

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 23, 1999

MEMORANDUM FOR: G. W. Cunningham, Technical Director
J. Kent Fortenberry, Deputy Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending July 23, 1999

Americium/Curium (AmCm) Stabilization - DOE is reconsidering the option of transferring the AmCm solutions to the HLW tank farms rather than vitrifying the solutions in F-Canyon. Last April, DOE-SR evaluated this alternative and concluded that the "F-Canyon vitrification option is the most prudent option, irrespective of future programmatic decisions." The reevaluation appears to be driven by budget constraints and a desire to finish F-Canyon operations early (the AmCm vitrification project is not scheduled to finish until late-2003). SRS is currently reassessing the issues involved with transferring this material to the HLW tank farms. Processing decisions for the Mark-18A targets currently stored in RBOF, which are also a source of AmCm, would likely be consistent with the decision for the F-Canyon solutions. DOE has yet to determine if the programmatic need for this material (special isotope production at ORNL) would preclude its disposition as a waste. (III.A.1.c)

H-Canyon Suckback - Last weekend, radioactive material was sucked back into piping in the H-Canyon hot gang valve corridor. The increase in corridor radiation levels was limited because of the low burn-up fuel being processed. For defense-in-depth, the Basis for Interim Operation requires that an air purge be established after a process transfer to prevent a suckback. Initial investigations indicate that the air purge gang valve was not properly aligned. Only partial air flow was provided. WSRC is evaluating the need for a periodic functional test of this system. (III.A.3)

F-Canyon Mis-transfer - Process water intended to be transferred to a new F-Canyon tank was inadvertently transferred to a sump hold tank. The mis-transfer appears to have occurred because of a blank in the intended transfer path and either a mis-positioned valve or leakage through a closed valve. The procedure used for this transfer had not been used for several years and did not identify a blank. Other causes include inadequate communications and procedure walkdowns. (III.A.1)

Spent Nuclear Fuel - On Thursday, the site representatives briefed a Citizens Advisory Board subcommittee on the Board's June 8th letter and the staff's report on SRS spent nuclear fuel (TECH-22). The site representatives emphasized the value of making maximum use of existing facilities for stabilizing aluminum spent fuel rather than depending on new technology that has not yet arrived (melt and dilute). Considering the DOE record (e.g., DWPF, ITP, AmCm), new technology projects usually take longer and cost more than originally intended and are susceptible to false starts. DOE EM-60 (Huizenga) missed the brief but joined in later discussions. EM-60 stated that DOE will respond to the Board's letter within a couple of weeks and that DOE does not intend to deviate from their preferred alternative, which is to depend on new technology with the canyons as the backup. EM-60 acknowledged that startup of the proposed facility has slipped from 2003 to 2005 or later. The site representatives have learned that the current plan involves completing a pilot by 2003, completing detailed design by 2006, and entering operation by 2009 or later. This appears to be much more realistic but, without canyon reprocessing, it may result in a growing inventory of aluminum-based spent fuel in water storage in SRS basins for extended periods. (III.A.3)