

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 19, 2004

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: T. Hunt and W. White, Pantex Site Representatives
SUBJECT: Pantex Plant Activity Report for Week Ending March 19, 2004

DNFSB Activity Summary: W. White was on leave Wednesday through Friday. T. Hunt was on leave Friday. A. Matteucci was on site Wednesday through Friday.

Cracked High Explosive Recovery Plan: The staff met with BWXT personnel to discuss the startup approach for the cracked high explosive (HE) unit and the restart path for the overall dismantlement program. For the cracked HE unit, BWXT has evaluated eight potential recovery options. Concepts considered include removing the HE pieces individually, procuring new equipment or tooling, or dissolving in a vat of chemicals. After considering, among others, potential for violent reaction, radiation exposure, and dropping potential, a decision was made to pursue vertically and horizontally taping all exposed HE surfaces, a process the site calls mummification. The procedure involves more tape, clearer procedures, and improved training but is generally the same process used during the initial recovery operation. The revised taping process creates an interference that prevents a secondary safety latch from functioning as designed. A compensatory measure has been proposed. The revised process has not been through the unreviewed safety question evaluation (USQE) process yet and a decision has not been made on the level of readiness review prior to restart. BWXT has requested a joint nuclear explosive safety review on the proposed process changes to deal with the anomalous unit but they will not be ready to present the proposal for several more weeks. On the startup of the overall process, a tooling modification is being evaluated to reduce the gap created – and subsequent energetic release – between the nuclear explosive and holding fixture during component separation. [I, W3]

Tooling: Another emergent issue involving a recently discovered tooling concern is expected to keep some operations shut down. PXS0 concluded a quality assurance (QA) survey of the special tooling program that had as a significant finding, the discovery that the Pantex plastic shop was producing adiprene tooling that did not meet design drawing specifications. The plastic shop was only making adiprene tooling with a hardness level of 60 durometers and greater. Drawing specs for tooling at Pantex typically call out requirement ranges of 30-60 durometers of hardness. Pantex does not have a formula to produce adiprene softer than about 60 durometers. Skid tests were initiated this week that will analyze the characteristics of the harder adiprene to meet tooling requirements. The primary concerns are with operations involving uncased conventional HE. According to BWXT, an authorization basis review resulted in several components important to safety being effected. Other notable findings in the draft QA report (there were 12 total) include bypassing the USQE process, tools with unauthorized modifications, unauthorized extensions of technical safety requirement-related calibration intervals, and inspectors eliminating surveillance requirements without tooling design concurrence.

BWXT issued a Tooling Improvement Plan this week that establishes a program to ensure authorization basis credited tools are functionally tested prior to use. The plan also addresses improvements to receipt and inspection, a reorganization to improve communications, and findings from the aforementioned QA survey. [I, E2, E4]