

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 2, 1999

TO: G.W. Cunningham, Technical Director
FROM: Paul F. Gubanc and David T. Moyle, Oak Ridge Site Representatives
SUBJ: Activity Report for Week Ending July 2, 1999

Staff members Andrews, Bamdad, Helfrich and outside expert West were at Y-12 to review Y-12 nuclear facility safety basis status. Staff members Hadjian, Burns, and Martin visited Oak Ridge to review hazard identification, material at risk, and NPH features for Y-12 and ORNL nuclear facilities.

A. Y-12 Hydrogen Fluoride (HF) System for Enriched Uranium Operations (EUO):

1. **Schedule**- Several weeks ago it was (re)discovered that the proper sintered metal filters for the HF system had not been supplied. Initial quotes from the vendor for filters of the correct material and pore size have identified delivery dates up to eight weeks late to support the restart schedule.
2. **Configuration Control** - Despite recent efforts by EUO to improve the control and tracking of temporary modifications (TMs), problems still are apparent. Roles and responsibilities are still being codified, key procedures are still in draft, known TMs are still not documented, and new examples of unauthorized modifications continue to be found. We continue to voice concerns to DOE and LMES but schedule pressure compels them to fix these problems "on the fly."
3. **Problem Identification and Disposition** - The 150+ deficiencies on the HF system identified by EUO have been reviewed for their significance and have resulted in the need to prepare approximately 50 non-conformance reports (NCR) which will require formal engineering disposition. Of the 100+ tubing butt welds originally identified as suspect, reinspection to more quantitative criteria has reduced the number requiring repair to about 60. (I-A, II-B)

B. Safety Management at the Y-12 Plant:

4. **Safety Analysis Delays** - Y-12 is still in the process of updating safety documentation for all of its nuclear facilities. The staff identified that some safety documents have been awaiting DOE approval action for over two years. Additionally, LMES and DOE have decoupled the SAR (analysis) approval from the TSR (controls) approval thus complicating consistency. DOE and LMES acknowledge these problems, as well as others, and are attempting to improve the situation with workshops and reorganizations. It is not clear how much improvement can be gained, however, given that the personnel involved will remain essentially unchanged.
5. **Material at Risk** - Modular Storage Vaults (MSVs), large concrete slabs with cylindrical cavities, are used for EU container storage. Due to their large mass, MSVs decrease the vulnerability of stored materials to diversion as well as hazards such as criticality and fire. Despite these benefits, only 60 MSVs are being used out of 300 available. Major fire hazards were also identified at some depleted uranium (DU) storage facilities (9720-12, 9720-18, 81-22). While DU does not pose a criticality hazard, potential toxicological (and to a lesser extent, radiological) consequences of DU exposure may warrant increased attention to reduce its vulnerability.
6. **Natural Phenomena** - A localized wind/rain event termed a "down-burst" or "micro-burst" occurred at the K-33 plant on June 24. The facility lost power, several large sections of roof were blown off (the largest being approximately 60ft by 80ft), and two sections of corrugated wall siding were removed. There was no evidence of major structural damage, but the roof damage severed water lines and exposed the building interior to rain and water from the broken pipes. During their visit, the staff acquired additional insights on this phenomena. (II-B)

cc: Board Members