DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 28, 2006

TO: K. Fortenberry, Technical Director
FROM: R. Quirk and W. Linzau, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending April 28, 2006

K Basins Closure: The project installed new safety-significant check valves for the flush lines on the Hose-in-Hose booster pump stations (see site rep weekly 4/7/2006). The safety analysis included assumptions for the seat leakage of valves at design pressure, but this was not explicitly translated into design and procurement documentation for the valves. The new valves were leak tested by the vendor using 80-psig air rather than with water at the design pressure, which was significantly higher. Project engineering completed an informal analysis that showed the estimated leakage at higher pressure would be within the value assumed in the safety analysis, but this has not been verified to be an acceptable approach for a safety-significant valve nor has it been issued as a formal document.

Tank Farms: During a walk-down of the equipment for the cross-site transfer next week, the site rep noticed a blue tag hanging in the variable frequency drive (VFD) for the SY-101 transfer pump. The tag, dated January 10, 2001, noted that a commercial grade item inspection of the motor contactor was required. A check of the records indicated that the inspection occurred in September 2001 and that the tag should have been removed then. Operators are trained on the use of yellow (caution) and red (danger) tags but apparently disregard other tags that may be attached to equipment.

Hazardous Energy Control: Technicians for CH2M Hill's Vent and Balance Group witnessed an electrical arc flash while unplugging test equipment at the Waste Sampling and Characterization Facility. The workers immediately stopped the activity and notified the building manager but then proceeded to unplug the equipment without de-energizing the outlet. It was then discovered that the equipment cord was damaged. A short circuit on the damaged cord caused the arc flash. The Vent and Balance Group previously had an instrument technician who performed periodic inspections of portable equipment but the position was not filled when he retired years ago.

Plutonium Finishing Plant: A positive Potential Inadequacy in the Safety Analysis (PISA) was declared when it was discovered that the controls in the Fire Hazard Analysis (FHA) were not reflected in the Documented Safety Analysis (DSA). The FHA credits sprinklers in a non-radiological portion of 234-5Z to prevent propagation of a fire that could threaten the filter room and building confinement integrity. This control was not captured in the DSA.

Ceiling panels in Filter Room 315 were discovered to be degraded and had cracks that could permit air leakage to an uncontrolled air space. The filter room is part of the Zone 3 ventilation exhaust system, a vital safety system. These non-structural ceiling panels separate the filter room from a rarely accessed crawl space. Activities in the room have stopped and the room has been secured and sealed until further evaluation of possible leakage is completed and corrective actions can be determined.