DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 25, 2003

TO: K. Fortenberry, Technical Director
FROM: D. Grover and M. Sautman, Hanford Site Representatives
SUBJ: Activity Report for the Week Ending July 25, 2003

Waste Treatment Plant (WTP): The Office of River Protection issued criteria that allow automatic fire suppression and detection systems to be omitted from any WTP space without ORP approval provided certain combustible loading and accessibility criteria are met. The pilot-scale evaporator is finding extensive foaming with the simulated recycle streams. Although the exact cause of the foaming is uncertain, the use of anti-foam reagents appears promising. (I-C)

Tank Farms: The Site Rep observed an Enhanced Work Planning session (using the recently revised process) for sampling the jumper which was involved in the June contamination event. This meeting would have been greatly improved by taking a methodical approach for discussing the work steps and placing more emphasis on the identification of hazards and controls.

The revised tank farm Technical Safety Requirements (TSR) for waste transfers and flammable gas have been dramatically reduced by replacing the detailed prescriptive requirements with vague, very flexible functional requirements whose implementation details are shifted to contractor-approved procedures. For example, the administrative control would not prohibit a misguided attempt to retrieve waste from a double-shell tank without the ventilation system operating or developing a process control plan although this effort would be terminated once 25% of the lower flammability limit was reached. Furthermore, ventilation systems which have successfully reduced waste temperatures and thus lowered the gas generation rate are only required to be operable, but not necessarily operating although this would eventually trigger a reexamination of the surveillance frequencies. A contractor making a good faith effort could operate safely and reduce the frequency of TSR violations that have no safety significance, but the increased flexibility is more vulnerable to abuse. (I-C)

Spent Nuclear Fuel Project (SNFP): The project identified a positive Unreviewed Safety Question (USQ) related the to the flammable gas controls with the Sludge Water System Project. The project and DOE have determined that a new flammable gas control strategy may be necessary relying on control of hydrogen generation versus the current control of oxygen in the system. The revised approach will include a phased startup approach where the sludge container will be partially filled with sludge and gas generation monitoring will be conducted. The data would then be used to support the development of revised controls. The project will need to develop an authorization basis (AB) to support this testing as well as for transporting the resulting container to T Plant for storage. The project then anticipates the data will support a revised set of (AB) controls for operations. In addition to the problems with the authorization basis, DOE and the contractor continue to identify equipment design, construction, and testing issues. (I-C, III-A)