

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 19, 2011

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending August 19, 2011

Waste Treatment Plant (WTP): The contractor has written a draft project execution plan for safety basis development for the Laboratory and Low Activity Waste facilities, and the Balance of Facilities. The objective of the draft plan is to define a process and the resources to re-baseline the PDSA to support completion of the design and construction and produce the final DSA to support commissioning. In addition, the draft plan clearly notes that the DSA will be compliant with 10 CFR 830 and will follow the methodology specified in DOE-STD-3009. Milestones presented in the plan include: developing facility-specific hazard analysis reports by February 2012, completing accident analyses by March 2013, and drafting a DSA by the end of November 2013. An independent team is reviewing the plan to ensure it will produce a compliant DSA, proposed schedules are reasonable, and that resources are sufficient. The team believes their review will be complete by next week.

100 K Project: Contractor management concluded they will recommend to DOE that the project perform a Readiness Assessment Level 3 (RA-3) before loading the Knock-Out Pot (KOP) sludge in Multi-Canister Overpacks (MCOs) and then processing the sludge at the Cold Vacuum Drying Facility (CVDF). An RA-3 is the least rigorous RA and was selected based, to some extent, on the expected success of the RA-3 that will be conducted for upcoming spent nuclear fuel operations. The site rep questioned contractor management if the assessment of readiness for MCO off-loading operations at the Canister Storage Building (CSB) should be upgraded from a management assessment to an RA-3. The site rep pointed out that the maintenance crew at the Waste Encapsulation and Storage Facility (WESF) is the same crew for the CSB and the Board's staff recently identified a number of problems with the maintenance program at WESF.

River Corridor Closure Project: The contractor has conducted proof-of-concept testing for the equipment for remediating the vertical pipe units (VPUs) at 618-10 and 618-11 burial grounds. The general concept is to use a large auger to bore into the ground and shred the waste while it is still buried. The Board's staff previously expressed that considerations for safety should be included early in the design process and, in particular, it would be prudent to integrate the controls to prevent the spread of contamination into the design. The current design includes installing an over-casing (1/2-inch steel, four-foot diameter cylinder inserted into the soil using a vibratory hammer) around the VPU and then affixing an enclosure to the top of the over-casing. The enclosure would provide confinement during insertion and removal of the auger and during subsequent sampling and removal of the shredded waste. A subcontractor conducted proof-of-concept testing by assembling a full-sized VPU at an off-site facility and demonstrated that the auger will shred simulated waste to a size that is easily retrievable. Prototype testing is scheduled for early next year and cold testing should be complete in a year.

Secondary Liquid Waste Treatment (SLWT): The Tank Farms contractor held a workshop to discuss planned upgrades to the Effluent Treatment Facility (ETF) to process the secondary waste from WTP. This secondary waste will contain Technetium-99 and there is no treatment step for it in the current process. The contractor tasked the expert panel in the workshop to assess the proposed processes and waste forms, and to identify follow-on testing.