

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 27, 2001

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending April 27, 2001

Staff members Coones, Troan, and West (OE) were on site this week reviewing HB-Line Phase II preparations and (West only) F-Canyon operations. Hunt was on site observing the HEU Blend-down Project preliminary design review. Hadjian, Stevenson (OE), and Rizzo (OE) were on site reviewing the civil/structural designs for the pit disassembly and tritium extraction facilities.

Recommendation 94-1: WSRC expects to make their recommendation to DOE next Tuesday on whether the F-Canyon americium-curium solution should be vitrified in F-Canyon (MPPF) or sent to the high level waste tank farms for eventual vitrification in DWPF (site rep weekly 3/23/01). DOE appears likely to make a decision before mid-May, when major procurements and canyon modifications would need to begin to support the MPPF option.

2H Evaporator: Chemical cleaning of the 2H evaporator pot is required to remove solids and eventually return this evaporator to service (currently scheduled for August 2001). 2H evaporator operation is critical to the HLW system for concentrating DWPF recycle and resolving on-going tank space management issues. WSRC closed all DOE Readiness Assessment pre-start findings and began the initial water soak of the evaporator pot this week.

Air purge of the evaporator pot is a safety basis control to prevent accumulation of flammable vapors. On Wednesday during backshift operations, the diesel air compressor that supplies the primary source of air purge failed. In accordance with the alarm response procedure, operators successfully aligned the standby diesel compressor to supply purge air. Soon after, an unrelated alarm associated with a heat tracing system impacted the validity of the pot pressure indication and associated alarms and interlocks. Because of the potential for pressurizing the pot with the air purge, the shift manager decided to secure the air purge system. Although the cleaning solution that contains organics and contributes to flammable gas generation has not been added, it is not clear that securing the air purge is the appropriate action during this situation. The secondary purge through pot dip tubes was maintained during this event. DOE-SR and WSRC are evaluating. Chemical additions are expected to begin next week.

Disciplined Operations: The site reps have been reviewing trends in reported operational occurrences in the separations (NMSS), high level waste (HLW), and tritium (DP) divisions. HLW and NMSS are comparable in size to each other and had roughly a comparable number of such occurrences last year: 91 and 120, respectively. Tritium is about one-third their size and had 12. On a normalized basis (i.e., events per man-hour worked), Tritium has been having about half or less the number of occurrences of the other two divisions. However, in the last 2 months, they have had 4 such events due to factors such as personnel temporarily modifying a supply diffuser, not performing appropriate post-maintenance testing, and misunderstanding a lockout status. Similar occurrences have happened in all 3 divisions, and lessons learned should be shared. Also, operational vigilance over construction and maintenance activities is becoming increasingly important for Tritium because of the current expansion in these activities (e.g., TCON and TEF).