

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 10, 2002

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
J. J. McConnell, Deputy Technical Director
FROM: R. T. Davis/ T. D. Burns
SUBJECT: SRS Report for Week Ending May 10, 2002

H-Canyon Ventilation System: Staff members R. Zavadoski, C. Creese, and J. Malen were on-site this week to review the status of the H-Canyon exhaust tunnel leak into the old HB-Line exhaust duct (site rep weekly 7/27/01). This leak path has the potential to result in an unfiltered ground-level release during accident conditions (i.e., part of the canyon exhaust could bypass the sand filter). WSRC continues to pursue cost effective modifications to eliminate this issue (previous estimates exceeded \$20M). H-Canyon is currently operating under a Justification for Continued Operations (JCO) that identifies appropriate compensatory actions. The staff noted that it would be appropriate to aggressively pursue correcting this issue given the additional missions proposed for H-Canyon.

Underliner Sump Flammable Vapors: Last month, elevated hydrogen and methane concentrations in the secondary containment leak detection system (underliner sump) of several Type III waste tanks led WSRC to declare an Unreviewed Safety Question with regard to a new explosion scenario. Subsequent efforts to determine the source of the flammable vapors led WSRC to open a New Information (NI) item regarding the potential for structural degradation of the concrete underliner due to microbial induced corrosion (MIC).

As part of the PISA for the potential underliner explosion, controls have been established to purge and monitor the affected underliner sumps. The JCO recently submitted to DOE, identifies an engineered design feature to preclude further accumulation of flammable vapors. This relatively simple device takes advantage of barometric pressure changes to purge the sump volume and has proven effective in similar environmental restoration activities elsewhere on-site. DOE intends to complete their review of the JCO by the end of next week.

Recently completed camera inspections of the concrete underliner showed no evidence of MIC. WSRC analyses indicates that off-gassing of non-aggressive microbes and radiolysis are the likely sources of the flammable vapors. SRTC plans to issue a report next week concluding that the structural integrity of the concrete underliner has not been degraded. Upon receipt of this report, WSRC will close out the NI item.

Evaporator Performance: Over the last two months the 3H, 2H, and 2F evaporators have achieved attainments of 20%, 71%, 100%, respectively. The low attainment for the 3H evaporator was due to downtime associated with the leak in the lift line jumper (site rep weekly 4/26/02). Approximately, 1.3 million gallons of overflows were produced during this period.

Tank 30 Cooling Coil Leak: Approximately two years ago, WSRC identified cooling coil leakage in the 3H evaporator drop tank (Tank 30). In effort to continue operation of the 3H evaporator while a replacement drop tank (Tank 37) is prepared for service, WSRC has relied on a commercially available stop-leak additive to plug the failed cooling coils (site rep weekly 6/1/01). On Tuesday, a leak test indicated that cooling coil B10 is leaking again at a rate of 50 gallons per day. Additional stop-leak material will be introduced into the B10 cooling coil today.