DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: J. Kent Fortenberry, Technical Director
FROM: Timothy Hunt and Dave Kupferer, Pantex Site Representatives
DATE: 21 December 2007
SUBJECT: Pantex Plant Weekly Report

Loss of Facility Control: Last week, personnel working in a nuclear explosive facility failed to maintain the dual-lock administrative control when they left both door locks (referred to as A and B) unfastened and the security access system (Argus) in an unsecure mode after exiting the bay; a violation of the nuclear explosive safety (NES) two-person requirement. DOE Order 452.2C, *Nuclear Explosive Safety*, requires the two-person concept be implemented when nuclear explosives are present in a facility and not protected by a dual-lock—or similar NES approved—security system.

Unauthorized Tester Software: During W78 joint test assembly work (no special nuclear material or main charges), it was discovered that the software (in removable disk format) used for two electrical tests was approved for training use only (TUO). The technician did not recognize, before using the software, that certain markings on the disks (e.g., revision numbers, "not for production use," "TUO," designations indicating the software was unauthorized) were inconsistent with what was required. It is unknown how the unapproved disks ended up in the bay. The software had been used for training last summer but had reportedly been removed from the bay prior to production work startup.

Lightning Safety: Last week, the Nuclear Weapon Complex Lightning Committee met to discuss the following lightning safety concerns (in order of priority): (1) bond wire inductance effects, (2) electrical and magnetic field effects, (3) multi-point grounding scenarios, and (4) concrete spalling. Senior management and NNSA have been more involved during the committee meetings since lightning concerns were discussed during the October senior management team meeting. The committee is close to finalizing a charter that would require committee members to document their recommendations for resolving the aforementioned issues, including any minority opinions.

Pantex Electrostatic Discharge (ESD) Environment: B&W Pantex recently developed a refined cumulative voltage distribution based on empirical data of static potentials collected on personnel and tooling for use in determining weapon response. While a bounding value of 15 kV would be used for the empirical distribution, an error term would be added to assign a finite probability of voltages up to 18kV. The new distribution would be applied to a particular weapon program only after an evaluation of charge-generating activities determines it is adequate and conservative. Consensus on the use of a unified ESD environment is still being pursued with the design agencies.

Multi-Unit Operations (MUO): As part of the Pantex Throughput Improvement Plan initiative, NNSA tasked B&W Pantex to implement multi-unit operations in nuclear explosive bays and cells. Last week, B&W Pantex and PXSO briefed NA-12 on three barrier options for implementing MUO to support W76 cell operations and one option to implement W76 MUO without a barrier. NNSA preliminarily selected the redesign of the current option (rejecting the possibility of pursuing MUO without a barrier) and has tasked B&W Pantex to develop a barrier implementation project plan. The other two barrier options would have been mounted very close to the unit and resulted in significant process or tooling redesigns or degraded efficiencies.