Radioactive Waste Management

safety ❖ performance ❖ cleanup ❖ closure

Nevada Test Site radioactive waste disposal facilities are essential to the clean up of U.S. Department of Energy and U.S. Department of Defense sites across the United States that were involved in the research, testing, and production of nuclear weapons. The low-level and mixed low-level waste generated at these cleanup sites, which includes the Nevada Test Site and Nevada Test and Training Range, are safely and permanently disposed at the Area 5 Radioactive Waste Management Complex which is ideally located due to its arid environment, very deep groundwater, and remoteness.

In addition to low-level and mixed low-level waste disposal, the U.S. Department of Energy National Nuclear Security Administration Nevada Site Office's Environmental Management Program is also responsible for managing legacy transuranic waste at the Nevada Test Site. All radioactive waste managed at the Nevada Test Site is conducted in accordance with applicable federal, state, and local regulations.

Low-Level and Mixed Low-Level Waste

Much of the low-level and mixed low-level waste disposed at the Nevada Test Site consists of debris, trash, soil, equipment, tools, and discarded personal protective clothing. Generally, workers may handle this waste, which is containerized, without any special equipment or clothing because the level of radioactivity is relatively low and the packaging provides the necessary shielding. To ensure the safety of workers, the public, and the environment, the waste must be approved for disposal prior to shipment. In order to obtain this approval, waste generators must undergo a rigorous certification and approval process to demonstrate compliance with the Nevada Test Site Waste Acceptance Criteria.

Included in the Nevada Test Site Waste Acceptance Criteria are separate and specific requirements for mixed low-level waste acceptance. These requirements are based upon the Resource Conservation and Recovery Act federal regulation which governs the management of the hazardous waste. The act also requires that the Nevada

Low-level waste boxes are covered with native soil following disposal at the Nevada Test Site.

Definitions

Low-Level Waste: Radioactive waste that cannot be characterized as high-level, transuranic, spent nuclear fuel, or by-product materials, such as uranium mill tailings.

Mixed Low-Level Waste: Waste that contains both hazardous and radioactive constituents. Hazardous constituents are toxic, corrosive, reactive, ignitable, or specifically identified by the U.S. Environmental Protection Agency as "hazardous."

Radioactive Waste: Materials with no future use that have been contaminated by a nuclear process, thereby containing unstable elements (such as hydrogen, plutonium, or uranium) which emit radiation.

Transuranic Waste: Waste contaminated with elements that have an atomic number greater than Uranium (92) and contains more than 100 nanocuries of alpha-emitting isotopes per gram, with half-lives greater than 20 years.

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.

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Site Office obtain a permit from the U.S. Environmental Protection Agency which delegated its authority to the State of Nevada. Under the terms of the Nevada Test Site Resource Conservation and Recovery Act permit, mixed low-level waste disposal is limited to either 20,000 cubic meters or until December 2010, whichever occurs first.

Workers transferred transuranic waste drums during the characterization process at the Nevada Test Site.

To learn more about the integral role Waste Management plays in the overall Environmental Management mission and for additional information, including fact sheets, on the activities listed here, visit www.nv.doe.gov/wastemanagement.

Transuranic Waste

The transuranic waste currently managed at the Area 5 Radioactive Waste Management Complex, consisting mostly of laboratory debris and miscellaneous equipment, is destined for disposal at the Waste Isolation Pilot Plant located near Carlsbad, New Mexico. Prior to disposal at the Waste Isolation Pilot Plant, this waste must undergo repackaging and additional characterization in order to comply with their Waste Isolation Pilot Plant Waste Acceptance Criteria.

Forty-eight shipments (1,860 drums) of transuranic waste from the Nevada Test Site have been disposed at the Waste Isolation Pilot Plant. This waste, originating from Lawrence Livermore National Laboratory in California between 1974 and 1990, represents more than 95 percent of the total volume the Nevada Site Office Environmental Management is responsible for managing.

For more information, please contact:
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Transportation

Transportation of all waste to and from the Nevada Test Site is strictly monitored. Drivers complete routing reports for each radioactive waste shipment that arrives at the Nevada Test Site. Information from these reports, such as the number of shipments and routes taken, is summarized quarterly and is available at www.nv.doe.gov/RadWasteTrans.

Information on the U.S. Department of Energy's transportation mission can be found at www.em.doe.gov/Pages/Transportation.aspx.

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

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