

# Idaho Cleanup Project

## Overview

The Idaho National Laboratory (INL) site was established in 1949 as the National Reactor Testing Station. The original mission of the INL site was to develop and test civilian and defense nuclear reactor technologies and manage Spent Nuclear Fuel (SNF). Fifty-two reactors — most of them first-of-a-kind — were built at the site, including the Navy's first prototype nuclear propulsion plant. Of the 52 reactors, four remain in operation.

In 1951, the INL site achieved one of the most significant scientific accomplishments of the century — the first use of nuclear fission to produce a usable quantity of electricity at the Experimental Breeder Reactor No. 1 (EBR-I). The EBR-I is now a registered National Historic Landmark open to the public.

The Idaho Cleanup Project (ICP) at the INL Site is responsible for treating, storing, and dispositioning a variety of radioactive and hazardous wastes; removing and dispositioning targeted buried waste; removing or deactivating unneeded facilities; and managing — and ultimately removing — SNF and High-Level Waste (HLW) from Idaho. Activities are primarily performed at the Radioactive Waste Management Complex (RWMC) and the Idaho Nuclear Technology and Engineering Center (INTEC) facilities.

ICP consistently provides updates about cleanup activities to the Shoshone-Bannock Tribes, the Idaho Department of Environmental Quality, the Idaho Cleanup Project Citizen's Advisory Board, and the Idaho congressional delegation's regional staff.

## Calendar Year 2023 Accomplishments

- **Completed ahead of a regulatory milestone the transfer of all SNF from a storage basin at INTEC to dry storage — an EM 2023 priority**
- **Began operation of the Integrated Waste Treatment Unit (IWTU) — an EM 2023 priority — and treated 68,000 gallons of liquid waste**

- **Began construction of a new disposal cell at the Idaho CERCLA Disposal Facility (ICDF), which will extend the facility's operational life by 25 years and increase the disposal capacity three-fold**
- **Conducted 7,000th shipment of transuranic (TRU) waste to the Waste Isolation Pilot Plant (WIPP)**

## Planned Cleanup Scope 2024–2034

Over the course of the next decade, cleanup activities at the INL Site will focus on completing treatment of remaining liquid sodium-bearing waste, facility decontamination and demolition at Naval Reactors Facility (NRF), shipping the remaining balance of TRU waste, and demolition and closure of facilities at RWMC and INTEC.

Work to demolish the last remaining waste processing facilities at the Subsurface Disposal Area (SDA) will be completed in 2024. Closure of the SDA and the construction of a permanent cap will follow.

At INTEC, activities for sodium-bearing waste processing, calcine, and SNF will increase in the coming decade. Sodium-bearing waste processing will continue at the IWTU, which is expected to finish by the end of 2030. Additionally, tank farm closure operations will commence. The calcine retrieval and processing systems needed to make the waste road-ready are in their early stages of development. Mockups of the waste retrieval and bin set cleaning systems are being tested and prepared for installation. The capabilities for calcine waste processing will be developed, installed, and placed into operation. For SNF, fuel packaging capabilities will be developed and installed, and packaging operations to make the fuel ready for shipment out of Idaho will commence.

EM will continue to support the DOE Office of Naval Reactors by demolishing the S1W, A1W, and S5G reactor prototypes and associated buildings, freeing up several acres at the NRF.

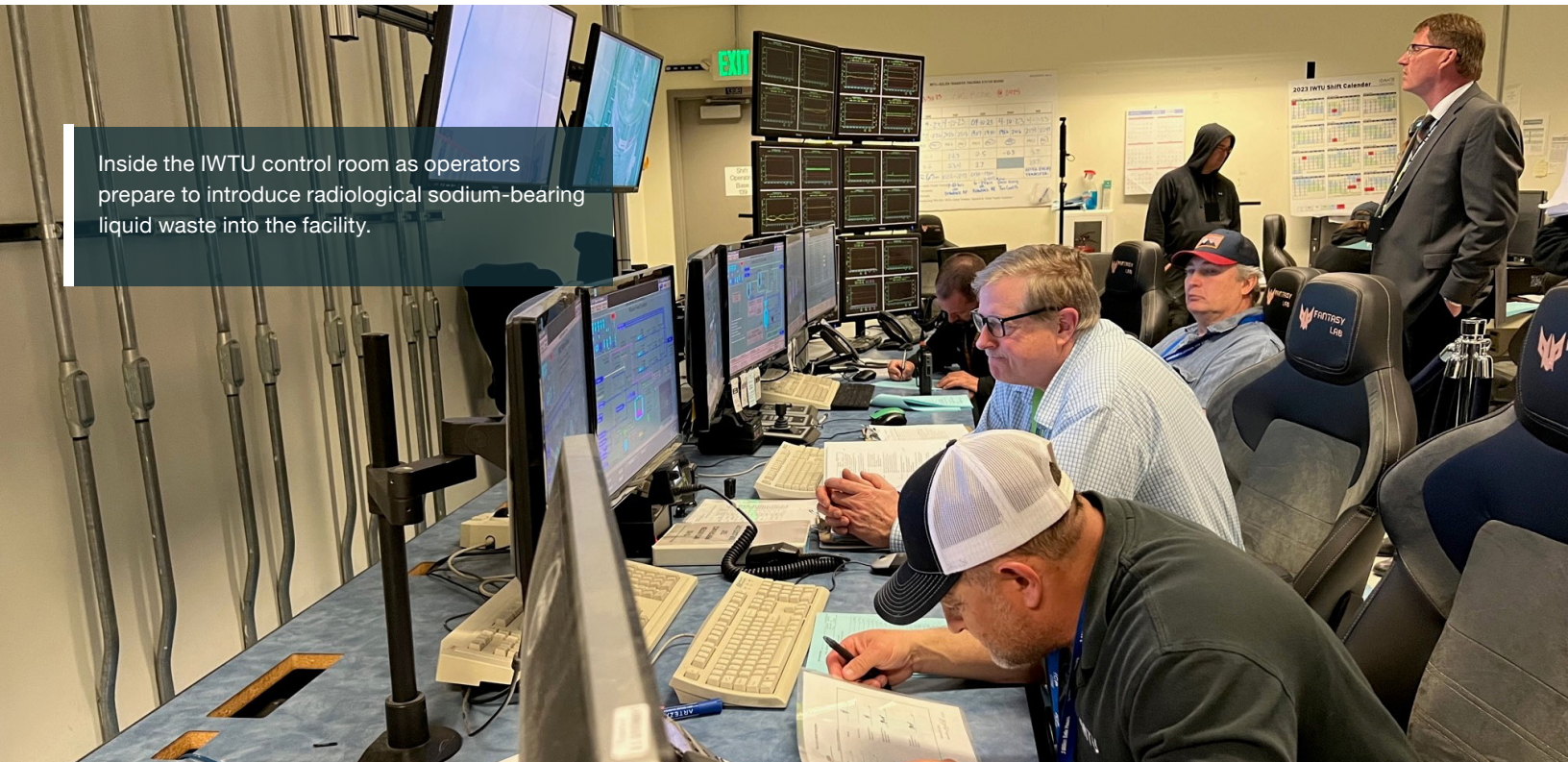
Lastly, EM will complete the additional cell at the ICDF, an on-site low-level waste disposal facility by 2026. The additional cell will allow for safe, cost-effective disposal

activities of contaminated soil and debris generated from D&D of facilities until 2050.

## Key Regulatory Milestones 2024–2034

The regulatory milestones are contained in the 1995 Idaho Settlement Agreement (ISA), 2019 Supplemental Agreement (SA), the Agreement to Implement the ISA, the Site Treatment Plan (STP), and the Federal Facility Agreement and Compliance Order. The milestones include:

- Idaho provides at least 55 percent of transuranic waste shipments to WIPP, based on an annual three-year average — 2031 (SA)
- Calcine waste milestones:
  - Define project – approve mission needs statement — 2025 (STP)
  - Identify and develop treatment technology — 2027 (STP)
  - Issue record of decision amendment identifying treatment technology — 2028 (STP)
  - Schedule for remaining milestones — 1 year after CD-1 project approval (STP)
- Complete certification of over 1,900 cubic meters original volume TRU waste — 2026 (STP)
- Complete treatment and disposition of remaining original volume TRU waste (over 400 cubic meters) — 2029 (STP)
- Complete sodium-bearing waste operations — 2030 (STP)
- Complete SDA cap — 2028



Inside the IWTU control room as operators prepare to introduce radiological sodium-bearing liquid waste into the facility.

## Post-2034 Cleanup Scope

At INTEC, HLW processing and SNF packaging are expected to be completed in the 2030s. In support of the Office of Nuclear Energy, processing and shipping remote-handled TRU, mixed low-level waste, and low-level waste will continue into the 2040s. After closure of the RWMC and INTEC facilities, the area will continue to be monitored and assessed for any further needed remediation as part of DOE's long-term stewardship. DOE currently anticipates completing cleanup work at the INL Site between 2049 and 2060.