

Radioactive Waste Acceptance Program

safety ❖ performance ❖ cleanup ❖ closure



The Nevada National Security Site (NNSS) serves as an integral component in the nationwide effort to clean up the U.S. Department of Energy's (DOE) nuclear weapons complex. The DOE National Nuclear Security Administration's Nevada Field Office is dually committed to restoring NNSS and surrounding U.S. government facilities **and** to the service of disposing cleanup-related waste and debris from a select group of **generators**.

To carry out this disposal mission in a manner that protects both the public and the environment, the Nevada Field Office has established a set of strict guidelines for waste generators known as the NNSS Waste Acceptance Criteria. *It is important to note that the only forms of **radioactive waste** accepted at the NNSS are **low-level** and **mixed low-level waste**.*



What is the NNSS Waste Acceptance Criteria?

The NNSS Waste Acceptance Criteria establishes specific requirements for waste generator sites and their proposed **waste streams**. These criteria govern generator **waste characterization** and quality assurance policies, as well as the practices associated with waste inspection, packaging, shipping, and disposal. Though designed to meet the requirements of the NNSS Radioactive Waste Acceptance Program (RWAP), these criteria are also structured in accordance with U.S. Department of Transportation, the *Resource Conservation and Recovery Act*, and other federal, state, and local laws and regulations.

How Do Waste Generator Sites Get Approved?

Long before any waste can be shipped to the NNSS, waste generators must submit to on-site inspections. Nevada Field Office RWAP personnel visit individual generator sites throughout the nation to verify whether overall operations and up-front procedures meet or exceed the NNSS Waste Acceptance Criteria. Evaluations include visual inspections of waste streams, packaging, and waste characterization methods. Waste generators must also demonstrate that all documentation and worker qualifications comply with RWAP standards.



RWAP staff conducts an impromptu surveillance of an approved generator's waste packaging and closure process.

How Do Waste Streams Get Approved?

Once a waste program is approved, the generator must then submit a detailed profile of each proposed waste stream to the NNSS' Waste Acceptance Review Panel. Profile information must demonstrate that waste origin, quantity, composition, packaging, and the analytical and preparatory methods used to characterize

Definitions

Low-Level Waste: Radioactive waste that **is not** 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.

Waste Characterization: The process of identifying the components of hazardous or radioactive waste.

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

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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the waste adhere to the NNSS Waste Acceptance Criteria. Copies of the waste profiles are routed to the State of Nevada Division of Environmental Protection (as part of the Joint Oversight Agreement) for review, comment, and concurrence of approval.

Prior to waste stream approval, the generator must also submit written certification that the waste meets the NNSS Waste Acceptance Criteria and is safely packaged, marked, and labeled in accordance with U.S. Department of Transportation regulations.

Waste Acceptance at the NNSS

Once generator programs and their relative waste streams are approved, waste can be shipped to the NNSS' Area 5 Radioactive Waste Management Site. When the waste arrives at Area 5, waste operations personnel immediately compare shipping documentation with previously approved paperwork. Each truck, trailer, and container is then surveyed to make sure security seals are in place and packaging is intact and appropriately labeled. In some cases, waste packages are inspected using on-site x-ray technology to further validate fulfillment of the NNSS Waste Acceptance Criteria. If RWAP standards are not met, waste may be rejected and returned to the generator site.

Waste Disposal at the NNSS

After the waste passes final inspection, the waste truck is allowed to access one of the several excavated disposal cells within the Area 5 Radioactive Waste Management Site. Waste is scanned and positioned within a grid system in the appropriate cell. The 20' x 20' grid system uses letters and numbers to locate waste packages once covered with soil. This tracking system helps waste personnel monitor the accumulation of radionuclide levels, and, if need be, retrieve waste packages.



Area 5 Radioactive Waste Management Site personnel stack approved waste containers in a low-level waste disposal cell.

Waste Transportation



Waste generators must ensure waste is packaged and transported in a safe and compliant manner as detailed in the NNSS Waste Acceptance Criteria and U.S. Department of Transportation guidelines. Generators and their contracted shipping carriers must be diligent with regard to packaging, routing, shipping documentation, permits, etc.

Related fact sheets can be found online at the Nevada Field Office's Waste Management Page: www.nv.energy.gov/emprograms/radwastedisposal.aspx

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