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Last of Flats' plutonium safely packaged

Golden, Colo., July 16, 2003 – An important chapter in the Rocky Flats story came to an end when workers verified the last quantities of plutonium metals and oxides had been successfully packaged into special containers for safe long-term storage and shipment off-site.

"This milestone significantly reduces the risk of material storage at Rocky Flats," said Department of Energy Rocky Flats Manager Gene Schmitt, "and clears the way for the last of this material to be removed from the site and from the Denver Metropolitan area." He added that the accomplishment puts the site first among Department of Energy sites in successfully satisfying a major recommendation of a key nuclear safety oversight panel, the Defense Nuclear Facilities Safety Board.

On July 8, Rocky Flats workers successfully packaged the last of 1,895 special containers through the Plutonium Stabilization and Packaging System (PuSPS) in Building 371. The PuSPS is a semi-automated stabilization and packaging system designed to reduce worker exposure and increase safety during the packaging operations.

"Packaging the plutonium for shipment is a major step toward closing Rocky Flats," said Kaiser-Hill President and CEO Alan Parker. "It also signifies a cultural change as cleanup will focus more on the demolition of the site."

Once packaged, the material will remain stable and can be safely stored for at least 50 years. The material will be transported to the Savannah River Site in South Carolina where it will be a candidate for conversion to a Mixed Oxide Fuel (MOX) that can be used to power nuclear reactors. Those shipments have been ongoing and are expected to conclude later this year.

The successful packaging of plutonium metals and oxides completes a multi-year effort to stabilize the bulk of the weapons grade plutonium and other radioactive materials that were left at Rocky Flats when its former production mission ended more than a decade ago. In the latter 1990s, the site safely removed

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all “pits” from the site. Those components were transferred to the Pantex facility in Texas, where the majority are being stored and will eventually be dismantled when a proposed Pit Disassembly facility is constructed at another Department of Energy site.

Other excess production materials that have been safely removed from Rocky Flats include 235,000 pounds of depleted uranium, 11 tons of niobium to DOE laboratories, 984,000 pounds of raw steel materials to other DOE sites, and more than 5 metric tons of highly enriched uranium, including thousands of liters of Highly Enriched Uranium Nitrate solutions. Dangerous solutions of plutonium and nitric acid also have been drained from tanks and process lines in buildings, stabilized and removed, while the site continues to make record waste shipments to off-site repositories.

Removal of plutonium and highly enriched uranium metals and oxides and radioactive and hazardous waste materials is crucial to the site’s efforts to safely complete site cleanup and closure under an accelerated schedule. Completion of the cleanup work remains on track for 2006. When cleanup work is complete, the site will become a National Wildlife Refuge under the management of the U.S. Fish and Wildlife Service.

PuSPS is a one-of-a-kind system used to package the site’s remaining plutonium metals and oxides into 50-year storage containers known as 3013s. The stabilization process, which involves heating the material to 1,000 degrees Centigrade, is semi-automated while the packaging portion of the system is automated.

After stabilizing the material in special furnaces, the plutonium is placed in a specially designed stainless steel can, which is then placed inside an inner can that is filled with helium to prevent the plutonium from reacting with oxygen. This can is welded shut by an automated welder and leak tested to ensure the integrity of the weld. The inner can, in turn, is placed in an outer can which is also filled with helium and welded shut to create the final 3013 storage container configuration.

Rocky Flats is a Department of Energy-owned cleanup and closure site operated by Kaiser-Hill Company under an accelerated closure contract. The Rocky Flats mission includes special nuclear material management and shipment, nuclear deactivation and decommissioning, waste management and shipment, environmental cleanup and site closure.

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