

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 5, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: A. Holloway and C. Stott, Resident Inspectors
SUBJECT: Pantex Plant Activity Report for Week Ending July 5, 2024

Special Tooling: During recent nuclear explosive assembly operations, CNS production technicians identified that a certain component was not seated properly following installation. The technicians had used appropriate tooling with multiple depth gauges to ensure proper component alignment; however, after identifying the discrepancy, the technicians noted that two of the gauges were not giving expected results. CNS has since successfully removed and properly reinstalled the component after receiving direction from the applicable design agency.

CNS also recently identified two copies of special tooling that were used past their in-service inspection (ISI) dates and associated grace periods. The two items were a lifting and rotating fixture and an assembly cart, both of which were actively supporting a staged, non-conformed component when the ISI grace periods lapsed. Normally, before utilizing tooling past its ISI grace period, CNS requires an engineering evaluation and safety basis supplement to verify that the equipment can safely perform the required operations. Since this staged component does not contain nuclear material, CNS special tooling program personnel determined—with input from CNS tooling and machine design personnel—that an engineering evaluation would not be required and did not perform one. Later, other CNS tooling and machine design personnel contended that an engineering evaluation should have been performed to allow continued use of the tooling beyond its grace period, including during subsequent operations to remove the staged component. During the critique, CNS stated their intention to perform a causal analysis to clarify the requirements for the use of special tooling past its associated ISI due date. CNS also noted that for this occurrence, both pieces of special tooling were removed from service upon completion of the operation and subsequently passed the needed ISI activities.

Separately, CNS has resumed operations involving the use of three different tools for a weapon program (see 5/17/24 and 5/24/24 reports). Following identification of aluminum weld cracking, CNS developed and fielded revised tooling designs that eliminate the need for the subject welds instead of reissuing existing tools that passed dye-penetrant testing. CNS is still planning recovery operations for one special tooling copy that is currently in use supporting a unit.

Conduct of Operations: During assembly operations in a bay, CNS production technicians installed a certain electrical connector cover on a unit per steps in a nuclear explosive engineering procedure. Of note, this electrical cover is authorized for use in this facility. While performing steps in a subsequent operating procedure in a special purpose facility, other technicians failed to identify that this cover did not match the expected configuration (i.e., a different cover is defined) and continued operations. Production technicians identified the discrepancy on the following day. In response, CNS determined that either connector cover would fulfill the necessary functions, allowing operations to resume. CNS then nonconformed the unit since a different connector cover had been utilized. During the critique, CNS proposed to evaluate procedure revisions to permit installation of either connector cover and allow technician repositioning of the unit to aid in cover verification.