

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMO TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Timothy Hunt and Dave Kupferer, Pantex Site Representatives  
**DATE:** 23 February 2007  
**SUBJECT:** Pantex Plant Weekly Report

**DNFSB Activity:** Staff member M. Duncan was onsite this week to observe the first week of Phase I (disassembly and inspection operations) of the W76-1 Nuclear Explosive Safety Study.

**Flammable Liquids:** BWXT recently replaced flammable isopropyl alcohol with a hydrofluoroether solvent (HFE-71IPA) for most cleaning applications on the W76 program. Testing has indicated that the new solvent is non-ignitable non-toxic, fast drying and stable and does not require the use of task exhaust to reduce vapor build-up. This multi-year replacement effort began following a flash-fire during a weapon disassembly operation in 1998 involving isopropyl alcohol. The HFE-71IPA will be evaluated for use on other weapon programs.

**Warehouse Segmentation:** PXSO has identified that a technical basis to demonstrate why a specific storage warehouse should be treated as three separate facilities does not exist. PXSO has directed BWXT to either develop the technical basis or develop a documented safety analysis for the building. The subject warehouse is currently categorized as a radiological facility and is used to store depleted uranium (DU) components. It is comprised of three bays that are separated by 3-hour fire walls and doors that are normally kept open. The inventory in each bay is limited to less than 13,000 kgs of DU, the threshold identified in DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*, for a Hazard Category 3 nuclear facility. The current combined inventory of all three bays greatly exceeds that quantity. Although the unmitigated consequences have been calculated to be relatively low, the standard does not consider potential consequences for segmentation; only radionuclide loading in the facility.

**Special Nuclear Material Component Requalification Facility (SNMCRF) NNSA Operational Readiness Review (ORR):** NNSA recently issued its report on the ORR conducted last month of the new Hazard Category 2 nuclear facility and associated process equipment. Three areas of weakness not identified during the contractor reviews were noted that resulted in five pre-start findings. Findings with potential safety implications included the use of procedures that did not contain the full scope of process operations and inconsistent implementation of the procedures by the operators. Production to support the W76-1 builds could be authorized within a couple weeks.

**Causal Factors Analysis Improvement Project:** BWXT's General Manager has initiated a project to improve BWXT's processes for evaluating operational events to both identify and correct organizational defects that could lead to accidents at Pantex. This initiative will include a series of seminars for senior managers during which active participation will be encouraged and expected. These seminars will cover the philosophy of high reliability organizations, normal accident theory, and causal failure analysis processes. BWXT plans to issue a Causal Factors Analysis Manual at the conclusion of the project.