

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 23, 2017

MEMO TO: Steven Stokes, Technical Director
FROM: Ramsey Arnold and Zachery Beauvais
SUBJECT: Pantex Plant Report for Week Ending June 23, 2017

Pneumatic Hose Whip Hazards: CNS safety analysis engineering (SAE) has been performing a review of recently released weapon response information, developed as part of an upgrade initiative, for a weapon program with conventional high explosives (see 3/17/17 and 5/12/17 reports). As part of the review, SAE identified an increase in weapon response consequences resulting from pneumatic hose whip insults and a weapon configuration where these hazards were not previously analyzed. Last week, CNS declared a potential inadequacy of the safety analysis (PISA) and implemented operational restrictions to prevent insults by requiring air hoses to be restrained during bay operations on the program. Operations conducted in nuclear explosive cells remain paused for this program due to a separate issue, however, controls are already in place to prevent a hose whip scenario in cells. Discrepancies in the possible energies of hose whip hazards were also identified during a similar review of weapon response information, related to a separate safety basis upgrade initiative, on a separate weapon program. CNS is awaiting formally released weapon response information to confirm the discrepancy before further processing the new information.

Command Disablement (CD): CNS continued their contractor readiness assessment (CRA) of an upcoming CD function test and subsequent disassembly and inspection (D&I) of the tested unit (see 6/16/17 report). Production technicians (PT) demonstrated the CD function test in a nuclear explosive cell and demonstrated selections from the D&I operations in a training bay. The CRA team expanded their initially proposed scope of demonstrations to include an operation with complicated procedural branching and activities performed in a contamination area (CA), as CA operations are not normally performed with this weapon program. During the cell operations, the CRA team drilled the PTs and radiation safety technicians' (RST) response to a simulated, high reading on a contamination swipe. The PTs and RSTs displayed a high level of knowledge with regards to their specified response actions. RSTs and other radiation safety personnel demonstrated their response to the scenario, including control of the area and preparation for reentry into the facility. The resident inspectors observed each of these phases of the demonstrations, and have provided preliminary feedback to the CRA team on the conduct and scope of the assessment.

Qualified Containers: In conjunction with their counterparts at the national laboratories responsible for pit quality, CNS completed their sampling plan to evaluate additional containers for corrosion and other degradation (see 5/19/17 and 6/2/17 reports). In development of the plan, CNS considered the following parameters in an attempt to bound the population at risk: effects of the 2010 flood, container vendor, storage magazine design, packaging dates, and initial packaging location. Through analysis of historical information, the information obtained during past surveillances, and the ongoing visual inspections in Zone 4, CNS was unable to conclusively narrow the scope of potentially affected containers. The sampling plan specifies 62 additional containers to be sampled from the same Zone 4 storage magazine where the original six drums that displayed signs of advanced corrosion had been stored. The sampling and inspection will include containers holding pits with a range of heat generation rates, including selections from each of the five thermal output categories.