

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 31, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais and Miranda McCoy, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending January 31, 2020

DNFSB Activity: Chairman Bruce Hamilton was on-site January 29. During the visit, he observed nuclear explosive operations, discussed proposed controls for internal charge generation hazards on one weapon program (see 1/18/19 report), and observed nuclear explosive training activities. C. Berg augmented resident inspector oversight.

Special Nuclear Materials (SNM) Limits: After receiving a shipment of canned subassemblies (CSA) from offsite, CNS production stores personnel transported two loaded CSA containers to a non-nuclear components warehouse. The facility is authorized to store non-fragment producing explosive devices and depleted uranium, but plant procedures do not allow enriched uranium into this facility. Production stores personnel recognized and corrected the condition by moving the containers to an authorized facility. The movement was performed outside the engineered process for controlling facility inventory limits. A separate recent event involving moves outside this process led to a specific administrative control violation (see 8/2/19 report).

Construction: Last week, CNS direct hire crafts workers impacted an energized power line while using a pneumatic saw to remove concrete slabs from a facility floor. The provided utility drawings did not note the presence of a power line. Utilities locators also performed ground penetrating radar prior to cutting activities, but the presence of rebar in the area resulted in unclear images and difficulties differentiating the power line from rebar. This event differs from previous excavation impacts (see 12/13/19 report) as the construction occurred in the Zone 12 south material access area and not in the balance of plant. Balance-of-plant utility drawings have historically been subject to lower configuration control requirements and have frequently mis-identified or not identified the position of utilities. Fact finding participants noted resumptive actions to identify circuits and implement additional hazardous energy controls in the area.

Special Tooling: The Pantex safety basis requires that special tooling equipped with vacuum fixtures also be equipped with secondary safety catches to prevent loads from dropping in the event that vacuum is lost. During dynamic testing of a vacuum fixture prototype performed in the non-nuclear tooling warehouse, the installed safety catches failed to maintain the load resulting in the test billet impacting the ground. The tool is being developed to lift a component that contains SNM during nuclear explosive operations. The applicable job safety hazards analysis directs personnel in the area to stand clear of the load path and to minimize the potential drop height. Per discussion during the fact finding, CNS production tooling personnel performing and observing the work abided by these requirements and did not sustain injuries. They proposed additional controls to prevent the billet from potentially impacting personnel to be considered during future tests. While safety catches are installed on all vacuum fixtures, the specific design was unique to this prototype based on the load configuration. CNS tooling engineers are evaluating changes to the tool design and intend to perform additional evaluations in the training environment. The resident inspectors note that this event emphasizes the importance of dynamic testing during special tooling development.