

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 21, 2011

**TO:** T. J. Dwyer, Technical Director  
**FROM:** W. Linzau and R. Quirk, Hanford Site Representatives  
**SUBJECT:** Hanford Activity Report for the Week Ending October 21, 2011

Tank Farms: Last week, contractor nuclear safety engineers questioned if the operational restrictions for transferring waste equipment at ambient temperatures below 32° F (see Activity Report 10/7/11) was bounding because some slurry conditions could plug the waste transfer lines and relief valves above 32° F. The Plant Review Committee (PRC) failed to classify this verbal information as “new information” and enter the unreviewed safety question (USQ) process. Office of River Protection (ORP) engineers noted that this decision was inconsistent with the contractor’s USQ procedure. This week, the PRC agreed that plugging above 32° F was credible and the transfer line flushing process was not a credited control. It is likely that the contractor will request additional time to complete the associated USQ determination and expected Justification for Continued Operation beyond that already approved by ORP.

The site rep met with contractor managers to discuss the issues related to a technical analysis that allowed transferring waste to and from double-shell tank AN-101, which is one of the tanks that is affected by the new information on large plutonium-rich particles (see Activity Report 10/14/11). The contractor agreed that there were some deficiencies, including the analysis did not clearly identify if any new controls were required.

Waste Treatment Plant (WTP): Earlier this month, ORP completed a report documenting their review of the recent installation of the vessel vent header in the Pretreatment facility with regard to its compliance with the authorization basis (AB). The report notes one finding related to the contractor’s process to ensure the design of installed equipment aligns with the approved PDSA. In 2009, an addendum to the PDSA upgraded the vessel vent system to safety-class and made other changes that affected the design of the system. The project has been addressing the required changes, but their solutions assumed the existence of a control to prevent multiple overblows of the pulse jet mixers. However, this control was never included in the PDSA. The review team calculated that the size of the installed header may need to be significantly larger if the control for overblows is not assumed. The report notes that the contractor has a process to ensure compliance with the AB before allowing procurement or construction, but there is not a strong mechanism that will stop an installation already underway when the AB is revised.

Plateau Remediation Contractor: In response to the Board’s recent letter on problems at the Waste Encapsulation and Storage Facility (WESF), the contractor initiated a review of the conduct of nuclear operations and maintenance at WESF and the Canister Storage Building. The Richland Operations Office (RL) is providing significant oversight of this review. The contractor will perform similar assessments during the next year at all their nuclear facilities. This review will be completed early next week.

The contractor completed the removal of material at risk from the 209E Critical Mass Laboratory and cancelled the DSA because they and the RL agreed it was less than a Hazard Category-3 (HC-3) facility. Subsequently, the contractor determined that the cancellation was premature because waste boxes outside the facility had quantities of material greater than the HC-3 threshold and declared an USQ.