

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy Dwyer, Technical Director
FROM: Matthew Duncan and Rory Rauch, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending May 21, 2010

DNFSB activity: C. Martin and R. Rosen were at Pantex to observe the second week of the W84 SS-21 Nuclear Explosive Safety (NES) Study. J. Anderson and outside expert L. McGrew were onsite to attend the kickoff meeting and training for the B53 SS-21 NES Study.

B61 Operations: As reported on 1/29/10, technicians suspended a B61 disassembly operation after they were unable to separate the pit from a high explosive charge. B&W designed a new tool that is capable of applying additional force to achieve the separation. Last week, a NES Change Evaluation Group determined that the new tool and process did not pose a threat to NES. This week, technicians successfully completed the operation.

Conduct of Maintenance: During a recent fire protection assessment, PXSO discovered a discrepancy in the work package that documented completion of the semi-annual surveillance of the deluge fire suppression system in the 12-44 cells. As part of the sensitivity testing of the deluge initiating device (in this case, an infra-red (IR) detector), the maintenance procedure requires crafts personnel to verify the reading in the detector self-check module is between 90-100 counts per second (cps). In the subject work package, crafts personnel recorded a value of 89 cps for 3 of the 12 detectors. The maintenance procedure contains a note that requires crafts personnel to clean the detector lens and repeat the test if the reading is not within the specified bounds. The individual that conducted this surveillance could not recall if he complied with the instructions in the note. Operability of the IR detector is actually defined by a range of 80-110 cps; therefore, fire protection engineering would have deemed the system operable had the discrepant reading been brought to their attention at the time the surveillance was performed.

Unreviewed Safety Question (USQ) Procedure: This week, PXSO approved a revision to the Pantex Plant USQ procedure. The primary purpose of the revision was to incorporate USQ program enhancements based on feedback from external assessments and to reflect the expectations promulgated in the new revision to DOE G 424.1-1B, *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements*. The most significant change involves the incorporation of explicit instructions on the format, content, and timing of the notification of an evaluation of the safety of the situation. Of additional note, per the implementation plan for the new Pantex USQ procedure, the authorization basis department will revise the Pantex-specific procedure for processing new information to ensure that B&W declares a potential inadequacy in the documented safety analysis (PISA) as soon as the new information has been verified as valid and applicable to the existing DSA. The previous version of this procedure, contrary to the guidance in DOE G 424.1-1B, allowed the USQ evaluator to skip the PISA declaration if enough information existed to perform the USQ determination.

NES Process Improvements: B&W has proposed to PXSO the implementation of NES “by design,” a new process that would integrate the NES community into the development of a new or significantly revised nuclear explosive process at a time when changes can be made without a major rework effort. This Conceptual NES Study (CNESS) would be led by a certified NES Study Group chair, who would select an appropriate set of subject matter experts to aid in the review. The CNESS team would take input from the weapon safety specification, process descriptions, tooling and tester concepts, and requirements process flow documents. The CNESS would likely take place in parallel with the Hazard Analysis Task Team reviews. This process has been presented to and agreed upon by PXSO and the NES Division manager.