

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 23, 2004

TO: K. Fortenberry, Technical Director
FROM: M. Sautman, Hanford Site Representative
SUBJ: Activity Report for the Week Ending July 23, 2004

T Plant: A limited scope contractor Readiness Assessment (RA) was conducted to evaluate T Plant's readiness to commence receipt and interim storage of K-East North Loadout Pit sludge contained in Large Diameter Containers. This scope of work is very similar to those evaluated during previous readiness reviews. The single pre-start finding identified one requirement that was not addressed in the procedure. There were no post-start findings. In contrast to past readiness reviews at T Plant, the Site Rep did not have any concerns with the T Plant's state of readiness or the conduct of the readiness review. (II)

Waste Treatment Plant (WTP): Based on successful sparge-only test data, Bechtel has been planning on using a 3-hour cycle (1 hour on, 2 hours off) for mixing non-Newtonian waste. Test data also indicate that mixing should be successful using continuous mixing, but with only 1/3 the sparger air flow. A recent test examined the ability of spargers to resume operation after an extended shut down period. Using a simulant with a yield stress greater than 100 Pascals, it was found that an air pressure of 14 psi was required to clear the sparger and resume operations. (III)

Tank Farms: While a 36' long thermocouple was being removed from a tank in 244-CR vault, the radiation dose rate meter went off-scale (i.e., >50 rad/hr β - γ) and the extremity radiation work permit void limit was exceeded. The field work supervisor decided to finish removing the thermocouple because he believed more dose would be received trying to reinsert the equipment or applying more shielding and he wanted to avoid leaving the equipment suspended in the air. Contamination was later found on one worker's anti-contamination and modesty clothing. Because the pocket dosimeters showed elevated doses, dosimetry was immediately read and one worker's finger ring was found to have exceeded the 15 rem extremity administrative control level. Although the tank was poorly characterized, radiation levels were not expected to be very high and controls typically used for handling equipment with very high β dose rates were not implemented. Since the use of water sprays had only limited success in reducing dose rates, trying to limit the exposure time was the main focus. A more conservative approach for working with a poorly characterized tank would have been to implement more rigorous radiological controls up front and then back off if warranted. High risk work has been restricted until several issues are addressed. (III)

Tri-sodium phosphate can precipitate and form a gel. The staff reviewed possible process controls to prevent gel formation during the upcoming S-102 retrieval and subsequent transfers. (II)

PPF: During decommissioning work, an electrician cut a cord that was still being used to power a solenoid associated with a glovebox. Factors that may have contributed to this event include the lack of specificity in the procedure steps, the lack of rigor in documenting which equipment had been previously isolated, the lack of a zero-energy check, and inadequate turnover between work crews. (II)

cc: Board members