DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 9, 2001

TO: K. Fortenberry, Technical Director

FROM: D. Grover and M. Sautman, Hanford Site Representatives

SUBJ: Activity Report for the Week Ending March 9, 2001

233-S: Last week's report discussed safety issues associated with the storage of plutonium-containing items in a wooden weather enclosure outside 233-S. In response to these issues, the Department of Energy-Richland (RL) declared that the controls in the 233-S Fire Hazards Analysis had been invalidated and directed Bechtel Hanford Inc. (BHI) to take actions to stop storing waste and remove combustibles from the enclosure. Mr. Sautman continued to have discussions with Shirley Olinger and Pete Knollmeyer to ensure that the associated authorization basis and unreviewed safety question issues were also resolved. Later in the week, DOE-RL directed BHI to declare an unusual occurrence due to a discovery that a potentially inadequate safety analysis existed, develop a positive Unreviewed Safety Question, and prepare a Justification for Continued Operations. Other corrective actions include not allowing any staging or storage of radioactive waste in the weather enclosure, removing the nondestructive assay equipment, and tagging out the space heaters. Support by senior DOE-RL safety and line managers has been key to resolving these safety issues in a timely fashion. (1-C)

Plutonium Finishing Plant (PFP): Recent surrogate testing has indicated that supercritical fluid extraction (SFE) is significantly underreporting (up to an order of magnitude or more) the moisture content of thermally stabilized $Mg(OH)_2$ precipitate cake. It appears that SFE is only measuring the adsorbed water on the surface, but is not extracting the chemically bonded water. During SFE testing, Los Alamos used hydrates that decompose at much lower temperatures than $Mg(OH)_2$ (120°C vs 400°C). PFP is inspecting all the cans which contain material analyzed by SFE for pressurization and is temporarily reducing the allowable measured moisture content from 0.5 w/o to 0.1 w/o. Since the adsorbed moisture that poses a near term safety issue was measured, PFP believes that they have time to resolve the SFE issues before longer term radiolytic pressurization in current cans becomes an issue. (3-A)

There continues to be a steady stream of reportable and nonreportable conduct of operations incidents involving procedure compliance as well as alleged incidents under investigation involving improper storage and handling of fissile material. Rising facility representative frustration with PFP management's response to these events culminated Friday with a facility representative imposing an operational restriction on all movement of items into and out of the vaults or involving high dose rate material. The Site Rep is especially concerned that many of these events have occurred on the weekend or during swing and graveyard shifts. The Site Rep has discussed these concerns with PFP and senior DOE line management. (1-C)

Spent Nuclear Fuel Project (SNFP): While purging the 4th multi-canister overpack in the K-West Basin prior to shipment to the Cold Vacuum Drying Facility, an operator incorrectly identified a valve as open despite the fact that the operator closed this valve earlier in the procedure. During a subsequent check of the cask pressure, the problem was recognized. Facility management was consulted and decided to correct the situation, proceed with the procedure, and delay the critique process until the purge was completed. On a subsequent purge cycle the operator again failed to perform a procedure step. This was not recognized by operator, shift operations manager, or facility manager, all of whom were present, until the DOE facility representative identified it. The facility management again decided to complete the purge before conducting a critique. The

repeated failure of the facility management to formally address conduct of operations violations promptly rather than at their convenience raises concerns with the SNFP's commitment to correcting one of the major problems identified by the operational readiness reviews. (3-A)