

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 1, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: A. Gurevitch, Resident Inspector
SUBJECT: Pantex Plant Activity Report for Week Ending April 1, 2022

Staff Activity: Messrs. Berg, Bradisse, Anderson, and Wright were onsite to review the Pantex fire protection program. While onsite, the staff also observed the site's full participation emergency exercise and evaluated responses from the fire department, radiation safety, plant shift superintendent, offsite field monitoring team, and emergency operations center.

Emergency Exercise: On Wednesday, Pantex conducted a full participation emergency exercise that involved coordination between the site and state and local organizations. The scenario involved an explosion in a nuclear explosive bay, resulting in the spread of special nuclear material—both onsite and offsite—and personnel injuries. The exercise used pre-determined wind conditions, which directed the simulated radiological material plume offsite. At the hotwash and critique, participants noted issues with exercise control, which led to several cases where incorrect, insufficient, or unearned information was given to emergency response personnel. Critique participants also discussed and analyzed a breakdown in inter-organizational communication that delayed fire department and radiation safety response. Participants from the emergency operations center and incident command post discussed communication issues specifically related to the radiation field monitoring team.

Special Tooling: Last week, a problem occurred with the rotation mechanism of a workstand containing a nuclear explosive unit in a nuclear explosive cell (see 3/18/22 report). After taking actions to place the unit in a safe and stable configuration, CNS declared a potential inadequacy of the safety analysis (PISA), but has since determined that the PISA did not represent an unreviewed safety question. Personnel from CNS engineering organizations are currently developing a path forward to safely remove the unit from the workstand, after which the workstand can be repaired or replaced.

Maintenance: During annual testing and maintenance on parts of the fire system (e.g., smoke and heat detectors) in a nuclear facility, personnel noticed that one of the facility's two automatic fire doors did not properly close following smoke detector testing. The doors are rated as 3-hour fire barriers, and are located on either side of an opening in a 2-hour fire barrier. CNS personnel determined that the other door closed, thus ensuring an appropriate fire barrier was intact. However, at the critique for this event, personnel discussed whether or not the step to close the door was marked as an in-service inspection step, since the ability of the doors to close is a design feature recorded in the facility technical safety requirements (TSR). Critique participants noted that activation of heat detectors—rather than smoke detectors—is the mechanism credited in the safety basis to ensure door closure during a fire. Consequently, the smoke detectors do not perform credited safety functions in this regard. It was therefore determined that the open door did not represent a performance degradation of any credited safety system. As a compensatory measure, CNS personnel will administratively control the door, so it remains in the closed position until the closure mechanism is repaired. Further, CNS will revise the maintenance procedure to reduce excessive wear on the door closure mechanism.