

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 13, 2001

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending April 13, 2001

2H Evaporator: Startup of the 2H evaporator cleaning has slipped into next week while WSRC addresses the pre-start findings from the DOE Readiness Assessment (RA). Several findings involve design changes that are required by the new Authorization Basis (AB) but not yet installed. Other findings require WSRC to ensure that supervisors, operators, and engineering support personnel are familiar with the new equipment and procedures and understand the proper response to new hazards, such as a nitric acid spill.

This was the second DOE RA for this operation. The first one started in January before an AB was approved and procedures were ready. It was subsequently suspended (site rep weeklies 1/12/01, 1/19/01). A second major AB revision was required later to resolve new issues discovered during further DOE review. On Wednesday, DOE-SR forwarded the RA report to WSRC and expressed concern that, although the facility is ready, the normal facility review and approval process failed to detect and correct numerous problems that surfaced during and after the first DOE assessment. The DOE letter stated that these symptoms indicate a continuing problem with the field validation process. DOE requested WSRC to provide a critical assessment of the cause of these deficiencies and the implications of the findings from the second DOE RA.

F-Canyon: F-Canyon continues to show a decline in disciplined operations (site rep weeklies 3/23/01, 3/30/01). This week, DOE-SR provided WSRC a report of facility representative observations during the last two months that highlighted specific examples. The most recent example is an occurrence last Sunday when operators inadvertently transferred a low activity waste stream (basically rainwater) to a canyon sump because a flexible jumper to the receipt tank was not connected to a wall nozzle. This was a non-routine transfer from the high activity waste system to the low activity waste system, driven by a pluggage in a waste header to tank farms that has since been resolved. The jumper was coiled and stored on top of the receipt tank, probably in early January. Configuration records (i.e., the scroll) had several inconsistencies, including indications that (a) the jumper was installed at both ends; (b) a 2nd jumper was also installed at the wall nozzle (physically impossible); and (c) the flexible jumper was stored on the receipt tank. These conflicts were not detected during required reviews before the transfer. F-Canyon is taking action to update configuration records and to verify transfer routes prior to first use. A senior supervisory watch has been put in place. The Board's staff is planning a review of F-Canyon operations at the end of April.

H-Canyon: During the last 2 weeks, H-Canyon has been investigating organics discovered in tank 11.1, which is the receipt tank for the HB-Line Phase I mixed scrap campaign. The organics appear to be due to an oil leak in the agitator gear box (gear box capacity is 6.5 gallons). The leading concern is criticality, particularly from concentration of Pu solids in the organic phase. The tank aqueous phase is borated, has 0.6 gm/L Pu, and about 925 gallons of solution. Total plutonium content is about 2.14 kg, of which the safety basis assumes that 10 percent is solids. Samples to date indicate 4 gm or less solids in the organic phase and no visible solids in the aqueous phase. An Unreviewed Safety Question screening is underway. The agitator is running and scheduled to be replaced by April 30th. The disposition path for the tank contents is still being developed.