

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 9, 2007

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending March 9, 2007

Staff member D. Grover visited Y-12 to observe a review of the Uranium Processing Facility.

A. Uranium Processing Facility. This week, NNSA conducted a Technical Independent Project Review to ensure that project design, cost, scope, schedule, security, and safety are sufficiently mature to proceed to Critical Decision-1 (CD-1). The NNSA team concluded that, although much of the facility design was at a maturity level consistent with CD-1, the overall Uranium Processing Facility project is not ready to request CD-1. The team identified 28 concerns that should be addressed prior to approval of CD-1. Several of the concerns deal with the need to improve and update the project cost and schedule estimates. The team also identified that the design does not adequately address facility structural load paths and that processing equipment layout and approach to operations needs further development. The project team will be working with NNSA HQ to identify a path forward to resolve these issues and proceed with CD-1.

B. Highly Enriched Uranium Materials Facility. As reported last week, BWXT was investigating the failure to install four items of reinforcing steel (U-bars) in a concrete placement that had been completed in August 2006. On Monday, BWXT briefed results of the investigation to YSO management. Among numerous factors noted were:

- the BWXT drawings of record and construction contractor fabrication drawings contained adequate information specifying the U-bars, though clarifications could have been made regarding this specific location;
- quality assurance checks by the construction contractor and BWXT failed to identify the missing U-bars; BWXT determined that there was improper interpretation as to the level of detail that inspectors were to annotate on drawings of record as items were verified as installed or accomplished; the U-bars were specified by a "typical" detail on the drawings of record but were not annotated by inspection personnel; and,
- extent of condition assessments for other wall-to-wall intersections identified no deficiencies.

BWXT identified several actions to support resumption of concrete placements and address the factors noted above. On Monday, BWXT authorized resumption of concrete placements.

C. Conduct of Operations. As externally reported by BWXT this week, follow-up of a surveillance of various overflow drains (to check for blockage) associated with the High Capacity Evaporator process led to concerns with conduct and documentation of the surveillance. This surveillance is conducted to avoid backup of fissile solution to unintended locations. A critique was called by facility management. BWXT identified the following specific issues: the surveillance report covering 16 separate drains had only one overall sign-off with no required individual sign-offs (or checkmarks) for each drain; procedural steps or instructions as to how to accomplish the drain checks were not provided; and, the surveillance was not entirely conducted as a deliberate evolution but completion was based in part on separate instances when operations personnel recalled positive indication that a drain was not blocked (in some cases days or weeks prior). All wet chemistry operations were suspended by BWXT pending an extent of condition review of other surveillances and other corrective actions.