

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 4, 2000

**TO:** G.W. Cunningham, Technical Director  
**FROM:** Paul F. Gubanc and David T. Moyle, Oak Ridge Site Representatives  
**SUBJ:** Activity Report for Week Ending February 4, 2000

Mr. Gubanc was on leave Wednesday through Friday.

A. Y-12 Building 9212: The current LMES schedule for resumption of fissile material movement extends into July. This time period seems excessive in light of the limited issues which caused the stop work order. It appears that neither DOE nor LMES have the ability to appropriately limit the scope of the ORR to enable a timely restart in compliance with DOE Order 425.1A. Instead, we have heard some indications that an exemption to the order may be sought to expedite restart.

We toured E-Wing on Tuesday and observed extremely poor housekeeping and industrial safety hazards. Several areas lacked adequate lighting. We observed excessive combustible storage, leaking steam lines, and piles of trash and old equipment. Additionally, new break and shear equipment procured and delivered to E-Wing eight years ago, has never been installed. The old equipment continues to have problems containing contamination and can cause airborne monitors to alarm during operation. On a positive note, LMES has responded quickly to remedy the poor lighting situation and has committed to extensive clean up within two weeks. (2-A)

B. Chemical Safety: LMES is finally taking more deliberate action to address the safety of dibutyl carbitol (DBC) stored exposed to air for long periods of time. On January 25, DOE issued a letter to LMES highlighting this concern which we originally raised in October of last year. LMES has now initiated an unreviewed safety question determination (USQD). As interim compensatory measures, LMES will identify all DBC containers, restrict container movement, and prohibit draining of DBC columns. Additionally, as required by the DOE letter, a sampling plan is being developed which will give a more statistically valid characterization of the stability of DBC in all storage configurations in buildings 9206 and 9212. (1-C)

C. Hydrogen Fluoride (HF) System: During a video conference on January 28, the staff identified some potential inadequacies in the safety analysis of the HF system. We will follow up to ensure that all potential accident scenarios are evaluated and adequate controls are implemented.

Currently, much of the HF system has been dismantled to facilitate removal of the stainless steel powder used as surrogate material for system testing last year. LMES is confident that the testing demonstrated the ability to load, transfer, fluidize, and unload material. There are no plans to reintroduce surrogate material prior to startup.

The HF system includes two essentially identical fluid bed reactors. The reduction fluid bed (RFB) operates with hydrogen gas and has stainless steel components. The hydrofluorination fluid bed (HFB) operates with HF (which is incompatible with stainless steel) and has inconel, monel, and hastelloy components. During dismantlement, some rupture disks were found to be incorrectly installed on the wrong systems (stainless steel on the HFB and inconel on the RFB). As a result, the material of construction of all vital components must be verified. (2-A)

cc: Board Members