DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 21, 2000

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending April 21, 2000

A Board and staff team was on site this week reviewing tritium facilities, spent nuclear fuel, nuclear material stabilization and storage, and high level waste activities. Eggenberger, Mansfield, Roberson (Board members), Fortenberry, Ogg, and Tontodonato (technical staff) participated.

Americium-Curium (Am-Cm) Stabilization: Last week, WSRC awarded a design-and-build contract for the in-cell equipment to a contractor team (Teledyne-Brown, Owens-Corning, and Duke Engineering). The contract is based on the preliminary design completed last June. It is estimated to take about 1 ½ years to complete. It includes design reviews at 30, 60, and 90 percent of detailed design, fabrication of in-cell racks, and training WSRC operators on the equipment at the vendor's facility. In parallel, WSRC is designing the F-Canyon interfaces and preparing the canyon for AmCm pretreatment. Based on this week's reviews, it appears that there are still perturbations being made in the vitrification process that may affect success. The staff and site reps will follow up. (3.a)

H-Canyon Phase III Readiness Assessments (RAs): Both DOE and WSRC currently plan to begin their RAs next week (4/24) and to conduct portions of their assessments concurrently, particularly observation of the single, planned cold run (site rep weekly 3/24/00). The site reps have discussed with the DOE team leader the challenges involved with achieving a thorough and independent review under these conditions.

One challenge will be the ability of both DOE and WSRC team members to clearly observe and independently assess control room operators at the Distributed Control System during the single cold run. Another aspect is that the DOE team needs to not only assess the operators but also assess the adequacy of the WSRC review. Therefore, a second challenge will be the ability of the DOE team to observe operations without influencing the WSRC review (i.e., delay feedback until WSRC has had a chance to do their job). The DOE team leader is sensitive to these and other challenges and intends to closely control the team and to schedule some additional evaluations after the WSRC team has completed its field work (i.e., during the 2nd week). This includes separately observing operators conduct maintenance and other activities, as well as operators response to abnormal conditions in the simulator facility. A site rep will be following progress on the RAs. (3.a)

Tank 8 Waste Removal: WSRC continues readiness activities for the slurry and transfer of tank 8 sludge (sire rep weekly 3/10/00). WSRC and DOE-SR readiness assessments are expected to be complete next week. Startup is now expected in May. Based on staff comments involving controls to prevent hydrogen deflagration, WSRC has developed a special procedure to ensure that controls identified in the Safety Evaluation are independently verified prior to slurry pump operations. The procedure also requires evaluation of hydrogen release during pump operations to help validate assumptions in the Safety Evaluation. In addition, WSRC will install a hardwired interlock to stop the pumps on a high alarm from the hydrogen monitor installed on the tank. The Safety Evaluation is currently being revised to identify these additional controls. (3.a)