Transforming the Plateau

Central Plateau Planning & Integration

To assist DOE in site-wide integrated planning, this team has developed breakthrough initiatives focused on two of the ultimate outcomes that will help transform the central plateau to a place for long-term waste management and storage: completion of the Spent Nuclear Fuel Project and deactivation of the Plutonium Finishing Plant. This quarter, the team also drafted 15 central plateau master schedules for review and comment by state and federal regulators.

Fast Flux Test Facility

In January, the Secretary of Energy signed a Record of Decision calling for permanent deactivation of the FFTF. The Project team is supporting DOE efforts to reestablish appropriate Tri-Party Agreement milestones for the deactivation. FFTF staff also continues to upgrade and repair fuel handling systems and equipment that will be needed to drain the reactor's sodium coolant and remove its fuel assemblies for the deactivation.

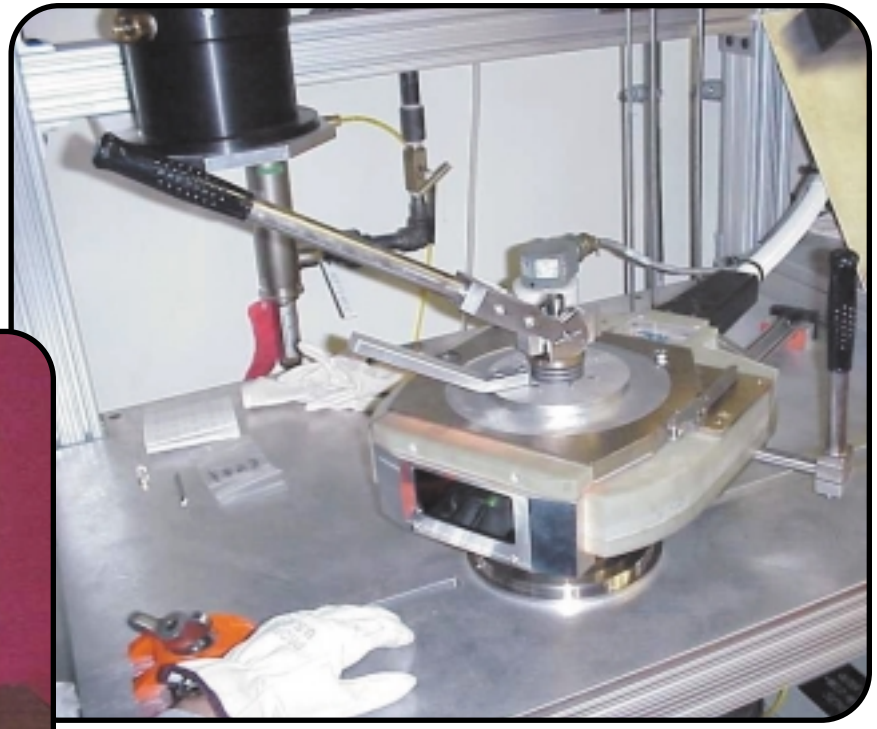
The Plateau

Nuclear Material Stabilization

Nuclear operator Brett Martin places a can of residues into a "pipe overpack container" inside a standard Department of Transportation drum and prepares it for shipping. The Plutonium Finishing Plant (PFP) residues team finished repackaging a material called "Rocky Flats ash" and shipped it to the Central Waste Complex for interim storage four weeks ahead of a Tri-Party Agreement milestone. The material will ultimately be disposed at the Waste Isolation Pilot Plant in New Mexico. The residues were packaged using a process called pipe-and-go, developed at Rocky Flats, that reduces waste volume, eliminates unnecessary processing and minimizes the radiation dose to workers.

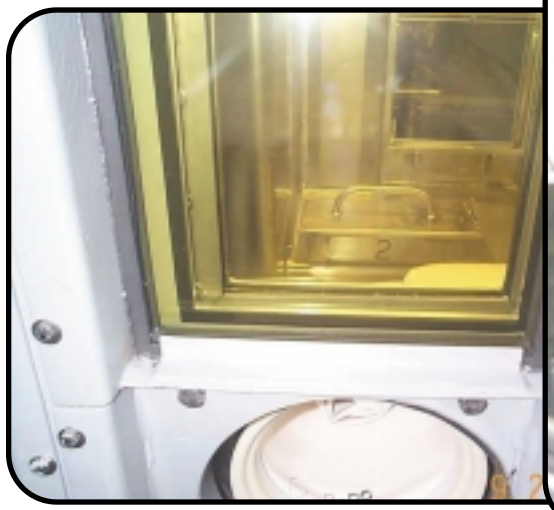
Nuclear Material Stabilization

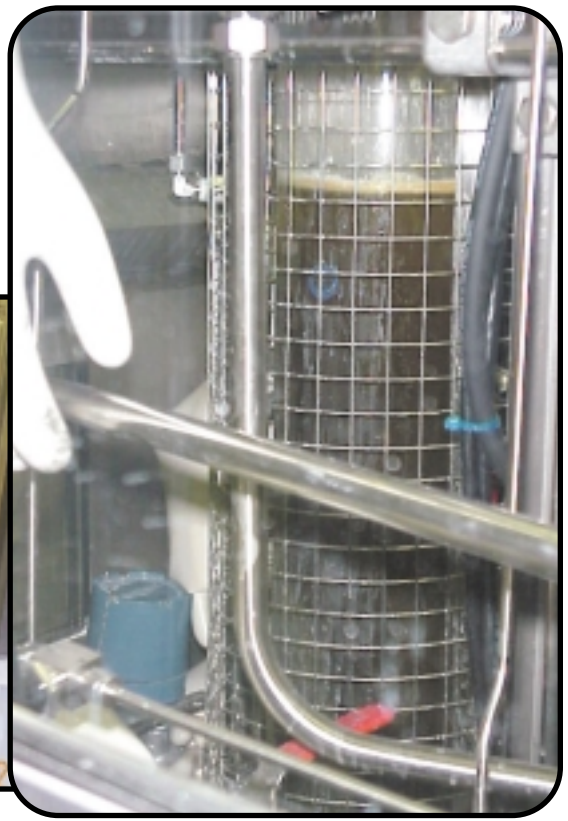
New equipment called an Outer Can Welder arrived in March and is undergoing tests prior to a projected April startup. The Outer Can Welder overpacks and seals plutonium packaged in two nested inner containers into a slightly larger container. The welder head features a viewing window for monitoring the automatic welding process. Hanford will likely be the first Department of Energy site to package in full compliance with the new triple-container national standard for safe long-term storage of plutonium.



Nuclear Material Stabilization

More than 10% of PFP's 4,000 liters of plutonium solutions has been stabilized to date. Fluor Hanford teamed with the Pacific Northwest National Laboratory (PNNL) on a precipitation process that removes plutonium from the solutions, leaving a powder that can be stabilized in a muffle furnace, then packaged for long-term storage. Because different solution types are in the inventory, PNNL is working to further enhance the process and evaluate other reagents. Shown here are a vessel in which magnesium hydroxide is mixed with plutonium solution, and a container of the resulting powder, after precipitation, moving into a furnace.





Despite all the potentially high-risk plutonium stabilization processes operating in parallel, the PFP staff has recorded more than 1.5 million safe work hours, thanks in part to an active Employee Zero Accident Council which helped implement several workplace safety initiatives.

Waste Management

A March campaign at the 242-A Evaporator processed about 840,000 gallons of highly radioactive waste pumped from underground double-shell waste storage tanks. By extracting excess water from the waste, the process opened up about 680,000 gallons worth of usable tank space and reduced the volume of contaminated liquids on the site. In this photo from an earlier Evaporator run, Nuclear Chemical Operator Alan Hammack monitors process operations from the condenser room while co-workers David Vasquez and Jerry Borrowman observe.

The Plateau

Waste Management

Nuclear Chemical Operator Ben Hovley places an empty 55-gallon drum in a drum crusher at T Plant, pushes the start button and 35 seconds later removes a "puck" from the crusher. The flattened drums are packaged as low-level waste and sent to the burial grounds. At one time, the contaminated drums might have contained T Plant waste, but in performing cleanup of the Plant canyon, the drums simply represented containers to be disposed of.

Waste Management

As an outcome of its technology teaming relationship with Fluor Hanford, the Pacific Northwest National Laboratory furnished a report on converting the Waste Receiving and Processing (WRAP) Facility low-level waste glovebox for a combined low-level waste/transuranic (TRU) waste mission. When the necessary procedural and physical capacity changes outlined in the report are made, workers will be able to process greater numbers of TRU waste drums at WRAP.

Environmental Restoration on the Plateau

Concrete core samples for characterization data were collected from the floor of the cells under the U Plant canyon with this remote concrete coring system. Traditional methods for obtaining equivalent concrete core samples would require physical entry into the process cells, which is not possible due to the highly radioactive environment of the cells. Deploying this new technology enabled the work to proceed safely.