



# EM NEWS FLASH

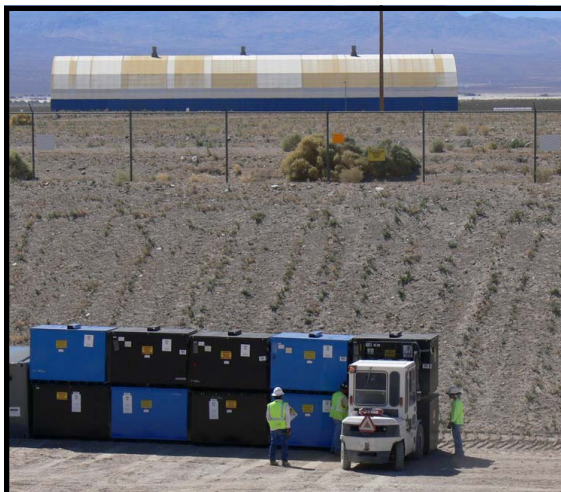
## NNSS Waste Management Proves High Standards in Safety

Over the years, radioactive waste disposal operations at the Nevada National Security Site (NNSS, formerly the Nevada Test Site) have been held to the highest standards in performance. Well-crafted procedures as well as a highly-trained workforce contribute to the success of these operations; but ultimately, it is the commitment to *safety* that makes the [Area 5 Radioactive Waste Management Site \(RWMS\)](#) a sound disposal option for numerous U.S. Department of Energy (DOE) and Department of Defense sites needing permanent disposal of cleanup-related waste.

Safety is considered in *every* stage of the waste disposal process. Low-level (LLW) and mixed low-level radioactive waste (MLLW) destined for disposal at NNSS' Area 5 RWMS are subject to rigorous inspection, packaging, shipping, and disposal standards. In addition, the RWMS

must comply with strict federal and state safety and environmental regulations.

According to Federal Project Director Frank DiSanza, successful communication is the key to safe operations: "We maintain open communications with generators and State regulators to ensure that everything is being conducted safely on a daily basis," he said. "Through these relationships," he continued, "NNSS can continue to play an essential role in the ongoing cleanup efforts at the NNSS and across the Complex."



*Area 5 RWMS personnel position containers of LLW within a grid system in an excavated disposal cell.*

### The Waste Acceptance Process

Long before any waste can be shipped and disposed, several rigorous reviews, inspections and certification processes must be conducted to ensure that everything – from

characterization, packaging, and transportation to disposal and monitoring – is in accordance with stringent nuclear safety requirements and NNSS [Waste Acceptance Criteria \(WAC\)](#).

DOE Nevada Site Office Radioactive Waste Acceptance Program (RWAP) auditors ensure that thorough reviews are conducted and that all generator policies and procedures meet or exceed NNSS WAC, which includes requirements set forth by the U.S. Department of Transportation, the *Resource Conservation and Recovery Act* (RCRA), and other federal, state, and local laws and regulations. RWAP conducts comprehensive evaluations at the Generator's facilities to verify that worker qualifications and processes are accurately reflected in the documentation submitted. This includes visually inspecting proposed waste streams and observing the methods used to characterize the waste.

Once a generator's program is approved, detailed profiles of each proposed waste stream must be submitted. Profiles include specific information on the waste origin, quantity, composition, packaging, and the analytical and preparatory methods used to characterize the waste. The profiles are extensively reviewed by the Waste Acceptance Review Panel (WARP), which is comprised of RWAP personnel, Area 5 RWMS Disposal Operations supervisors, and the State of Nevada Division of Environmental Protection.

These members include experts in the areas of quality assurance, waste traceability, radiological characterization/nuclear criticality, and RCRA characterization. Prior to discussion during weekly meetings, review comments are coordinated with the lead RWAP staff for reconciliation with the generator. All WARP members must agree that the waste is acceptable for disposal before the DOE Nevada Site Office Federal Project Director for Waste Management issues an approval.

And this occurs before the waste is even packaged and placed on the truck!

### **Road trip**

Generators must ensure waste is packaged and transported in a safe and compliant manner, as detailed in NNSS WAC and U.S. Department of Transportation guidelines. Generators and their contracted shipping carriers must consider such things as packaging, routing, shipping documentation, permits, etc.

When the waste shipment arrives at the NNSS Area 5 RWMS, Disposal Operations personnel verify the shipping documentation matches previously approved paperwork. Each truck, trailer and container is then surveyed to ensure security seals are in place and the package is intact and appropriately labeled. And to further ensure compliance of the waste, packages may be visually inspected using on-site x-ray technology. Waste may be rejected and returned to the generator if anything is found to be out of compliance with the NNSS WAC during these inspections.

### **Disposal time**

Now that the waste has passed its final inspection, the waste truck is allowed to access one of the several excavated disposal cells within the Area 5 RWMS. 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.

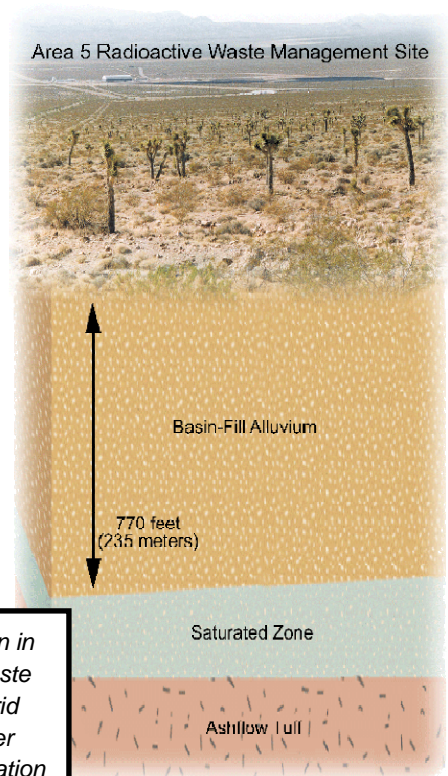
To accommodate recent increases in waste disposal volumes generated by *American Recovery and Reinvestment Act* –funded cleanup sites, two new LLW cells were recently constructed at the Area 5 RWMS. These cells can accept waste items such as protective clothing, equipment, and debris. In addition, a new specialized MLLW cell was recently completed to dispose waste containing hazardous components, including polychlorinated biphenyls (PCBs). In accordance with its RCRA permit, this excavated unit is lined with a five-layer *geoliner* made of plastic and an earthen-like material, and uses a collection system to drain any potential moisture away from buried waste containers.

### **It doesn't end here...**

After waste disposal, experts monitor the air, groundwater and soil as a method for early detection in the unlikely event that any contamination migrates from the immediate disposal area. Performance assessments are performed using computer models to develop conservative forecasts on potential short-term and long-term risks associated with waste disposal.

## Safety on the mind

When it comes down to it, the success of the Nevada Site Office Waste Management Program hinges on safety at every stage. From the point of generation to final disposal at NNSA, the responsible handling of radioactive waste requires thorough evaluations, characterization, inspections, monitoring, and adherence to strict federal, state and NNSA agreements and regulations. Attention to these details contributes to the safety of workers, the public and the environment and is the key to the Nevada Site Office mission of providing disposal services vital to the cleanup of the nuclear waste complex.



*Did you know... The Area 5 RWMS has been in operation since the 1960s. It is ideal for waste disposal because of its remoteness, the arid environment, and the depth to groundwater (approximately 750 feet deep). The combination of these factors makes the possibility of any contaminant migration highly unlikely.*

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