DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 31, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Miranda McCoy, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending July 31, 2020

Safety Basis: Last week, CNS safety analysis engineering (SAE) personnel declared a potential inadequacy of the safety analysis (PISA) and subsequently upgraded the PISA to a positive unreviewed safety question. SAE received new information from the responsible design agency regarding the hazard analysis report for one weapon program. SAE and the design agency determined that weapon response rules for certain mechanical impact hazards had been mapped incorrectly; the current mapping was inappropriate given the orientation of the unit during the applicable operations. Similar to the response to a PISA last month on the same program, CNS implemented a NNSA pre-approved measure—the existing personnel evacuation specific administrative control—to the affected operations (see 6/26/20 report).

Readiness Activities: CNS completed a contractor readiness assessment (CRA) for assembly/disassembly operations involving one weapon program (see 7/3/20 report). The recent readiness activities are a continuation of a readiness process begun last year, which resulted in authorization of limited scope operations for that program. The CRA report documented four pre-start findings, which have all since been resolved and closed. The findings involve the following deficiencies: non-executable procedures provided to production technicians, conduct of operations deficiencies, prerequisites not satisfied in the readiness-to-proceed memorandum, and category 2 and 3 electrical equipment not approved for use. Additionally, the federal readiness assessment (FRA) team provided an outbrief of their review. The FRA identified one finding, regarding outdated procedures that had not been updated to reflect current design requirements or nuclear explosive safety rules. The FRA also identified two lessons learned, one cautioning to minimize the frequency of concurrent CRA/FRA reviews —as occurred in this case due to COVID-19 related concerns—and one cautioning against the use of phased startups and multi-part readiness reviews due to the increased propensity for introduction of errors.

Technical Safety Requirement (TSR) Violation: This past weekend, a special nuclear material (SNM) technician notified production section managers (PSM) of an item discovered in a cardboard box in the ramp by certain SNM facilities. The item was packaged in a sealed velostat bag within an open radioactive material bag (i.e., rad bag). Procedurally, items in rad packaging are not to be left in ramps and must be accepted upon delivery. Two PSMs brought the boxed item into the applicable facility, placed it appropriately into a radioactive material management area, and left the cardboard box nearby. They then exited the facility. On Monday, the production manager (PM) investigated the issue further, and determined that the unattended box constituted a combustible loading TSR violation. The PSMs involved in the incident were relatively newly qualified and their PM was off duty the day of the incident; moreover, the SNM facilities have areas where unattended combustible loading is acceptable, but are not currently demarcated with easily identifiable combustible loading requirement postings. The item's inner packaging (i.e., velostat bag) was appropriate given the date of its initial packaging. The use of rad bags was not implemented at Pantex until much later, and it is unclear who performed the attempted repackaging; production stores personnel are not trained in repackaging the item.