

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy J. Dwyer, Technical Director
FROM: Timothy Hunt and Rory Rauch, Pantex Site Representatives
DATE: 6 March 2009
SUBJECT: Pantex Plant Weekly Report

Hoist Malfunction: During the lift of a weapon from its shipping container, the unit started lurching up and down (although, the chain did not slip or lower). The technicians immediately lowered the weapon about three inches back onto the base of the container. The 2-ton ASME NUM-1 hoist (downrated by B&W Pantex from the manufacturer's rating of 5-ton) was installed in December as part of the hoist upgrade project. The pneumatic pressure had been set to 68 psi—limiting the load that could be lifted by the hoist before it stalled—to prevent potential overloading of the 2-ton rated bridge. The pressure will be raised to 75 psi, lower than the maximum allowable pressure of 90 psi that ensures the hoist will stall before it reaches the 2-ton limit. The chain and spindles were also lubricated as part of the maintenance recovery action.

Tritium Contamination: B&W Pantex learned last week that 12 items it sent off-site for disposal were unexpectedly found by the receiver to be contaminated with high levels of tritium (up to 339,000 dpm/100 cm²). B&W Pantex had performed pre-shipment radiation and contamination surveys on 3 of the 36 similar legacy items (a 10 percent sampling is a management expectation for this process) and no contamination was found. There is no indication that any employees were unsuspectingly exposed. Some of the individuals involved in the process participate in the bioassay program and the tritium bioassays for those individuals came back normal for the month in question. Also, the legacy items were double-bagged to prevent the spread of contamination to others in proximity. The items had the same part number but the wrong suffixes, which could have indicated potential contamination if correct. The legacy radioactive material labels associated with each item also did not contain sufficient information to predetermine which were contaminated. B&W Pantex is revising the process of handling legacy material and setting up an area to evaluate and, if necessary, survey all items with insufficiently detailed radioactive material labels prior to opening or shipping a container.

Technical Procedures: Numerous comments provided to B&W Pantex process engineering personnel on the W62 and W80 dismantlement procedures have been resolved to the satisfaction of the staff. In the spirit of continuous procedure enhancement, the engineers on these two programs were receptive to the comments and made revisions to the dismantlement and corollary disassembly and inspection procedures. The staff is continuing to collaborate with site personnel to resolve comments on B61 procedures.

Lightning Safety: The Nuclear Weapons Complex Electromagnetic Committee met this week to discuss the actions needed to resolve outstanding lightning concerns. One of the primary concerns of the committee is the potential for penetration bonds to carry voltages that compromise facility standoff distances. To eliminate this concern, the committee has approved use of time-domain reflectometry (TDR) to verify intrinsic bonding of penetrations to the facility Faraday cage. Approximately 30 of 2000 penetrations have been verified as intrinsically bonded to date, but TDR is inefficient. This methodology requires placing the target facility in repair mode, using craft support to remove bonds from their holding clamps, and using expert judgment to process the output data. B&W Pantex will continue to use the TDR to verify intrinsic bonding, but in the meantime most of the resources of the committee will be devoted to the development of a more efficient methodology that enables *in situ* intrinsic bond verification using an inductive current transformer.