

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 13, 2004

**TO:** K. Fortenberry, Technical Director  
**FROM:** D. Grover and M. Sautman, Hanford Site Representatives  
**SUBJ:** Activity Report for the Week Ending August 13, 2004

Mr. Ogg and Ms. Raabe were on site reviewing the Sludge Retrieval and Disposition Project.

Spent Nuclear Fuel Project (SNFP): The project has approximately 11 Multi-Canister Overpacks (MCOs) worth of fuel left to process. The single pass reactor (SPR) fuel is currently being processed and loaded into fuel baskets with the MCO containing these expected to be shipped in the next week. Any SPR fuel not able to fit in this MCO will be combined with the N Reactor fuel scrap in subsequent MCOs.

The Fluor Hanford decision to delay processing the more degraded fuel continues to cause operational problems. This volume expansion due to the degradation is wedging fuel into canisters requiring considerable time and effort to remove it. The fuel is also fragmenting severely resulting in the generation of more scrap than the project expected when decisions to delay scrap processing were made, although these scrap quantities are well within the assumptions made at the outset of the project. As a result, the probability of needing to put more than one scrap basket in an MCO is increasing. While the safety basis allows this for fuel that has been cleaned using the primary cleaning machine and statistical process control, it does not for fuel that has been determined to be clean based on visual inspection controls. SNFP is working with DOE on revised controls to deal with this situation.

The project is also expecting to have one to two, out of five, baskets of fuel remaining when the last full MCO is shipped. The SNFP is expected to develop a technical basis to delay processing this fuel until all fuel and scrap found while retrieving sludge is available for processing. This would eliminate a partially filled MCO from being generated and stored. This technical basis would be expected to provide the inventory of leftover fuel, processing information, short term storage conditions, and the schedule for completion of this fuel removal. (II)

Sludge Retrieval and Disposition Project: The removal of debris from the basin has not kept pace with the fuel processing efforts. In K-West basin several thousand empty fuel canisters and lids are scattered across the basin along with broken process equipment and dropped tools. While K-East basin does not have as many canisters, it does contain a large quantity of historic equipment and canister racks that will need to be dealt with to meet the end of year sludge consolidation milestone. K-West has more time to deal with this debris but more efficient removal equipment is not currently planned for installation. (II)

Plutonium Finishing Plant (PFP): PFP has experienced several recent problems with respiratory protection equipment. While most have been related to personnel error in preparing equipment for use, this week, problems with batteries for powered air purifying respirators prematurely discharging were identified. (II)