

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 7, 1998

TO: G.W. Cunningham, Technical Director

FROM: P.F. Gubanc, Oak Ridge Site Representative

SUBJ: Activity Report for Week Ending August 7, 1998

Staff member Monique Helfrich and Outside Expert Bob Lewis were at Y-12 this week to observe the 18-member DOE team reviewing Y-12 Integrated Safety Management System (ISMS) implementation. DOE's ISMS review of Y-12 completes August 14.

A. Y-12 Enriched Uranium (EU) Restart: On August 6, DOE-ORO and LMES agreed to slip the EU Phase-A2 restart schedule by four weeks. The primary reasons are delays in preparing the carbon burners for service and completing approval and implementation of the most recent safety documentation revision (provided for DOE approval on August 7). This slip results in a LMES ORR start date of September 28 and a DOE ORR start date of October 19. This slip is not expected to have a negative impact on production and any potential impact on the Phase-B schedule will be provided by LMES by August 14. Planned DNFSB staff reviews are being adjusted accordingly.

B. Y-12 Chill Water Pump Explosion: On August 5, a "brine" pump exploded, causing superficial injuries to the utilities operator. Based on a tour of the accident scene and discussions with the cognizant engineers and management, I understand the following:

1. The "brine" system is actually a chilled water system (20% methanol) which services much of the plant. The system capacity is nominally 300,000 gallons and operates at 70-80 psig.
2. The failed centrifugal pump (J-107) is one of 12 and pumps at about 3000 gpm (400 HP motor). The impeller had previously been trimmed such that it would not bind if overheated.
3. Idled pumps are normally left with their inlet and outlet isolation valves open. Due to leakage, pump J-107 had been previously isolated. The pump exploded after running for about two hours; its isolation valves were discovered afterward to still be shut.
4. Starting these pumps is considered "skill of the craft" work; no procedure is used. The plant utilities staff comprises four crews, 13 operators/crew, of which a subset are trained to operate this system. They are being briefed on this event.

LMES has initiated a "Type C" investigation which DOE will observe.

C. Y-12 TSR/OSR Implementation: In 1995, LMES formalized its program for TSR/OSR implementation in response to DOE concerns. This year, as part of a procedure reduction effort LMES canceled this program without fully evaluating its merits or informing DOE. With DOE's encouragement, LMES is reconsidering the need for a formalized TSR/OSR implementation protocol.

D. DOE-EH Assessment: As part of its complex-wide assessment program, EH-24 will conduct a radiation protection special surveillance of Y-12 on August 18-27. It isn't clear why this review is focused exclusively on Y-12 when the radiological hazards are much more significant at ORNL.

cc: Board members