

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 20, 2001

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: R. T. Davis
SUBJECT: SRS Report for Week Ending July 20, 2001

HB-Line Phase II: This week, WSRC began demonstration runs for HB-Line Phase II startup. WSRC is currently investigating equipment problems associated with material transfer to column NK-1 (i.e., column absorption) that were identified during the demonstration runs. These runs will continue until the readiness self-assessment, which is now expected to start the week of August 6th. The staff continues to work with DOE-SR and WSRC to resolve safety issues associated with phase II startup.

HEU Blend Down Project: In June, WSRC submitted the preliminary design report for the Highly Enriched Uranium (HEU) blend down project. On June 29, DOE approved Critical Decision (CD) 2B/3B that allowed WSRC to proceed with long-lead tank procurements and construction activities including the Low Enriched Uranium loading station. WSRC is currently evaluating project risks and expects to submit the project baseline package in late August. Definitive design is scheduled to be complete in January 2002.

HLW Contamination Event: During a 2H evaporator pot sampling activity, radiological control personnel identified contamination outside of the glovebag containment used for this activity. Subsequent nasal smears for two of the operators were positive and all personnel associated with this job are now on a bioassay program. Area surveys and initial nasal smear results do not indicate a significant uptake. It appears that operators responded appropriately during this event.

Safety basis requirements for flammable gas control require an air purge to the evaporator, which results in the pot being slightly pressurized. The sample line from the cell cover to the pot is sealed with an expandable plug. During pot sampling, WSRC enters the appropriate Limiting Condition for Operation and secures the air purge to depressurize the pot. A glovebag at the cell penetration is used for containment. During this event, it appears likely that there was a leak path by the plug when it was replaced after the sample was taken. Once the contamination was identified, air purge to the pot was secured. The cell cover has been decontaminated and WSRC is developing a path forward.

HLW Tank Structural Integrity: On Tuesday, the staff conducted a video teleconference with DOE-SR and WSRC to discuss structural integrity issues associated with the SRS HLW tanks. Topics covered included flaw stability analysis, corrosion mechanisms, controls, inspection programs and current tank issues. WSRC analysis of visual and ultrasonic inspection results indicates that very little wall thinning or pitting is occurring and that the leak sites identified in Type I and II tanks are caused by stress corrosion cracking. WSRC discussed their plans to bolster their in-service inspection program by utilizing new ultrasonic inspection equipment to assess tank conditions and understand degradation mechanisms. WSRC also expects to identify new tank fill limits for Type I and II tanks in September.