

June 28, 2001

General John A. Gordon
Administrator of the National
Nuclear Security Administration
Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0701

Dear General Gordon:

The Defense Nuclear Facilities Safety Board (Board) has been following the U.S. Department of Energy (DOE), National Nuclear Security Administration's (NNSA) preparations to start up the new disassembly campaign at the Y-12 National Security Complex (Y-12). Problems with determining and reporting readiness to start up a new process or to restart a process after an extended shutdown have been the subject of several recent letters from the Board. In August 1999, the Board identified significant issues with the readiness review process in use across the complex. That letter cited several key issues: premature declaration of readiness to start reviews; use of readiness reviews to assist in attaining readiness, rather than as an independent confirmation of readiness; and failure to conduct independent reviews at all. In response to this letter, DOE conducted a review and forwarded a report of actions to be taken in a letter dated December 22, 1999. However, in March 2000 the Board noted that the problem of repeated declarations of readiness by line management before a facility or activity was ready did not appear to have been fully addressed.

The enclosed issue report prepared by the Board's staff indicates that implementation of the readiness process at Y-12 is once again falling short of the standards expected under DOE Order 425.1B, *Startup and Restart of Nuclear Facilities*, and DOE-STD-3006-00, *Planning and Conduct of Operational Readiness Reviews*. Most recently, it was necessary to terminate the NNSA readiness assessment of the new disassembly campaign at Y-12 because of significant issues noted during the review. The inability to complete this review appears to have been caused by a failure on the part of line management to ensure that the disassembly campaign was ready to operate. Also, the large number of pre-start findings from the contractor management self-assessment and contractor Readiness Assessment, in addition to those noted during the terminated NNSA Readiness Assessment, clearly demonstrated that line management had failed to address known or readily apparent problems.

Correspondence between the Y-12 Area Office and the contractor, BWXT Y-12, after the assessment was terminated does not clearly define an adequate path forward for establishing and verifying readiness of the disassembly campaign. It appears that the contractor's and NNSA's planned corrective actions are insufficient to address all aspects of the issues raised during the multiple reviews conducted to date and to assess adequately the facility's readiness to proceed.

Therefore, pursuant to 42 U. S. C. § 2286b(d), the Board requests (1) a briefing, prior to the initiation of another NNSA Readiness Assessment of the new disassembly campaign, of the actions taken to ensure that the campaign is ready to conduct operations safely; and (2) a briefing, within 60 days of receipt of this letter, on the longer-term corrective actions required of both the contractor and the Y-12 Area Office to establish and maintain the required standards for startup preparation activities. This second briefing should emphasize the actions required to ensure that line management will identify and resolve more effectively technical issues that could impact the safe startup or restart of hazardous defense nuclear facilities and activities.

Sincerely,

John T. Conway
Chairman

c: Mr. Ralph E. Erickson
Mr. William J. Brumley
Mr. Mark B. Whitaker, Jr.

Enclosure

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Staff Issue Report

June 21, 2001

MEMORANDUM FOR: J. K. Fortenberry, Technical Director

COPIES: Board Members

FROM: T. Dwyer

SUBJECT: National Nuclear Security Administration's Readiness Assessment of the New Y-12 Disassembly Campaign

This report documents a review performed by the staff of the Defense Nuclear Facilities Safety Board (Board) of the Readiness Assessment (RA) of the new disassembly campaign conducted by the U.S. Department of Energy (DOE), National Nuclear Security Administration's (NNSA) Y-12 Area Office (NNSA/YAO). The RA convened May 29, 2001, and concluded June 4, 2001. Member of the Board's staff T. Dwyer and the Board's Y-12 Site Representative, P. Gubanc, observed the RA Team's activities, as well as demonstrations conducted by the Y-12 National Security Complex contractor, BWXT Y-12.

Background. BWXT Y-12 has been working toward startup of the new disassembly campaign at the Y-12 National Security Complex for more than a year. The first management self-assessment was performed August 29–September 15, 2000. Based on the results of that assessment, NNSA/YAO rescinded the restart authority it had delegated to the contractor and ordered a redesign of the process. The Board issued a classified letter addressing problems with the process on September 21, 2000. NNSA responded in November 2000, promising further reporting in December 2000, and again on January 31 and March 9, 2001. During April 2–13, 2001, BWXT Y-12 conducted a second management self-assessment. A contractor RA was performed April 24–May 4, 2001, at which point it was suspended because of issues related to training and equipment readiness. The contractor RA resumed May 10, 2001, and was declared complete a day later.

NNSA/YAO Readiness Assessment Plan of Action. The scope of the NNSA/YAO Plan of Action is improperly limited with regard to verifying the readiness of NNSA/YAO. Neither minimum core requirement #16 nor #18 from DOE Order 425.1B, *Startup and Restart of Nuclear Facilities*, which would pertain to NNSA/YAO qualification and oversight, is included in the RA. This is particularly important in order to compensate for the fact that the disassembly campaign is a new (i.e., redesigned) operation being performed in a facility/department with known contractor management weaknesses (see, for example, the Board's letter of September 21, 2001), and that the assigned NNSA/YAO Facility Representative, while very capable, is still relatively new and in an interim qualification status.

NNSA/YAO Readiness Assessment Team. The seven personnel assembled by NNSA/YAO to conduct this RA were well qualified for their roles and approached their duties in a thorough and detail-oriented manner. The RA Team Leader and two of the team members are, or have been, qualified Facility Representatives.

BWXT Y-12 Performance. Based on the performance of BWXT Y-12, as observed during RA demonstrations, the Board's staff concluded that readiness preparations were clearly deficient.

Effective Line Management Was Not Demonstrated—The Assembly Organization Manager had been relieved recently. Line management leadership, which was frequently required, was provided by a stand-in manager who at the time was not expected to be involved in the actual operations. Also, the Engineering Manager, who was acting as the process engineer for the startup of this campaign, frequently acted in the role of a line manager to resolve issues and continue operations. The RA Team discussed on several occasions their concern that the only positive management activities they had observed involved these two managers, who were not directly assigned to campaign line management.

Assembly Organization Personnel Were Not Proficient in Their Operations—The first inert lathe operation had been performed only once prior to the RA. The second inert lathe operation had never been practiced, and when the RA Team requested a demonstration of this operation, line management requested a 1-day delay to rehearse. Also, when Radiological Controls personnel participating in the demonstrations objected to the use of a scribe for marking a part, the operators had difficulty using the alternative marking procedure.

Prerequisites for Operations Were Incomplete—As indicated by the lack of operator proficiency discussed above, line management had never conducted a start-to-finish run through the process. Even the As Low As Reasonably Achievable (ALARA) Review performed on the new disassembly procedure did not include the second lathe operation. Procedures, required to be operation-ready by plan of action prerequisites, were incomplete (see below). Repeat findings from the contractor RA and the contractor management self-assessments are indicative of further incomplete prerequisites.

Procedures Were Incomplete—During a demonstration of an operation of the inert lathe, it became necessary to move the assembly in question back into a walk-in hood to continue the disassembly process. Although all of the personnel associated with the program knew this was an expected course of action, no provision to perform it existed in the approved disassembly procedure. A further indication of incomplete procedures occurred when the Radiological Controls personnel objected to the use of the scribe, and indicated that their department would never concur on the procedure if that step remained in place.

Equipment Was Not Ready to Support Operations—Several major issues related to physical equipment became apparent during the RA. For example, investigation into the requirements for use of the walk-in hood for this campaign resulted in the shutdown of the hood in question, plus two additional walk-in hoods across the site, as well as issuance of an occurrence report (ORO--BWXT-Y12NUCLEAR-2001-0027). Significantly, a portion of the issue associated with these hoods had been identified in the first management self-assessment. In another example, RA demonstrations were delayed 2 days by discovery of a broken lanyard and missing ball-lock pin on a required lifting fixture. The fixture was eventually repaired and recertified for use, but the Shift Supervisor indicated that, except for the insistence of the RA Team, the process to recertify the lifting fixture would not have followed the requirements of the DOE and Y-12 hoisting and rigging standards. As still another example, line management had difficulty producing a Master Equipment List for the operation being assessed.

Additional Findings—Additional major findings were identified by the RA Team in the following areas.

- ! Specific safety analyses
- ! Training and qualification (especially regarding certification)
- ! Procedural adequacy (including failure to grade as Use Category I)
- ! Formality of discipline and operations

Conclusion of the NNSA/YAO Readiness Assessment Team. The RA Team concluded its field work on June 4, 2001, and, on the basis of its observations, verbally informed both NNSA/YAO and BWXT Y-12 line management that the RA Report would conclude that the activity was “not ready.” In fact, the RA Team was unable to complete several lines of inquiry due to this lack of readiness.

Subsequent NNSA/YAO and BWXT Y-12 Actions. On June 5, 2001, BWXT Y-12 recommended by letter that NNSA/YAO suspend the RA pending a contractor management review of equipment and procedure readiness. On June 6, 2001, NNSA/YAO sent a letter to BWXT Y-12 addressing inadequacies in contractor readiness preparations, citing the new disassembly campaign as a case in point. The RA Report was issued on June 8, 2001. Of note, by this time the conclusion of “not ready” had been changed. The cover letter to the RA Report states, “The assessment was not completed, but was, under [NNSA/YAO Manager] direction, terminated . . .” On June 11, 2001, the NNSA/YAO Manager forwarded the RA Report to BWXT Y-12, stating, “The team was not able to complete the NNSA RA; therefore, no conclusion of readiness was made by the team.”

Both NNSA/YAO and BWXT Y-12 line management had ample opportunity to recognize the deficiencies in BWXT Y-12’s readiness preparations. BWXT Y-12’s initial management self-assessment resulted in NNSA/YAO rescinding the restart authority it had delegated to the contractor and ordering a redesign of the process. BWXT Y-12’s second management self-assessment of the process resulted in 27 pre-start findings. The BWXT Y-12 RA was suspended for cause, and resulted in 14 pre-start findings, 8 post-start findings, and 9 observations. The BWXT Y-12 RA Team devoted a significant portion of its report to the poor quality of the second management self-assessment.

Implications of NNSA/YAO Actions. A conclusion by the RA Team that the process was “not ready” would require contractor line management to address all findings from the NNSA/YAO RA, reverify readiness, conduct a BWXT Y-12 RA, correct any pre-start findings, and declare readiness to operate. This would be followed by a complete re-performance of the NNSA/YAO RA. By changing the RA Team’s conclusion to “not completed/no conclusion,” NNSA/YAO has opened the door to a path that would require only that contractor line management redeclare readiness, and that the existing RA Team finish any incomplete Criteria and Review Approach Documents (CRADS). Given the number and severity of the findings identified, the Board’s staff believes only a complete reconstitution of the readiness process will ensure that the new disassembly campaign is truly ready for startup.

Conclusions of the Board's Staff. A root cause of the above problems appears to be that contractor line management did not adequately prepare for this activity. Any fundamental actions to resolve the persistent issues identified in this report must start with improved performance by line management. In particular, prerequisites for the contractor and NNSA readiness reviews need to be clearly and carefully established and reliably satisfied.