

DOE-ID NEPA CX DETERMINATION Idaho National Laboratory

SECTION A. Project Title: Research and Development Activities at In-Town Locations (Overarching)

SECTION B. Project Description and Purpose:

This Environmental Compliance Permit (ECP) supersedes overarching ECP INL-07-013 R1 "Research and Development Activities at In-Town Locations (Overarching)" and covers research and development (R&D) activities and research-related operational changes consistent with categorical exclusions related to R&D and with activities and impacts analyzed in the Environmental Assessment (EA) for the *Proposed Consolidation and Expansion of Idaho National Laboratory (INL) Research and Development at a Science and Technology Campus* (now called "Research and Education Campus" (REC), (DOE/EA-1555, March 2007). This ECP serves as an 'overarching environmental compliance permit' for routine R&D related activities and operations in government and privately-owned and constructed facilities at the REC located in or near Idaho Falls, ID for Calendar Year (CY)-2020-2021. Some R&D activities at in town facilities may include connected efforts at INL Site facilities. It also covers the leasing of additional facilities in the future pursuant to 2nd tier ECP's.

Covered activities include ongoing and future research work related to nuclear energy and physics research, non-nuclear energy research, basic and applied chemistry, analytical methods development, biology, materials science, radiological work, prototype developments, biomass, and physical measurements. The work may also include National and Homeland Security program-sponsored research, development, and demonstration facilities. This ECP also covers moving activities between different in-town laboratories and includes non-structural modifications to laboratories and to newly opened laboratories to accommodate changes in laboratory-related analysis or R&D work. Non-structural modifications includes activities such as reconfiguring lab space by rearranging equipment, furniture, etc. and moving equipment within the same laboratory.

This ECP covers in-town laboratories, buildings, and structures currently in use and those that may come into use. The current INL facilities covered by this ECP are as follows:

Leased Building and Structures	
<ul style="list-style-type: none"> IF-692, Collaborative Computing Center (C3) IF-685, Energy Systems Laboratory (ESL) and associated structures IF-682, Security Systems Laboratory IF-684, Critical Infrastructure Protection & Resilience (CIPR) IF-616, Willow Creek Building (WCB) IF-654, Engineering Research Office Building (EROB) IF-670, Bonneville County Technology Center IF-694, N&HS Laboratory & Training Facility IF-696, INL Industrial R&D Innovation Center 	<ul style="list-style-type: none"> IF-688, Energy Innovation Laboratory (EIL) IF-681, Cyber Security & Intelligence Building IF-680, Homeland Protection Building IF-691, Cybercore Integration Center (CIC) IF-606, INL Administration Building (IAB) IF-606A, RAP Addition to IAB IF-639, North Holmes Laboratory (NHL) IF-675, Portable Isotopic Neutron Spectroscopy (PINS) facility
DOE Owned INL Research Center Buildings and Structures	
<ul style="list-style-type: none"> IF-601, Radiological and Environmental Sciences Office Building IF-602, IRC Office Building IF-603, IRC Laboratory Building IF-655, IRC Chemical Storage Facility IF-638, IRC Physics Lab IF-689, DOELAP Building (DOE operated, INL maintained) 	<ul style="list-style-type: none"> IF-683, Radiological & Environmental Sciences Laboratory (RESL) (DOE operated, INL maintained) IF-605, Energy Storage Technology Laboratory IF-657, INL Engineering Demonstration Facility (IEDF) IF-627, Systems Analysis Facility (SAF) IF-611, National Security Laboratory
Other DOE Owned Buildings and Structures	
<ul style="list-style-type: none"> IF-608, Information Operations & Research Center (IORC) and IF-716, IORC Storage Shed 	

This ECP does not address the following:

- Construction or modification of laboratories or facilities.
- D&D of contaminated facilities to support new research.
- Relocation of entire laboratory processes or research programs from REC to INL-Site or INL-Site to REC.

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

- Operations of CAES.
- Any action which would require obtaining a new or modified permit from a regulator. In the event a new or modified permit is required, a project-specific 1st tier ECP must be prepared.
- Activities with the potential to generate transuranic (TRU) waste.

The number of laboratories, location of in-town laboratories and the activities within the labs may change over time. Project personnel and the Program Environmental Lead (PEL) evaluate changes against this ECP. In addition, the PEL evaluates each project covered under this ECP before project personnel initiate work and participate in development of Laboratory Instructions and procurement of research equipment. Demonstration of that review is documented using a separate "second tier" ECP, reviewed by the PEL and signed by the researcher.

Ongoing and future work could result in emissions to the atmosphere of both chemicals and radionuclides; generating hazardous, mixed, radioactive low-level, and industrial wastes; analysis of samples with polychlorinated biphenyls (PCBs), and R&D regarding PCB analysis or destruction technologies. Samples for analysis or R&D work may be received from outside the INL or originate within the INL. Laboratory activities may result in excess samples or sample residues that project personnel must return to the generator or to INL personnel to manage and dispose. Project activities may retain wastewater from laboratory operations for characterization and management by Waste Generator Services (WGS) or may be disposed to laboratory drain systems in accordance with the appropriate sewage disposal regulations.

Based on the analysis in the 2007 *Final Environmental Assessment for the Consolidation and Expansion of the Idaho National Laboratory Research and Development at a Science and Technology Campus* (DOE/EA-1555) and associated Finding of No Significant Impact (FONSI), DOE consolidated and expanded R&D capabilities for INL at the REC in Idaho Falls. Only programs having minimal potential hazards to workers or the public are performed in Idaho Falls at the REC. INL uses the following limits to define "minimal potential hazard" activities:

- The dose to the public limit in DOE Order 458.1 is 100 mrem/yr from all sources (direct radiation, air inhalation, food and water consumption, etc.) (See 458.1 CRD 2.b.(1).(a)). Exceeding 25 mrem/year requires calculating dose to the extremities and lenses of the eyes (2.e.(1).(a).3). This 25 mrem/yr limit is also the determinant for including non-DOE sources in environmental ALARA dose assessment to the maximally exposed individual (MEI). Projects approved under this ECP must not exceed this 25 mrem/year limit.
- For radiological air emissions, the unmitigated radiological emissions from each source or emissions point (i.e., each individual emissions point) must be below 0.1 mrem/yr as described in 40 CFR 61, Subpart H. Projects having unmitigated emissions that exceed the 0.1 mrem/yr limit are required to install stack monitors (40 CFR 61.93.(e)). For projects having mitigated emissions resulting in a dose to the public that exceeds 0.1 mrem/yr, an Approval to Construct from EPA must be approved prior to commencement of the project. Projects approved under this ECP must not exceed the 0.1 mrem/yr limit for air emissions.
- Radioactive material inventory must be below the 40 CFR 302.4 Appendix B reportable quantity levels for LTHC3 facilities where such work is authorized in Tenant Use Agreements (TUAs). For buildings leased under "start clean/stay clean" criteria, no unsealed radiological materials are allowed, except for minor quantities authorized in the Energy Innovations Laboratory (EIL).
- The dose to public for each building is limited to less than 0.1 mrem/yr and the combined dose to the public from all buildings at the IRC campus must be less than 10 mrem/yr, and the combined dose to the public from the EIL, EROB, and the UB buildings must be less than 10 mrem/yr.

Research not involving higher risk organism or materials which require control measures at bio-hazard safety level three (BSL-3) or higher (neither of which are currently allowed at INL). See LWP-14621, Laboratory Biological Experimentation Safety

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Activities may result in chemical and radiological emissions from vents, stacks, and hoods. Each activity must meet state and Federal air emission regulations. Environmental Support & Services (ES&S) must evaluate each new activity with the potential to emit air toxics, criteria pollutants, or radionuclides, before beginning work, through the Air Permitting Applicability Determination (APAD) process. General laboratory APADs may be used to cover independent projects. The APAD establishes the appropriate maximum 24-hour and maximum annual emission limits for toxic pollutants used at the laboratory. Administrative controls based on inventory limits and independent Hazard Reviews for new programs would then be implemented to assure that these limits would not be exceeded.

Where biological materials or nanoparticles are involved, HEPA filtration will be installed as required.

Discharging to Surface-, Storm-, or Ground Water

This ECP does not authorize direct discharge to ground water, surface water, or the ground surface. Storm water runoff may occur from parking lots.

Disturbing Cultural or Biological Resources

All biomass materials are reviewed against the list of noxious weeds identified in IDAPA 02.06.22. Importing biomass materials identified in IDAPA 02.06.22 as noxious weeds is not covered by this overarching ECP.

The 2007 Final Environmental Assessment for the Consolidation and Expansion of the Idaho National Laboratory Research and Development at a Science and Technology Campus does not address potential impacts to the historic built environment. Although no architectural inventory or National

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

Register evaluations exist for the in-town buildings identified in the scope, the proposed activities are often considered exempt from further review (due to the nature of the activities as internal reconfiguration of active laboratories.).

Activities using federal funds must complete Section 106 for the following in-town buildings to comply with 36 CFR 800; IF-616 (Willow Creek Building), IF-639 North Holmes Building, and IF-608 (Information Operations and Research Center.) Full Section 106 may include the following:

- Architectural survey and inventory of the in-town facilities
- National Register evaluation of in-town facilities
- Submission of full survey report to the Idaho State Historic Preservation Office (SHPO) for review
- Concurrence from the Idaho SHPO regarding survey results and National Register evaluation
- Identification and completion of mitigation of impacts as necessary.

Based on the nature of in-town R&D activities, the CRMO does not anticipate archaeological historic properties being present. However, if in the event archaeological resources are discovered, please contact the CRMO immediately at grp-crmo@inl.gov.

Generating and Managing Waste

Activities at in-town laboratories generate both hazardous and mixed waste. Waste Generator Services (WGS) characterizes and manages all solid waste. WGS also monitors the handling and shipping of hazardous and radioactive material. In addition, Radiological Control personnel identify safe work practices and storage requirements for radioactive materials and waste. Project personnel manage and use radioactive material in accordance with the Radiological Control Manual as supported by Radiological Control personnel.

Project activities may generate radioactive waste (does not include TRU waste or HLW). WGS and Radiological Control personnel assist in characterizing, storing, and disposing of radioactive waste.

Laboratory activities could generate industrial waste. Industrial waste would be disposed of off-site or in the Bonneville County landfill.

Laboratory wash water and cooling water would be discharged to the City of Idaho Falls sewer system.

Releasing Contaminants

Laboratory-related discharge of wastewater to any drain system must meet the waste acceptance criteria of the receiving unit.

Potable water systems in radiological areas must meet the backflow prevention requirements established in INL Technical Interpretation, ES&S-Technical Interpretation (TI)-027. This includes safety shower and eye wash stations.

Project personnel must evaluate work involving biological hazards and verify the work falls within the limits of the Idaho Falls laboratories. In addition, project activities covered under this ECP may only involve work at Biosafety Levels 1 and 2. Work at Biosafety Levels 3 or 4 requires a separate EC.

Project personnel would purchase, store and use chemicals in accordance with laboratory procedures. All chemicals will be managed in accordance with laboratory procedures.

Although not anticipated, there is a potential for spills when using chemicals or fueling equipment.

Using, Reusing, and Conserving Natural Resources

The proposed action uses fossil fuels, metals, and other resources. Project personnel will use every opportunity to recycle, reuse, and recover materials and divert waste from the landfill when possible.

<p>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.</p>

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). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

"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: Environmental assessment DOE/EA-1555, March 2007, Proposed Consolidation and Expansion of Idaho National Laboratory Research and Development at a Science and Technology Campus.

The activities described in this ECP are consistent with the Categorical Exclusion (CX) B1.2, B1.24, B3.6, and B3.15. Each project approved under this overarching ECP must meet the conditions of the CX established under B1.2 "Training exercises and simulations", B1.24 "Property Transfers, B3.6 "Small research and development, laboratory operations, and pilot projects" and B3.15 "Small-scale indoor research and development projects using nanoscale materials."

Justification: The proposed action would perform analytical and R&D activities in laboratories located at facilities, in or around Idaho Falls, which are, or will be, owned or leased by INL contractors. The activities include ongoing and future work related to nuclear energy and physics research, basic and applied chemistry, analytical methods development, biology, materials science, radiological work, prototype development, biomass, and physical measurements. The work may also include National and Homeland Security program-sponsored research, development, and demonstration facilities.

This ECP covers the operational aspects described in the Environmental Assessment for the "Proposed Consolidation and Expansion of Idaho National Laboratory Research and Development at a Science and Technology Campus," DOE/EA-1555, March 2007, and serves as an "overarching environmental checklist" for routine analytical and R&D activities at in-town facilities primarily located in or near Idaho Falls. It is expected this ECP, and subsequent 2nd tier ECPs, would address ongoing and future work related to chemistry, biology, materials science, radiological work, prototype development, biomass, and physical measurements including, but not limited to, radiological work.

The proposed activities are consistent with CX B1.2 "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.",

B1.24 "Transfer, lease, disposition, or acquisition of interests in personal property (including, but not limited to, equipment and materials) or real property (including, but not limited to, permanent structures and land), provided that under reasonably foreseeable uses (1) there would be no potential for release of substances at a level, or in a form, that could pose a threat to public health or the environment and (2) the covered actions would not have the potential to cause a significant change in impacts from before the transfer, lease, disposition, or acquisition of interests.",

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); 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 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

B3.15 "Siting, construction, modification, operation, and decommissioning of facilities for indoor small-scale research and development projects and small-scale pilot projects using nanoscale materials in accordance with applicable requirements (such as engineering, worker safety, procedural, and administrative regulations) necessary to ensure the containment of any hazardous materials. Construction and modification activities would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible)."

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

Approved by Jason Sturm, DOE-ID NEPA Compliance Officer on:02/03/2021