DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 21, 2003

TO: J. Kent Fortenberry, Technical Director
FROM: Donald Owen, Oak Ridge Site Representative
SUBJ: Activity Report for Week Ending November 21, 2003

Staff members Gwal, Hadjian, Linzau, March, Moury and Zavadowski visited Y-12 to review design progress on the Highly Enriched Uranium Materials Facility.

A. Highly Enriched Uranium Materials Facility (HEUMF). YSO and BWXT are currently reviewing the 90% design for the HEUMF recently submitted by the design contractor. The staff reviewed the electrical, fire protection and ventilation systems as well as the structural/seismic design. The electrical system design is still being refined and the staff noted some questions on the proper sizing of the electrical equipment along with the need for seismic qualification of the emergency egress lighting. The staff also questioned the assumption in Fire Hazard Analysis that only one lift truck be considered in the fire loading. During structural/seismic design discussions, the design contractor resolved several outstanding questions on the modeling, soil-structure interaction analysis and the concrete detailing. YSO intends to complete their review of the 90% design by early December. The 100% (Ready for Construction) design is projected to be submitted by January 2004 in order to support award of a construction contract in summer 2004. (2-A)

B. Melton Valley Waste Processing Facility (WPF). As reported last week, the DOE-ORO line management assessment for startup of supernate processing was completed. A line management assessment report is being issued. The DOE Office of Environmental Management Operational Readiness Review is currently scheduled to begin on December 8th, assuming resolution of the DOE-ORO line management issues. (3-A)

C. Building 9212 - Small Electrical Fire. Late last week, a small electrical fire occurred in an electrical panel supporting an office area in Building 9212 (separate from any radiologically controlled area). As Y-12 externally reported this week, a burning odor was detected in the area of the panel and, upon investigation by the fire department, several fuses were found to be burned or damaged. Subsequent investigation this week revealed that the panel has a number of electrical non-conformances (e.g., multiple connected loads to a circuit, ground wires used as load wires, loose circuit connections) and has had little or no maintenance performed over the years. Also noted was that the panel is inappropriately located in a heating, ventilation and cooling return-air enclosure. Investigation of this panel is being completed and implications to other Y-12 facilities are being assessed. YSO management noted to the site rep. that short-term and long-term corrective actions are to be developed by BWXT and reviewed with YSO management. (1-C)

D. Building 9204-2E - Excess Generation of Machine Chips. As Y-12 externally reported late last week, uranium machine chips were generated that exceeded a criticality safety limit during a machining operation. The report noted that this was the third incident where the limit had been exceeded since late October for the operation. Investigation and corrective actions following the first two incidents were not successful in preventing the excess chips from being generated. This week, investigation revealed that set screws holding the machine cutting tool (based on friction) had worn and loosened allowing for unplanned tool translation. Several design improvements are planned to the machine. Development of other corrective actions is in progress. (2-A)

cc
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