

Low-Level Waste

...at the Nevada Test Site

Background

In 1961, the U.S. government began using the Nevada Test Site (NTS) for the disposal of low-level waste. Initially the waste was generated by the weapons testing program; however, later it was also generated through U.S. Department of Energy (DOE) environmental restoration activities.

Since 1976, NTS disposal activities have expanded to include the receipt of low-level waste generated at other DOE and U.S. Department of Defense-approved facilities throughout the United States. The DOE Nevada Site Office (NSO), which manages these NTS programs, is committed to conducting disposal operations in the safest, most systematic manner possible.

NTS – An Ideal Location

A combination of various conditions make the NTS ideal for the safe and effective disposal of low-level waste. The two disposal sites are located well above regional groundwater levels (770 feet and 1,600 feet, respectively), and are contained in “closed basins.” A “closed basin” describes a certain kind of topography that prevents the external drainage of surface water. The surface water collects within the basin and eventually evaporates. Disposal conditions at the NTS are further optimized by the arid desert environment and the typically high temperatures, which serve to maximize evaporation.

Once accepted for disposal at the NTS, low-level waste is disposed either in engineered pits and trenches at the Area 5 Radioactive Waste Management Site (RWMS) or in subsidence craters at the Area 3 RWMS.

Radioactive Waste Management Sites Area 5

The Area 5 Radioactive Waste Management Site is a 732-acre site, of which 92 acres are currently used for low-level waste disposal. Low-level waste is generally shipped to the NTS in drums and boxes that are placed in shallow, excavated disposal cells, approximately 22 feet deep. To ensure the integrity of waste packages during transit, radiological surveys are completed for each truck and package upon arrival at the Area 5 RWMS and again prior to being released from the disposal area. Once delivered to the Area 5 RWMS, the containers are



carefully stacked and methodically arranged in a grid system within the disposal cells to facilitate tracking. As the cells fill, waste handlers spread an 8-foot layer of soil over the waste.

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WWM

What is Low-Level Waste?

Unlike other categories of radioactive waste, low-level waste is not defined by what it is, but rather by what it is not. Low-level waste is material that is not classified as high-level waste, transuranic waste, spent nuclear fuel, or by-product material such as uranium mill tailings. Low-level waste usually contains small amounts of radioactive material and includes items like construction debris, trash, soil, and equipment.

Area 3

Low-level waste is disposed in subsidence craters at the Area 3 RWMS, a 128-acre facility at the NTS. These craters, formed by historical underground nuclear weapons testing, are ideal locations for the burial of radioactive waste. The Area 3 RWMS is routinely used for the disposal of large or bulk-type containers, including concrete monoliths, “transportainers,” “supersacks,” and “burrito wraps.” The majority of waste disposed in the Area 3 RWMS is generated by environmental restoration activities throughout the DOE Complex. Layers of waste are separated by a 1- to 3-foot layer of clean fill soil. Radiological surveys similar to those conducted at Area 5 are performed on each waste shipment received at Area 3.



How Do We Ensure Safe Disposal?

- **Radioactive Waste Acceptance Program** - verifies that waste *types, packaging, and handling procedures* conform to the NTS’s stringent waste acceptance criteria prior to shipment and acceptance
- **Risk Assessments** - systematic analyses, such as computer models, offer predictions on potential short-term and long-term risks associated with waste disposal activities
- **Air, Groundwater, and Soil Monitoring** - serves as an early detection system in the unlikely event that any contamination migrates from the immediate disposal area
- **Closure Program** - focuses on the development of earthen closure caps for disposal sites to protect against potentially damaging environmental forces, such as erosion

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