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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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April 21, 1993

Dr. Everet H. Beckner
Acting Assistant Secretary for
Defense Programs
U.S. Department of Energy
Washington, D.C. 20585

Dear Dr. Beckner:

Defense Nuclear Facilities Safety Board (DNFSB) staff members visited the Oak Ridge Y-12 Plant during the period March 24-25, 1993 to review the Operational Readiness Review (ORR) process and the application of that process to the Reclamation Relocation Project in Building 9204-2E (which will reclaim special nuclear material, SNM, from returned components).

The Board is aware that the DOE Site Manager had previously identified several deficiencies in the Martin Marietta Energy Systems (MMES) review of the Reclamation Relocation Project. The DOE Site Manager provided specific details of items which were not acceptable and also additional site-level guidance for conducting contractor ORRs. The DOE evaluation of the Reclamation Relocation Project revealed that several important areas were not completely reviewed by MMES. DOE required MMES to address those areas prior to beginning operations and also to provide DOE with a report of lessons learned after disassembling ten B-28 secondaries.

The Board agrees with the DOE assessment that the MMES ORR was not sufficient to verify readiness, and therefore was not an adequate basis on which to rest a request for a readiness review by DOE. Moreover, and notwithstanding the comments below concerning the overall Y-12 Plant ORR process, the Board agrees that, pending completion of corrective actions and the initial run of ten disassemblies, the Reclamation Recovery Project should be able to operate safely. The Board would be interested in receiving a copy of the report concerning lessons learned during the initial B-28 disassemblies, when it is available.

The Board notes that MMES chose to conduct an ORR as part of the process of verifying the readiness of the Reclamation Recovery Project to begin operations. The Board also notes that the MMES ORR plan for the Reclamation Relocation Project was consistent with MMES and local DOE guidance. However, the ORR process at the Y-12 Plant does not embody many of the principles of an ORR expressed in DNFSB Recommendations 90-4 and 92-6 and the DOE Implementation Plans for those Recommendations (see enclosure). Furthermore, the Board notes that there are several ORRs scheduled to be conducted at the Y-12 Plant in the near future including, activities such as the O-Wing renovation in Building 9215 and the

operation of the C-1 Wing scrubber, hydrogen fluoride supply system, and centrifugal contactors in Building 9212.

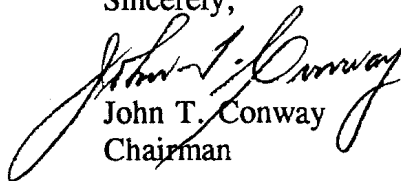
In Recommendation 92-6, the Board recommended that DOE develop rules, procedures, Orders, directives, and other requirements to govern safety requirements of ORRs, along with specific criteria for when ORRs are needed. The Board's Recommendation addressed correct features of an ORR when it is to be conducted.

Due to the present DOE schedule for the above ORRs, it is unlikely that the new DOE Order and guidance on ORRs, anticipated by the DOE Implementation Plan for DNFSB Recommendation 92-6, will be implemented for these reviews. Therefore, the Board considers it essential that ORR practices at the Y-12 plant be evaluated promptly and brought into closer consonance with the requirements listed in the DOE Implementation Plan for DNFSB Recommendation 92-6. Pursuant to 42 U.S.C. § 2286B(d), the Board requests that DOE provide the following report:

- A report evaluating the DOE and MMES ORR processes at the Y-12 Plant against the DOE Implementation Plan for DNFSB Recommendation 92-6 dated January 15, 1993 and the DNFSB comments expressed in the letter accepting the Implementation Plan dated February 8, 1993, along with any planned corrective actions.

The Board requests the above reports be submitted within 30 days of receiving this letter. If you need any further information, please let me know.

Sincerely,



John T. Conway
Chairman

Enclosure

c:

Mark Whitaker, Acting DR-1 w/enclosure

**Observations from a Trip to Y-12 to
Evaluate the Operational Readiness Review Process**

1. Background: DNFSB Staff members J. McConnell and S. Krahn visited Y-12 during the period March 24-25, 1993 to review the Operational Readiness Review (ORR) process. This review involved briefings by Martin Marietta Energy Systems (MMES) and DOE-OR personnel and review of records from the recently completed MMES ORR for the relocation of reclamation activities from Building 9204-4 to Building 9204-2E. This ORR supported initiation of secondary disassembly operations in Building 9204-2E.

2. Summary: The process used at Y-12 to conduct operational readiness reviews is described in a MMES corporate-level procedure ESP-OP-551, "Operational Readiness Process". This process is inconsistent with DNFSB Recommendation 92-6 in several areas. These inconsistencies are summarized below, and explained more fully in the attachment.
 - a. **Independence of Senior Members:**
 - (1) The MMES procedure governing the operational readiness process requires significant line management involvement in assessing the readiness of an activity. The division manager with direct line management responsibility for an activity being started or restarted identifies the need for an ORR and appoints an Operational Review Team (ORT).
 - (2) The ORT reports its findings and information to the Readiness Review Board (RRB) - a Y-12 MMES management group which ultimately makes the determination of an activity's readiness. Although the RRB has a degree of independence, they only meet periodically and are not as actively involved in the review as "Senior Safety Experts" envisioned by Recommendation 92-6.
 - (3) Regardless of the level of review, ORRs for activities at Y-12 are conducted before line-management has affirmed the activity is ready. This is contrary to one of the principles of Recommendation 92-6 which states, "...conducting an Operational Readiness Review prematurely, before line management responsible for preparing a facility for operation has concluded on a sound basis that readiness has been achieved, has adverse effects on safety."

b. **Scheduling of ORRs:** Although DOE-OR does not start its reviews of the MMES ORRs until after they are completed, DOE-OR presently has no formal procedures for their own readiness reviews.

c. **Review Criteria:**

- (1) The Readiness Review Plan (RRP) identifies the scope of the review (using a MORT-tree process) but does not specify the criteria or review approaches. This is contrary to Recommendation 92-6 which states the plan should include, "...factors to be used by individual technical experts in judging satisfactory performance."
- (2) In addition, the RRP does not require a final report such as that required by DOE's Implementation Plan for Recommendation 90-4 and envisioned by the Board's Recommendation 92-6.

d. **Review Team Make-up**

- (1) The ORTs reviewed during the trip were comprised of line personnel from mid-management, with some representation from outside organizations such as Quality Assurance (QA). MMES personnel stated that the ORT normally consults with subject matter experts when required but these personnel are not a formal part of the ORT.
- (2) This is contrary to one of the principles of Recommendations 90-4 (and therefore Recommendation 92-6) which states, "the group constituted to carry out the readiness review [should] be composed of experienced individuals and that their backgrounds collectively include all important facets of the unique operations involved."

Attachment: Detailed Discussion

MMES Procedure ESP-OP-551, "Operational Readiness Process" describes the requirements for planning, scheduling, and conducting contractor readiness assessments. The policy appears to be designed to provide a tool for line management to ensure a given activity is ready to operate on schedule. Specific inconsistencies with the attributes of DNFSB Recommendations 90-4 and 92-6, and the DOE Implementation Plan for Recommendation 90-4 are cited below:

| 90-4 / 92-6 Attribute | MMES Procedure |
|---|--|
| Independence of Senior Members | The contractor's Operational Readiness Team (ORT) is chartered by, and receives its direction from, the line manager responsible for the activity. This team reports its findings to the Readiness Review Board (RRB) which ultimately decides if an activity is ready. The division manager with line management authority for an activity is not permitted to be on the RRB for that activity. The RRB may independently verify some objective evidence of readiness but the RRB members are not part of the ORT, which performs the actual review, and the board only meets periodically. RRB personnel do not perform all of the activities of "senior Safety Experts" and do not personally direct and supervise the ORT. |
| Line management responsibility for achieving readiness before ORR | Line management is not required to assert the activity is ready to operate before convening the MMES ORR. In fact, the policy suggests that the readiness process start as soon as possible in the life-cycle of the subject activity. The process described in the procedure does not appear to provide senior management independent confirmation of an activity's readiness. |
| Experience and qualifications of review team members | ORT personnel are appointed by the division manager with direct line |

responsibility for the activity and should be knowledgeable about the subject activity and outside requirements. Representation from the QA and Environmental Safety and Health (ES&H) functions should be commensurate with the potential hazard. The team is encouraged to seek out and utilize input from "specialized" groups such as Environmental Control, Safety, and Engineering. These subject matter experts are not part of the formal ORT. Representatives from the QA and ES&H functions are required on the RRB.

Criteria and review approaches

One of the initial tasks in the Operational Readiness Process is to identify criteria for the review. This is accomplished using a logic tree called an Operational Readiness Tree (similar to a MORT Tree). Criteria are continuously refined during the process leading up to operation of the activity. The term "criteria" as applied at Y-12 actually refers to identifying the scope of the review. No criteria suitable to be used as a measure of acceptability are explicitly identified. The ORT is required to identify and verify objective evidence which supports the determination of the activity's readiness but the check sheets reviewed with the Staff did not identify the standards to be used nor the approach taken to judge conditions against standards.

DOE Order compliance

The procedure does not explicitly require the ORT to assess compliance with DOE Orders.

Operator level of knowledge

The procedure includes a general criteria to ensure personnel are trained and available. It does not require the

ORT to conduct oral interviews and assess the level of knowledge of operators.

Adequacy of support services

The procedure concentrates on the activity alone and does not address support services.

Configuration control

The procedure does not explicitly address evaluating configuration management or the status of as-built drawings.

Start-up test program

The process as defined in the policy procedure ends once the RRB determines the activity is ready and MMES issues a readiness to proceed memo.

Closure of Findings

The procedure does not provide detail on classifying or closing findings. Actions taken from recommendations of the RRB must be documented and approved by the RRB initiating member, members, or chairperson. The resolution of these actions and verification of closure of open items is not addressed in the procedure.

Documentation of results

The products from MMES's reviews include the plan, criteria, and results (readiness or not). The products do not include an ORR final report summarizing findings and resolution.