

K Basins Closure Project Achieves Major Successes in 2006

K Basins Closure (KBC) Project workers posted significant victories in calendar year (CY) 2006, capped by finishing containerizing the bulk of the sludge in the K East Basin. That achievement brought accolades from U.S. Representative Jay Inslee (D-Washington, 1st District). “Congratulations on this important milestone,” Congressman Inslee told Pete Knollmeyer, vice president of the KBC Project for Fluor Hanford and K East Closure Director Chris Lucas. “We recognize that doing a job like this required people to dig deeper than the standard operating procedure. When you tackle a project like this, you’re going the extra mile.”

In October 2004, Fluor Hanford completed removing and drying 2,300 tons of spent nuclear fuel that had been stored for many years in the K Basins. Then for two years, employees worked literally night and day to vacuum the K East Basin’s highly radioactive sludge into underwater containers. It was extremely challenging, exhausting work. To containerize the sludge, they stood on grates suspended above the 20-foot-deep basin and manipulated vacuuming equipment at the end of long poles – while using special underwater cameras and lights to guide their work.

Lucas credits the K East Containerization Project Manager Rob Gentry and his staff for continuously engaging workers to obtain input and ideas to adapt to constantly changing conditions and inventing several new tools that advanced the work. “Areas just a few feet apart in the basin could

have totally different types of sludge and completely different accessibility,” he said. “It could be heavy and dense in one place, completely hidden under debris in another place, and swirling and flaky in yet another place.” During the sludge-pumping endeavor, management, engineering and workers teamed to devise new “end effectors” to fit onto the ends of the pumping hoses. Different shapes and sizes were used in different conditions.

Of the two basins, the K East Basin had the majority of the sludge. In October 2006, KBC workers completed capturing all of the bulk sludge in that basin (nearly enough to fill a 30-foot-long motor home).

At a celebratory lunch in November, Knollmeyer called the accomplishment a “major success for our employees who worked

so hard, and for the overall cleanup and safety of the Hanford Site. Everyone worked side-by-side to adapt to changing conditions. Their effort was tremendous and I am extremely proud of them all.”

Another significant accomplishment in CY 2006 was removing monumental amounts of debris (solid nuclear waste) and heavy, bulky fuel racks from both basins. Debris ranged from smaller than a dime to items weighing 1,200 pounds each. “The debris varied in terms of

size, shape, contamination levels, length of time in the basin, location of sharp edges, and other characteristics,” says Rhonda



Nissen, now a manager at K West Basin and formerly the debris-removal manager at K East Basin. "This wide variation made it hard to handle any pieces of debris pieces in a routine manner. The crews had to be creative each day, in each work evolution, and they really rose to the challenge. They developed ideas that worked in a practical sense, and ideas that were truly ingenious."

Gentry agrees, "We relied on the expertise and experience of the workers, and they performed beautifully." In total, KBC workers have removed over 300 tons of debris and racks from the two basins combined – an astonishing amount considering the size of the basins. Each K basin is about one-third the size of a football field, and 20 feet deep.

Other key KBC work in 2006 included completing, testing and starting up a spe-

cial sludge transfer system to move the sludge containerized in the K East Basin to underwater containers in the K West Basin. The unique hose-in-hose system began operating in October. It was developed to allow the K East Basin to be emptied of its primary radiological inventory and prepared for demolition first because it is the more contaminated and leak-prone of the two K Basins.

In March, treatment of about four cubic meters of K Basins sludge with lesser radioactivity levels was completed at T Plant. This achievement represented the first successful retrieval and treatment of fuel-basin sludge in Hanford's 63-year history.

The KBC Project, with subcontractor EnergySolutions (formerly BNG America) also worked during 2006 to develop plans to stabilize the remainder of the sludge for long-term storage and to close the ba-

sins. The Project initiated procurement of equipment required for sludge treatment. In November, Project workers began modifying the Cold Vacuum Drying Facility in 100-K Area to treat the sludge. The following month, engineers completed designing the system that will stabilize and package the sludge.

Late in the year, the project started up a new fuel vacuuming system in the K West Basin, and completed the last transfer of fuel pieces from the K East to the K West Basin using the Fuel Transfer System. In February, the Project received a prestigious Workplace Safety Award from the Association of Washington Businesses for ergonomics improvements in the highly challenging basins work environment. At year's end, KBC workers had sustained 3.35-million work hours without a day lost to an injury.

■ **Michele Gerber, Communications**