

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: J. Kent Fortenberry, Technical Director
FROM: Timothy Hunt and Dave Kupferer, Pantex Site Representatives
DATE: 17 February 2006
SUBJECT: Pantex Plant Weekly Report

DNFSB Staff Activity: R. Rauch and outside expert L. McGrew were onsite to observe the second week of the W87 Nuclear Explosive Safety Study (NESS).

Hoist Upgrade: There are 95 hoists (14 different designs) used in nuclear operations at Pantex. ASME NUM-1, *Rules for Construction of Cranes, Monorails, and Hoists*, is a nationally recognized design standard for hoists and cranes that are used in nuclear operations. More than a year ago, BWXT performed a cross-walk between the requirements of ASME NUM-1 and the current configuration of onsite hoisting equipment. BWXT identified several weaknesses including a lack of redundant systems, inadequate safety factors, and a lack of design documentation. During the past year, BWXT has been assiduously planning to replace all 95 hoists with three types of ASME NUM-1 certified hoists manufactured by Ingersoll-Rand: a five-ton air chain design, a two-ton air chain design, and a two-ton manual chain design. Pro2Serve, a private engineering company, is in the process of seismically qualifying the three hoist designs. Next week, BWXT is planning to install the first of the new hoists, a five-ton Hercu-Link model, in a nuclear explosive facility.

Facility Mode Incident: On Tuesday, it was determined that Production Technicians (PTs) had been performing an activity in a cell while it was in Maintenance Mode. There was not a Technical Safety Requirement violation because the activity being performed did not meet the definition of “active operations” – i.e., handling, processing or physical activity involving nuclear material or explosives. PTs were changing nozzles on a dissolution cart in accordance with an Engineering Instruction, but there were no main charge explosives or nuclear material present in the facility. The normal protocol, which apparently broke down, is for the Production Section Manager to verify the facility status by communicating with the BWXT Facility Representative prior to approving operations. In addition, an entry had been made in the facility logbook that incorrectly documented the facility as being in operational mode. BWXT is evaluating whether additional rigor needs to be applied to the facility mode verification process.

W76 Disassembly: After three previous attempts, BWXT successfully removed a weapon component that was mechanically fastened to the physics package. A vigorous effort by the production technicians resulted in separation of the parts. A cursory post-operation analysis was inconclusive as to the cause of the anomalous condition. A more refined engineered process should be considered if a similar configuration is encountered on future units.

W62 Dismantlement: Two weeks ago, BWXT realigned dismantlement operation priorities to focus on newer W62 units. The realignment was in response to difficulties encountered while dismantling older units. This week, while dismantling a relatively new unit, PTs experienced the same issue. BWXT speculation that the difficulty in dismantling certain units could be correlated with the dates of fabrication now appears invalid. BWXT Engineering is evaluating significant process and tooling modifications to address this issue.