

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 26, 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 November 26, 1999

The office was closed Thursday for the Thanksgiving holiday. Mr. Moyle was on leave Friday.

A. Y-12 Building 9206: An interim response to the November 2, 1999, Board letter is expected out this week. Based on an uncertain budget and lack of an approved authorization basis, DOE will defer a thorough response until January 2000. Discussions with Building 9206 personnel has revealed that some progress is being made with special operations packages. For example, LMES is currently removing uranium chips from the facility which were identified in the draft BIO as the facility's highest hazard material. Beyond this, however, it is not clear that adequate detail exists to define a path forward for other risk reduction activities and required resources to fulfill these needs. (3-B)

B. U-233 Inspection Program: This week, another test can was damaged during operational testing of the inspection equipment. Unlike prior can drops (see reports of October 8 & 15), this damage was caused by the cask shield drawer being closed onto the can. The operating crew had mistakenly believed the can had been successfully lifted from the drawer's path before closing. This valuable lesson has identified and/or heightened sensitivity to the following:

1. The need for and value of a rigorous, pre-operational equipment and procedure test program.
2. Preference for direct indications. (ORNL had assumed a high vacuum indication immediately downstream of the vacuum producer equated to high vacuum at the retrieval tool suction cup and thus further equated to successful attachment to the can.)
3. Skepticism of existing designs. (This drawer design has been used for years and an internal shroud was thought sufficient to assure the drawer could never be closed at an inappropriate time.)
4. Complications introduced by reduction of operator "feel" in handling operations. (The use of robust shielding and lifting fixtures has insulated the operators from seeing the cans directly and feeling the can's weight on the end of the lifting tool.)

Messrs. Gubanc and Massie will collect more details during the DOE Peer Review next week. (3-A)

C. Chemical Safety: We are still concerned about the long-term storage safety of dibutyl carbitol (DBC, an organic solvent used in primary extraction). Ethers such as DBC can form peroxides when exposed to air for long periods of time, but it is unknown whether significant quantities of peroxides have formed in the DBC in Y-12 Buildings 9212 and 9206 to be an explosive concern. We believe that sampling is necessary to gain an understanding of peroxide formation under the current storage conditions. After discussing this issue with LMES and DOE this week, LMES committed to look into the following:

1. Potential methods of sampling for and quantifying peroxide content.
2. Determining criteria for unacceptable peroxide levels.
3. Mitigation options if unacceptable peroxide levels are discovered.

We will continue to pursue this issue. (1-C)

D. Y-12 Enriched Uranium Operations (EUO): On November 22, Jimmy Stone, formerly the Y-12 ES&H Manager, was appointed General Manager for Resumption and EUO and the EUO Operations Manager and his deputy were reinstated. We are attempting to ascertain what their duties are.(2-A)

cc: Board Members