

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 18, 2000

TO: K. Fortenberry, Technical Director

FROM: M. Sautman and S. Stokes, Hanford Site Representatives

SUBJ: Activity Report for the Week Ending August 18, 2000

A. Spent Nuclear Fuel Project: An additional delay, to allow for more time for operator proficiency training, was announced this week for the Fuel Retrieval System (FRS) and Integrated Water Treatment Systems (IWTS) readiness assessment. The new start date for this activity is August 28, 2000. This is viewed as positive step, given the recent conduct of operations issues noted at the basin. The resolution of the FRS mechanical issues that had prevented further testing, and lead to the last set of delays, have been addressed sufficiently to complete testing but may require further resolution since the proposed fix involves a software bypass of a failed component rather than its repair. This approach, though valid, dismisses the issue of why the manipulators were designed with this feature if it is not really needed (though the manipulators are an off-the-shelf item, the addition of feedback potentiometers is unique to the Hanford design). This is potentially yet another example of poor design engineering.

Engineering and quality issues continue to hamper testing progress, particularly in the Cold Vacuum Drying Facility. For example, the leaky valves in the vacuum pump system were evaluated at the Pacific Northwest National Laboratory (PNNL) to determine a failure cause. Preliminary reports indicate that foreign matter as well as materials defects were present. Though insufficient information was available to determine whether the defects were present prior to installation, researchers concluded that these valves, in their current condition, could not be made to function and more importantly ball valves of this type are a poor choice for helium systems. Further evaluation of the valves is underway to determine if this is another supplier related quality issue. Additionally, after finding the foreign matter in the vacuum pump system piping, the design authority (engineering) developed a test deficiency report that required a flush of the system and cited NQA-1 cleanliness standards as applicable to this activity. Subsequently, construction operations developed a flush procedure that did not incorporate these requirements. The system design authority authorized the flush procedure despite these deficiencies and the flush was completed. The Site Rep brought this issue to the attention of the SNFP Chief Engineer and Project Manager as well as the Acting DOE-RL SNF project manager as yet another example of poor conduct of engineering. This system is now scheduled to be flushed again using the applicable requirements later next week.

Also over the past week, other quality issues have also been discovered that will require more effort to correct and potentially add more delays. For example, DOE-RL Facility Representative surveillances completed over the last week identified quality related issues in CVDF that suggest poor compliance with existing quality procedures and the latest suspension of CVDF testing may involve quality issues with the process-MCO shield plug connection. This last instance involved failure to develop an adequate seal between the two fixtures. Initially believed to be a MCO shield plug defect, it was later shown that the MCO shield plug was machined within specifications. Further investigations are now underway to determine the exact cause of this failure.

cc: Board Members