

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 28, 2003

**TO:** K. Fortenberry, Technical Director  
**FROM:** D. Grover and M. Sautman, Hanford Site Representatives  
**SUBJ:** Activity Report for the Week Ending November 28, 2003

Tank Farms: The tank S-112 saltcake dissolution process was shut down after a facility representative realized something was wrong. The operators had switched from transfer to recirculation mode on the human machine interface (HMI), but did not realize that the valve was a manual one versus a motor operated valve. As the waste continued to be pumped out, there was no indication on the HMI that the level was decreasing because the level instrument had become stuck about an hour beforehand. The operators did not notice that a pressure indicator on the transfer line indicated 120 psig (when it should have been lower). If the video camera had been used, it might have been observed that the waste level continued to decrease. As the pump started running dry, there were several low waste flow, low pressure, and high waste density alarms that were acknowledged by the operators. Not only did the operators dismiss the numerous alarms as nuisance alarms, but they did not reference the alarm response procedures throughout this event or notify the shift manager or operations engineer of the alarms. Furthermore, a recent software modification inadvertently prevented an automatic pump shutdown from occurring after a low waste flow alarm happened. It was only when the facility representative brought the alarms to the attention of a process engineer (who had recently arrived) did response actions begin to occur. After it was confirmed with a video camera that there was no recirculation flow, the transfer pump was shut down. The process engineer had to instruct the operators how to use the video camera, shut down the pump, and explain what they were viewing with the camera because the operators did not know how to perform these actions. These operators were reportedly trained how to operate this system although one of them had not completed a field walkdown. No supervision was present during this event. At the critique, there was a significant amount of confusion between the operations and engineering staff regarding how the system and its interlocks should have worked. In the Site Rep's opinion, the large number and types of breakdowns that occurred make this a much more serious event than the actual consequences would alone warrant. CH2M Hill Hanford Group is 1) briefing all operators on their roles and responsibilities, 2) having operations managers walk through the operating and alarm response procedures with the operators, and 3) having the crews perform field walkdowns. The Office of River Protection has requested that CHG perform a thorough review of operations across tank farms to ensure similar performance deficiencies do not exist. (III-A)

Transuranic Waste Retrieval: This week the contractor Readiness Assessment (RA) for the Transuranic Waste Retrieval project concluded. Many of the findings identified by the team involve the lack of a higher level of operational formality for higher hazard drums compared to the level of formality that has been in use for burial ground operations. This was primarily evident in the implementation of the new Technical Safety Requirement Administrative Control programs, e.g., requirements and surveillances were not proceduralized, the technical content of procedures was not accurate, and procedure compliance was not adequately demonstrated. In addition the RA team noted that no Integrated Safety Management System verifications had been performed for the retrieval project in 2003. (III-A, I-C)