

**FINDING OF NO SIGNIFICANT IMPACT FOR THE  
ENVIRONMENTAL ASSESSMENT FOR THE  
LITHIUM PROCESSING FACILITY AT THE  
Y-12 NATIONAL SECURITY COMPLEX,  
OAK RIDGE, TENNESSEE**



March 2021

U.S. DEPARTMENT OF ENERGY  
NATIONAL NUCLEAR SECURITY ADMINISTRATION  
FINDING OF NO SIGNIFICANT IMPACT FOR THE  
ENVIRONMENTAL ASSESSMENT FOR THE  
LITHIUM PROCESSING FACILITY AT THE  
Y-12 NATIONAL SECURITY COMPLEX,  
OAK RIDGE, TENNESSEE

AGENCY: Department of Energy, National Nuclear Security Administration

ACTION: Finding of No Significant Impact

SUMMARY: The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the United States (U.S.) Department of Energy (DOE), has the primary responsibility to maintain and enhance the safety, security, and effectiveness of the U.S. nuclear weapons stockpile. One of NNSA's critical production sites is the Y-12 National Security Complex (Y-12), which is located on the Oak Ridge Reservation (ORR) in Oak Ridge, Tennessee. Y-12 is the only source of secondaries, cases, lithium components, and other nuclear weapon components for the NNSA nuclear security mission. In accordance with the Council on Environmental Quality (CEQ) regulations at 40 Code of Federal Regulations (CFR) Parts 1500–1508 and the DOE National Environmental Policy Act (NEPA) implementing procedures at 10 CFR Part 1021, NNSA has prepared an environmental assessment (EA) (DOE/EA-2145) to analyze the potential environmental impacts associated with constructing and operating the Lithium Processing Facility (LPF) to process and supply the lithium material and components that are needed to support the National Security Enterprise.

NNSA's Proposed Action is to construct and operate the LPF at the Y-12 site on a proposed location that is currently occupied by the Biology Complex. The Biology Complex is currently undergoing decontamination and decommissioning (D&D), which is scheduled to be completed by approximately 2022. That D&D would include the demolition of Biology Complex facilities prior to turnover of the site from the DOE Office of Environmental Management (DOE-EM) to NNSA. Construction of the proposed LPF, which would be approximately 135,000 square feet in size, is expected to begin in 2024, with a completion date of 2028. LPF operations are expected to begin in 2030.

In November 2020, NNSA published the Draft EA on the NNSA NEPA web page (<https://www.energy.gov/nnsa/nnsa-nepa-reading-room>) and the DOE NEPA web page (<https://www.energy.gov/nepa/public-comment-opportunities>) for public review and comment. NNSA also provided the Tennessee Department of Environment and Conservation (TDEC) with a copy of the Draft EA. NNSA announced the availability of the Draft EA in local newspapers and provided an email address and postal address where comments could be submitted. NNSA initially provided an approximately 30-day comment period, which was scheduled to end on January 8, 2021. In mid-December 2020, in response to requests from stakeholders, NNSA

extended the public comment period through January 22, 2021. The Final EA, published in March 2021, considers all comments received on the Draft EA.

The NNSA Production Office Manager has determined that the construction and operation of the LPF at the proposed site is not a major Federal action that significantly affects the quality of the human environment within the meaning of NEPA. Therefore, preparation of an environmental impact statement (EIS) is not required.

ADDRESS: The LPF Final EA and this Finding of No Significant Impact (FONSI) have been prepared and are available to the general public on the NNSA NEPA web page (<https://www.energy.gov/nnsa/nnsa-nepa-reading-room>) and/or the DOE NEPA web page (<https://www.energy.gov/nepa/doe-environmental-assessments>). Requests for additional information may be submitted via regular mail to NNSA NEPA Document Manager, Attn: LPF EA, P.O. Box 2050, Oak Ridge, TN 37831; or by email: [NEPA.Comments@npo.doe.gov](mailto:NEPA.Comments@npo.doe.gov).

SUPPLEMENTARY INFORMATION: As described in Section 1.2 of the Final EA, lithium operations are currently primarily performed in Building 9204-2, which was built in 1943. The facility, at approximately 325,000 square feet, is oversized for today's mission, was not built in accordance with current codes and standards, is costly to operate, has many operating issues, and has exceeded its expected life. Approximately 98 percent of the assets in Building 9204-2 are more than 40 years old and 91 percent are insufficient to meet mission requirements (CNS 2019). The facility has concrete deterioration, both internal and external, in areas where the roofs, walls, and ceilings have been exposed to decades of corrosive liquids and processing fumes, requiring restricted access and protective equipment (e.g., hard hats) in some processing areas. In order to ensure lithium capabilities for decades to come and to reduce annual operating costs and increase processing efficiencies using safer, more modern, agile, and responsive processes, Building 9204-2 must be replaced; the current facility and equipment have degraded beyond the option of repair. Replacing Building 9204-2 with a new LPF that is code compliant would improve employee safety; reduce the site's footprint; improve facility operations to provide energy-efficient assets; remove substandard and hazardous space; and reduce operation and maintenance costs.

The proposed LPF would consist of a reinforced concrete and steel structure, approximately 135,000 square feet in size. The facility would be made up of eight independent wings. The LPF would be designed and constructed to meet the "high-hazard" classification for occupancy described in Section 307 of the International Building Code (IBC). For a non-nuclear facility like the proposed LPF, the IBC establishes the minimum requirements to safeguard the public safety and safety to life and property from fire and other hazards and provides the classification of buildings based on the purpose or purposes for which they are used.

ENVIRONMENTAL IMPACTS: Construction of the LPF would disturb approximately 13.9 acres of previously disturbed land at Y-12. Visually, Y-12 would remain a highly developed area with an industrial appearance. Minor, short-term effects would be due to generating airborne dust and other pollutants during construction. The area is in attainment for all National Ambient Air Quality Standards and emissions from LPF construction and operation would be below *de minimis* thresholds. There are no sensitive noise receptors in the vicinity of the proposed site and there would be no notable noise sources associated with LPF construction and operation.

Water requirements for LPF construction and operation would represent less than one percent of water use at Y-12 and would be within the bounds of historical water use at the site. No water quality impacts are expected from operations as stormwater and effluents would be managed under existing permits, as required. No wetlands would be affected by LPF construction and operation.

Construction activities would result in a potential increase in soil erosion. Appropriate mitigation, including detention pond/basin, runoff control ditches, silt fences, and protection of stockpiled soils would minimize soil erosion and impacts. No impacts on undisturbed geological resources would be expected. The LPF would be designed and constructed to meet applicable code requirements related to geological hazards.

Construction activities would not impact ecological resources because the facility is being sited on land that has been used for more than 70 years for the Biology Complex. Y-12 would remain heavily industrialized and no change to ecological resources would be expected. No critical habitat for threatened or endangered species is known to exist at Y-12.

Construction activities for the LPF would occur outside of the Y-12 Historic District and there would be no cultural resource impacts. The exterior of the new LPF would be designed to be compatible with existing historic properties.

Because the peak construction workforce (300 persons) and operational workforce (70 persons) would be negligible compared to the projected population in the region of influence (ROI), socioeconomic impacts, although beneficial, are expected to be negligible. No environmental justice populations were identified within the census tracts where LPF would be located. During construction and operation, no disproportionately high and adverse environmental or economic effects on minority or low-income populations are expected.

Workers would be subject to occupational risks. Over the full construction period, approximately 7.7 days of lost work from illness/injury and 0.06 fatalities would be expected. Operational impacts would be similar to existing operations. No offsite impacts are expected during normal operations. There would be no radiological impacts associated with LPF operations. LPF accidents would not result in high consequences, meaning no member of the public would be exposed to chemical concentrations that could result in irreversible or other serious health effects. The likelihood of sabotage and terrorism is extremely low. However, it is possible but highly unlikely that random acts of vandalism could occur. A variety of measures to control access and maintain security would be used.

The LPF would generate approximately 25.7 tons of nonhazardous waste annually, which would be disposed of at the Oak Ridge Reservation (ORR) landfills. Compared to the nonhazardous wastes that were disposed of in the ORR landfills in 2018, the LPF operations would increase wastes by 0.5 percent. The LPF would not generate any hazardous or radiological wastes.

Temporary increases in traffic associated with construction activities would not be notable compared to existing activities in the ROI. During peak construction, the addition of 300 vehicles to daily traffic counts of the Oak Ridge Turnpike, S. Illinois Avenue, and Scarboro Road would

result in a 0.9-2.7 percent increase in traffic counts. The addition of 300 construction workers would represent less than a one percent increase in Anderson County employment, which also suggests that area traffic would not be adversely affected. Operational traffic would be the same as existing lithium operations. Construction of the LPF would have minimal impacts on infrastructure capacity. The capacity of the existing infrastructure at Y-12 would be adequate to support the LPF.

**DETERMINATION:** Based on the analysis in the EA, I conclude that the construction and operation of the LPF at the proposed site does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA. Therefore, preparation of an EIS is not required.

Issued in Oak Ridge, Tennessee, this 19th day of March 2021.

---

Geoffrey L. Beausoleil  
Manager, NNSA Production Office