Two million safe work hours achieved at PFP

Jean McKenna, FH

Employees in the Nuclear Material Stabilization Project at Hanford's Plutonium Finishing Plant have performed two million safe work hours without a day lost to injury. The accomplishment by approximately 500 employees of Fluor Hanford and its subcontractors demonstrates the PFP team's focus on working safely with an extremely challenging workscope.

PFP is considered to be one of the most urgent cleanup challenges on Hanford's central plateau. Before its contaminated buildings can be deactivated and dismantled, 4 tons of plutonium metals, oxides, solutions, residues and polycubes must be converted into a stable form and repackaged for long-term storage. The sheer volume and variety of plutonium forms make PFP one of the most challenging projects at Hanford.

A PFP nuclear chemical operator is shown removing the sealed inner container of plutonium from the Bagless Transfer System after it has been filled with helium and welded. The Outer Can Welder , below, which features a viewing window for monitoring the automatic welding process, welds plutonium packaged in two nested containers into the slightly larger outer container, making up the complete 3013 storage package.

"I am extremely proud of the PFP team's achievement of two million safe work hours," said George W. Jackson, Fluor Hanford vice president for the Nuclear Material Stabilization Project. "PFP is gearing up to apply for OSHA Voluntary Protection Program status in February of next year, and we're using the VPP process on a daily basis to understand any weaknesses and effectively address them."

"We have been able to achieve our two million safe work hours because of our workforce working hand in hand with management at PFP," said Rich Layman, HAMTC safety representative for the Nuclear Stabilization Project. "This partnership is also how we will reach our goal of VPP Gold Star status next year."

The previous record of one million safe hours was set last October. PFP employees have achieved the new record while completing installations and startups and simultaneously operating several state-of-the-art processes for stabilizing and packaging all its forms of plutonium.

The variety of challenging tasks at PFP during the period of this safety accomplishment includes:

• Removing plutonium from solutions using the new Magnesium Hydroxide Precipitation Process. Nearly 600 liters of the 4,000-liter inventory have been processed. Adding a second two-boat hot plate to speed drying of the solids is expected to double the rate of solutions stabilization.

• Packaging plutonium materials into the new DOE 3013 standard containers using the Bagless Transfer System. This system, started up last September, is used to seal plutonium into the inner container of the new

Continued on page 7.

Two million safe work hours achieved at PFP, cont.

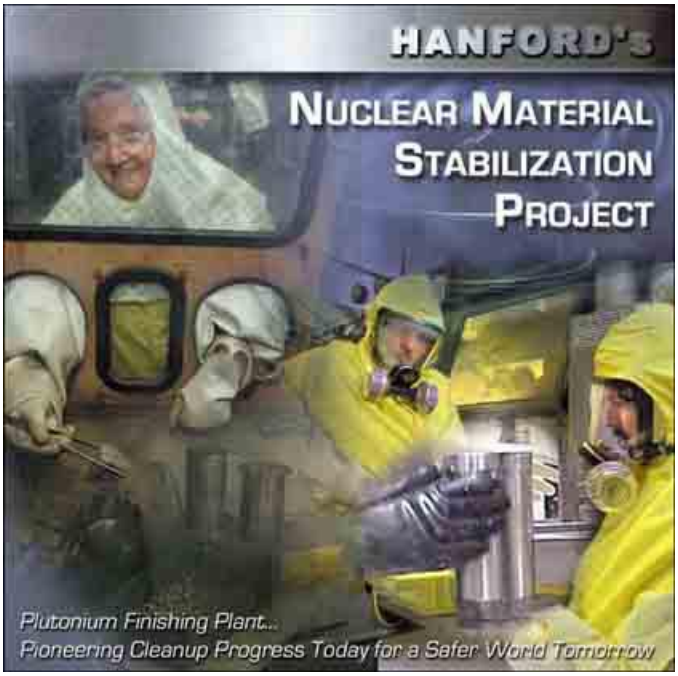
two-container package made of heavy welded stainless steel.

• Startup of the Outer Can Welder this past April, which made Hanford the first DOE site to fully comply with the new DOE 3013 standard for plutonium packaging. With this method, an inner stainless steel container is welded into the outer container. Approximately 300 complete storage packages have now been processed.

• Repackaging various plutonium residues not requiring further stabilization for future shipment to the Waste Isolation Pilot Plant, using a technique called "pipe-and-go" developed at the DOE Rocky Flats Site. This safe and effective technique eliminates unnecessary processing, reduces waste volume and minimizes dose rates to workers.

• Stabilization and packaging of plutonium metals. The metals are brushed, which removes loose rust-like oxides. This leaves a stable metal that is packaged into the new stainless steel containers, and the oxides are stabilized in the muffle furnaces. The PFP staff is working toward completion of metals brushing and packaging, and the stabilization and packaging of the oxides, by an Aug. 31 milestone date.

• Construction of a second stabilization and packaging system — the W460 Project — in the 2736-ZB Building, which is nearing completion. When this system is started up sometime this fall, all the pieces will be inplace to complete stabilization and packaging of PFP's 4 tons of plutonium by the mid-May 2004 milestone. ✥



PFP THE MOVIE: A 10-minute documentary video on the Plutonium Finishing Plant's Nuclear Material Stabilization Project has just been completed. The video, which is available on a CD as well as on tape, will be used to brief key decision-makers, media representatives, local, state and federal agencies, employees, interest groups and the public on PFP technologies. The technologies that have been brought on line will safely stabilize and package all of the plant's plutonium forms for ultimate shipment offsite. PFP employees can borrow a CD or VHS tape from their senior managers; other employees on the site should send e-mail to Jean McKenna.