

Amended Record of Decision

Record of Decision on Treating Transuranic (TRU)/Alpha Low-Level Waste at the Oak Ridge National Laboratory (DOE/EIS-0305)

United States Department of Energy

Office of Environmental Management

PUBLIC AVAILABILITY AND CONTACT INFORMATION:

- This Amended Record of Decision (AROD) and the associated National Environmental Policy Act (NEPA) documents are available at: <https://energy.gov/nepa>

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DECISION

DOE is amending its August 9, 2000, Record of Decision (ROD) (65 FR 48683) to the *Final Environmental Impact Statement for Treating Transuranic (TRU)/Alpha Low-Level Waste at the Oak Ridge National Laboratory, Oak Ridge, Tennessee* (DOE/EIS-0305; EIS-0305). Under this AROD for EIS-0305, DOE is extending the operating life of the existing TRU Waste Processing Center (TWPC) through FY2052 and accepting 449 shipments of approximately 4,279 m³ of

TRU waste from off-site DOE facilities to TWPC for treatment, characterization, and temporary storage.

Expected TRU waste generator sites include: Savannah River Site (Aiken, SC), Waste Control Specialists LLC (Andrews, TX), Massachusetts Institute of Technology (Cambridge, MA), Lawrence Livermore National Laboratory (Livermore, CA), Knolls Atomic Power Laboratory (Niskayuna, NY), Separations Process Research Unit (Schenectady, NY), Shallow Land Disposal Area (Vandergrift, PA), Nevada National Security Site (NNSS) (Nye County, NV), and Los Alamos National Laboratory (Los Alamos, NM). However, under the current updates to the action, DOE may transport TRU waste from any DOE facility to TWPC, including sites not yet identified or included in this AROD and associated Supplement Analysis (DOE-EIS-0305-SA-1), assuming all shipments follow applicable laws and regulations. The potential impacts and analysis will not change if additional sites are identified, provided that the shipments and quantities analyzed in DOE-EIS-0305-SA-1 remain accurate.

TRU waste will be accepted for treatment and characterization at TWPC only in accordance with the Tennessee Hazardous Waste Management Permit (TNHW-200) (Environmental Protection Agency ID Number: TN1890090003) and the *Site Treatment Plan for Mixed Waste on the U.S. Department of Energy Oak Ridge Reservation* (STP). DOE is under a Tennessee Department of Environment and Conservation Commissioner's Order (September 1995) to implement the STP, under the Federal Facility Compliance Act, that mandates specific requirements for the treatment and disposal of Oak Ridge National Laboratory's (ORNL) TRU waste. Treated and characterized waste will ultimately be shipped from TWPC to the DOE Waste Isolation Pilot Plant (WIPP) or NNSS for disposal. Shipments from TWPC to WIPP or NNSS were addressed in the *Final Waste Management Programmatic EIS for Managing Treatment, Storage, and*

Disposal of Radioactive and Hazardous Waste (DOE/EIS-0200; WM PEIS), and no additional NEPA review is required.

BACKGROUND

DOE's purpose and need for the action, as described in EIS-0305, was to develop and implement safe and efficient treatment and temporary storage of TRU/alpha low-level waste generated at ORNL in accordance with Resource Conservation and Recovery Act regulations. In EIS-0305, DOE analyzed five reasonable alternatives, including no action, for construction of facilities with different technologies to treat and temporarily store TRU/alpha low-level waste. The ROD for EIS-0305, documented DOE's selection of the Preferred Alternative for the construction, operation, and decommission/decontamination of TWPC to treat and store legacy TRU/alpha low-level waste in preparation for ultimate disposition off-site at WIPP.

TWPC was constructed on five acres of land adjoining the Melton Valley Storage Tanks at ORNL. It is a Hazard Category 2 Nuclear Facility and the ORR's center for managing, treating, packaging, and shipping TRU waste. Since 2003, 98% of the contact-handled (CH) and remote-handled (RH) TRU waste has been processed and 90% has been dispositioned, leaving ample space in TWPC to allow for further waste treatment, characterization, and temporary storage.

DIFFERENCES FROM PROPOSED ACTION AND ENVIRONMENTAL IMPACTS IN EIS-0305/ROD

EIS-0305/ROD addressed the treatment, characterization, and temporary storage of legacy TRU/alpha low-level waste at ORNL. This AROD documents the DOE decision for transport of TRU waste to TWPC from off-site DOE facilities and the required life extension of the facility to

FY2052, with the assumption that all shipments of waste will follow applicable laws and regulations.

The following resources that were originally analyzed in EIS-0305 were not analyzed in detail in DOE-EIS-0305-SA-1, because there are no differences in potential impacts anticipated by changes to the proposed action or new circumstances or information: land use, cultural and historic resources, ecological resources, geology and seismicity, surface water, groundwater, wetlands and floodplains, noise, accidents, socioeconomic, environmental justice (per Executive Order 14154), and cumulative impacts. The resource areas described below were analyzed in detail in DOE-EIS-0305-SA-1.

Waste Management: For the facility life extension, the primary waste types anticipated to be treated and processed at TWPC are CH and RH TRU. Waste management techniques will not change from the analysis conducted in EIS-0305.

In EIS-0305, 4,050 m³ of legacy waste was estimated for treatment, and 10,833 m³ of total waste was estimated to be generated at TWPC, including 1,560 m³ of sanitary wastewater. From FY2004-FY2025, 3,955 m³ of legacy waste was processed/treated, 10,980 m³ of waste was generated (including TRU, low-level waste [LLW], and mixed low-level waste [MLLW]), and 28,000 m³ of sanitary wastewater was generated. For FY2026-FY2052, the estimate for TRU waste to be processed/treated is 7,388 m³, with 19,949 m³ of waste generated (including TRU, LLW, and MLLW), and 38,880 m³ of sanitary wastewater generated (primarily due to a greater number of staff than originally anticipated).

TWPC's wastewater is disposed of at the Harriman Publicly Owned Treatment Work (POTW) facility. In comparison to Harriman POTW's water treatment capacity, the amount of sanitary

wastewater generated by TWPC is negligible and will not have a significant impact on the capabilities of the utility system.

The total waste volumes exceed original estimates in EIS-0305; however, 98% of the CH and RH TRU waste has been processed and 90% has been dispositioned, leaving ample storage space at TWPC, and no additional waste types are anticipated for the proposed action. Given the types of waste to be treated, available space at TPWC, and the capacity for sanitary wastewater treatment via Harriman POTW no significant impacts are anticipated.

Climate and Air Quality: Air emissions from DOE's TRU/Alpha Low-Level Radioactive Waste Remediation Operation are permitted under emission source reference number 73-0165-01 at TWPC. United Cleanup Oak Ridge, LLC (UCOR) operates TWPC under non-Title V Operating Permit number 071009P. The operating permit for TWPC includes conditions for dose and emissions limits for radionuclides into the ambient air, particulate matter, and volatile organic compounds. The EIS-0305 analysis for air emission impacts was estimated by considering characteristics of all waste streams to be processed at the facility. Minor emissions during normal operations with slightly higher volatile organic emissions during tank waste processing were expected. Given the primary waste streams (i.e., CH and RH TRU) that are anticipated for treatment and characterization during the facility life extension, similar or lesser impacts are expected compared to the original analysis.

Transportation: DOE-EIS-0305-SA-1 used data from the WM PEIS to conduct a screening analysis for potential impacts of transportation associated with the proposed action. DOE uses the screening analysis to determine when a more detailed analysis is necessary. DOE estimated the public and crew LCFs and accident fatalities from the additional shipments and found that

they were significantly less than 1 latent cancer fatality for the public and crew under both incident free, radiological accident, intentional destructive act, and no-radiological accident conditions. Risk associated with transportation was not a substantial change from the risk described in EIS-0305.

Utility Requirements: The projected electricity usage over the life of the facility (FY2004-FY2052: 28,763 kW) exceeds the original estimation (15,000 kW) but is not anticipated to result in significant impacts given the grid capacity (i.e., 166 MW) for the ORR. The total estimated water usage will be less than originally analyzed. Therefore, no additional impacts are anticipated by extending the operating life of the facility.

Human Health: Over the operating life (FY2004-FY2025) of TWPC, annual radiological release doses to the off-site public MEI, involved worker MEI, non-involved worker MEI, affected population, and facility worker were lower than those predicted in EIS-0305. Future, continued impacts are anticipated to be similar to or less than historic values throughout the life extension.

At TWPC, administrative control limits are in place to restrict the maximum worker TEDE to less than 600 mrem and the average worker TEDE to less than 50 mrem. During the operational lifetime of TWPC, the maximum worker TEDE was 160 mrem and the average worker TEDE was 80 mrem. The associated 70-year risk for the maximum worker TEDE and average worker TEDE, using an incidence rate of $6\text{E-}04$ fatal cancers per rem, results in a PCF of $6\text{E-}03$ and $7\text{E-}04$, respectively.

TWPC emissions will continue to be monitored and stay below radiological release and dose limits in all categories for the TWPC life extension. Consequently, there will be minimal effects

on the health of the public, involved worker, and non-involved worker in comparison to those evaluated in EIS-0305.

DOE concluded in the SA that the changes to the proposed action are not substantial changes relevant to environmental concerns, nor are there substantial new circumstances or information about the significance of the adverse effects; as described in NEPA and the DOE NEPA Implementing Procedures (June 16, 2026). No further NEPA documentation is required. DOE will implement the proposed action for a facility life extension (FY2026-FY2052), and the acceptance of TRU waste from DOE generator sites to TWPC for treatment, characterization, and temporary storage.

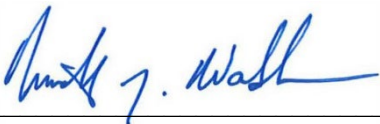
This document has been reviewed and confirmed to be UNCLASSIFIED and contains no UCNI.

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Signed in Washington, D.C., on July 24, 2026.



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