TRANSITION THE PLATEAU

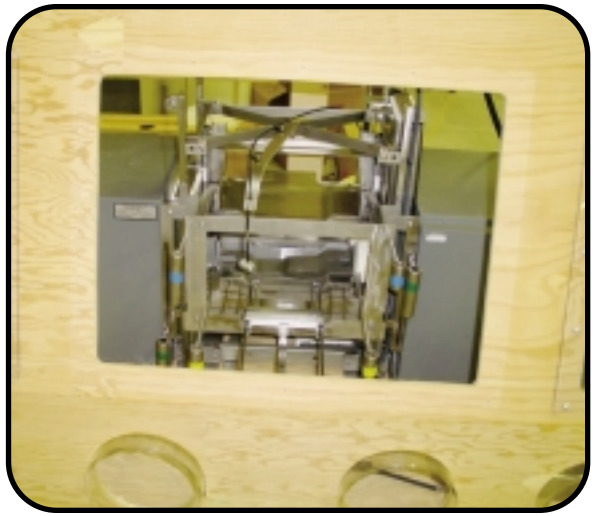
Fast Flux Test Facility (FFTF)

A team commissioned by the Secretary of Energy to review the decision to permanently shut down the FFTF provided its report on July 27. The Secretary subsequently initiated a 60-day review of a commercial proposal. A final decision on FFTF's future was expected as this issue went to press. Meanwhile, FFTF staff continued repairs and upgrades to fuel handling systems that would be needed to remove stored fuel assemblies for deactivation.

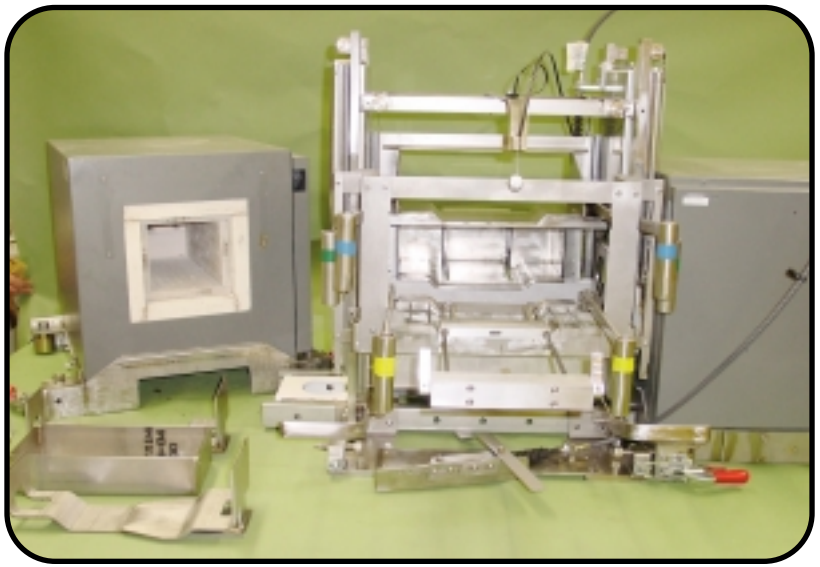
Nuclear Material Stabilization

The Plutonium Finishing Plant (PFP) team successfully switched to a more efficient oxalic acid precipitation process to stabilize plutonium solutions to supplant the magnesium hydroxide precipitation in use since last September. The change in chemistry reduces the volume of precipitate generated and lessens moisture reabsorption, which slowed the stabilization process. This, along with approval to directly discard low-plutonium concentrate solutions that can be packaged for disposal without further treatment, will speed the rate of solutions stabilization. Direct-discard processing began September 26.

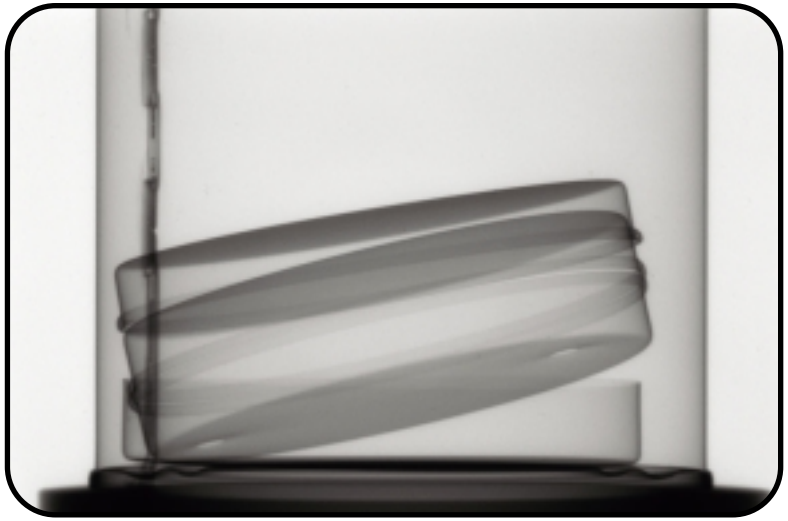
Nuclear Material Stabilization



The Pacific Northwest National Laboratory, in support of PFP, developed and functionally tested a new stabilization furnace design called a "hot box." This design could prove to be important in future stabilization plans at PFP. The hot box allows continuous operation of the furnaces, which operate at 1,000 degrees Celsius. The device is a mechanical loading/unloading system (center, lower photo) positioned between two furnaces (to the right and left of the hot box). Special heating and cooling chambers enable workers to load and unload material in the furnaces while safeguarding themselves from the very high heat. Currently, the furnaces must be cooled down for several hours before material can be inserted or retrieved. The top photo shows the complete glovebox mockup – with furnaces coupled to both sides of the hot box – used for testing and evaluation. The technology is readily transferable to any DOE site that needs new furnace and glovebox capability.



Nuclear Material Stabilization



Workers completed repackaging of the remaining plutonium metals inventory to new long-term storage standards, attaining a key goal set by the Defense Nuclear Facilities Safety Board. Digital radiography is being used to periodically monitor the contents of the new triple-container canisters for safe storage of plutonium. This "X-ray" shows metal items in a canister.

Final packaging was also completed for a group of plutonium metal alloys that did not require thermal stabilization.

Waste Management

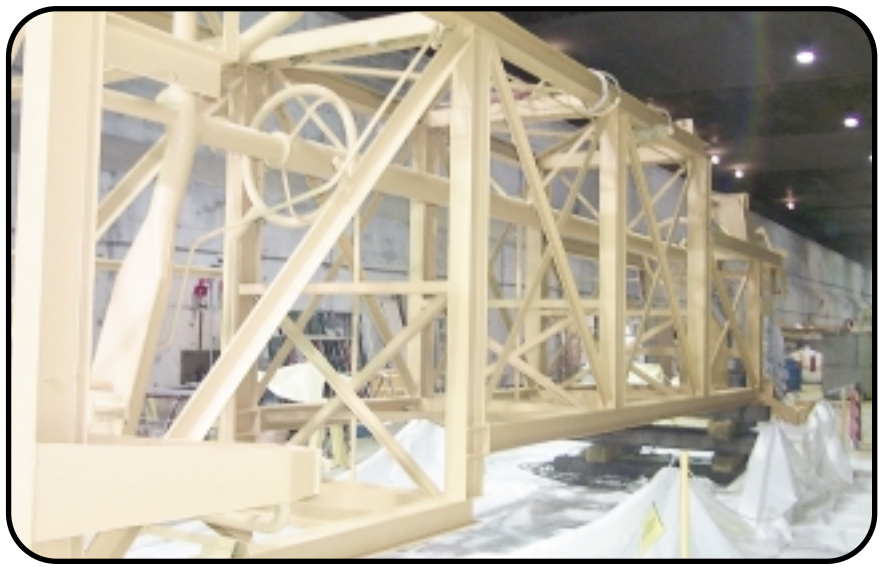
This quarter, three more shipments of transuranic waste left Hanford's Waste Receiving & Processing Facility (seen behind the cask transporter) for disposal at the Waste Isolation Pilot Plant in New Mexico. A total of seven shipments were made this year – two more than planned – removing nearly 60 cubic meters of Hanford's waste legacy. Transuranic waste is the kind of radioactively contaminated clothing, rags and debris depicted in these "see-through" drums.

Waste Management
River Corridor Project Support

Helping the River Corridor Project successfully complete cleanout of the 324 Building B Cell *(see Page 6)* remote-handled mixed transuranic and remote-handled low-level waste and equipment involved shipping 21 containers from the 300 Area to the low-level waste burial grounds in the 200 Area. The low-level waste was disposed of in the burial grounds while the transuranic waste is in interim storage while awaiting processing.

Waste Management
Spent Nuclear Fuel Project Support

Accelerated cleanout of the T-Plant canyon on the central plateau will make room for receipt, starting next fall, of sludge from the K Basins near the Columbia River. Ten deck sections have been cleared and major pieces of stored equipment removed, including two long towers, shown here prior to removal from the canyon. The towers had once been part of the now-deactivated Plutonium-Uranium Extraction (PUREX) Facility.



Waste Reduction Technologies

The National Energy Technology Laboratory funded a demonstration of emerging robotic technologies potentially applicable at Hanford to efficiently reduce large, complex steel shapes such as the PUREX towers. In a collaborative effort with DOE's Office of Science and Technology, Fluor Hanford and the Pacific Northwest National Laboratory jointly hosted a demonstration of a size-reduction technology at Hanford's Volpentest HAMMER Training & Education Center.