

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 20, 2004

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman
SUBJ: Activity Report for the Week Ending February 20, 2004

Waste Treatment Plant: After the Submerged Bed Scrubber (SBS) Condensate Receipt vessel was installed in the High-Level Waste facility, it was identified that the fabrication engineering specification did not include the Safety Requirements Document (SRD) requirement that black cell vessels undergo full volumetric inspections of the welds in the primary *confinement* boundary of the vessel, but rather limited these inspections to the primary *containment*. This requirement was imposed after the specification was issued, but the specification was not revised to incorporate this authorization basis amendment. As a result, the examinations performed only included the welds up to the highest liquid level and excluded welds that serve to confine gases (e.g., welds on the vessel head nozzles). Of the 34 nozzles that were not examined, 11 have interferences that will likely prevent full 360 ultrasonic examinations. Preliminary examinations indicate that four nozzle welds have defects that need to be repaired. The error was in a generic vessel specification used for 66 black cell vessels that are at various stages of procurement. Seven of these vessels are more than 94% fabricated, and similar interference problems have already been identified. Furthermore, dozens of the welds on the SBS Condensate Receipt vessel exhibit residual slag or arc strikes, are undersized or undercut, or have inadequate contouring. Although these do not comply with Bechtel's specifications and/or the fabricator's drawings, they were not identified by either the fabricator's or Bechtel's shop inspectors. Bechtel also decided to wait until after installation before repairing these defects although the full extent of the problem was not known - the tank interior was only inspected Thursday. The staff met with senior Bechtel managers to discuss their plans to conduct a barrier analysis on the missed SRD requirement and actions to improve their oversight of vessel fabrication. (III)

Spent Nuclear Fuel Project: The improved maintenance and operations regime for the Fuel Transfer System has increased the availability of the system. As a result, SNFP has been able to move as much fuel from K-East basin to K-West basin this past quarter as was done in the previous six months. Approximately 75 percent of the fuel has now been transferred. At this rate it is likely that the containerized fuel in K-East Basin will be removed by early May. However, the remaining fuel is more deteriorated than previous fuel causing productivity problems with the Primary Cleaning Machine and Integrated Water Treatment System. Also a significant portion of the remaining fuel is in canisters that contain holes in the side. This is adversely affecting the PCM's ability to clean the fuel due to water being forced out the holes rather than through the center holes of the annular fuel assemblies. This is requiring multiple cleaning cycles or repackaging of the fuel into different canisters prior to washing. These considerations along with the scrap concerns identified last week are making it difficult to meet production goals for completion of fuel removal by the July 2004 milestone. (II)

Cc: Board Members