

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 5, 2004

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJ: Activity Report for Week Ending November 5, 2004

A. Oxide Conversion Facility. Preparations are in progress to resume the BWXT Operational Readiness Review (ORR) which is now planned for November 15th. YSO recently raised an issue regarding planned use of "test procedures" intended for initial system operation with hazardous materials (i.e., enriched uranium, hydrogen fluoride and hydrogen). YSO noted several differences between these test procedures and the normal operating procedures that have been used for practice cold operations and integrated runs performed during the past several months. The site reps. met with YSO and BWXT personnel to discuss the differences in these test procedures. The main differences in the test procedures include use of smaller batches of enriched uranium, demonstration of transfer of uranium through the system before fluid bed heat-up, performance of low temperature fluid bed control evaluations, and demonstration of the capability to quickly transfer liquid hydrogen fluoride from the vaporizer back to the cylinder. The test procedures have not yet been practiced nor operators trained on the procedures. BWXT management has recently indicated to YSO that training would be completed and the test procedures practiced after completion of the BWXT ORR and prior to the NNSA ORR. The YSO-approved Plan of Action for BWXT's ORR does not clearly discuss these test procedures but does call for two satisfactory integrated runs of operating procedures as a prerequisite to the BWXT ORR. It is not clear what expectations apply for the test procedures. The site reps. have inquired with YSO management on this matter.

B. Wet Chemistry Restart. Installation of new low-capacity tanks for limiting quantities of organic liquids used for Primary and Secondary Extraction systems was completed in late October. This is an important milestone in overall fire protection upgrades for these wet chemistry operations and will help reduce reliance on administrative controls. During the past week, another attempt (see the 8/27/04 report) at initial Primary Extraction operation could not be completed as backwash supply flow could not be properly controlled. Three (additional) attempts (see the 8/13/04 report) at initial operation of the Secondary Extraction system were also unsuccessful this past week due to contactor centrifuge bearing failure, excessive organic crossover to the raffinate stream, and raffinate stream control valve failure, respectively. The site rep. inquired on YSO follow/evaluation of these startup attempts and found that the technical review and oversight was limited to a YSO Facility Representative (FR). This does not appear to meet the intent of YSO's oversight plan for initial wet chemistry operations (see the 3/14/03 report) that calls for YSO subject matter expert/technical support to augment FR oversight. This observation was discussed with YSO management who agreed that such augmentation was warranted.

C. Building 9215 Sprinkler System. During a walk-down of the safety class sprinkler system in the basement of Building 9215, BWXT personnel identified a non-compliance with the National Fire Protection Association (NFPA) code. The system was found to have 42 sprinkler heads on a 3-inch branch line versus the code maximum allowed of 40. The original system installed in the 1950's had 38 heads with an additional 4 heads added during a modification in 1971. The code in effect in 1971 also identified a maximum of 40 sprinkler heads. BWXT personnel have been unable to locate the technical justification for exceeding the NFPA code during the 1971 modification. BWXT fire protection engineering personnel have stated that this code violation does not impact the ability of this system to perform its safety function. Based on questions from the site rep., BWXT performed calculations that indicate adequate sprinkler performance.