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 March 11, 2011

Nuclear Explosive Safety (NES) Rule (NESR) Violation: B&W has rescinded the NESR violations described in last week's report. The specific NESRs in question state that, "[a strong-link] verification shall be made only once before the first of the following: disassembly operations, maintenance operations, or operations with orange-decal testers." Earlier this week, B&W received a clarification from the acting manager of the NNSA NES Division (who also served as the chair for the W80 NES study), who intended this statement to mean that the strong-link verification is to be performed once before each of the three types of operations cited. Thus, B&W, with concurrence from the NNSA NES Division, concluded that no unauthorized electrical testing occurred on either the W80 or B83 programs.

B&W still plans to evaluate the conditions that led to this near non-compliance. B&W management has asked personnel from the process engineering and NES departments to evaluate the wording of all specific NESRs and clarify any ambiguous statements. In addition, these organizations plan to evaluate the NES change control process for ways to more reliably identify when a proposed change to a single procedure could affect the authorized NES envelope through interactions with other procedures.

B61 Operational Safety Review (OSR): PXSO recently approved the OSR Report of B61 operations. The report contained one post-start finding and five senior technical advisor (STA) comments. The post-start finding captured the NES deficiencies associated with an event in which a member of the fire department entered a nuclear explosive area (NEA) with unauthorized electrical equipment (in this case a radio, see 11/12/10 report). According to the OSR report, this event highlighted two specific NES deficiencies. First, existing controls do not reliably prevent the introduction of unauthorized energetic equipment into an NEA. Second, the Pantex process for incident reporting, tracking, trending, and corrective action does not reliably capture all incidents of potential NES concern. B&W is developing a corrective action plan in response to this finding.

In the memo transmitting the approved OSR report, PXSO requested that B&W evaluate several aspects of the five STA comments, including a comment that the human factors discipline should be applied more widely and more consistently at Pantex. The comment went on to state that reliance on ad hoc consultation from human factors experts is not tantamount to a comprehensive human factors program. Of note, B&W hired an individual to lead the human factors program at Pantex.

High Explosive (HE) Operations: Last November, while performing remote digital radiography operations in a non-nuclear facility, a hemisphere of pressed conventional HE fell out of a fixture approximately 6 inches onto a padded table (see 11/19/10 report). B&W recently completed the causal analysis and corrective action plan for the event. The analysis determined that the event occurred because a roller on the HE rotation fixture attached to unanticipated undulations in the HE hemisphere and dislodged the HE from a retaining ring. Also contributing to the event was the fact that the undulations in the hemisphere went undetected using current measurement methods (shadow graph). This process has not operated since the event. Prior to restart, B&W will evaluate the retaining ring for enhancements to prevent the HE from dislodging. They will also explore alternative measurement methods that could identify undulations on the HE.