

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 22, 2018

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending January 19, 2018

Staff members B. Weathers and K. Herrera visited the Oak Ridge Reservation this week and walked down Buildings 9212, 9215, 9204-2E, and the Transuranic Waste Processing Center. R. Rauch completed his assignment as one of the Board's Oak Ridge Reservation resident inspectors.

Building 9212: This week, the Building 9212 operations manager declared a technical safety requirements (TSR) violation after CNS personnel identified that several Oxide Conversion Facility (OCF) TSR surveillances were not performed correctly. Some OCF TSR surveillances test the time between a field condition (e.g., low scrubber tank volume) and automatic isolation valve closure in order to ensure that the programmable logic controller governing automatic system isolation can perform its design function. CNS personnel recently reviewed surveillance records and identified that operators did not measure time correctly during surveillances performed in the last several years. Regardless, OCF systems remained in an operable status. In response to the TSR violation, the Building 9212 shift manager declared the impacted systems inoperable even though OCF operations are currently suspended due to a different issue (see 12/15/17 report). CNS will hold a fact finding meeting to further discuss the TSR violation.

Nuclear Criticality Safety (NCS): As a part of the extent of condition review initiated as a result of the inadvertent accumulation of uranium in the Building 9212 reduction sand separator (see 11/9/17 report), Y-12 NCS engineers reviewed all entries in a criticality safety evaluation (CSE) issues tracking database. The database is intended to only capture issues related to CSE quality, however the sand separator event revealed that it may also contain issues that question whether certain CSEs evaluate specific upset events. NCS engineers recently completed their survey of the database; of the approximately 1200 documented issues, they identified 22 issues that warrant additional review. In order to further evaluate these 22 issues, the NCS engineers are utilizing the Y-12 Potential NCS Issues (PNI) process (see 7/8/16 report). NCS engineering management is currently targeting completion of all PNI forms in 30 business days.

NCS engineers recently discussed the 22 issues in order to prioritize their evaluation and resolution. They have already completed their evaluation of several of the highest priority issues using the PNI process. For instance, they identified that the CSE evaluating motorized size reduction of uranium metal in Building 9212 does not consider the potential for holdup in an associated motor enclosure. In order to resolve this issue, production personnel cleaned out the area in question and containerized accumulated material for further evaluation. The cleanout activity identified only gram quantities of U-235 in the motor enclosure that accumulated over the course of several years. NCS engineers committed via the PNI process to revising the CSE and identifying new controls that monitor for accumulation in the motor enclosure. NCS engineers also recently evaluated drip pans under safe bottle racks stored in Building 9212. The drip pans are of a thickness that may allow for accumulation of fissile solution in a manner that is not evaluated within the CSE. NCS engineers walked down the storage area and noted that most drip pans have holes that preclude accumulation of fissile solution, though they also noted that some pans did not include these holes. As a part of the PNI process, the NCS engineers suggested that production personnel move safe bottles stored in racks positioned over drip pans without holes and store them in a different location. NCS engineers will re-evaluate the storage area before returning the affected storage locations to service.