

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 2, 2001

**MEMORANDUM FOR:** J. Kent Fortenberry, Technical Director  
**FROM:** C. H. Keilers / R. T. Davis  
**SUBJECT:** SRS Report for Week Ending March 2, 2001

**Recommendation 2000-2:** Staff member R. Zavadoski was onsite this week, participating in DOE development of assessment criteria. Also, the site sent DOE headquarters this week the Phase I assessments of safety class, confinement ventilation, and fire protection systems at priority facilities.

**HLW Tank 6:** WSRC has completed inspections of the tank wall through all accessible risers with 6 identified leak sites. Based on annulus ventilation and periodic inspections, WSRC believes this situation is stable (i.e., significant waste will not be released to the annulus). A decision on waste transfer is now expected no earlier than the week of March 12<sup>th</sup>. Inspections of the Tank 5 primary wall are about half complete with no issues identified. WSRC will likely need to move additional DWPF recycle material to Type I tanks before the end of March to support DWPF operations.

**HLW Tank 49:** On Saturday, WSRC began adding copper catalyst to tank 49 as a part of the 2<sup>nd</sup> phase of decomposing the remaining phenylborates. Benzene release rates were within expected ranges with the vapor space reaching about 180 ppm on Sunday. The tank will be maintained at 40°C during the next 2 weeks and samples will be used to confirm adequate decomposition prior to the next catalyst addition. Safety controls to prevent tank deflagration include the normal and standby nitrogen systems as well as defense-in-depth control of benzene in the vapor space.

**2H Evaporator:** WSRC continues to resolve open issues to support evaporator pot cleaning to remove solids. Procedure validations have been completed to resolve issues identified in the Readiness Assessment (site rep weekly 1/19/01), and lessons learned will be applied to future procedure development activities. Also, WSRC has been recently resolving late-identified issues due to organic contaminants in the cleaning material that contribute to a postulated deflagration accident scenario. To address this, WSRC has a safety strategy that relies on safety significant alarms on loss of purge and general service (i.e., non-safety) air purge systems to sweep the pot vapor space. WSRC plans to begin cleaning by the end of March and restarting the evaporator in July.

**Canyon Operations:** Several recent occurrences indicate that both canyons need to improve formality of operations and engineering support. H-Canyon has been improving, but last week, DOE facility representative review identified that operators stepped out of the procedure-based regime and into the more error-prone, knowledge-based regime. Specifically, operators violated a procedure and accepted a 2<sup>nd</sup> cycle feed stream with slightly lower acidity than the Double Contingency Analysis process limit. The limit is part of a criticality defense intended to minimize highly enriched uranium carryover to the low activity waste system and into tank farms. To recover, instead of a minor acid adjustment, H-Canyon Engineering issued an Immediate Procedure Change – without Criticality Safety review – to accept the lower acidity. The change was made quickly to support a cycle startup in progress.

F-Canyon generally did well in this area in 2000, but in the last two months has had several similar occurrences including: exceeding the allowable time without solvent circulation prior to 2<sup>nd</sup> cycle startup (a criticality defense); violating a procedure and pressurizing a dissolver sampler, resulting in high airborne contamination in a sample aisle; and making a transfer to tank farms based on incorrect sample analysis, verbally transmitted, for Organic to Aqueous ratio. Increased vigilance is clearly required.