DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy J. Dwyer, Technical Director
FROM: Timothy Hunt and Rory Rauch, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending August 14, 2009

Support Activities Nuclear Explosive Safety (NES) Master Study (SAMS): NNSA recently approved the final report for the SAMS, which evaluated those management systems (e.g., emergency response, procedures) that had not been covered by a previous NES evaluation. The NES study group documented two post-start findings. One finding captured the potential for the Pantex Fire Department (PXFD) to bring electrical equipment that has not been reviewed for NES implications, as required by DOE Order 452.2D, *Nuclear Explosive Safety*, into a nuclear explosive facility. The other post-start finding documented the NES study group's concern that the PXFD procedures had not received a NES review. PXSO has requested that B&W Pantex close both findings within 90 days or develop a closure plan. The SAMS report also included one minority opinion (not accepted by NNSA), which requested a post-start finding to document the position that human factors considerations are not comprehensively implemented at Pantex.

Human Factors: Many of the operations performed at Pantex warrant a human factors evaluation, but B&W Pantex has had difficulty over the past several years hiring and retaining specialists in this area. This week, B&W Pantex will begin training its engineers using a human factors course developed in conjunction with Texas Tech University. The course contains eight modules, including: engineering and workstation design, biomechanics physiology, human error, writing procedures, and hazard identification and control. The process, system, and authorization basis engineers will attend a four-day course, while facility and tooling engineers will attend a two-day course. The classwork—which will be added to each engineer's training qualification—is expected to be completed in FY10. In a related note, B&W Pantex has submitted a change to the Sitewide safety analysis report to incorporate a chapter that describes a qualitative process for integrating human factors into control development and implementation.

Procedure Adherence: A shipment of canned subassemblies was transferred from a Zone 12 storage facility to a loading dock without a proceduralized safety step being performed and verified. The on-site transportation procedure requires pins be installed in the tracks of the dock roll-up doors to prevent the doors from possibly closing when sensitive components are passing underneath. The individual responsible for verifying that the pins were engaged cursorily referred to outdated information on an operator aid (i.e., grease board that a previous verifier had initialed and dated two days earlier) instead of visually observing the proper insertion of the pins and documenting the inspection on an approved form. The same procedure and step is used to implement a technical safety requirement (TSR), but in this case the items being moved were not subject to the TSR. B&W Pantex personnel are reviewing the pinning and associated verification processes to ensure the potential for errors in implementing the control is minimized.

Natural Phenomena Wind Hazard: The 10-year update to the site-specific natural phenomena wind hazard resulted in two significant changes: an increase in the atmospheric pressure change (APC) criteria and the application of performance category (PC)-4 wind-driven missile criteria for PC-3 structures, systems, and components (SSCs). Engineering has determined that SSCs are capable of meeting the new APC criteria. However, calculations show that PC-4 missiles will penetrate certain facilities. B&W Pantex plans to update the documented safety analysis to include the new APC and wind-driven missile criteria. For the facilities that are vulnerable to PC-4 missiles, B&W Pantex will attempt to demonstrate an acceptable level of risk using a combination of time-at-risk arguments and administrative controls. If PXSO finds this approach unacceptable, B&W Pantex estimates the required physical upgrades will cost $600,000.