

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: J. Kent Fortenberry, Technical Director
FROM: Timothy Hunt and Dave Kupferer, Pantex Site Representatives
DATE: 20 January 2006
SUBJECT: Pantex Plant Weekly Report

Special Tooling: W56 operations were temporarily suspended in a nuclear explosive bay this week due to a special tooling malfunction. All W56 operations were previously suspended in July 2005 and only recently restarted after emergent electrostatic discharge issues were resolved. A primary gripper, which was accepted at Pantex after the July suspension, failed during its first use. All four cables that secured a plastic component to the assembly became disconnected during operations. The cables did not serve a safety function nor were they in the load path. Operations resumed after Nuclear Explosive Safety and Process Engineering personnel determined that the tooling issue did not affect the current operation. Eight copies of this tool were fabricated and delivered at Pantex last July from an Acquisition Level 1 certified shop. During the receipt inspection of other attributes, BWXT personnel discovered that some cables were improperly fabricated on one of the eight new tools. Although there was no requirement to inspect or test these cables following fabrication or receipt, it appears that an opportunity was missed to evaluate the other seven copies for the same anomaly prior to production use. This week's evaluation revealed that the swaged cable ends were improperly crimped on all eight copies.

W78 operations were also suspended in a nuclear explosive bay following the recognition by the production technicians of an unusual noise when a unit was being raised in a workstand. The crank handle became hard to turn and the sound appeared to be created by the trunnion spur gears. Closer observation indicated shavings, fines, and larger pieces of metal in, and in the area of, the gear teeth. The practice of the production technicians has been to change the stand out after every few units to prevent this type of situation. This was the first time this particular stand had been used since being reissued by the warehouse. An engineering procedure is under development to continue using the compromised stand to slowly raise the unit until it can be placed into the transfer cart and the stand can be replaced. BWXT is redesigning this work stand to utilize a chain rather than a belt drive.

Radioisotopic Thermoelectric Generators (RTGs) Dismantlement: NNSA-HQ has requested that the site submit a revised proposal to partially dismantle RTGs at Pantex. Last year, PXS0 had indicated significant safety concerns with the original Pantex proposal and it was subsequently withdrawn. PXS0 and BWXT are currently reviewing a report developed by Sandia National Laboratories which attempts to address some of the concerns raised by Pantex during the initial evaluation of mission. The key question that remains unanswered is how Pantex would respond to an inadvertent rupture of a heat source during disassembly and the potential subsequent release of radioactive material. Pantex currently lacks the equipment and safety systems to handle such a hazard. Should Pantex decide to move forward and be considered for this work, a revised proposal will be submitted to NA- 131 by the end of February. BWXT and PXS0 management continue to express strong reservations with respect to performing work at Pantex on components containing plutonium oxide.

Unreviewed Safety Questions (USQs) and Potential Inadequacies in the Documented Safety Analyses (PISAs): In October 2005, the Office of Security and Safety Performance Assurance disseminated a report that identified weaknesses in USQ programs that are common to most sites in the defense nuclear complex. The weaknesses included inadequate site USQ procedures, unsatisfactory implementation of USQ screening processes, and a lack of formal and expeditious use of site processes to determine the existence of PISAs. In response to the aforementioned report, PXS0 has directed BWXT to assess the Pantex USQ process.