

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 21, 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 21, 2000

Staff members Blackman, Bamdad, Helfrich and Hadjian visited Y-12 to review safety analysis, technical design and corrective action matters associated with Y-12 Modernization. NNSA Administrator John Gordon visited Y-12 for tours and briefings on Monday and Tuesday.

A. DOE Role in Y-12 Project Management: Aside from a wide variety of technical and project management issues discussed this week, a potentially controlling-path DOE issue was realized.

1. DOE at Y-12 does not currently possess all the technical resources necessary to support its role in overseeing the Y-12 Modernization projects. More significantly, the totality of DOE's technical responsibilities have not been compiled, recognized by management and converted into manpower requirements (e.g., PSAR approval responsibility in accordance with 5480.23).
2. DOE has an *essential, near-term role* to work with LMES and establish expectations for technical deliverables from the HEU Materials Facility (HEUMF) design/build contractor. The proposed HEUMF contracting strategy will not readily permit backfitting these expectations later.
3. DOE-OR's near-term plans to acquire additional personnel are focused on project management skills; not technical engineering skills.

To make the HEUMF project successful (both technically and financially), DOE needs to quickly identify its own requirements for technical interaction and then act on the overdue commitments of the DOE project management corrective action plan (Actions 7 & 8):

- a. Evaluate its technical resource requirements against the project schedule.
- b. Identify and commit DOE technical resources to support the HEUMF schedule. This must include identifying gaps in coverage and determining compensatory actions. (1-C)

B. Y-12 Building 9212 Reduction Operations: In preparing for restart of the metal reduction process, LMES has finally repaired the vacuum pump which failed in November, but the reactor vessel integrity issue remains open after over a year without closure. A March 2000 interpretation from DOE-EH on use of the current vessels has recommended remote operations in addition to actions to protect against chemical or radiological consequences of a vessel failure. LMES intends to protect operators by evacuating the room during reactor firing, but no actions are planned to protect the co-located worker and public who are estimated to receive 7 and 0.4 rem, respectively, from this accident. The basis for interim operation considers this event "unlikely", but with the uncertainty in the reaction conditions and the use of non-code rated pressure vessels, it may be "anticipated". LMES has not yet documented an acceptable technical justification for their path forward. (2-A)

C. Y-12 Building 9206: Over half of the high equity oxide identified for shipment to USEC has been removed from 9206 for repackaging building 9212. The USEC campaign is on track for completion in September and will result in a 45% reduction in the uranium inventory at 9206. The remainder of the deactivation plan relies on availability of 9212 wet chemistry processes (which remain shutdown) to process 9206 material. LMES is currently evaluating alternative approaches including processing materials to oxides either by installing new equipment, or restarting old wet chemistry equipment. Recognizing the poor condition of 9206 and the lack of equipment maintenance in nearly 10 years, extensive effort would be required to safely start up any operations in this building. (3-B)

cc: Board Members