

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 25, 2002

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: R. T. Davis/ T. D. Burns
SUBJECT: SRS Report for Week Ending January 25, 2002

Staff members Contardi, Wong, Plaue, and Feldman were on-site this week to review both the americium and curium (Am/Cm) disposition project and the status of site efforts to develop salt processing capabilities.

Americium/Curium: During the staff's review, it was recognized that two potential safety issues remain unresolved. The first pertains to hydrogen accumulation in H-Pump Tank 7 (HPT-7) (site rep weekly 12/14/01). Recently completed calculations by WSMS indicate that existing passive ventilation capacity in H-Diversion Box 8 is sufficient to preclude an unacceptable rate of increase in hydrogen concentration in H-Pump Tank 7. Based on these results, WSRC has concluded that no additional control measures are necessary. The staff is not convinced that these calculations contain sufficient conservatism to be appropriate as a basis for concluding hydrogen will not accumulate beyond the lower flammable limit. The second issue pertains to meeting the waste acceptance criteria (WAC) for the extended sludge processing (ESP) tank (tank 51). Blending of the Am/Cm solution in tank 51 is credited to establish that the specific dose (rem/gal) will be below the WAC limits. This week it was realized that the WAC limits also apply to the tank 51 transfer line and valve box, both of which will contain Am/Cm solution prior to blending. WSRC is developing a path forward.

F-Canyon: On Thursday, a high activity alarm was received in the segregated cooling water system at F-Canyon. Operators responded appropriately to verify the contamination in this system and to divert flow to a hold basin. Outfall samples indicated no release to the environment. Subsequent investigation appears to indicate that the contamination was caused by a coil leak in the 6.4D dissolver. A maintenance activity associated with this dissolver resulted in isolation of the cooling coil. The high activity alarm was received when the coil was returned to service. Operators re-isolated this coil pending investigation of this event. The 6.4D dissolver is currently not being used for stabilization activities; however, the tank is being used for lag storage. Given the DOE plan to suspend PUREX operations in March, it seems likely that dissolver replacement will not be pursued.

HEU Blend Down: WSRC appears to have resolved the issues associated with iron and sulfur content in the HEU product from the 2nd uranium cycle in H-Canyon (site rep weekly 1/11/01). Based on recent testing, it appears that the ferrous sulfamate (FS) stream line to the 1D bank was plugged causing the FS to overflow through a common vent line into an acid stream line to the mixer-settler. WSRC has replaced the FS drop jumper and testing indicates that the iron and sulfur content is now within the TVA purity specification. Additional actions will likely be taken to separate the vent lines and prevent future drop jumper pluggage. WSRC plans to run additional demonstration runs to confirm the product meets all TVA specifications. WSRC continues to clean the HA-Line tanks that will be used for this project.