

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 30, 2004

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJ: Activity Report for Week Ending July 30, 2004

Mr. Davis began his new duties as a Board site representative at Oak Ridge. Mr. Owen was out of the office on Friday. Staff members Gutowski and Yeniscavich visited Y-12 to review preparations for startup of the Oxide Conversion Facility.

A. Skull Oxide Calciner Deactivation. As reported on July 1st, a BWXT Readiness Assessment (RA) was planned for clean-out of the Skull Oxide Calciner. The BWXT RA was started this week. The RA team reviewed limited field activities this week including simulated glove box clean-out and duct boroscope inspection. Other activities were delayed because of issues with the breathing air system qualification and operational status of a process hood. The RA team has identified several potential issues including the integration of operations activities and maintenance activities, inadequate staffing, and procedure issues. The team will continue to review field activities next week.

B. Ventilation System Degradation. Late last week, a Nuclear Criticality Safety (NCS) Engineer reported a criticality safety deficiency associated with a ventilation duct system in the enriched uranium operations building. An annual criticality surveillance is performed on this duct system to ensure that new low points and entry points for liquids have not been created. Degradation of this duct has been noted for several years but not identified as impacting criticality safety. However, based on the most recent inspection in June, the NCS Engineer concluded that corrosion and damage of the system was such that the credited physical barrier to liquid ingress is no longer sufficient. This issue has not impacted building operations because of other independent contingencies that remain in place. An addendum to the criticality safety evaluation that documents this conclusion is being developed and should be complete next week. Facility management is investigating long term actions to address degradation of this duct system.

C. Y-12 Criticality Safety. As reported June 10th, YSO had transmitted the report of a Y-12 criticality safety review performed by members of DOE's Criticality Safety Support Group (CSSG) to BWXT. YSO had requested an action plan on the CSSG recommendations. BWXT has recently responded to the report. Noteworthy among actions proposed by BWXT is establishment of Criticality Safety Improvement Plans in each facility, maintained on an ongoing basis, that would allow line management to better establish priorities for upgrades including proposed engineered controls. Other actions are identified that generally address the CSSG recommendations. YSO noted to the site reps., however, that the actions will be reviewed and refined, with clear completion dates, as the actions are entered into site issue tracking systems.

D. Y-12 Conduct of Engineering. As also reported on June 10th, BWXT Engineering Division management had been evaluating flawed engineering changes to the Denitrator system that had led to failed initial operation and to a flawed billet basket modification that did not preclude multiple billets from being processed. The BWXT evaluations were recently completed. The fundamental issue noted was inadequate design technical basis for the changes and inadequate verification of the basis by engineering personnel. The evaluations concluded that adequate engineering protocols requiring proper design technical basis and verification for hardware changes are in place but were not properly followed. Protocols for operating procedure changes need to be revised, however, to ensure adequate technical basis development (to address the flawed change to a Denitrator system control temperature). Near-term training sessions and revised baseline training for engineering personnel on these issues are planned.