DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy Dwyer, Technical Director
FROM: Matthew Duncan and Rory Rauch, Pantex Site Representatives
SUBJECT: Pantex Plant Report for Week Ending December 10, 2010

W78 Operations: Technicians have suspended operations on the first W78 disassembly and inspection (D&I) unit of this surveillance cycle on three separate occasions because of process and tooling anomalies. The first work stoppage occurred after technicians were unable to remove the wire tapes that mate a support fixture to the physics package. Process engineering developed a temporary procedure that permitted the technicians to hammer the fixture in previously untargeted areas. The wire tapes eventually came loose.

The second operational suspension occurred during the canned subassembly (CSA) extraction step. The technicians had successfully extracted the CSA from the unit, but were unable to set the CSA down because the transfer cart with the CSA holding fixture could not mate with the workstand. The technicians inspected the configuration and discovered that a tool on the unit was obstructing the transfer cart. The technicians' supervisor, a process engineer, and nuclear explosive safety personnel determined the safest and most stable configuration was to leave the CSA hanging in a vacuum fixture approximately one half inch from the top of the CSA holding fixture (vertically) and one and a half inches from the intended touchdown point (horizontally) with all three safety arms engaged. After approximately three hours, the process engineer obtained the necessary approvals for the recovery procedure. Technicians removed the tool obstructing the cart (the tool would have been removed during the next step anyway) and reentered the normal process.

Tooling engineers believe this obstruction occurred because the physics package was somehow misaligned in the workstand. Previous steps in the W78 D&I process utilize a fixture equipped with pins that should have provided the necessary detent to maintain the unit in the proper orientation. However, these pins, when recessed, are not long enough to prevent technicians from installing the fixture if the unit is already misaligned. Tooling engineers plan to increase length of these pins.

The third operational suspension occurred when the swing arm could not latch into place because it was offset approximately one inch from level. PXSO approved a justification for continued operations that allowed the technicians to replace the swing arm (with the transfer cart temporarily assuming the safety function of the swing arm) and reenter the normal process.

B53 Operations: Technicians installed a new version of the high explosive holding plate on the first B53 dismantlement unit this week. The pit and a main charge high explosive component separated after being subjected to the force imparted by the two jackscrews on the new plate for about an hour. B&W subsequently completed this unit.

Operations System Development & Integration (OSD&I) Project: The OSD&I project will replace the enterprise-class software product called Consolidated Application System (CAS), which has been used at Pantex for 18 years. CAS has many modules. For example, Pantex uses CAS to track non-conformances, tooling, and the location of nuclear explosives, high explosives, and nuclear material. As some of CAS's functionality performs a nuclear safety function, effective software quality assurance is required for the replacement system. On April 1, 2010, NNSA approved Critical Decision 1. PXSO and B&W are currently evaluating the applicability of DOE-STD-1189, *Integration of Safety into the Design Process*, to the project.