

U.S. Department of Energy- Idaho Operations Office
National Environmental Policy Act
Categorical Exclusion Determination

Project Title: UAS Operations

Project Description and Purpose:

The primary flight test site is at the Idaho National Laboratory (INL) Unmanned Aerial Systems (UAS) B16-710 runway (Figure 1) and facility B16-612 and includes UAS and counter Unmanned Aerial Systems (cUAS) systems testing and demonstration for group 1, 2 or 3 UAS and lighter than airships under remote control, supervised pilot in the loop control, or autonomous control. The UAS program supports activities that may use assets located within site boundaries such as power lines, cellular communications or unoccupied building for future sensor testing and development.

UAS projects include research and operation of various control systems, aircraft, visual/non-visual sensors, radios/communications, and image collection devices. Radio frequency analysis includes counter-drone radar analysis, radio frequency interference, long range command and control validation, and encrypted communication development and testing. Other sensors tested include environmental conditions such as gathering wind information and radioactive fallout detection. INL receives requests to support UAS training activities for government agencies and conduct flights for internal projects and programs for data collection. UAS flights are coordinated with facility managers as needed via Site Flight Overflight process (Range scheduling meeting).

Non-UAS flight activities will be conducted at Lindsay Boulevard Complex, IF-694/695, EIL, EROB, and ESRL including temporary equipment storage, non-flight development and testing, integration, prototyping, and debugging of the platforms.

Figure 1: UAS Runway (B16-710) and facility (B16-612)



The UASs are limited to group 1 (2 to 20 lbs), group 2 (21 to 55 lbs), or group 3 (<1320 lbs) airframes or lighter-than-air aircraft obtained through commercial vendors. Vehicles payloads are expected to include sensors, video cameras, communication devices and control hardware. Modifications to the UASs to accommodate sensors and other equipment would occur, but no modifications would occur that would compromise the flight worthiness of a UASs.

Most field testing, takeoffs, and landings occur at the B16-710 runway. Flight tests are also conducted throughout the INL Site as approved by the Federal Aviation Administration (FAA) Certificate of Authorization (COA) and with permission of applicable INL facility owners. A COA with the FAA is in place which allows UAS flight operations in INL air space. The FAA is notified prior to all flights, as required by the COA, to coordinate airspace with governing agencies or local authorities.

Flight restrictions around INL facilities and operational restrictions occurring within the Sage Brush Steppe Ecosystem Reserve and the Sage Grouse Conservation Area (SGCA) are observed. Flights are prohibited within 1 Km (vertical and horizontal) of a Sage Grouse Lek during breeding season.

U.S. Department of Energy- Idaho Operations Office
National Environmental Policy Act
Categorical Exclusion Determination

Takeoffs are accomplished using a pneumatic launcher or unused roads with adequate clearance. A rail launch system could also be used to allow launch of UASs from the UAS runaway and the NSTR. The rail launch system is designed to aid UASs in takeoff when the aircraft is not configured with take-off or landing gear or when no suitable runway is available. Launches occur from 2-track and gravel roads without disturbance to vegetation. Vehicles can turn around only within the confines of the road to avoid vegetation disturbance. Parking, when required, is limited to the confines of the road.

Lighter-Than-Air aircraft can be tethered air systems that use small electric ducted fan motors. Lighter-Than-Air also include Parafoil/Parachute type aircraft that can be propelled by an electric/fuel motor.

Electric power sources include nickel cadmium (NiCd), nickel-metal hydride (NiMh), lithium polymer, lithium ion, sealed lead acid batteries, or an onboard generator provide power. Other power sources could be considered and approved for use as technology changes. Prior to implementing other power sources, a review is required to determine if additional hazards would be introduced, including an air permit applicability determination (APAD) review, and, if so, needed mitigation strategies.

Recurring activities occurring at the INL in relation to the UAS program may include:

- Counter-Drone/UAS/UAG durability testing and analysis operations of payloads. The payload would be ground or air-based radar and RF frequency monitoring to track and interfere with the signals of the Drone.
- Drone/UAS/UGS Intelligence, Surveillance, and Reconnaissance (ISR) Operations. The payload would be cameras and/or sensors placed on the UAS to detect electro-magnetic radiation and ground activity.
- Drone/UAS/UGS/Manned fixed wing aircraft payload development, testing and analysis operations to include testing visual and nonvisual sensors, payloads and communication systems development, testing and analysis operations, visual navigation computers, and other black boxes needing above ground analysis before being integrated into future planned system. The payload will include air-to-ground radio systems transmitting camera data, collecting Lidar images, or radar imaging.
- Provide system and design engineering in support of payload integration and UAS modifications.
- Determine proper modifications to UAS for testing to include safety and hazard analysis as well as establish Size, Weight, and Power (SWaP) requirements to fulfill payload work requests.
- System and component testing and analysis. Design and conduct UAS and sensor component and system testing, including test plan preparation, test execution, sensor or payload data processing, test results analysis, and test reporting.
- Define requirements for platform or payload integration, bench testing and operational testing of various components (e.g., visual camera payloads, radio testing, external detectors, Electronic Warfare components, etc.) against established specifications or requirements.
- Performing analytical review of the complete system and/or individual components of a larger system, and all related activities for above work requests.
- Analyze current cUAS tactics for gathering Intelligence, Surveillance, and Reconnaissance (ISR) information to provide a baseline threat assessment. This assessment will identify vulnerabilities that can impact soldier survivability. The proposed action will take place in several different environments, including desert, forest, snow, and other areas.
- INL will fly UASs over an area at different altitudes attempting to locate the Protective Force Teams (PFT) on the ground and collect pictures and video from the UAS.
- Project activities will occur on the INL Site and on Bureau of Land Management (BLM) property with proper permission from BLM and DOE-ID. INL will support additional UAS flight analysis locations as needed by CCDC-SC[NM1] , but first approved by DOE-ID.
- Verification and validation of system radar ranging and detection and RF interference.
- Range testing at various distances up to 20 kilometers or more.
- Radius testing at various angles and heights from test location.
- Final system validation testing.
- Test radar ranging and detection, RF interference, as a complete system versus multiple air and ground targets simultaneously.
- Many UAS test sites (FAA and DOD) are often subjected to radio frequency interference due to their proximity to other locations (such as military bases or encroaching civilian populations). INL's inherently low RF noise floor, access to any frequency as a National Telecommunications and Information Administration (NTIA) Experimental Radio Station, and its ability to manage its own frequencies over a 980 square mile range is truly unique.
- The microwave relay systems are made to be wheeled in or backed into the location shown in Figure 1 and 2. The stations have large tires to go over rough terrain. There is a generator onboard/built-in will be used. There will be a drip pan underneath to catch any spills or leaks from the generators.
- Testing will be conducted at the NSTR explosive range and consist of using kinetics and explosives on drones.
- A valuable asset that INL also has is the ability to leverage the INL Wireless Test Bed (WTB). Many UAS test sites (FAA and DOD) are often subjected to radio frequency interference due to their proximity to other locations (such as military bases or encroaching civilian populations).

U.S. Department of Energy- Idaho Operations Office
National Environmental Policy Act
Categorical Exclusion Determination

Recurring activities may result in noise, air emissions, chemical use, and waste generation. These will be managed in compliance with DOE orders and federal or state regulations and guidelines, or with applicable permits to avoid extraordinary circumstances. In all instances, the demand for resources and environmental impacts resulting from implementation of these proposed activities would be small and temporary in nature.

Biological reviews shall be performed in accordance with established protocols, policies, and procedures to identify plant and animal species for protection under the Endangered Species Act, candidates for protection, or listing by federal or state agencies as threatened or endangered in accordance with applicable guidance documents and agreements (i.e., the INL Candidate Conservation Agreement). Caution shall be exercised during the bird nesting season. If nesting birds, pair of birds of the same species, or bird defensive behaviors is observed, then work shall stop and a qualified Natural Resource Specialist shall be contacted for guidance. Actions that potentially affect ecological resources shall require a resource review and clearance before proceeding. This may include ground disturbing activities; remove or modify vegetative cover; expand roadways/parking lots; involve unusual noise, light, or chemicals, that may affect wildlife; located near an ecologically sensitive area; conducted on the outside of structures; conducted in abandoned buildings; or have the potential to alter or affect the living environment. If a biological review determines potentially adverse impacts, then appropriate mitigation measures shall be identified and implemented to avoid, minimize, eliminate, rectify, or compensate impacts.

Cultural resource reviews shall be performed in accordance with established protocols, policies, and procedures to identify resource protection consistent with the INL Cultural Resource Management Plan and associated programmatic agreements with the Idaho State Historic Preservation Office. Cultural sensitivity shall be determined using site location topographic maps, geographic information system databases, and/or pedestrian surveys to identify proximity to cultural resources (i.e., historic buildings, traditional cultural properties, artifacts, and previously recorded archaeological sites). A description of cultural resource reviews that have been performed in support of N&HS WTB program can be found in the Appendix.

INL uses an electronic Environmental Review Process (ERP) system to screen proposed activities for potential environmental impacts to the human environment. It shall be incumbent upon the project personnel, environmental staff, NEPA subject matter experts, or other NEPA trained individuals to assure that the requirements and conditions (i.e. project specific instructions and hold points) identified in the ERP system are met prior to applying this umbrella categorical exclusion. These individuals shall also be responsible for assuring that no extraordinary circumstances exist where normally excluded actions may have significant effects on the human environment.

There is always a risk of a crash. There are strict preflight checklists that are followed for assembly and in preparation to launch. There is a risk of fire in the event of a crash as well. There are “go boxes” that have fire extinguishers in them and all trucks have shovels to help mitigate any fire issues. All fires regardless of size will be reported to the INL Fire Department. Any downed drone will be recovered by taking T-roads to the closest point possible and walk on foot from there.

In accordance with the limitations on categorical exclusions (CX) B1.2 (training exercises and simulations), B1.7 (electronic equipment), B1.31 (installation or relocation of machinery and equipment), B3.6 (small-scale research and development, laboratory operations, and pilot projects), and B3.11 (outdoor tests and experiments on materials and equipment components) imposed by 10 CFR Part 1021, Appendix B to Subpart D, none of the activities addressed in this ECP include the following:

- Actions that are part of, or in support of, a larger project that requires either an Environmental Assessment (EA) or an Environmental Impact Statement (EIS).
- Actions that change the scope, mission, or hazard categorization of a facility.
- Actions that may cause a significant increase in environmental impacts of a facility.
- Actions for which a separate categorical exclusion is specified in 10 CFR 1021, Appendix B to Subpart D.
- Actions include, but are not limited to, the installation or relocation of contaminated equipment, special nuclear material or related equipment.
- Actions with extraordinary circumstances that affect any sensitive area or natural resources, Undertakings determined during the National Historic Preservation Act Section 106 process that may affect historic properties, 36 CFR 800.4(d)(2), federally-listed threatened or endangered (T&E) species or their habitat, federally-proposed or candidate species and their habitat, state-listed or state-proposed T&E species, and other federally-protected species such as Bald and Golden eagles and birds protected under the Migratory Bird Treaty Act (MBTA), floodplains and wetlands, areas having a special designation (e.g., national landmarks), special sources of water (such as sole source aquifers), and involve genetically engineered organisms, synthetic biology, noxious weeds and invasive species).
- Activities that disturb 1) current or potential sagebrush habitat anywhere on the INL Site outside of current facility footprints, 2) native or naturalized vegetation within the INL boundary, Sagebrush Steppe Ecosystem Reserve, or the area between Specific Manufacturing Capability (SMC) and Test Area North (TAN), 3) soil in the INL storm water corridor, or 4) disturb vegetation or soils in the CITRC area (including previously disturbed areas at CITRC).
- An upgrade or improvement that would extend the useful life of a facility.

Testing and launch locations:

- UAS runway and surrounding area for flight operations
- National Security Test Range (NSTR)
- Central Facilities Area (CFA)

**U.S. Department of Energy- Idaho Operations Office
National Environmental Policy Act
Categorical Exclusion Determination**

- Materials and Fuels Complex (MFC)
- Radiological Response Training Range (RRTR)
- Critical Infrastructure Test Range Complex (CITRC)
- Idaho Nuclear Technology and Engineering Center (INTEC)
- Advanced Test Reactor (ATR) Complex
- Radioactive Waste Management Complex (RWMC)
- Test Area North (TAN)
- Operator Control Trailer (PBF-632)
- WRRTF Demolition Landfill (TAN 1756)
- Microwave relay stations:
 - Antenna Relay Spot Coordinates (N 43°42'3.84, W 112°49'41.83)
 - Microwave Relay Spot Coordinates (N 43°47'29.80, W 112°44'57.87)
- Wireless Test Bed (WTB)

Refueling locations:

- UAS Runway Building (B16-612) – gravel area
- NSTR (B13-600) – gravel area
- Other facilities or locations as noted in the testing locations above where gravel or asphalt areas are available

Equipment:

- Conex storage containers (UAS testing pad), average 40 feet long, single or double stacked
- UAV fuel trailers capacity of 990 gallons and less
- Aerial platforms and platform components
- cUAS
- Launch and recovery trailers equipped with diesel engines
- Visual sensors
- Lasers and laser integration
- Fuels with varying octane grades
- Portable tent/canopy shelters (approximately 40 feet by 60 square feet each)
- Generators
- Batteries (lithium variants, NiMH, alkaline, and lead acid)
- WTB microwave relay systems, with a generator onboard/built-in will be used
- Weather stations
- Radar systems
- Command/control data transmission antennas
- Portable toilets

Waste may include:

- Personal protective equipment, wipes: 15 lbs
- Non-hazardous industrial waste
- Scrap metal UAS parts
- Absorbent spill materials
- Batteries
- Plastic and metal fragmentations from drones and projectiles

Waste will be managed in accordance with Waste Generator Services (WGS) guidance.

All vehicle traffic will be limited to T-roads. Foot traffic may be required off of T-roads when drones go down when search and recovery efforts are required.

Environmental Aspects or Potential Sources of Impact:

Air Emissions

If this project or activity produces or causes air emissions, and it is not stated in this ECP how those emissions caused by this project or activity are exempt, then an APAD is required for documentation.

Generators will be used to support electricity along with vehicle emissions. The possible air emissions that may be produced will be from the generator. Since the generator is temporary it is exempt from permitting requirements. Emissions are expected from portable electrical generators which will remain in place less than one year.

Air emissions have the potential to occur during UAV launches or from leaks in lighter-than-air UAVs.

Project activities have the potential to create fugitive dust.

Discharging to Surface-, Storm-, or Ground Water

NA

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.

Generating and Managing Waste

Generation of plastic and metal fragmentations from drones and projectiles from testing done at NSTR explosive range preapproved areas. Typical municipal waste may be generated to include plastic bottles, paper, etc.

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

Project activities have the opportunity to reduce the impact on our natural resources by recycling or diverting materials from disposal in the landfill.

Determination

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

U.S. Department of Energy- Idaho Operations Office
National Environmental Policy Act
Categorical Exclusion Determination

Page 6 of 6

Categorical Exclusion Posting No.: DOE-ID-INL-25-034

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.

References: B1.2 "Training exercises and simulations", B3.2 "Aviation activities", B3.11 "Outdoor tests and experiments on materials and equipment components"

Justification: For the DOE procedures regarding categorical exclusions, including the full text of each categorical exclusion, see 10 CFR 1021.102 and Appendix B to 10 CFR Part 1021, and also Section 5.4 (Applying one or more categorical exclusions to a proposal) and Appendices B and C of DOE's National Environmental Policy Act Implementing Procedures (June 30, 2025). Requirements and guidance in 10 CFR 1021.102 and DOE's National Environmental Policy Act Implementing Procedures: (See full text in regulation and in Implementing Procedures).

The proposal fits within a class of actions that is listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE's NEPA Implementing Procedures (June 30, 2025). To fit within the classes of actions listed in Appendix B to 10 CFR Part 1021, or Appendix B of DOE's NEPA Implementing Procedures, a proposal must satisfy the conditions that are integral elements of the classes of actions in Appendix B of both 10 CFR Part 1021 and DOE's NEPA Implementing Procedures.

There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal. DOE or an applicant may modify the proposal to avoid reasonably foreseeable adverse significant effects such that the categorical exclusion would apply.

The proposal has not been segmented to meet the definition of a categorical exclusion.

[Note: For proposals that fit within the categorical exclusions listed in Appendix C of DOE's NEPA Implementing Procedures, see DOE's notice of adoption for the subject Appendix C categorical exclusion for additional considerations. DOE notices of adoption for other agency categorical exclusions may be found on DOE's Section 109 webpage.]

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.

B3.2 Aviation activities. Aviation activities for survey, monitoring, or security purposes that comply with Federal Aviation Administration regulations.

B3.11 Outdoor tests and experiments on materials and equipment components. Outdoor tests and experiments for the development, quality assurance, or reliability of materials and equipment (including, but not limited to, weapon system components) under controlled conditions. Covered actions include, but are not limited to, burn tests (such as tests of electric cable fire resistance or the combustion characteristics of fuels), impact tests (such as pneumatic ejector tests using earthen embankments or concrete slabs designated and routinely used for that purpose), or drop, puncture, water-immersion, or thermal tests. Covered actions would not involve source, special nuclear, or byproduct materials, except encapsulated sources manufactured to applicable standards that contain source, special nuclear, or byproduct materials may be used for nondestructive actions such as detector/sensor development and testing and first responder field training.

Approved by Robert Herzog, DOE-ID NEPA Compliance Officer on: 9/10/2025