

**FINDING OF NO SIGNIFICANT IMPACT FOR THE  
ENVIRONMENTAL ASSESSMENT FOR  
ACTIVITIES IN SUPPORT OF THE  
Y-12 NATIONAL SECURITY COMPLEX  
MATERIALS MANUFACTURING MISSION**



**January 2024**

U.S. DEPARTMENT OF ENERGY  
NATIONAL NUCLEAR SECURITY ADMINISTRATION  
FINDING OF NO SIGNIFICANT IMPACT FOR THE  
ENVIRONMENTAL ASSESSMENT FOR  
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Y-12 NATIONAL SECURITY COMPLEX  
MATERIALS MANUFACTURING MISSION

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 performance of the U.S. nuclear weapons stockpile, and support other DOE/NNSA missions. One of NNSA's critical production sites is the Y-12 National Security Complex (Y-12) in Oak Ridge, Tennessee. Y-12 is the lead production plant for the materials manufacturing mission and is responsible for maturing the manufacturing process and deploying the capacity to produce the required materials components that are used in support of the nuclear weapons stockpile. NNSA does not currently have the capability to manufacture these materials in the required quantities it needs. Consequently, NNSA prepared an Environmental Assessment (EA) (DOE/EA-2218) to analyze the potential environmental effects associated with materials manufacturing activities performed in support of the materials manufacturing mission.

NNSA described the Proposed Action in the EA as a two-phase approach to materials manufacturing. Initially (2024-2025), NNSA would install government-furnished equipment in the Test and Demonstration Facility (TDF), which is operated by Teledyne Brown Engineering (TBE). The TDF is located at 350 Centrifuge Way in Oak Ridge, approximately 0.75 miles northeast of Y-12. To support the equipment installation, TBE would make some minor internal upgrades to the TDF. During this first phase, TBE would productionize the materials research and development (R&D) technology at TDF to provide initial capacity to prove the materials manufacturing process and support qualification evaluations. Operations at the TDF would be conducted by TBE personnel, with oversight from Y-12 personnel. In parallel with this first phase, NNSA would repurpose Building 9225-03 at Y-12 as a long-term Materials Manufacturing Facility (MMF). Repurposing Building 9225-03 would consist of internal building modifications, utility upgrades, installation of equipment, and a 3,000 square foot expansion of the building to accommodate utilities and additional capacity equipment. Once operational in approximately 2027, NNSA would shift materials manufacturing operations from the TDF to Building 9225-03. When NNSA achieves full-scale operations in Building 9225-03 (in approximately 2028), the TDF would provide a long-term supplemental capacity, and operate as needed.

In October 2023, NNSA published the Draft EA on the NNSA NEPA web page (<https://www.energy.gov/nepa/articles/doeea-2218-draft-environmental-assessment>) and the DOE

NEPA web page (<https://www.energy.gov/nepa/doeea-2218-activities-support-y-12-national-security-complex-materials-manufacturing-mission>) for public review and comment. 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 also provided the Tennessee Department of Environment and Conservation (TDEC) with a copy of the Draft EA for review; as well as notifying the City of Oak Ridge. NNSA provided an approximately 31-day comment period, which ended on November 30, 2023. No comments were received on the Draft EA. The Final EA was published in January 2024.

The NNSA Production Office Manager has determined that the Proposed Action described in the EA is not a major Federal action that significantly affects the quality of the human environment within the meaning of the *National Environmental Policy Act* (NEPA). Therefore, preparation of an environmental impact statement (EIS) is not required.

**ADDRESS:** The 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 the NNSA NEPA Document Manager, Attn: MM 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:** The EA analyzes the potential environmental effects of NNSA's proposal to perform materials manufacturing at the TDF, located approximately 0.75 miles northeast of Y-12, and at Building 9225-03, located at Y-12.

**ENVIRONMENTAL IMPACTS:** No land disturbance would occur at the TDF during the first-phase operations. The use of the TDF for manufacturing would be consistent with past uses of the facility, neighboring uses, and zoning. Construction at Building 9225-03 to ready the facility for production operations would not disturb any previous undisturbed land or include the construction of any wholly new facilities. Existing land uses at Y-12 would remain unchanged and use of Building 9225-03 for the materials manufacturing mission would be consistent with previous uses of that facility, as well as the current Y-12 mission and historic uses of the site.

Construction activity at the TDF is primarily limited to interior retrofits. Backup generators would be located at the exterior of the property but would not require major modifications to the building's exterior or site. The TDF site is heavily screened from public viewpoints with mature vegetation. An increase in construction related traffic and material staging and laydown areas would be virtually imperceivable to the casual viewer. Because Building 9225-03 is located within the margins of Y-12, construction-related activities would not draw attention beyond the installation's boundary. Site visitors and employees observing construction would find these activities similar to past and ongoing construction activities at the site.

A construction air permit from TDEC would not be required for either the TDF or Building 9225-03. Because there would only be internal construction activities at the TDF, no notable air emissions associated with construction are expected. Minor, short-term effects would be due to generating airborne dust and other pollutants during construction at Y-12. The area is in attainment

for all National Ambient Air Quality Standards and emissions from construction and operation would be below *de minimis* thresholds. The Proposed Action would have only small (essentially zero) greenhouse gas emissions.

The TDF is located in the City of Oak Ridge's Heavy Industrial Zoning District, which is not considered to be a noise sensitive area. At Y-12, the area surrounding Building 9225-03 is generally used for industrial purposes and is also not considered to be noise sensitive. Thus, the construction activities associated with the Proposed Action would take place in areas that are relatively insensitive to noise.

No effects to water resources are anticipated from construction activities or facility operations. Groundwater would not be used as a water source. During construction at Building 9225-03, Y-12's Stormwater Pollution Prevention Plan would be implemented to protect the East Fork Poplar Creek (EFPC). Potential effects to water quality are not expected during the materials manufacturing process. No hazardous chemicals would be used and no hazardous wastes would be generated at either Building 9225-03 or TDF. Although there would be cooling tower blowdown to Outfall 113, which reaches EFPC, no water quality effects are expected from operations. However, Outfall 113 is not currently permitted for cooling tower blowdown and could require modification to the facility National Pollutant Discharge Elimination System (NPDES) permit. Minimal quantities of makeup water for cooling systems would be required occasionally.

There are no wetlands within or adjacent to either Building 9225-03 or TDF and there would be no effects to wetlands from construction and operations. Building 9225-03 and TDF do not overlap with 100- and 500-year floodplains associated with the EFPC. In the immediate vicinity of Building 9225-03, the 100- and 500-year floodplains for the EFPC do not extend beyond the existing channel. The TDF is located over 3,500 feet to the northeast of the 100- and 500-year floodplains of the EFPC. There would be no effects from flooding nor floodplain disturbance during construction and operations.

Repurposing Building 9225-03 would cause minor effects to the existing geologic and soil conditions at the site. At Y-12, construction activity would occur on previously disturbed land, which was graded and compacted and paved during the original construction of Building 9225-03 in 2004. Grading, excavation, and other site development activities associated with Building 9225-03 would occur within a previously disturbed parcel, and less than 1 acre of previously disturbed land would be re-disturbed. Because the area to be disturbed at Y-12 is currently partially paved, the potential for increased soil erosion due to stormwater runoff and wind is minimal. Additionally, the site is generally level, which would reduce potential stormwater velocity and any sediment transport.

No critical habitat for threatened or endangered species is known to exist at Y-12, or on or near the TDF. Because of the minimal construction activities, and the fact that any construction activity would occur on previously disturbed land, only minimal terrestrial biotic effects are expected.

To ensure construction activities would not have an adverse effect on facilities within the Y-12 Historic District, exterior modifications of Building 9225-03 would be designed to be compatible with existing historic properties. Unanticipated discoveries of archaeological materials during

construction would be evaluated and, if needed, mitigated in accordance with the Y-12 historic Programmatic Agreement (PA). Construction activities at the TDF would consist of internal modifications including the installation of government-furnished equipment and utility upgrades. There would be no notable change to the constructed footprint, exterior wall structure, or outside appearance of the building; therefore there would be no effects to cultural resources. Unanticipated discoveries of archaeological materials during construction, although unlikely to occur, would be evaluated and, if needed, mitigated in accordance with the PA.

Repurposing Building 9225-03 would require approximately 30 construction workers (at peak construction), with construction activities expected to be completed in 18 months. Repurposing the TDF would also require approximately 30 construction workers at the peak, with construction activities expected to be completed in 18 months. Materials manufacturing operations would require up to 5 TBE workers at TDF and 10 Y-12 workers at Building 9225-03. Because the peak construction workforce and operational workforce would be negligible compared to the projected population in the region of influence (ROI), socioeconomic impacts, although beneficial, are expected to be negligible.

NNSA acknowledges the existence of low-income and minority populations in the Scarboro and Woodland communities (which are approximately 1.3 miles north of the Y-12 Complex). However, it is anticipated that any effects would be small to the Scarboro and Woodland communities, as well as to all other members of the population; consequently, there would be no disproportionate and adverse human health effects on minority populations and low-income populations from the Proposed Action.

During both construction and operations, it is anticipated that environmental and health effects would be minimal, temporary, and confined to the Y-12 Complex and the TDF area. Based on the effects analysis for resource areas, no notable adverse effects are expected from construction and materials manufacturing operations at the Y-12 Complex or the TDF. Workers would be subject to occupational risks. A total of 2.8 days of lost work from illness/injury and zero (0.01) fatalities would be expected from construction activities at the TDF and Building 9225-03. Operational impacts would be similar to existing operations. No offsite impacts are expected during normal operations. In an average year, a total of one (0.6) day of lost work from illness/injury and zero (0.0003) fatalities would be expected from concurrent operations at the TDF and Building 9225-03. There would be no radiological impacts associated with operations.

Because there would be no hazardous chemicals or radiological materials utilized during materials manufacturing, NNSA did not identify any potential hazards to the public that would require preparation of a detailed accident analysis. The materials that would be used for manufacturing are low toxicity and are non-carcinogenic and non-reactive at normal temperatures and pressures. Workers would be adequately protected by use of personnel protective equipment such as gloves and eye protection, and no short- or long-term adverse effects are expected. The risk of terrorist acts associated with the Proposed Action are considered minimal given that there would be no hazardous or radiological materials at either the TDF or Building 9225-03. It is also anticipated that existing Y-12 physical security measures (e.g., gates and fences) would serve as an impediment to assault by trucks or other vehicles at Building 9225-03.

During construction, no notable quantities of nonhazardous waste would be generated during construction. To the extent practicable, NNSA would implement pollution prevention/recycling measures to minimize waste generation and disposal requirements. During operations, a total of approximately 7.2 tons of nonhazardous waste would be generated at the TDF and Building 9225-03 annually. At a typical density of 250 pounds per cubic yard of municipal waste, 7.2 tons equates to approximately 57 cubic yards of nonhazardous waste that would be generated annually by materials manufacturing. Compared to the 155,034 cubic yards of nonhazardous waste that was disposed of in the Oak Ridge Reservation landfills in 2022, materials manufacturing would increase wastes by 0.037 percent. Minimal quantities of waste (such as consumable air filters) could be managed as special wastes and disposed of in Landfills IV and V. No hazardous or radiological wastes would be generated.

Temporary increases in traffic associated with construction activities would not be notable compared to existing activities in the ROI. The addition of 30 construction workers would represent much less than a one percent increase in the Anderson County employment, which also suggests that area traffic would not be adversely affected. Consequently, it is not expected that traffic associated with construction would adversely affect traffic in the vicinity of Y-12. There would be no effect on area roads during operations because work at the TDF and Building 9225-03 would be performed by existing Y-12 employees. The transportation of additional materials and parts during operation are not expected to increase overall traffic, as transportation will occur within the currently executed TDF to Y-12 transportation strategy. There are regularly scheduled deliveries between TDF and Y-12 and activities will be batched to fit within these already occurring transportations.

Construction and operational activities would have minimal impacts on infrastructure capacity at TDF. The capacity of the existing infrastructure at Y-12 would need to be upgraded to support operations for the Proposed Action.

DETERMINATION: Based on the analysis in DOE/EA-2218, I conclude that the Proposed Action of materials manufacturing activities performed in support of the materials mission 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 16th day of January 2024.

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