DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 3, 2003

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending October 3, 2003

Spent Nuclear Fuel Project (SNFP): Recently the Fuel Transfer System (FTS) Safety Class (SC) over travel interlocks actuated. In response the SNFP modified an attachment to the FTS operating procedure to allow the interlocks to be reset and operations to continue, the attachment was added to the procedure in March to reset another SC interlock problem. This attachment allowed the interlocks to be overridden while the FTS lift platform is lowered to disengage the interlock. This action is contrary to the Technical Safety Requirements (TSR) which requires the interlocks to be operational for these activities. Verification that these interlocks are not in override is a TSR surveillance requirement to be performed each shift. The SNFP Unreviewed Safety Questions (USQs) review for these procedure changes were negative. There are indications that this situation has occurred several times in the past although the extent is still being determined. Following this latest problem with the nuclear safety program at SNFP, Fluor Hanford (FH) implemented an operational pause at the K Basins. Prior to resuming operations, a review will be completed of safety basis related changes to technical documents during the last 12 months, modify operating procedures that allowed inappropriate operation of SC interlock override switches, and brief DOE-Richland on the adequacy of the K Basin authorization basis. In addition, all USQ evaluations will need to be approved by one of 7 specified individuals from the FH central nuclear safety group. This event also raises concerns with the failure of the standardized process for identifying safety-related requirements in procedures and whether occurrence reporting requirements for activation of SC interlocks were followed. (III-C)

Tank Farms: Saltcake dissolution of S-112 began last week. Waste retrieval was twice shut down when the exhauster's continuous air monitor measured high beta count rates, but radiological surveys did not detect any spread of contamination. The retrieval was also impacted by a tank farms-wide worker-issued stop work. Work was also stopped when an increasing material balance discrepancy indicated that SY-101 was not receiving the expected volume of solution, but the retrieval resumed once an investigation was not able to detect any evidence of a leak or misroute. When engineers noticed the trend was continuing, they put a hold on retrieval operations. There are some indications that the volume of retained gas in SY-101 may be roughly 4000 ft^3 versus the ~750 ft^3 that was calculated in May 2002 based on gas generation rates, evaporation, gas outflow, etc. Scientists did not develop their estimate at that time using tank level versus barometric pressure data because the available data showed too much scatter. The increase in retained gas volume would affect the volume decrease (and thus the material balance) due to gas compression as waste transfers into SY-101 increased the hydrostatic head. However, not all the data supports the gas volume increase and the evaluation of the situation is still in progress. The increased gas volume, if confirmed, could also affect the tank's waste categorization under the new Documented Safety Analysis.
cc: Board Member