DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 28, 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 July 28, 2000

Staff members Andrews, Helfrich and Moury visited Y-12 to review safety preparations for EUO reduction operations and weapons disassembly, and also DOE-ORO readiness verification processes.

A. Y-12 Enriched Uranium Operations (EUO) Reduction: Observations from this week include:

1. The key LMES engineers and operations managers involved with reduction changed about two months ago, significantly reducing the historical understanding of the technical issues at hand.

2. The staff once again asked about retaining previously used safety controls (i.e., high temperature cutoff). Over the past year, EUO has steadfastly insisted this was unnecessary. As a result of our probing, the Y-12 Development staff independently suggested that such a cutoff would be an expected safety feature to preclude excessive reactor temperatures. EUO is now reevaluating their position.

3. EUO is practicing what can best be described as "faith-based management" and seems resistive to exercising technical inquisitiveness and operational formality. For example:

    1. EUO intends to conduct the first set of reduction runs (coincidently sufficient to meet production needs) under a formal "test." Unfortunately, the approved test procedure contains no explicit control over the operations and no acceptance criteria for identified hold points or the adequacy of data collected. EUO management trusts that engineering will promptly review all data and provide a safety conscience for continued runs.

    2. Despite citations in former safety documents and technical reports of excessive reaction temperatures and pressures (900+ °C and 200+ psig), EUO is committed to utilize only some recent test data which supports their assertions of safety. Our initial review of these recent test data suggest that the conditions favored lower temperatures and pressures (e.g., higher surface/volume ratio resulting in a lower heat flux and resultant vessel wall temperature, and better preparation of the charge to remove moisture).

    3. EUO has discontinued efforts to install either a blast barrier or HEPA ventilation citing the DOE-approved safety basis which requires no such equipment. EUO appears

unconcerned that the Board and DOE staffs continue to question the adequacy of the safety envelope.

Underlying the above symptoms appears to be a deep-seated belief that there is no safety hazard associated with this operation and the above questions/concerns are superfluous. (2-A)

B. Y-12 Weapons Dismantlement: This Fall, Y-12 plans to initiate a new dismantlement campaign. The weapon's canned subassembly, while not presenting new types of hazards than those encountered before, does possess these hazards in much more abundance. As a result, the administrative controls normally used to control these hazards become even more important to safety (i.e., the situation is much less forgiving should an error occur). Recognizing this increased risk, LMES has appropriately identified a formal readiness assessment (RA) as being required to verify readiness. Unfortunately, DOE has not responded in kind, choosing instead to provide only its normal line management oversight. Given the increased magnitude of the hazard, the almost exclusive reliance on administrative controls, and the potential for interacting with other hazards in the same work area, the staff believes DOE would be well-served to retain restart authority and conduct its own independent readiness verification. (2-A)

cc: Board Members