

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 27, 1999

TO: G.W. Cunningham, Technical Director
FROM: Paul F. Gubanc, Oak Ridge Site Representative
SUBJ: Activity Report for Week Ending May 28, 1999

I am on leave Friday.

A. Y-12 Enriched Uranium Operations (EUO): This week, several issues were revealed or culminated regarding preparations for Phase B restart of EUO:

1. Several key individuals are leaving the restart effort. One of the DOE Facility Representatives departed this week for extended maternity leave; a replacement has not yet been named. Due to budgetary and other concerns, LMES is phasing out the use of subcontractors in key EUO restart leadership positions. These people are some of the real "movers and shakers" in EUO.
2. This week, the EUO restart Chief Test Engineer (an LMES subcontractor), identified a recurring problem with defective sensing line welds in the new HF and fluid bed systems. These 1/4" and 3/8" lines run throughout these systems and are joined together using over 300 butt welds. If an extensive inspection/repair effort is required, EUO Phase B, Block 1 restart will probably be delayed by several months.
3. LMES has been conducting surrogate material transfers through the fluid beds for testing and training. During these pneumatic transfers, several kilograms of material has become held up in the system. This will require an extensive cleanout effort before the introduction of HEU material and identification/evaluation of the holdup locations (e.g., dead legs) for criticality safety, radiological protection and nuclear material accountability.
4. In evaluating the holdup issue, a DOE Fac Rep identified that the fluid beds system piping uses sharper radius elbows than prescribed in the design (3D vs 6D bend, nine locations).

LMES Engineering was poorly prepared for the critique of items 2 and 4 on May 27; it will need to be reconvened to fully understand the scope of the problems. These issues, coupled with the past issues on HF system welding, raise serious concerns with Y-12's conduct of engineering. (I-A, II-B)

B. Y-12 Criticality Safety: Highly enriched and depleted uranium (HEU,DU) parts are electropolished in Building 9204-2E to prepare them for welding. In September 1998, the nuclear criticality safety organization (NCSO) evaluated and approved (via a telephone conference memo) the one-time disposal of HEU electropolish rinse solutions into the DU waste stream. The facility subsequently used that memo as justification to dispose of HEU electropolish solutions (which have a much higher HEU content). NCSO and facility management discovered this situation on May 21, immediately halted waste solution disposal and are developing a recovery plan. After visiting the facility on May 25, I believe the NCSO never clearly understood the waste stream or the facility's operations and that the facility clearly violated the limits of the NCSO approval. I'm following up. (II-B.2)

C. Y-12 HEU Materials Facility: On May 14, the Conceptual Design Report (CDR) for the new HEU Materials Facility was issued and approved by DOE-Oak Ridge. This week, representatives from DOE-DP were at Y-12 conducting a validation review of the CDR. Both DOE-OR and DOE-DP believe substantial progress has been made since the staff review of March 18 (Board letter of May 12 forwarded the staff report) and are very supportive of a staff follow-up review to make their case. The CDR is currently undergoing review by the staff (Blackman lead). (I-A.3)

cc: Board Members