

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 1, 2011

DNFSB Staff Activity: T. Spatz was onsite to observe the final hazard analysis task team walkdown for the B83 Tooling Upgrade Project.

Conduct of Operations: In a letter dated June 10, 2010, NNSA program management (NA-122.22) expressed concern with the formality of operations at the Special Nuclear Material Component Requalification Facility (SNMCRF, see 6/18/10 report). The letter requested a general assessment of the formality of operations at SNMCRF. B&W recently completed the conduct of operations assessment requested by NNSA. The assessment concluded that SNMCRF operations are compliant with the requirements defined in DOE Order 5480.19 and the Pantex Plant Conduct of Operations Manual. However, the assessment team identified several weaknesses, such as informal recording of equipment behavioral data, failure to strictly adhere to “at-the-controls” requirements, and improper logbook maintenance. Given these weaknesses, the assessment team concluded that the special nuclear materials (SNM) division needs to develop a manual or work instruction that clearly translates conduct of operations requirements to the floor level. Additionally, as a result of this assessment and other conduct of operations events at SNMCRF (see 10/1/10 report), SNM Division management has upgraded the level-of-use category for most SNMCRF procedures (e.g., specific-use to critical-use). Technicians are now using critical-use procedures and the reader-worker-checker protocol for intrusive operations, such as the integrated pumpdown and fill station.

B53 Operations: Last week, technicians suspended operations on the latest B53 dismantlement unit after they were unable to remove a cap using the current process and tooling. The applicable procedure directs the technicians to use a compression ring to release the tension that holds the cap and the primary together. On this particular unit, the technicians had installed the compression ring and were preparing to remove the cap using a transfer cart when they observed that the cap had not released from the primary.

Tooling engineers have developed the conceptual design of a new tool to complete the separation. The tool is designed to apply a force in a manner that is bounded by existing weapon response estimates. Safety basis and nuclear explosive safety personnel are evaluating the new tool. If approved for use, the B53 process engineer plans to incorporate it as a permanent part of the cap removal step.

Special Tooling: During a vacuum load test, tooling tryout personnel discovered that a non-credited vacuum lifting fixture used on the W88 program could not maintain the required vacuum level. The W88 tooling engineer evaluated the tool and found that the fitting on the vacuum inlet was starting to leak due to wear. The fitting is located on the component interface side of the tool’s check valve, thereby presenting a known failure mechanism during leak check (when the vacuum supply has been removed and technicians ensure the pressure drop on the vacuum gage does not exceed 2 mm Hg in one minute). Tooling personnel have removed all copies of the tool from the line and W88 cell operations have been suspended. Before operations resume, the W88 tooling engineer plans to redesign the tool with a new type of fitting on the vacuum supply side of the check valve. He has also instituted an annual vacuum load test requirement to monitor the fixture for signs of degradation.