

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 15, 2000

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director

FROM: C. H. Keilers / R. T. Davis

SUBJECT: SRS Report for Week Ending December 15, 2000

Readiness Assessments (RAs): DOE-SR is initiating a review of recent WSRC RAs for the separations facilities (i.e., canyons and B-Lines). This is responsive to the issues reported last week.

HLW Operations: Evaporator problems continue to challenge the site's ability to support the two main high level waste (HLW) missions, waste immobilization at DWPF and waste receipt from site generators. Sludge feed preparation and DWPF recycle produce a significant waste volume that needs to be concentrated prior to storage. Currently, all three evaporators are not operating. Without evaporators, WSRC may have to delay sludge feed preparation. WSRC expects to finish the current feed batch in August 2001. Recovery of tank 49 for HLW service, currently scheduled for June 2001, may help alleviate this situation. Status of the evaporators is as follows:

3H Evaporator: WSRC continues to investigate cooling coil leaks in the evaporator drop tank (site rep weekly 11/24/00). Cooling is required to prevent challenging the Authorization Basis (AB) limit of 80°C. In the short term, WSRC will attempt limited runs in January to determine utility with little or no cooling capability. Chemical sealants will also be investigated in late January. For long term operation, WSRC is evaluating the use of an alternate drop tank (tank 37) or the installation of additional cooling capability to the current tank. The tank 37 option appears to be the best long term option because of the more robust cooling system but requires significant project work (e.g., new backflush valve, gravity drain line extension, jumpers) and salt removal.

2H Evaporator: WSRC has developed a chemical cleaning flowsheet to remove solids seen in the evaporator pot (site rep weekly 8/18/00). Project work and AB approval are nearing completion. An RA is scheduled for early January. WSRC plans to finish cleaning in February and restart operation in May. This evaporator will be used to process DWPF recycle solutions. In the interim, WSRC plans to begin transferring recycle solutions from an H-Area type IV tank to F-Area type I tanks in about 2 weeks to provide space for DWPF recycle solutions.

2F Evaporator: The 2F evaporator has been shutdown for several weeks because of an instrument problem associated with the cesium removal column. WSRC is pursuing a path forward to bypass this column and restart operations in the next few weeks. Over the last year, utility has been low.

H-Canyon: H-Canyon reported Monday that one of two criticality controls to prevent over-batching the 2nd Uranium Cycle evaporator had been violated, which is the second time in 3 months (site rep weekly 9/22/00). This time, it appears that the operator incorrectly compared 3 numbers when deciding how much solution to transfer to a feed tank upstream of the evaporator. The problem was found by the second control, sampling the feed tank. No solution was transferred to the evaporator.

FB-Line: Operators reported low vacuum on tanks during the weekend. Proper vacuum is required to prevent hydrogen buildup in the vapor space. While it appears operators took the right actions, the facility didn't enter the appropriate Abnormal Operating Procedure until Tuesday.