DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 22, 2004

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending October 22, 2004

Tank Farms: In response to the Board's reporting requirement, the Office of River Protection commenced Phase 1 of the Integrated Safety Management Improvement Validation review at tank farms. Because of a number of concerns with the adequacy of a consultant's common cause analysis of recent radiological reports, CH2M HILL Hanford Group (CHG) has decided to perform a more methodical and comprehensive common cause analysis internally. While still planning for a new mixer pump to bring tank AN-107 back into specification with chemistry requirements, CHG is considering pursuing expert panel-recommended analysis, testing, monitoring, and inspections which may support modifying the chemistry specification for just tank AN-107. Similarly, CHG may seek a 6-month extension to the tank SY-102 Justification for Continued Operations in parallel with preparing for 1+ caustic additions. The phosphate-rich Phase 2 saltcake dissolution waste from tank S-102 may be stored in tank SY-101 rather than transferring it to East farms with the rest of the dissolved and sluiced waste from S-102. (IV, II)

Waste Treatment Plant (WTP): The Site Rep observed the Pretreatment Facility Safety Awareness Session which discussed recent accidents and corrective actions. During the hydro test of a feed receipt vessel, the test plug blew out and released 60,000 gallons of water to the cell floor and other nearby cells. Bechtel performed an assessment of the 903 vessel welding and acceptance issues (see 2/20/04 weekly report), which included 22 nonconformance reports. Lessons learned included avoiding excessive confidence in proven NQA-1 suppliers, clear inspection requirements, developing an overall plan for activities when an item's acceptability is questioned, and evaluating the extent of condition to avoid a piecemeal approach. (III)

Spent Nuclear Fuel Project (SNFP): A worker at the K-West Basin received skin contamination of 200,000 dpm/100cm^2 beta-gamma and 6,125 dpm/100cm^2 alpha on both forearms. This resulted when heavily contaminated workers in two sets of anti-contamination clothing entered a crowded enclosure and was aided in undressing by workers wearing only one set, the contaminated worker was only in one set. A SNFP investigation identified that the radiological work plan called for the enclosure to be posted as a high contamination area which would have required these people to be in two sets. The implementation of this control in the work document was found to be inadequate. The knowledge of the individuals involved of the radiological control manual practices was also inadequate, i.e., the inner step off pad for a highly contaminated area is inside the posted area and highly contaminated outer clothing is removed before stepping on this pad.

While the investigation of the cause of the contamination was adequate, the investigation failed to identify other deficiencies in the work planning and performance. The Job Hazards Analysis did not identify the potential for fall hazards, yet the work document discusses the need to restrict movement due to the potential for a fall into the basin within the enclosure the work was being conducted. This area was identified as a High Radiation Area (HRA) in the investigation documentation but the Radiological Work Permit did not authorize work in a HRA. (II)