

Closing in on Closure

# KBC completes welding multi-canister overpacks

Welding operations on multi-canister overpacks (MCOs) holding spent nuclear fuel from the K Basins finished May 18, permanently closing all of the MCOs available for welding at this time. Seven of the 386 MCOs cannot be welded at this time because they are involved in a monitoring program to assure that internal gases remain at safe levels during years of storage.

Chris Lucas, Fluor Hanford's facilities management director for the K Basins Closure (KBC) Project, said that welding all the available MCOs "really closes the door on the spent-fuel risk at Hanford." Jerald Kinz, welding operations manager, called the completion "the 'finish line' for many years of effort in remediating the spent-fuel issues at this Site."

Permanent cover assemblies, weighing more than 500 pounds each, were welded onto the giant MCOs. The integrity of each weld was verified with helium-leak and dye-penetrant tests. Welded MCOs are rated to withstand internal pressures up to 450 pounds per square inch (psi), instead of the lower 150 psi pressure limit provided by the initial mechanical seals placed on the MCOs as they left the K West Basin. The ability to withstand higher internal pressures is important in the unlikely case that pressure builds up during storage.

The highly successful welding sub-project, underway since February 2003 in the Canister Storage Building (CSB) in central Hanford, compiled a remarkable safety and quality record. The project started on time, remained ahead of schedule, and finished over three months ahead of its target date. In addition, welding operations never had a safety incident, or any significant conduct of operations discrepancy, or any defective welds. More than 2,600 tests were performed on the MCO welds, with no rejects.

According to Lucas, "safety and quality records as outstanding as those of this welding project haven't happened in any other Hanford project in recent memory." In a message to employees, he offered a "tribute to all of you who have played a part in meeting this important goal .... I am proud of how this team has remained focused and continues to work safely and efficiently."

Hanford's MCOs, each holding about five metric tons of irradiated uranium,

were welded to the "N-Stamp" pressure vessel criteria. The N-Stamp means that the finished product meets the very strict quality and design specifications of the American Society of Mechanical Engineers (ASME) code. Lucas, Kinz, and CSB manager Paul Garello credit the extraordinary success of the welding project to the interaction and dedication of the work team. Garello said,

"Each member was professional and attentive, and truly believed in the team as a whole." Kinz added, "Whenever you needed anything to make the job work, every team member was there for you, helping, making it work."

Each of the two MCO welding crews included three welders and a boilermaker and quality-assurance inspectors from Amer Industrial Technologies (AIT), a Fluor Hanford subcontractor based in Wilmington, Del. Hanford Atomic Metal Trades Council (HAMTC) welders Joe Johnson, Jim Rogers, Buck Schmidli, Brent Anderson, and Evan Anderson finished the actual welding, along with HAMTC boilermakers Juan Castaneda and Mark Mackey. Many other HAMTC welders, boilermakers, riggers, operators, radiological control technicians and other craft were involved over the years and contributed to the success. They readied the welding pit, transported the MCOs to and from the pit using the massive MCO Handling Machine, and performed other key project functions. The welding effort was also supported by Fluor Hanford quality-assurance personnel as well as AIT quality-assurance inspectors Marci Ostrum and Lori Kendall who compiled a perfect record of never missing an assigned shift of work throughout the welding project.

Immediately after completing MCO welding activities, the CSB crews transitioned to welding Shippingport Spent Fuel Canisters (SSFCs), holding dried spent fuel from a Shippingport, Penn. Reactor. The fuel had been stored at Hanford's T Plant for nearly 30 years. The first SSFC was welded successfully on May 19. Welding operations on the 18 SSFCs are expected to finish in mid-June. Welded MCOs and SSFCs will be stored in underground vaults at the CSB until they are shipped to the national high-level waste repository in the 2013 to 2021 timeframe.

**Michele Gerber, Communications**

KBC

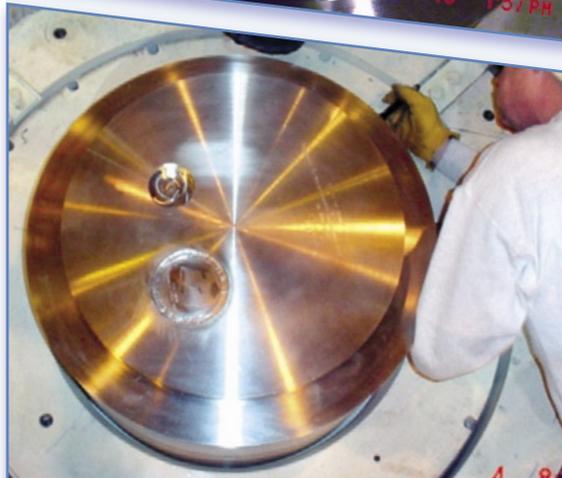


*FH Boilermaker Mark Mackey works in a MCO welding pit in Canister Storage Building.*

KBC



KBC



*First Shippingport Spent Fuel Canister welded to N-Stamp criteria in the CSB. SSFC welding operations began two days after the completion of MCO welding.*