

Radioactive Waste Acceptance Program

safety ❖ performance ❖ cleanup ❖ closure



The U.S. Department of Energy (DOE) [Environmental Management \(EM\) Nevada Program](#) oversees the safe and compliant acceptance and disposal of classified, low-level, and mixed low-level radioactive waste at the Nevada National Security Site (NNSS). NNSS radioactive waste disposal facilities are a vital resource that supports cleanup at sites across the U.S. (including the NNSS) involved in historical nuclear research, development, and testing (Manhattan Project/Cold War), and ongoing national security and science missions.

NNSS Waste Acceptance Criteria (NNSSWAC)

To ensure the protection of the public, the workers and the environment, all radioactive waste shipped to and disposed at the NNSS must meet rigorous regulations and stringent criteria known as the NNSSWAC. The NNSSWAC establishes generator waste characterization and quality assurance policies, as well as the practices associated with waste inspection, packaging, and shipment for disposal. The NNSSWAC aligns with applicable federal and state regulations, as well as DOE Orders.

There are three main pillars of the NNSSWAC that provide a foundation for safe and compliant waste disposal:

- **Programmatic Certification:** Evaluation and approval of generator programs that control and assess characterization, packaging, and shipping procedures to confidently certify compliance of waste destined for the NNSS.
- **Profile Certification:** Review and approval of extensive documentation that demonstrates all waste complies with NNSSWAC requirements prior to shipment.
- **Container Certification:** Official documentation certifying that each container used to ship waste meets specifications of the previously approved profile, ensuring NNSSWAC compliance.



Managing the Waste Acceptance Process

The Radioactive Waste Acceptance Program (RWAP) was established to verify NNSS requirements are met by the generators. RWAP personnel visit individual generator sites throughout the nation to review overall operations and governing procedures as part of the generator waste certification approval process. After a generator is approved, evaluations are continued to monitor:

- Waste
- Packaging
- Waste characterization methods and records

Waste generators must demonstrate that all documentation and worker training and qualifications comply with technical standards.



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Approval Process for Waste Profiles

Once a generator's waste certification program is approved, detailed documentation on waste proposed for disposal must be submitted for review to the NNSWAC Waste Acceptance Review Panel (WARP) - federal and contractor subject matter experts tasked with ensuring waste profiles demonstrate that waste origin, quantity, composition, packaging, and the characterization methods used to characterize the waste adhere to the NNSWAC. Following a review, the NNSWAC WARP makes recommendations to DOE EM on waste acceptance. Copies of the waste profiles are also provided to the State of Nevada Division of Environmental Protection (as part of the State of Nevada Agreement in Principle and Resource Conservation and Recovery Act Part B disposal permit) to allow them to thoroughly review and ask questions in order to have a full comprehension of the waste.

Prior to acceptance of waste shipments, the generator must also submit written certification that the individual waste packages meet the NNSWAC and are compliantly packaged, marked, and labeled in accordance with U.S. Department of Transportation regulations.

Waste Acceptance at the NNSWAC

Once a generator has a certified waste program and individual waste profiles proposed for disposal are approved, waste can be shipped to the NNSWAC. Prior to shipment, and again upon arrival at the NNSWAC Radioactive Waste Management Complex (RWMC), each truck, trailer, and container is surveyed by radiological technicians and inspected in order to ensure all security seals are in place and packaging is intact and appropriately labeled. Shipping documentation is also compared with previously approved paperwork transmitted in advance of the shipment. In some cases, waste packages are inspected using on-site x-ray technology to verify consistency with the waste profile and to ensure there are no prohibited items. If the waste received is not consistent with pre-approved documentation that demonstrates NNSWAC compliance, it may be rejected and returned to the generator site.



Waste Disposal at the NNSWAC

Upon successful completion of the final inspection, the waste shipment is permitted access to one of several excavated disposal cells to be safely off-loaded for permanent disposal. For more information on waste disposal at the NNSWAC, visit www.nns.gov/docs/fact_sheets/DOENV_540.pdf.

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."

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

Waste Generator: Entities with NNSWAC-approved waste certification programs that generate classified and/or low-level/mixed low-level radioactive waste in support of DOE and U.S. Department of Defense missions.