

PFP exceeds expectations in fiscal year 2003

The Plutonium Finishing Plant Project, managed for the Department of Energy by Fluor Hanford, closes fiscal year 2003 with an unprecedented array of accomplishments, most notably the stabilizing and repackaging of nearly 85 percent of its 18 tons of plutonium-bearing materials.

“PFP is a great example of what DOE is striving for across the complex — risk reduction,” said Stacy Charboneau, director of the PFP Project for DOE’s Richland Operations Office. “We’re excited to continue the momentum and start moving the stabilized plutonium inventory off-site.”

The technically challenging stabilization and repackaging project began nearly four years ago. PFP is a complex of 61 facilities that produced more plutonium products from 1949 to 1989 than the Savannah River and Rocky Flats Sites combined. The 14-acre compound also held the leftovers of multiple nuclear experiments conducted at Hanford and from facilities throughout the nation.

When Fluor Hanford began the cleanup project, four new stabilization processes were quickly brought on line. Accelerating its stabilization activities in 2001, PFP became the first facility in the DOE complex to comply with strict new plutonium packaging requirements, called Standard 3013. The standard includes certifying that, for secure shipment and storage, materials are protected in triple-lined containers designed to hold plutonium safely for at least 50 years.

Additional achievements followed. PFP workers finished stabilizing all plutonium metals in September 2001, all plutonium-bearing solutions in July 2002, and all “polycubes” (plutonium oxide in a plastic matrix) in February 2003. This past summer, they repackaged all 7,000 pounds of plutonium-bearing residues covered under a regulatory milestone.

Personnel at the historic PFP complex now enter FY 2004 on track to finish the overall stabilization and packaging project this coming winter, ahead of all Tri-Party Agreement milestones. It’s also expected that the work will be finished ahead of deadlines set by the Defense Nuclear Facilities Safety Board, a part of the federal government that oversees special nuclear materials.



Plutonium Finishing Plant workers replace heavy arm-length gloves on equipment in the 232-Z Incinerator Building to improve the safety of working conditions.



A stabilization process is under way in a PFP muffle furnace.

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“The stabilization and repackaging work accomplished at PFP has played a huge role in furthering Hanford Site cleanup,” said Scott Sax, Fluor Hanford project director. “We are making the region safer and more secure.”

Legacy work and D&D

Deactivating and decommissioning PFP moved forward with completion of detailed planning and six major regulatory documents, and workers began physically removing both chemical and radioactive materials. Cleaning out tanks of legacy hazardous chemicals and piping began in the main PFP building (234-5Z) and in the Plutonium Reclamation Facility, or PRF.

D&D teams also started cleaning out legacy plutonium held up in multiple PFP buildings. “Hold-up” plutonium is residual plutonium in equipment, including ductwork, filters, gloveboxes and other facility structures. Project employees first cleaned out a major glovebox in the main processing line of the 234-5Z Building. After incorporating some important lessons learned, they tackled a larger glovebox burdened with more hold-up material, and began cleaning out the “miscellaneous treatment” area of the PRF.



PFP workers seal out contaminated waste from a glovebox in the Plutonium Reclamation Facility.

The plan calls for cleaning out two highly contaminated structures, beginning in October — the 232-Z Incinerator Building and the 241-Z Liquid Waste Treatment Facility. The 232-Z facility still contains large gloveboxes and various support equipment. Fluor Hanford held a technology workshop in June to evaluate decontamination options for five large tanks in 241-Z.

Bob Heineman, a 30-year Hanford veteran, directs PFP’s D&D effort. “Cleanout and D&D of the PFP complex involve some of the most complicated work in the DOE system,” Heineman said. “PFP facilities are old, highly contaminated, and full of unexpected challenges when we start the dismantling work. It’s a tribute to the PFP workers that we’re proceeding safely and efficiently.”

Safety also shines

Sax is proudest of the fact that the work has been accomplished with an outstanding employee health and safety record. Despite working in old facilities with hazardous materials during the four-year stabilization and repackaging period, PFP employees achieved a milestone of 2 million safe hours worked, and facility employees recently achieved a million-hour safety milestone for the third time.

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PFP personnel also reduced the average radiation exposure to its workers, while its plutonium stabilization throughput quadrupled twice between 2000 and 2002. The PFP complex had only one injury that resulted in a lost workday during the four years of the stabilization effort. And, two months ago, PFP became the first “high-hazard nuclear facility” in the nation to be awarded Star status in the DOE’s Voluntary Protection Program .

“These achievements are due to the ingenuity, innovation and teamwork of the nearly 600 employees of the PFP complex,” said Sax. “It’s hard to overstate their accomplishments, especially considering the very hazardous work they do at PFP.” ■