DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 22, 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 December 22, 2000

A. Y-12 Integrated Safety Management (ISM): This week, we had the following observations regarding Y-12's response to the August 2000 DOE verification review findings:

1. The Y-12 Area Office (YAO) has yet to issue an action plan to address the review findings. While YAO has prepared a draft plan and is proceeding to hire personnel in the areas noted to be understaffed (e.g., Fac Reps), a holistic plan has yet to be developed. YAO has asked one of the senior review team members to visit Y-12 next week to assist them in developing their plan.
2. On December 15, BWXT issued its corrective action plan to address the 29 specific findings from the DOE verification. In concert with the Headquarters staff, we will provide a detailed evaluation of both the initial and this supplemental response in early January. Our initial impressions, however, are that the supplemental plan, like the initial plan, are more focused on documents and processes than the conduct of actual work. (See other items in this report). (1-C)

B. Y-12 Near Miss Incident: BWXT is currently installing a 3500-ton press into a specially designed, 13 foot deep, pit in Building 9998. To support this installation, a 5-ton overhead bridge crane, installed to support post-installation operations, is being used to stage equipment for installation of the press. On December 20, after placing a load in the pit, the crane cables came loose from the drum causing the hook to fall approximately 6 feet and pull down the cables from over 50 feet above. Fortunately, the rigger standing in the pit was not injured. Key points from the Dec. 21 critique:

1. The crane was designed for only 50 feet of vertical travel (i.e., to floor level), yet was being used to lower equipment into the pit in such a way that the hook was extending below floor level. This design limitation was not recognized by the parties involved, and no lower limit switch was specified for this crane as it was not envisioned that the hook could ever go below the floor.
2. The crane is owned by BWXT, but was being operated by an experienced subcontractor. BWXT authorized use of the crane but did not provide qualified oversight of crane operations.
3. Hardware failure was not part of this event. When fully unwound from the drum, the cable ends slide out of their anchor slots. (DOE-STD-1090-99, Sect. 8.1.7, requires no less than two full turns of cable remain on the drum when the hook is fully extended unless a lower limit switch is provided. Sect. 7.1.7 recommends a lower limit switch for cranes which extend into pits.)
4. The lift was judged to be an "ordinary lift" demanding no special evaluation or control.

In summary, the personnel involved did not understand the limitations of the equipment before use. Interestingly, the contractor's August 2000 ISM assessment identified concerns with the inadequate understanding of lifting equipment limits. (During that evaluation, a load was damaged during an incorrectly classified "ordinary lift.") Currently, use of this bridge crane is suspended pending further review, but no other restrictions have been placed on site-wide rigging activities. (1-C)

C. Y-12 Maintenance: On December 19, Mr. Gubanc attended the first offering of an 8-hour training class intended to address weaknesses in workforce understanding of Y-12 work planning processes and procedures identified during the ISM verification. While the class provided some worthwhile exercises and specific knowledge enhancements, it did not clearly educate the students on the totality and integrated nature of the work planning and performance processes. We don't believe that this training will be sufficient to deal with the workforce understanding problems. (1-C)

cc: Board Members