

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 24, 2000

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending March 24, 2000

Staff members Jellett, Ogg, and Robinson were on site this week reviewing HLW tank space management. Outside expert R. West was on site observing H-Canyon Phase 3 preparations. B. Jones, Linzau, and Pyatt were on site receiving training and, along with DeLoach, conducted a review of HLW tank integrity programs. Throughout the week, the site reps and several of the staff in Washington, DC, conducted teleconferences with the site on the adequacy of controls for tank 8 waste removal and H-Canyon Phase 3 operations (e.g., site rep weekly 3/10/00).

H-Canyon Phase 3 Restart: H-Canyon continues preparations for restarting the 2nd uranium solvent extraction cycle and 2nd neptunium receipt, concentration, and storage process. This week, WSRC conducted a 2nd uranium cycle demonstration run with minimal operational issues. On Wednesday, WSRC submitted the proposed authorization basis to DOE for these processes. DOE review and approval is expected to take 5 weeks. Installation and testing of 3 safety related systems and closure of 30 prestart issues also remain to be completed. Currently, the WSRC and DOE readiness assessments (RAs) are scheduled to start on April 10th and 24th, respectively. This week, DOE-SR proposed conducting its RA concurrent with WSRC. The site representatives will follow this closely in light of experiences last year at other DOE sites with concurrent assessments. (3.a)

High Level Waste Evaporators: The 2F evaporator is currently the only operating evaporator in either tank farm. While it appears to be in good condition, it is near the end of its design life. WSRC is aggressively pursuing wastewater reduction activities (e.g., reduction of DWPF recycle water) to ensure adequate tank space is available to support site mission activities.

WSRC continues to investigate the 2H evaporator issue involving solids that contain higher than expected uranium (site rep weekly 1/14/00, 1/21/00). WSRC is conducting tests to understand the chemistry leading to the solids formation. WSRC is evaluating methods of removing the solids (e.g., chemical or mechanical cleaning) and a revised operating strategy to preclude recurrence.

On December 16, 1999, DOE approved the startup of radioactive operations for the 3H evaporator (i.e., the Replacement High Level Waste Evaporator). Subsequently, WSRC completed connections to the feed and receipt tanks and began final operational testing consistent with the startup plan. However, backflush equipment problems have prevented WSRC from completing final testing. Particularly, the backflush valve provides the capability of flushing the gravity drain line between the bottoms receipt tank and the evaporator and is required to operate the evaporator. WSRC is making modifications to this valve and expects to restart testing in a few weeks. (3.a)

F-Canyon Activities: F-Canyon has a tight schedule during the next 2 months that includes several safety basis revisions and readiness assessments, leading up to EBR-II/Mk-42 dissolutions, continued 2nd plutonium cycle operations, and resolution of the alkaline plutonium solutions in tanks 13.7 and 13.5 (site rep weekly, 3/25/00). In particular, WSRC analysis indicates that dissolving the Mk-42 assemblies (Pu-oxide-aluminum cores in aluminum cladding) will require blocking dissolver inserts, boration, and engineered flammable gas controls (e.g., interlocks). (3.a)