

Mixed Low-Level Waste at the Nevada Test Site

safety ❖ performance ❖ cleanup ❖ closure



Background

The historic role of the Nevada Test Site in developing and testing nuclear weapons helped to protect the safety and security of the United States. Today, the U.S. Department of Energy (DOE) Environmental Management Program is aggressively cleaning up remnants of these activities at the Nevada Test Site and other sites across the United States. One such remnant is mixed low-level waste, which is generated by equipment maintenance, materials production, environmental restoration, and facility decontamination and decommissioning.

What is “Mixed” Low-Level Waste?

Mixed low-level waste is a “mix” of both low-level radioactive waste and hazardous waste. These wastes are considered hazardous because they are toxic, corrosive, reactive, ignitable, or specifically identified by the U.S. Environmental Protection Agency (EPA) as “hazardous.” The low-level portion of mixed waste contains small amounts of radioactive material and can generally be handled without personal protective equipment. Mixed low-level waste is managed separately from low-level waste because of the hazardous waste component.



The EPA regulates generation, transportation, treatment, storage, and disposal of hazardous waste as directed in the Resource Conservation and Recovery Act (RCRA). In Nevada, the EPA delegated regulatory authority to the State of Nevada to ensure compliance with RCRA.

Disposal at the Nevada Test Site

The DOE, National Nuclear Security Administration Nevada Site Office operates a Mixed Waste Disposal Unit under the Nevada Test Site Part B RCRA permit reissued by the State of Nevada Division of Environmental Protection in December 2005. According to this permit, the Nevada Site Office is limited to accepting no more than 20,000 cubic meters of mixed low-level waste and must permanently close this unit by December 2010, or sooner, if volume capacity is reached.

All mixed low-level waste disposed at the Nevada Test Site complies with strict waste acceptance criteria, including RCRA land disposal restrictions. All waste disposed at the Nevada Test Site adheres to the Nevada Test Site Waste Acceptance Criteria and extensive document review. Compliance is also determined by X-ray scanning of 5% or more of all the mixed low-level waste disposed. Any waste that does not meet all requirements is not accepted.



Waste is shipped in approved containers that are built to meet strict U.S. Department of Transportation safety requirements.

Definitions

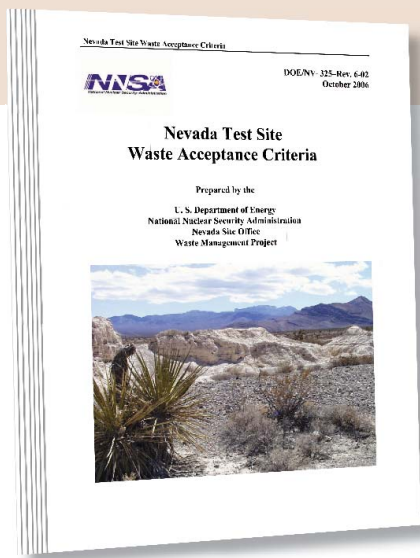
Generators: U.S. Department of Defense and U.S. Department of Energy Environmental Management sites that generate low-level and mixed low-level radioactive waste through clean-up activities.

Legacy Waste: Waste generated as a result of historic U.S. nuclear weapons research and development programs.

Waste Acceptance Criteria: Document utilized by waste generators that explains specific requirements for waste forms, characterization, packaging, and transportation of low-level and mixed low-level waste to the Nevada Test Site.

Waste Stream: A waste or group of wastes from a process or a facility with similar physical, chemical, and radiological properties.

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How Does a Generator Get Approval to Dispose Waste?

Each mixed low-level waste generator completes a series of steps prior to their first waste shipment. A key element for generators to obtain approval to dispose waste is to develop a waste certification program at their site which complies with the Nevada Test Site Waste Acceptance Criteria. Once the generator's program is approved, waste stream profiles can be submitted for review and approval on a waste stream-specific basis. The approval process includes a comprehensive review of program documents, generator and treatment facility evaluations (i.e., audits, surveillances, and program reviews) and waste verification.

What are the Packaging Requirements?

Waste is shipped in 55-gallon drums, boxes measuring 4' x 4' x 7' or 4' x 2' x 7', large cargo containers, or other Nevada Test Site approved containers that are built to meet strict U.S. Department of Transportation safety requirements. This waste is disposed at the Nevada Test Site in its packaging container. Alternate packaging is considered, but Nevada Test Site Disposal Operations personnel are consulted prior to shipment to ensure the appropriate resources are available.



The Nevada Test Site accepts a variety of approved containers for disposal of mixed low-level waste.

Storage of Mixed Low-Level Waste

In addition to disposal capabilities, a mixed low-level waste storage facility (for on-site generated waste only) is operated at the Nevada Test Site. Legacy and newly generated mixed low-level waste is managed at this facility through disposal and, when necessary, off-site treatment. The waste handled at this facility is managed in accordance with strict treatment and disposal schedules established by the State of Nevada.

For more information, please contact:

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Summary

Mixed low-level waste is managed at the Nevada Test Site to support environmental restoration and other activities. The Nevada Site Office works diligently to accelerate closure of the Mixed Waste Disposal Unit while providing a crucial disposal capability for the Nevada Test Site and other DOE sites throughout the United States engaged in accelerated cleanup. The Nevada Site Office conducts these and other activities while protecting the public, the workers, and the environment.

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

