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Nevada Site Office Environmental Management

EM NEWS FLASH

More Recycling Means Less Waste for Complex

What do batteries, lead bricks, and mineral oil have in common? They are all on the list of recently recycled materials at the Nevada National Security Site (NNSS). The goal of these recycling efforts is to minimize waste volumes at the site and encourage the repurposing of materials across the U.S. Department of Energy (DOE) Complex.

In September 2011, a total of 33,000 pounds of lead was shipped from the NNSS to the recycling company, [Toxco Inc.](#) A portion of this lead (13,220 pounds) was recovered during environmental investigation activities at a number of NNSS industrial buildings and historic nuclear test locations.

The remaining 19,780 pounds of lead was removed during demolition of the historic Test Cell C facility. Toxco, which received the lead in the form of bricks, battery plates, and counterweights, plans to use the material to make protective shielding for government and/or commercial nuclear industrial operations.

The previous summer (2010), NNSS personnel were able to recycle 7,300 gallons of mineral oil. The oil was removed from leaded-glass

windows at the NNSS' Engine Maintenance, Assembly, and Disassembly (EMAD) compound and taken to [Evergreen Recycling Inc.](#) Removal of the mineral oil—in addition to hazardous materials—was done in order to stabilize the facility for future closure and/or demolition.

“Part of our job is to stay conscious of how we can recycle or reuse the material we recover during cleanup activities,” said Rebecca King, a project manager for National Security Technologies, LLC. “Otherwise the material is considered a waste stream and requires disposal.”

Also slated for recycling are various used fluids that have been gathered since 2009 during well drilling operations and activities associated with draining rail equipment and piping at EMAD.

[Environmental Restoration](#) at the NNSS

For more than two decades, the NNSS has been the focus of a massive cleanup effort involving some of the most highly-skilled scientists and engineers in the world. This environmental restoration team works on numerous sites and facilities associated with historic nuclear testing to remove contaminated soil and debris, decontaminate and decommission facilities, and examine potential contaminant movement in groundwater.

These fluids (626 gallons of oil, 369 gallons of diesel fuel, and 16 gallons of antifreeze) are being held at an onsite location until enough material has been accumulated to make shipping to an off-site recycling facility economical.

“Recycling is a major component of our commitment to restore the NNSA environment to the degree possible,” said Robert Boehlecke, Federal Project Director at DOE’s National Nuclear Security Administration Nevada Site Office. “We will continue to look for recycling opportunities wherever and whenever feasible.”

A photograph of the EMAD facility, a large industrial building with a complex structure of pipes and tanks. A person is visible in the foreground for scale.

Where did these recycled materials originate?

Constructed in 1965 as part of the NNSA Nuclear Rocket Development Station, the 100,000 square-foot EMAD facility was used for the assembly of prototype nuclear rocket engines. Mineral oil, which was removed and recycled from the facility, had been used in EMAD windows to increase visibility through thick glass.

Rocket engines were tested in separate structures called “test cells.” Test Cell C, seen here before and after demolition, was one of three test cells located in the Nuclear Rocket Development Station that ceased operations in 1973. Lead recovered during demolition had been an integral part of the facility’s construction, serving as a primary material for radiation shielding.

A photograph showing Test Cell C before demolition, featuring a complex network of pipes, ladders, and structural elements.

A photograph showing Test Cell C after demolition, with the ground level and remaining structural elements.

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