

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 4, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: A. Gurevitch, M. Bradisse (acting), and C. Berg (acting), Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending February 4, 2022

Staff Activity: The resident inspectors attended demonstrations associated with an ongoing nuclear explosive safety study (see 1/14/22 report).

Technical Safety Requirement (TSR) Violation: Last month, during a contractor readiness assessment (CRA) in a nuclear material bay, the assessment team discovered a nitrile glove on conduit piping approximately ten feet above the floor. While there was no nuclear material in the bay at this time due to the ongoing assessment, CNS assumed that the glove was present during nuclear material operations within the last few months. Consequently, this discovery was captured as a violation of the TSRs pertaining to combustible loading in nuclear material facilities (i.e., transient combustibles must be under direct control at all times). Of note, this CRA had already identified a safety basis non-compliance associated with flammable liquid cabinets in the bay's equipment interlock (see 1/21/22 report).

Safety Basis: In December 2021, CNS determined that there existed an unreviewed safety question for a certain warhead program related to a tool found to weigh more than its recorded safety basis value (see 12/17/21 and 1/7/22 reports). As an operational restriction, safety analysis engineering (SAE) required two technicians to lift this tool in the presence of high explosives. Last week, SAE submitted an evaluation of the safety of the situation (ESS) and safety basis change package to formally incorporate the two-person lift requirement into the control set. As a result, drop scenarios involving this tool and resulting in high-order consequences are considered sufficiently prevented.

This week, CNS also identified a discrepant weight associated with a tool for a different weapon program. At the current time, for simplicity, the safety basis analyzes the impact from the tool on every weapon configuration. Consequently, SAE declared a potential inadequacy of the safety analysis and, for configurations where this tooling weight increase exceeded established weapon response parameters, instituted an operational restriction to prohibit the use of this tool.

Fire Suppression Systems: Last month, an escutcheon fell from a deluge sprinkler head in a nuclear explosive cell (see 1/21/22 report). The safety class fire suppression system and its components are required to remain in place during design basis seismic events; consequently, this event represented an unreviewed safety question. Since escutcheons are cosmetic and not essential to the functioning of the sprinkler system, the plan is to remove escutcheons from nuclear explosive facilities that use this sprinkler design to maintain compliance with the safety basis. However, the equipment necessary to support removal cannot be brought into facilities where nuclear explosives are currently being processed. This week, NPO issued a safety evaluation report (SER) allowing production work to finish in the affected facilities to support removal of the units. The SER noted that the design agencies provided a screened weapon response for falling escutcheons for all applicable weapon configurations during processing for these specific units. Following NPO approval, CNS authorized resumption of operations.