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 April 15, 2011

B53 Operations: Last week, nuclear explosive safety and authorization basis personnel approved a new tool that technicians could use to pry the cap from the primary on the latest B53 dismantlement unit (see 4/1/11 report). Technicians attempted to pry the cap from the primary using leverage from the compression ring (as the tool was designed to be used); however, the compression ring slipped before separation could be achieved. The B53 process engineer has written a temporary procedure that directs the technicians to install a new copy of the compression ring and reattempt the cap removal step using the new tool. The temporary procedure permits the technicians to reposition the compression ring if it slips. The technicians are scheduled to execute the temporary procedure this week.

Program personnel have started to evaluate several process and tooling changes in an effort to achieve removal of the cap on this unit (if the latest reattempt fails) and prevent process delays on future units. The change that could be approved and implemented the fastest—assuming it can be done within existing weapon response estimates—involves a tooling modification to enhance the gripping force of the compression ring. Other changes would be more substantial and could result in a more significant process delay.

Special Tooling: The NNSA Service Center, on behalf of PXSO, recently completed an assessment of the B&W special tooling program with an emphasis on the analyses supporting component-tooling interfaces. PXSO requested this assessment after it discovered that the analysis supporting the B53 high explosive holding plate did not fully demonstrate that the tool could support all anticipated loads with the required minimum safety factors (see 12/3/10 report). The assessment team concluded that special tooling designed to interface with components is adequately evaluated for potential adverse impacts. The assessment team did make one observation that the procedures governing tool design should include a note reminding the tool designer to include the forces exerted by components when formulating load paths in tooling analyses.

Maintenance Work Planning: B&W performed a comprehensive assessment of the work planning and control practices of the Maintenance Division. The assessment team reviewed more than 300 work packages, interviewed personnel, reviewed requirements and process documents, and attended meetings. They concluded that the work planning and control processes were robust and well documented and that integrated safety management was the foundation for these processes. However, the report stated that there were many areas that needed improvement. The team developed 17 conclusions and a judgment of need for each area. The most notable issues identified with the work packages were that: (1) maintenance had been performed outside the scope of some work packages, (2) in many cases general hazard analyses had been performed instead of activity-specific hazard analysis, and (3) there was no consistency in the format or content of work packages. B&W developed an improvement plan with 21 corrective actions that are scheduled to be completed by the end of September.