Department of Energy
Idaho Operations Office
1955 Fremont Avenue
Idaho Falls, ID 83415

November 5, 2026

Subject: FINDING OF NO SIGNIFICANT IMPACT FOR THE ENVIRONMENTAL ASSESSMENT FOR THE DEVELOPMENT OF THE ENERGY TECHNOLOGY PROVING GROUND AT IDAHO NATIONAL LABORATORY (DOE/EA-2312)

Agency: United States Department of Energy

Action: Finding of No Significant Impact (FONSI)

Summary: The United States Department of Energy (DOE) prepared an environmental assessment (EA) to evaluate the potential environmental impacts associated with the phased development and operation of the Energy Technology Proving Ground (Proving Ground) within a defined 383-acre area near the Central Facilities Area (CFA) at the Idaho National Laboratory (INL) Site.

DOE, through the Energy and Environment Science and Technology directorate of INL, has an ongoing need for modern, flexible, and scalable infrastructure and a research facility capable of supporting evolving research, development, testing, and demonstration requirements. The Proving Ground would address this need by consolidating enabling infrastructure and research, testing, and support capabilities within a coordinated development area.

Under the proposed action, DOE would construct and operate utility systems, roads, parking areas, utility corridors, outdoor testing areas, storage areas, and modular research and support facilities over a phased planning horizon. The maximum development envelope includes up to 11 high bays, four hangars, six laboratories, 21 office pods, two sprung structures, one command center, 13 concrete testing pads, one grounded gravel pad, and containerized battery/electrical and bulk-hydrogen storage units. These facility types, quantities, and dimensions are representative and establish an upper-bound envelope for analysis; specific facility designs, technologies, processes, and operational characteristics have not been defined. Before implementation, DOE would evaluate individual facilities and activities to confirm that they fall within the bounds analyzed in the EA.

The operational and process-source envelope includes research, testing, and demonstration capabilities associated with critical-materials processing; ammonia and fertilizer integration; high-temperature hydrogen production and electrochemistry; thermal-energy management; chemical and fuel synthesis; concrete and cementitious materials; hydrogen-based steel production; modular data-center systems; grid and power-system testing; and supporting

training, control, utility, and storage functions. The Modular Power Systems Testbed would include up to 17 power poles (up to approximately 90 feet tall), a grounded gravel pad, a mobile substation, and a high-current grid emulator supporting energized and deenergized equipment testing, fault testing, microgrid integration, and related grid-research activities. Operations may occur intermittently, by campaign, or continuously, but the proposed action does not authorize unrestricted commercial production beyond the scale, throughput, operating hours, storage quantities, emissions, waste generation, water demand, or other assumptions analyzed in the EA.

Before implementing a future facility, process unit, major test campaign, or substantial modification, DOE would determine whether the proposed activity remains within the location, facility, construction, operational, process-source, and resource-impact bounds analyzed in the EA. A proposal that exceeds those bounds, introduces a new pollutant, waste stream, wastewater stream, hazardous material, emissions source, or accident scenario, or would cause effects different from or greater than those analyzed would require additional review before DOE could authorize the activity.

Based on the EA, DOE determined that development and operation of the Proving Ground within the analyzed maximum development envelope would not significantly affect the quality of the human environment. Therefore, preparation of an environmental impact statement is not required, and issuance of a Finding of No Significant Impact is appropriate.

DOE also evaluated a no-action alternative. Under the no-action alternative, DOE would not develop or operate the Proving Ground, existing conditions at INL would continue, and DOE programs and collaborators would remain dependent on existing, geographically dispersed, program-specific, or temporary infrastructure. The no-action alternative provides the baseline against which the environmental effects of the proposed action were evaluated.

Purpose and Need: DOE, through the Energy and Environment Science and Technology directorate, has an ongoing need to provide modern, flexible, and scalable-infrastructure and research-facility capability to support evolving research, development, testing, and demonstration requirements at INL. These activities increasingly require co-located infrastructure, adaptable site configurations, and laboratory, high-bay, testing, and support facilities capable of accommodating changing technical requirements. Existing and geographically dispersed facilities and infrastructure at INL are not always optimized to efficiently support these needs.

The purpose of the proposed action is to develop and operate the Proving Ground to provide shared enabling infrastructure and a range of research and support facilities for current and future DOE activities and collaborations with industry and other stakeholders. Future facilities may include laboratory facilities, high-bay and large-scale test structures, research support buildings, data control modules, and outdoor test areas and pads. Consolidating utilities, access roads, pads, and adaptable facility capabilities within a coordinated development area would improve efficiency, reduce reliance on temporary or project-specific solutions, facilitate the co-location of related activities, and support long-term planning.

Analysis: To determine whether the proposed action could cause significant environmental effects, DOE evaluated the phased construction and operation of the maximum reasonably

foreseeable development envelope described in Section 2.1.5 of the EA. The analysis addresses the general facility and infrastructure envelope, construction and operational assumptions, and process-source capabilities associated with the proposed research, testing, demonstration, and support activities. Each resource analysis applies the bounding metric appropriate to that resource, including disturbed acreage, building footprint and height, construction activity, operating hours, emissions, water and electrical demand, traffic, waste and wastewater generation, hazardous-material inventories, and proximity to sensitive resources. Where final-design information was unavailable, DOE used conservative assumptions based on representative facilities, analogous operations, available design information, and best professional judgment. Before implementing a future facility or activity, DOE would determine whether it remains within the scope and effects analyzed in the EA; activities that exceed those bounds or introduce materially different effects would require additional review. The following discussion summarizes the potential impacts of the proposed action and the basis for DOE's determination that those impacts would not be significant.

Air Quality **-** Construction would generate temporary exhaust emissions and fugitive dust from site preparation, grading, equipment operation, and vehicle travel. These emissions would be localized and controlled through dust suppression, equipment maintenance, and other best management practices. For operations, process operations with potential air emissions are bound by the operating assumptions and emissions envelope analyzed in the EA. DOE evaluated campaign-based process sources at up to 2,000 operating hours per year and continuous or fugitive sources at up to 8,760 hours per year where that assumption provided the conservative emissions basis. The quantified combined operational envelope is 10.03 tons per year of particulate matter, 4.99 tons per year of carbon monoxide, 4.67 tons per year of nitrogen oxides, 0.82 ton per year of sulfur dioxide, and 1.90 tons per year of volatile organic compounds. These values conservatively combine emissions from facilities that generally would operate intermittently and would not necessarily operate concurrently. The combined emissions remain within the growth component of INL's sitewide permit to construct with a facility emissions cap, with nitrogen oxides representing the largest use of the available growth component at 82.6%. New stationary sources would undergo applicable permitting review and would be incorporated into the sitewide permit, as appropriate, to ensure compliance with major-source thresholds, National Ambient Air Quality Standards, and Prevention of Significant Deterioration increments. Operational emissions are not expected to meaningfully degrade visibility in Craters of the Moon Wilderness Area or other Class I areas. Critical-materials activities involving cyanide would remain within the analyzed envelope only if conducted in closed or controlled systems without unquantified atmospheric hydrogen cyanide emissions. Any source exceeding the emissions or operating assumptions or introducing an unquantified hazardous or radiological air emission would require additional review before operation. Accordingly, air-quality impacts would not be significant.

Water **-** Construction would temporarily increase the potential for erosion and sediment transport from grading, excavation, utility installation, and road and pad development. These effects would be controlled through erosion and sediment-control best management practices and applicable stormwater permitting. The EA estimates approximately 5,775 gallons per operating day of employee-related potable-water use, which the existing CFA wells are expected to accommodate. The EA also analyzes an additional storage tank or well as options if future water

demand exceeds existing system capacity. Process-water and fire-protection needs will be determined during facility design, and any improvements will remain subject to applicable design, permitting, and environmental-review requirements. The CFA wastewater lagoons have approximately 7,000 gallons per day of available capacity. Wastewater exceeding that capacity would require a properly designed and permitted alternative, such as a centralized pond or lagoon, individual or shared septic systems, or a permitted water-reuse system. Any such system would require appropriate siting, capacity, treatment, containment, monitoring, maintenance, and protection of groundwater and surface-water resources. The proposed action does not authorize injection wells or discharges to surface waters. Wastewater flows or characteristics exceeding an approved system's design or permit limits would require additional capacity, pretreatment, permit modification, or supplemental environmental review before operation. With these requirements, impacts to water resources would not be significant.

Soil and Geology **-** Phased development within the 383-acre proposed-action area would involve grading, excavation, trenching, utility installation, road and pad construction, and building development. These activities would permanently alter soils within developed areas and could temporarily increase soil compaction, erosion, and sediment transport. Disturbance would be limited to facility parcels, roads, utility corridors, staging areas, and other areas necessary for construction and operation. Erosion and sediment-control best management practices, stabilization of disturbed areas, stormwater controls, and restoration of areas not required for long-term operations would reduce construction effects. Fill, aggregate, and gravel would be obtained from approved sources and would not require expansion of existing borrow areas. The proposed action does not include subsurface resource extraction or deep drilling and would not alter regional geologic conditions. Facilities would comply with applicable structural and seismic design requirements. Because portions of the proposed development area are within the ORD-03 Munitions Response Area, ground-disturbing work would comply with the applicable Munitions Response Area Activity Notification and unexploded-ordnance procedures. Accordingly, impacts to soils and geology would not be significant.

Ecological - Development would remove and fragment sagebrush-steppe vegetation within disturbed portions of the Proving Ground, displace wildlife, and increase the potential for invasive-weed establishment, wildlife collisions, electrocution, and other human-wildlife interactions. Surveys identified three special-status plant species within the footprint that could be removed by development, but no plant communities with elevated conservation rankings were documented. Evidence of greater sage-grouse, pygmy rabbit, nesting migratory birds, bats, pronghorn, mule deer, and other special-status wildlife was also documented; however, no pygmy-rabbit burrow systems, bat roosting or maternity features, or effects that would cause loss of local wildlife populations were identified. Impacts would be reduced by limiting unnecessary disturbance, controlling weeds, stabilizing and revegetating temporarily disturbed areas with native species, applying seasonal and spatial restrictions, using wildlife-compatible infrastructure, and implementing the conservation measures in the greater sage-grouse Candidate Conservation Agreement and INL Site Bat Protection Plan. Vegetation removal or construction conducted between April 1 and October 1 would require a nesting-bird survey, with work restrictions or delays imposed where active nests are found. Sagebrush habitat losses would be calculated annually and addressed through compensatory mitigation under PRD-407, "Evaluation, Determination, and Implementation of Sagebrush Compensatory Mitigation Commitments." With these measures, ecological-resource impacts would not be significant.

Cultural **-** Cultural-resource inventories identified 23 archaeological resources within the 383-acre Proving Ground boundary, including three precontact archaeological properties eligible for listing in the National Register of Historic Places under Criterion D. No built-environment historic properties are located within the boundary; however, 10 listed or eligible historic properties are located adjacent to the development area, including the Experimental Breeder Reactor-I National Historic Landmark. Because final facility designs and locations have not been established, DOE would use a phased Section 106 process under the National Historic Preservation Act. The INL Cultural Resource Management Office would review each facility and infrastructure design before implementation, and DOE would consult with the Idaho State Historic Preservation Office, the Shoshone-Bannock Tribes, and other consulting parties to identify, avoid, minimize, or mitigate adverse effects. Viewshed analyses, treatment plans, and agreement documents would be completed when necessary. The Modular Power Systems (MPS) Testbed, as currently scoped and located, would have no direct or indirect effects on archaeological historic properties and no direct effects on built-environment historic properties; any change in its scope or location, including future expansion, would require additional Section 106 review. Based on the effects analyzed in the EA and DOE's commitment to complete project-specific Section 106 review and any required measures before implementation, DOE has determined that the proposed action would not have significant impacts on cultural resources. Future activities with effects beyond those analyzed in the EA would require additional environmental review.

Waste Management - Construction would generate soil and debris, packaging, scrap metal, and minor quantities of maintenance-related waste. Operations would generate industrial, universal, and hazardous wastes and recyclable materials consistent with waste streams currently managed at INL. Using comparable INL facilities, the EA estimates combined annual waste generation and hazardous-material recycling of approximately 2,439 cubic feet, compared with an average INL sitewide generation rate of approximately 16,600 cubic feet per year. Construction and operational wastes would be generated incrementally as development proceeds and would be characterized, stored, transported, recycled, treated, and disposed of through existing INL procedures and permitted waste-management pathways. The MPS Testbed would generate only minor quantities of construction debris and maintenance waste. The analyzed envelope excludes facilities that would generate radioactive or mixed waste and does not authorize new waste streams requiring waste-management capabilities not evaluated in the EA. Any facility that would exceed the analyzed waste quantities, generate radioactive or mixed waste, or introduce a materially different waste stream would require additional review before operation. Accordingly, impacts to waste-management systems would not be significant.

Transportation **-** Phased construction would temporarily increase traffic from worker commuting, material deliveries, heavy equipment, prefabricated modules, and other construction-related movements. Construction traffic would use existing INL roadways and access points and would be managed through established traffic-control and safety procedures. The anticipated construction activity would not require modification of external Site-access points or exceed the capacity of the existing internal roadway network. Operation and maintenance of the Proving Ground, including the MPS Testbed, would generate additional trips associated with personnel, deliveries, maintenance, and facility-support activities. These increases would be consistent with traffic generated by research, testing, and industrial-support

facilities at INL and would not involve unrestricted commercial-production traffic. Any future activity requiring traffic volumes, heavy-haul movements, or material shipments materially greater than those associated with the research and demonstration activities analyzed in the EA would require additional review. Existing transportation infrastructure is expected to accommodate the temporary construction traffic and incremental operational traffic without measurable degradation of roadway performance or safety. Accordingly, transportation impacts would not be significant.

Utilities and Infrastructure **-** Development of the Proving Ground would require extensions and connections to existing INL electrical, water, sanitary, communications, and other utility systems. Utility improvements would be installed in phases within the evaluated Proving Ground area and integrated with existing systems where available. The EA also analyzes supporting electrical infrastructure, including substation and switchyard development. Final utility needs and available capacity would be confirmed as facility designs are developed. With applicable design, safety, and environmental requirements, impacts to utilities and infrastructure would not be significant**.**

Worker Health and Safety - Construction would involve occupational hazards associated with excavation, heavy equipment, elevated work, electrical installation, material handling, vehicle movement, and exposure to severe weather conditions. Operations could involve energized electrical systems, arc-flash and high-current testing, hydrogen and compressed-gas systems, high-temperature and pressurized equipment, chemical handling, mineral and powder processing, molten or heated materials, and other industrial and laboratory hazards. These hazards would be evaluated through facility- and activity-specific hazard analyses and controlled through INL's integrated safety-management system, work-control processes, engineering and administrative controls, worker training, personal protective equipment, emergency planning, and compliance with applicable DOE and Occupational Safety and Health Administration requirements. MPS Testbed activities would be performed by trained personnel under controlled conditions and would not include explosives testing or open detonation. Because portions of the development area are within the ORD-03 Munitions Response Area, ground-disturbing activities would comply with the applicable Munitions Response Area Activity Notification and unexploded-ordnance procedures. Any future activity introducing a materially different accident scenario, hazardous-material inventory, or hazard classification beyond those analyzed and manageable under existing Site programs would require additional review before implementation. With these requirements, the proposed action would not result in disproportionate or unmanageable worker risks and impacts to worker health and safety would not be significant.

Reasonably Foreseeable Cumulative Impacts **-** DOE evaluated the incremental effects of the maximum Proving Ground development envelope in combination with ongoing INL operations and other past, present, and reasonably foreseeable activities. Construction would occur in phases and would be spatially distributed, limiting the duration and geographic overlap of construction dust, traffic, stormwater, waste generation, noise, and worker hazards. Combined operational emissions from the quantified Proving Ground process facilities would remain within the growth component of INL's sitewide air permit and would not cause exceedance of major-source thresholds, National Ambient Air Quality Standards, or Prevention of Significant Deterioration increments. Incremental demands on water, wastewater, transportation, utilities,

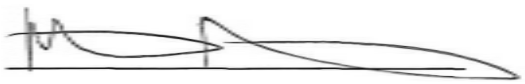
and waste-management systems would remain subject to available system capacities and applicable permitting requirements. Habitat loss would be addressed through conservation measures and sagebrush compensatory mitigation while potential effects on historic properties would be addressed through phased Section 106 review. Before implementing each future facility or activity, DOE would determine whether its individual and combined effects remain within those analyzed in the EA; activities resulting in greater or materially different cumulative effects would require additional review. Accordingly, the proposed action would not result in significant cumulative impacts.

Determination: Based on the analysis presented in DOE/EA-2312, DOE has determined that phased development and operation of the Energy Technology Proving Ground within the defined 383-acre proposed-action area, when limited to the maximum reasonably foreseeable development envelope and subject to the requirements and commitments identified in the EA, is not a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA; 42 U.S.C. § 4321 et seq.) and DOE's NEPA implementing regulations at 10 CFR Part 1021. Therefore, preparation of an environmental impact statement is not required, and DOE is issuing this Finding of No Significant Impact.

This determination applies only to facilities, infrastructure, process systems, operating conditions, and environmental effects that remain within the location, development, construction, operational, process-source, and resource-specific bounds analyzed in the EA. Before implementing each future facility, process unit, major test campaign, or substantial modification, DOE will determine whether the activity remains within those bounds. Additional NEPA review, supplemental analysis, or other environmental review will be completed before DOE authorizes an activity that would occur outside the proposed-action area; involve a materially different facility or process; exceed an analyzed footprint, height, disturbance area, operating period, throughput, storage quantity, emission rate, waste quantity, water demand, traffic level, or hazardous-material inventory; introduce a new pollutant, waste or wastewater stream, accident scenario, or emissions source; or cause effects different from or greater than those analyzed in the EA.

DOE's determination incorporates the permit requirements, design features, best management practices, conservation measures, sagebrush compensatory-mitigation requirements, phased Section 106 review, safety controls, and other environmental commitments identified in the EA. No mitigation beyond the measures and commitments identified in the EA is necessary to support this determination.

Issued at Idaho Falls, Idaho on the 5th day of November 2026.



Robert Boston
Manager

Copies of the EA and FONSI are available from: Danielle Miller, Office of Communications, Idaho Operations Office, U.S. Department of Energy, 1955 Fremont Avenue, Idaho Falls, ID 83415, or by calling 208-526-5709.

For further information on the NEPA process contact: Doug Herzog, NEPA Compliance Officer, U.S. Department of Energy, 1955 Fremont Avenue, Idaho Falls, ID 83415, or by calling (208) 244-9465.