DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 8, 2012

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending June 8, 2012

Board staff members M. Forsbacka, J. MacSleyne, and J. Shackelford were on-site to discuss the monitoring and control of flammable gas in the double-shell tanks.

618-10 Burial Ground: A drum retrieved during trench remediation started smoking when holes were being punched in the lid and required activation of the fire suppression system. The drum was in the Drum Punching Facility (DPF), which is a large steel box with doors, HEPA ventilation, and a sand-filled hopper on top. Operators were remotely punching holes in the top of a 30-gallon drum when light wisps of smoke were observed but dismissed it as dust, which is common when punching retrieved drums. Operators were preparing to remove the drum and place it in a storage location when they did one last check to ensure it was safe to approach. They noted a rapid rise in temperature (estimated to be one degree per second) and stopped the operation. The operators consulted with their supervisor by radio and were directed to drop the sand, but inadvertently contacted the switch to add mineral oil to the drum (about ½ gallon was added before being secured). When the operator activated the sand dump, only a small amount (enough to cover the lid with about ½ inch) of sand was released, but this amount was sufficient to cause a drop in temperature. The drum's initial temperature was about 67 degrees F and the highest reading reported was 77 degrees F. The operator called 911 and the Hanford Fire Department arrived and assumed control of the event. After trying to get the rest of the sand to dislodge, the decision was made to mechanically agitate the hopper, which caused the rest of the sand to release and fill the open 55-gallon drum that held the 30-gallon drum. No release of radiological or hazardous materials was reported. Management put this operation on hold until recovery and corrective actions can be implemented.

Sludge Treatment Project (STP): DOE completed a Technical Readiness Assessment of the STP Engineered Container Retrieval System, and at the outbrief the review team noted all five critical technical elements were adequately demonstrated (Technical Readiness Level six). The review team noted that the approach used by the STP should be considered complex-wide.

Waste Treatment Plant (WTP): The site rep observed sessions of a workshop for revising the Implementation Plan (IP) for Recommendation 2010-2. The contractor is ensuring that the information required for the safety basis development is integrated in the revised IP. Additionally, they are developing the logic ties between the resolution of technical issues and the IP deliverables.

Plutonium Finishing Plant (PFP): The contractor determined that the postulated failure of a small HEPA filter in the air sample vacuum system is a Potential Inadequacy in the Safety Analysis (PISA) because it could lead to a small but previously unanalyzed unfiltered release.

The contractor concluded that workers unknowingly performed maintenance on energized equipment. The work was done in April, but this week workers used the same lock-out/tag-out and identified energized conductors during the safe-to-work check. The contractor concluded that the previous safe-to-work checks were not performed properly.