

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 13, 2015

MEMO TO: Steven Stokes, Technical Director
FROM: Zachery Beauvais, Pantex Site Representative
SUBJECT: Pantex Plant Report for Week Ending November 13, 2015

Potential Inadequacy of the Safety Analysis (PISA) for Charge Generating Steps: On November 6, 2015, Consolidated Nuclear Security, LLC (CNS), Safety Analysis Engineering declared a PISA affecting two weapon programs. The concern relates to the potential for triboelectric charge generation during certain disassembly steps that was not previously evaluated in the applicable Hazard Analysis Reports. The steps differ slightly on the two programs of concern. CNS Facility Engineering plans to perform tests on inert trainer units to determine if the steps of concern generate measurable electrostatic charge.

Moisture in a Nuclear Explosive Bay: On November 9, Production Technicians observed moisture seeping through the floor of a nuclear explosive bay. The PTs paused the operation and made appropriate notifications. After using paper towels to absorb the initially present moisture, the condition returned indicating the potential for moisture seeping upward through the slab and leaking through a penetration in the Electrostatic Discharge (ESD) dissipative floor covering. The moisture was discovered within six feet of a nuclear explosive workstand; thus, it was not proximate to the fire suppression system riser as was observed in a nuclear explosive cell in August (see 8/14/2015 report). The site representative observed the accumulated moisture and observed CNS production and facilities personnel initially inspect the condition of the floors. The ESD floor covering delaminated from the slab in a localized area and contains a small crack allowing the moisture to escape. CNS Facility Engineering performed an Operability Evaluation of the ESD floor covering, the floor slab and the facility fire suppression system. The evaluation determined that each of these systems is still capable of performing its safety function. At the time of this report, CNS had not yet determined a source of the moisture. CNS Process Engineering is currently developing a Nuclear Explosive Engineering Procedure to remove the unit from the facility.

Justification for Continued Operations (JCO) Approval: Last week, the NNSA Production Office released a Safety Evaluation Report approving the JCO for the second of two weapon programs affected by the discovery of degraded isolator components (see 7/10/2015 report). In an Information Engineering Release, referenced in the JCO, the design agency reported that the weapons response for an ESD insult to the affected isolator screened. The design agency was able to arrive at this conclusion following additional testing and analysis to update their component response. The JCO specifies additional controls to protect against worker safety hazards only.

Path Forward to Resume Detonator Cable Assembly Electrical Tests: On November 10, the design agency issued a Special Instruction Engineering Release (SIER) authorizing Pantex to modify procedures in order to implement additional ESD controls during the performance of electrical tests on other units with similar DCAs. The controls include those specified in the Nuclear Explosive Engineering Procedure developed for testing the anomalous units (see 9/18/2015 and 10/23/2015 reports). Additionally, the SIER authorizes Pantex to perform the electrical test earlier in the procedure, eliminating one potential ESD scenario.