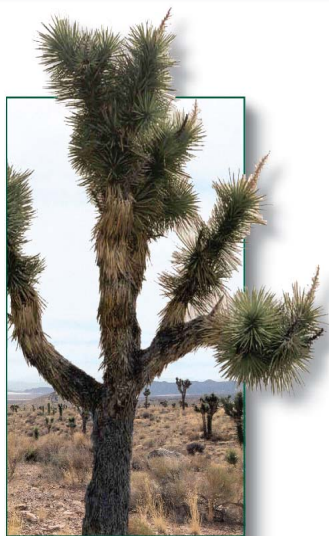
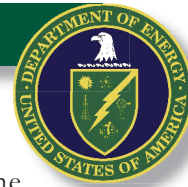


Low-Level Radioactive Waste Disposal

safety ❖ performance ❖ cleanup ❖ closure



In 1961, the U.S. government began utilizing the Nevada Test Site (NTS) for disposing low-level radioactive 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 radioactive waste generated at other DOE and U.S. Department of Defense-approved facilities throughout the United States. The DOE National Nuclear Security Administration Nevada Site Office manages these NTS programs and is committed to conducting disposal operations that protect workers, the public and the environment.

Nevada Test Site - An Ideal Location

A combination of various conditions make the NTS ideal for safely and effectively disposing low-level radioactive waste. The two disposal facilities, located in Areas 5 and 3, are well above regional groundwater levels (approximately 800 feet and 1,600 feet, respectively), and are contained in closed basins. Disposal conditions at the NTS benefit from the arid desert environment and the typically high temperatures, which serve to maximize evaporation.

The Nevada Site Office Radioactive Waste Acceptance Program must approve all low-level radioactive waste *prior to* shipment to the NTS. Upon arrival at the appropriate disposal facility, physical radiological surveys are completed for each truck, trailer and container to ensure compliance with U.S. Department of Transportation regulations and NTS Waste Acceptance Criteria. A final physical survey is conducted on all trucks and trailers prior to release.

A box containing low-level radioactive waste is positioned in a disposal cell at the Area 5 Radioactive Waste Management Complex.

Area 5

Currently, only the Area 5 Radioactive Waste Management Complex is used for low-level and mixed low-level radioactive waste disposal at the NTS. The Complex is a 732-acre site of which approximately 160 acres are currently used for radioactive waste storage and disposal. Low-level radioactive waste is generally shipped to the NTS in drums and boxes that are placed in shallow, excavated disposal cells, which range in depth from 12 to 48 feet. Once delivered to the designated disposal cell, waste containers are carefully stacked and methodically arranged in a grid system to facilitate tracking. As the cells are filled, workers cover the waste with an 8-foot layer of native soil. At closure, a final cap is optimized and placed on the complex.



Definitions

Closed Basin: Topography that prevents the external drainage of surface water. The surface water collects within the basin and eventually evaporates.

Low-Level Radioactive Waste: Radioactive waste that cannot be characterized as high-level, transuranic, spent nuclear fuel, or by-product materials, such as uranium mill tailings. Typical examples include used personal protective equipment, soil, and scrap metal.

Radiological Surveys: Inspections using a variety of methods and equipment to detect potential alpha, beta, gamma, and neutron radiation which would indicate the presence of radioactive material.

Waste Generator: U.S. Department of Defense and U.S. Department of Energy Environmental Management sites that generate low-level and mixed low-level radioactive waste through cleanup activities.

Low-Level Radioactive Waste Disposal

Area 3

Historically, larger or bulk-type packages of low-level radioactive waste have been disposed in designated subsidence craters in Area 3 of the NTS. These craters, formed in the early 1960s by underground nuclear testing, cover approximately 120 acres and have a limited available capacity remaining. Common types of low-level radioactive waste packages disposed at this facility include concrete monoliths and cargo containers. The waste packages disposed in Area 3 are layered in the cells and separated by a 1- to 3-foot layer of clean fill soil. Once the two currently inactive disposal cells are filled to capacity, it is anticipated that the Area 3 disposal facility will undergo the closure process.

For more information, please contact:

U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office
Office of Public Affairs
P.O. Box 98518
Las Vegas, NV 89193-8518
(702) 295-3521
envmgt@nv.doe.gov
www.nv.doe.gov

Safe Disposal Requirements

The Nevada Site Office is committed to safely accepting, disposing, and providing long-term management of radioactive waste at the NTS. This is accomplished through strict compliance with the numerous DOE Directives and Orders and by honoring commitments to State regulators and stakeholders. One such commitment is the Agreement in Principle through which the State of Nevada Division of Environmental Protection is involved in the acceptance and disposal of low-level radioactive waste at the NTS to include the following activities:

- *Radioactive Waste Acceptance Program* - reviews procedures and conducts site visits (some unannounced) to certify waste generator programs. Upon Program approval, radiological composition, characterization, and packaging for each proposed waste stream is verified to conform to the stringent NTS Waste Acceptance Criteria prior to shipment and disposal.
- *Risk Assessments* - are systematic analyses, such as computer models, that 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 developing earthen closure caps for disposal sites to protect against potentially damaging environmental forces, such as erosion.



Concrete monoliths of low-level radioactive waste are positioned in a disposal cell at the Area 3 Radioactive Waste Management Site.



For information on all Nevada Site Office Environmental Management activities visit:
www.nv.doe.gov/envmgt

