DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 7, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Zachery S. Beauvais and Miranda McCoy, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending February 7, 2020

DNFSB Staff Activity: R. Jackson performed onsite walkdowns and discussed the Material Staging Facility conceptual design with NPO and CNS personnel.

Facility Crane Authorization: Last week, crane operators in a courtyard adjacent to several nuclear explosive cell facilities performed operations without a lift plan in place, resulting in a violation of a technical safety requirement (TSR). These lifts were not performed directly over nuclear explosive facilities. However, a functional requirement of a specific administrative control (SAC) requires plant shift superintendent (PSS) authorization of crane operations within the material access area. Due to a verbal miscommunication, crane operators believed a lift plan had been completed and signed and work had been authorized by the PSS. The resident inspectors noted that the functional requirement, as written, focuses on the authorization process rather than directly implementing a positive measure that would prevent a crane-related impact. The resident inspectors have discussed these observations with NPO and CNS engineering personnel.

Fire Suppression System: Following a water flow alarm, CNS facilities personnel identified a leak in a section of wet pipe fire suppression pipe serving a special nuclear material storage cell last month. The fire suppression pipe is part of the designated safety class system. CNS maintenance personnel determined that the leak was due to freezing in the pipe that caused a pipe elbow to burst. While the section of pipe is located indoors, it is located near a roll-up door that had been broken in an open position since September 2019. The broken roll-up door allowed the section of pipe to experience unexpectedly low temperatures that resulted in the pipe burst. CNS facilities personnel submitted a work order to fix the roll-up door in September, but higher priority maintenance activities prevented it from being worked. After discussions with NPO, CNS categorized the event as a degradation of a safety system. At the request of NPO, CNS decided to perform a fact finding for the event. The resident inspectors note that the piping failure may raise a broader question related to maintenance prioritization and the ability of non-safety systems (i.e., roll-up doors) to adversely impact safety systems that were illustrated by this event.

Additionally, during quarterly preventive maintenance (PM) activities, a manual trip station for the deluge system serving a separate nuclear explosive cell failed a surveillance requirement. Craft workers attempted to manually activate the deluge system using the emergency remote release (ERR), but the ERR did not activate the system as expected. The affected nuclear explosive cell has been in repair mode, which precludes the introduction of greater than hazard category 3 quantities of nuclear material to the facility, since its last quarterly fire protection system mechanical PM. While completing the same PM step in a nearby facility, crafts workers experienced difficulty with an ERR a second time; in this case, the deluge system activated after an abnormal delay.