

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 24, 2000

TO: J. Kent Fortenberry, Technical Director

FROM: Paul F. Gubanc and David T. Moyle, Oak Ridge Site Representatives

SUBJ: Activity Report for Week Ending March 24, 2000

Mr. Gubanc was on leave all week.

A. Hydrogen Fluoride Supply System (HFSS): The new gas preheaters to replace the heaters that failed to reach the required process temperatures were received this week. They were successfully tested by the vendor prior to delivery. While it is encouraging that some problems are being solved, pre-operational testing and technical baseline development continue to uncover new issues. For example, the HF transfer line heat tracing was recently tested and found to be incapable of maintaining the required temperature when outside air temperature is low. Additionally, the flow limiting orifice on the hydrogen line to the fluid bed (a design feature for safety) was sized incorrectly such that the flow rate could exceed the intended limit. The following issues also remain to be answered and may require significant modifications and rework to address.

1. Natural phenomena analysis and qualification.
2. Safety significant equipment criteria.

Recognizing the hazards of the HFSS, the Y-12 Development organization is currently pursuing an alternative process for metal production which would eliminate the use of HF, and possibly hydrogen. This salt-free direct oxide reduction (SDOR) process is likely to be used in a new enriched uranium operations facility as part of modernization. We will follow up to determine the maturity of this process and any hazards it introduces. (2-A)

B. Building 9212 Fissile Material Handling: The LMES operational readiness review (ORR) resulted in two prestart findings which were closed this week. The DOE ORR was delayed due to the findings, and will begin next week. The more significant finding was associated with the E-Wing operations performed under a special operations package using a category II procedure. The procedure was not used with appropriate rigor and discipline. LMES has implemented the following corrective actions.

1. A standing order has been issued which institutes the worker-reader method for performance of all category I and II procedures as well as infrequently used procedures.
2. Required reading of lessons learned has been identified.
3. A new E-wing manager has been identified who will monitor operational performance and determine when the worker-reader method can be relaxed.

LMES also intends to evaluate the need for similar measures in other areas of the facility as processes come on line. (2-A)

cc: Board Members