special form capsules, with the exception of one (1) cesium-137 source, one (1) plutonium-239 source, and one (1) strontium/yttrium-90 source. These three sources (sealed and non-dispersible form) are expected to be used to perform portable radiation instrument response checks. INL provided procedures INL-LWP-15006, which addresses initial actions to a leaking source, and INL-LWP-15015, which addresses response to abnormal situations.

Sealed Source Accountability

Assessment: The INL provided procedure INL-LWP-15006, which addresses source accountability requirements.

Sealed Source Leak Test

Assessment: INL provided procedure INL-LWP-15006, which addresses leak test requirements. INL provided leak test results for all the radioactive sources that will be used during the exercise from leak tests performed on September 25 & October 9, 2014. All sealed sources passed the leak test using the criteria described in INL's procedure LWP-15006.

Radiation Generating Devices

Assessment: The INL provided procedure INL-LI-344, which describes the safe use of radiation producing equipment and gamma-ray generating equipment (radiography devices).

Personnel Training

Assessment: The INL personnel involved in the training are expected to have INL Radiation Worker II training. This training allows work in High Radiation Areas and permits a worker to perform sealed source handling operations. The INL Radiation Worker II-trained personnel have training in contamination control and protective clothing donning and removal techniques. Radiological controls are expected to be provided by an INL Health Physics Technician, who has specific training and qualifications to perform these duties. As described by INL, Health Physics Technician training is more rigorous than Radiation Worker II training. The Health Physics Technician specializes in radiation safety and includes the oversight of all radiological work being conducted during the exercise (e.g., radiation monitoring, personnel dosimetry, and oversight of the INL Radiation Work Permit). The students involved in the training will have several hours of classroom work involving basic radiation protection fundamentals. The INL will provide a briefing on the INL Radiation Work Permit and radiological hazards associated with the training to the students prior to performing the training using radioactive sealed sources.

REGULATORY FRAMEWORK:

The NRC regulation in 10 CFR 30.12(a) exempts DOE and its prime contractors from NRC licensing requirements for the possession, use, transfer and receipt of byproduct material for the performance of work for DOE at a U.S. Government-owned or controlled site. Furthermore, 10 CFR 30.12 exempts DOE and its prime contractor or subcontractor from NRC licensing requirements for the possession, use, transfer and receipt of byproduct material under its prime contractor or subcontractor when the Commission determines that the exemption of the prime contractor or subcontractor is authorized by law, and that, under the terms of the contract or subcontract, there is adequate assurance that the work hereunder can be accomplished without undue risk to the public health and safety.

The Commission is required by the final paragraph of 10 CFR 30.12 to determine that the activity proposed by INL is authorized by law and that it can be accomplished without undue risk to the public health and safety. Furthermore, this determination needs to be made in conjunction with the State of New York as described in comparable regulations in Title 6 of the New York Codes, Rules and Regulations, Section 380.1.2(g)(4) and 381.2(b)(5). Eric Michel, Attorney, Reactor & Materials Rulemaking – Office of General Counsel, U.S Nuclear Regulatory Commission provided his opinion in an e-mail dated October 21, 2014, that the proposed activity is authorized by law under the exemption of 10 CFR 30.12. Mr. Robert E. Dansereau, Assistant Director, Bureau of Environmental Radiation Protection, NYSDH was consulted for this evaluation and provided concurrence via email dated October 24, 2014.

ENVIRONMENTAL REVIEW:

An environmental assessment for this action is not required since this action is categorically excluded under 10 CFR 51.22(c) (14) (xvi).

CONCLUSION:

The information submitted by INL sufficiently describes the proposed activity and provides reasonable assurances that the public health and safety will be adequately maintained during the conduct of the training and field exercise scheduled for November 3 through 7, 2014. Therefore, the staff concludes that the proposed activity is authorized under the law; and that, under the terms of the contract, there is adequate assurance that the work thereunder can be accomplished without undue risk to the public health and safety.

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