

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 8, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: C. Berg, Acting Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending July 8, 2022

Operations: Earlier this year, CNS personnel inadvertently damaged a container enclosing a nuclear explosive, referred to as handling gear (H-gear), when contacting a wall during movement into a staging facility (see 6/3/22 report). Originally, Pantex had planned to repackage the nuclear explosive into an undamaged H-gear prior to offsite shipment. However, after discussions involving appropriate CNS and design agency organizations, as well as notifications to applicable military personnel, CNS determined the damage to be minimal—i.e., not resulting in a compromise of the H-gear features (e.g., weld integrity and Faraday cage characteristics)—and the H-gear safe to ship in its current state.

Fire Suppression System (FSS): Last month, NPO approved a safety basis supplement (SBS) related to the high pressure fire loop (HPFL) lead-in replacement project for a nuclear material facility. The project includes replacing the underground fire water piping from the HPFL to the fire suppression riser within the facility, and consequently results in the loss of fire water supply to the facility's wet-pipe FSS. As it is not feasible to empty this facility of nuclear material, CNS developed a strategy to temporarily supply fire water to the facility via a nearby fire hydrant—which is also serviced by the HPFL—for the duration of the lead-in replacement project. Employing this strategy, CNS is permitted to continue facility operations, except during switchover between the permanent and temporary water supplies. CNS will construct an above-ground temporary lead-in, which permits fire water flowing from the fire hydrant, through the facility fire department connection, and to the wet-pipe FSS. Upon construction of the temporary water supply, CNS will perform a main drain test to ensure the system can provide continuous and unobstructed water flow from the HPFL to facility FSS.

In addition, CNS developed a compensatory measure for the temporary water supply related to freeze protection: if the ambient temperature is at or below 32 °F, CNS will conservatively declare the facility wet-pipe FSS inoperable. In its report, NPO directed CNS to modify this compensatory measure and require the system to remain inoperable following a freeze event until completion of the permanent HPFL lead-in. If the FSS were declared inoperable, in accordance with Pantex technical safety requirements, CNS would place all nuclear material into safe and stable configurations, implement a fire watch or reduce combustibles, and place the facility in maintenance mode. NPO and CNS do not expect such a freeze event during the timeframe for this project. However, NPO identified that the SBS will expire upon completion of the lead-in replacement project or six months after commencement of the project. Furthermore, if the project is to extend into winter months, NPO directed CNS evaluate a means to recover temporary water supply operability following a freeze event.

Safety Basis: CNS determined the potential inadequacy of the safety analysis associated with electrostatic discharges during hoisting operations on one weapon program (see 7/1/22 report) represented an unreviewed safety question. To preclude the hazard, CNS continues to implement a standoff between hoisting operations and certain configurations in the staging area.