

DNSC Upgrades Mercury Safety and Security

DNSC has enhanced the safety and security of mercury stored at DNSC depots in Somerville, New Jersey; Warren, Ohio; and New Haven, Indiana through a process referred to as 'over-packing'.

At the Somerville and Warren depots, the over-packing project consisted of visual inspections, vacuuming, and wiping the surface of each 76-pound flask. Once this was done, six flasks were placed in plastic-lined, 30-gallon drums constructed of 16-gauge carbon steel. At the New Haven depot, where the flasks had been placed in plastic bags, each bag was inspected for indications of flask leakage before flasks were placed in 30-gallon drums.

Several layers of protection have been added inside the drums. The drums are lined with an epoxy-phenolic coating. A cushioning material that doubles as an absorbent mat was placed in the bottom of each drum. The flasks are separated by a cardboard divider for additional cushioning and sealed in a thick plastic bag. Finally, each drum lid is equipped with a half-inch rubber gasket and a steel locking ring that is bolted to seal the drum. The drums are now very secure, both airtight and liquid-tight.

The over-packed drums have been placed on drip pans positioned on wooden pallets, and the entire over-packed inventory has been relocated to upgraded warehouse facilities. The mercury storage warehouses have new security features, improved lighting, an upgraded fire suppression system, and floors that have been sealed with a mercury-resistant impermeable covering.

Inspections and Monitoring

Environmental assurance inspections will continue to play a major role in the safety and security of the mercury stockpile. To aid in the environmental assurance inspection process, and to ensure continued safe storage, each pallet is now stored one-high to allow sufficient aisle space for clear vision of each drum and pallet.

In August 2000, the New York State University (SUNY) and New Jersey Institute of Technology (NJIT) began an intensive independent study of mercury vapor readings before and during the over-packing procedure. Using state-of-the-Art Ohio LUMEX™ and Tekran™ mercury vapor analyzers, in addition to meteorological equipment, they measured mercury vapor concentrations in the surrounding community to establish upwind and downwind concentrations at key off-site locations.

Data from SUNY and NJIT vapor monitoring inside, outside and downwind of all mercury stockpile depots show mercury vapor levels to be within established background readings and validates a determination that there has been no significant contribution of mercury vapor to the ambient air from mercury storage at the DNSC depots.