RADIOACTIVE WASTE MANAGEMENT COMPLEX

The Radioactive Waste Management Complex (RWMC) is in the southwest corner of the Idaho National Engineering and Environmental Laboratory. Bechtel BWXT Idaho, LLC (BBWI) manages and operates the Idaho National Engineering and Environmental Laboratory (INEEL) for the U.S. Department of Energy.

Current Missions

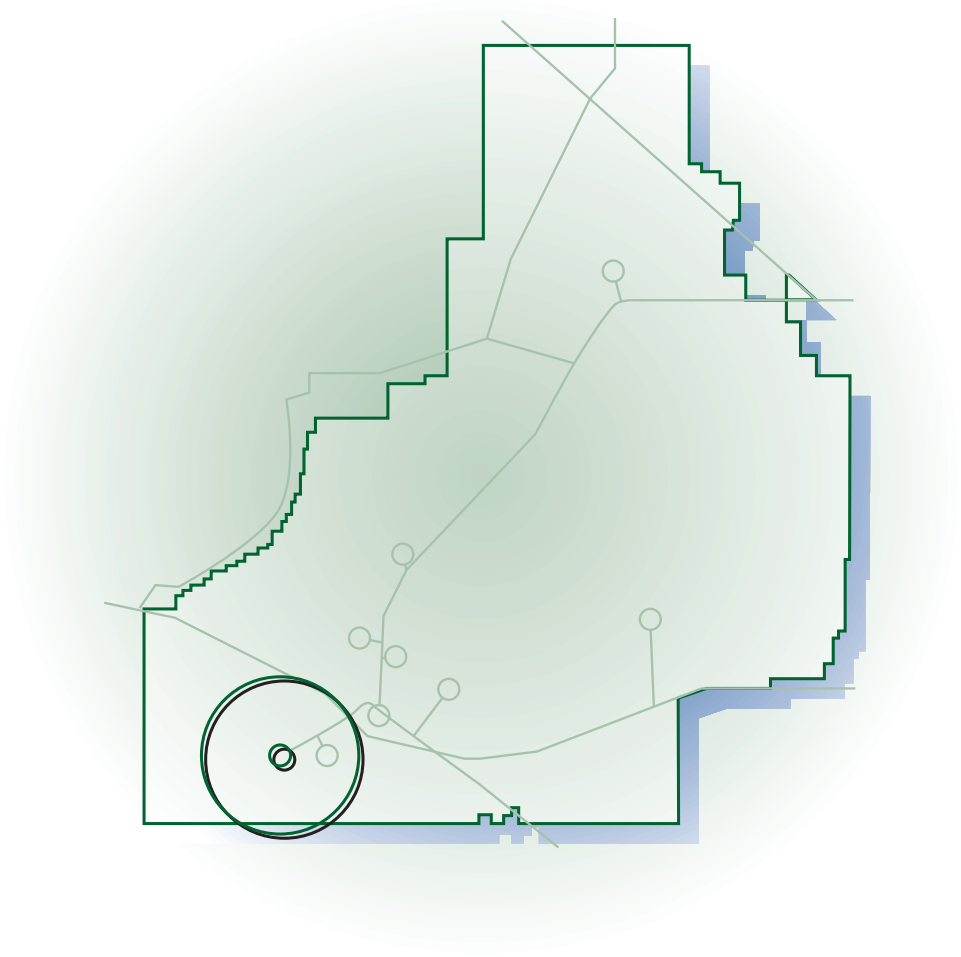
The RWMC is a 168-acre (69-hectare) area used to manage solid transuranic waste and solid low-level radioactive waste generated in national defense and research programs. The facility also supports research and development projects to characterize landfills, waste retrieval and processing technology, and temporary storage and treatment of transuranic waste destined for the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. Waste shipments to WIPP from RWMC began in 1999 and will continue until DOE meets its commitment for the safe, permanent, cost-effective disposal of retrievable legacy wastes remaining from the United States' nuclear weapons production during the Cold War. As of June 27, 2001, the INEEL had made 97 shipments of transuranic waste to WIPP, which included more than 2,800 drums of waste. (Waste shipments out of Idaho are also a key component in the 1995 Settlement Agreement among the DOE, U.S. Navy and the state of Idaho.)

RWMC's main focus is to help the Department of Energy and the INEEL fulfill its environmental cleanup mission

The RWMC stores low-level radioactive waste generated in national defense and research programs and prepares it for shipment to the Waste Isolation Pilot Plant in New Mexico. Here the first shipment is checked prior to departing the INEEL.

to safely manage and dispose of retrievable radioactive wastes stemming from 50 years of national nuclear materials production. The RWMC supports DOE's environmental mission by developing, demonstrating and deploying subsurface soil characterization and recovery technologies that are safe and cost effective. One such technology, vacuum vapor extraction, draws volatile organic solvent vapors from the ground and thermally destroys them. Since its inception in 1996, this process has removed more than 89,200 pounds of organic solvent vapors from the ground beneath RWMC.

Between 1954 and 1970, radioactive and chemically hazardous waste was buried in the RWMC's 97-acre Subsurface Disposal Area (SDA). This site is being remediated under CERCLA (the Superfund). The SDA consists of 20 pits, 58 trenches and 21 soil vault rows. The U.S. Department of Energy and BBWI are performing a remedial investigation/ feasibility study. The study will describe potential risks of the buried waste, summarize remediation alternatives and provide information that the state of Idaho, EPA and DOE decision-makers will use to compare the remedial alternatives. A proposed plan for public review may be available in 2003. Potential options for dealing with the wastes include institutional controls, containment, stabilization, retrieval and treatment followed by disposal, or a combination of these approaches.



The Radioactive Waste Management Complex as seen from the air. Some 300 employees work at this facility.

Construction of the **Advanced Mixed Waste Treatment Project** facility is advancing rapidly under the management of BNFL, Inc. The facility will prepare plutonium-contaminated waste stored at the INEEL for shipment to the WIPP in New Mexico. The facility is on track for completion by its scheduled construction deadline of December 2002. BNFL, Inc. will process approximately 65,000 cubic meters of mixed transuranic waste in temporary storage at the Transuranic Storage Area to meet environmental laws and disposal criteria, and package the waste for shipment to WIPP.

Employees

About 300 BBWI employees work at RWMC. These employees have extensive operations, engineering and scientific expertise and experience in subsurface soil cleanup and remediation. In addition, BNFL Inc. will employ hundreds more in building and operating the Advanced Mixed Waste Treatment Project facility.

Most RWMC employees work a four 10-hour day schedule, Monday through Thursday. The RWMC also runs shifts 24 hours a day, 7 days a week to support activities for characterizing, certifying and shipping transuranic waste.

Facilities

In addition to an administrative area, the RWMC has these operating areas and facilities.

- The **Subsurface Disposal Area** (SDA) is a 97-acre (35-hectare) area in the western section of the RWMC. It contains an active shallow-land-burial area for the permanent disposal of solid, low-level waste. The area also contains pits and trenches where mixed transuranic and low-level waste was buried between 1954 and 1970. Much of the transuranic waste buried at the RWMC was shipped to the INEEL from the Rocky Flats Plant near Golden, Colo., and was the product of Cold War nuclear weapons production.

The artist's concept at left shows the new Advanced Mixed Waste Treatment Facility, center of photo, that is now under construction.

- The **Transuranic Storage Area (TSA)** is a 56-acre (23-hectare) area in the southern section of the RWMC dedicated to storage of contact- and remote-handled solid transuranic waste. This waste was received at the INEEL after 1970, but was not buried. Instead, it was placed in retrievable storage on asphalt pads, then covered with an earthen berm. The waste, in drums and boxes, is also stored in storage modules. The INEEL is currently shipping transuranic waste to the WIPP near Carlsbad, New Mexico, which serves as the nation's permanent deep-geologic repository for transuranic waste.Within the Transuranic Storage Area are a number of facilities used in managing the transuranic waste:
- The **Stored Waste Examination Pilot Plant (SWEPP)** characterizes waste to ensure it meets repository acceptance criteria and transportation requirements. Mixed transuranic waste is temporarily stored in permitted storage areas until it is packaged and sent to the WIPP repository.
- The **TRUPACT Loading Station** is being used to load transuranic waste into TRUPACT-II shipping containers for shipment to the WIPP repository.
- The **Advanced Mixed Waste Treatment Project (AMWTP)** is a facility owned by BNFL, Inc., under contract with the Department of Energy. The facility is currently under construction. The facility will process approximately 65,000 cubic meters of mixed transuranic waste in temporary storage at the Transuranic Storage Area to meet environmental laws and disposal criteria, and package the waste for shipment out of Idaho to the WIPP. How much is 65,000 cubic meters? Stacked on a football field, the material would reach a height of about 48 feet. A treatment process, called supercompaction, will reduce the volume of waste by crushing 55-gallon drums into smaller bundles, or "pucks" by a high-force press. These pucks, on

average, will have about an 11-gallon volume — about one-fifth the volume of the original drum and its waste.

History

The RWMC was established in 1952 as a 13-acre (5-hectare) location for storage and disposal of solid radioactive waste. For about two years, only low-level waste was buried at the RWMC. In 1954, Rocky Flats began shipping defense waste with transuranic elements, and by 1957 the original 13 acres (5-hectares) were nearly filled.

The RWMC was then expanded to 97 acres. The size of the RWMC remained the same until 1970.

Between 1960 and 1963, the RWMC accepted low-level waste from private sources such as universities, hospitals and research institutes. This service stopped when commercial burial sites for contaminated waste from private industry became available.

In 1970, the Atomic Energy Commission adopted a new policy for managing transuranic waste. All waste contaminated with transuranic elements higher than 100 nanocuries per gram was to be placed in interim storage until a federal repository was available for permanent disposal. That same year, the 56-acre (23-hectares) Transuranic Storage Area was established. Asphalt pads were constructed on which transuranic waste was stacked and then covered with plywood, plastic sheeting and three feet of soil.

From 1975 to 1996, air-support buildings were used to protect recently received waste containers during stacking operations. These were emptied in 1996 and decommissioned in 1998. In 1996, the INEEL completed construction on eight permitted waste storage facilities in the Transuranic Storage Area at the RWMC. In order to meet Resource Conservation and Recovery Act permit requirements, the new facilities provide interim storage for the waste until it can be shipped to WIPP.

In 1996, DOE awarded a privatized contract to BNFL, Inc. to begin permitting and design work on the Advanced Mixed Waste Treatment Project. Beginning in 2003, BNFL, Inc. will retrieve, sort and compact plutonium-contaminated waste stored at RWMC and prepare it for final disposal at WIPP.

In April of 1999, INEEL made its first transuranic waste shipment to the Waste Isolation Pilot Plant. The INEEL will continue to make waste shipments to WIPP until Dec. 31, 2002, the target date for completing shipment of the first 3,100 cubic meters of waste. The remainder of the 65,000-cubic-meter volume will be processed by BNFL, Inc. and completely removed from the state by 2018 under the terms of the 1995 settlement agreement.

Distances

Distances to nearby cities:

51 miles (82 kilometers) west of Idaho Falls

32 miles (51 kilometers) southwest of Mud Lake

15.5 miles (25 kilometers) east of Arco

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