

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 18, 2019

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais and Miranda McCoy, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending October 18, 2019

DNFSB Staff Activity: C. Berg augmented resident inspector coverage throughout the week. The resident inspectors briefed the results of their recent review of work hour limit implementation, focused on weapons assembly and disassembly personnel, to NPO and CNS.

Special Tooling: While performing an unreviewed safety question (USQ) evaluation related to physical modifications to a piece of special tooling, CNS safety analysis engineering (SAE) identified that commercial components in special tooling did not meet the normal and rare event factor of safety functional requirements specified in the documented safety analysis (DSA). The CNS tooling engineering design manual allows special tooling designs with commercially procured components (e.g., casters and bearings) to be loaded up to the manufacturer's rated limit, relying upon existing—though unquantified—safety margin in the manufacturer's specified limit. This differs from tooling components that are designed by CNS, which must meet additional safety factors specified in the DSA. CNS management suspended all nuclear explosive and nuclear material operations, CNS SAE declared a potential inadequacy of the safety analysis (PISA) and subsequent positive USQ related to this practice, and CNS management categorized the issue as a DSA non-compliance. CNS SAE is developing a justification for continued operations to address the discrepancy.

Fire Protection Controls: During a walkthrough of a facility by fire protection engineers as part of a semiannual combustible loading inspection, several special nuclear material containers were identified as not meeting the required standoff from combustible equipment installed in the facility. CNS management determined that this violated a combustible loading specific administrative control. As immediate corrective actions, CNS personnel moved the containers to regain compliance, verified that similar facilities implemented the appropriate standoff distance, and committed to physically mark standoff distances within those facilities. The plant has experienced similar violations of this control in the past (see 4/28/17 and 11/22/17 report). In a separate event, last week, NPO personnel identified that an interlock door in a nuclear explosive bay remained open when it was not being used to actively enter or exit the interlock. The Pantex DSA specifies a specific administrative control requiring that these doors remain closed except when "personnel are entering, exiting, or present in the interlock." This control prevents the spread of a fire from the interlock, where combustibles are not closely controlled, into the bay. NPO personnel communicated the issue to production technicians present in the bay who then closed the door. Two nuclear explosives were present in the facility at the time of the violation.

Conduct of Operations: CNS management released an action plan and causal analysis in response to a recent adverse trend in conduct of operations, identified by NPO (see 8/16/19 report). Among other areas, the response identifies contributing deficiencies related to safety basis development, identification of root causes for events, and a hesitancy to engage across organizational boundaries to ensure comprehensive corrective actions. The action plan identifies improvements to address these causes to be completed over the next 14 months.