

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 20, 2015

TO: Steven Stokes, Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending November 20, 2015

Building 9212: In December 2013, the contractor completed installation of a new ventilation system for E-Wing operations. The system has a backflush feature that allows dust buildup on the cartridge filters to be collected (see 4/26/13 report), but to date this feature has not been effective at freeing dust from the filters. Recently, four filters were removed from the system and their fissile mass loading, as measured by non-destructive assay, exceeded the nuclear criticality safety (NCS) administrative mass limit. The mass loading was well below the applicable subcritical limit for ^{235}U and responsible NCS personnel were able to quickly issue an addendum to the associated NCS analysis to allow further processing of the filters. CNS engineers postulate that the filters have excess surface area and are working with the manufacturer to evaluate if a filter with fewer pleats will increase the effectiveness of the backflush feature.

Conduct of Operations: In August 2015, the CNS Senior Director for Production Operations implemented a standing order to increase oversight in Building 9212. The primary function of the oversight activities was to monitor procedural adherence and verify operations are being conducted with an appropriate level of formality. The standing order required daily Senior Supervisory Watch (SSW) visits and a minimum of 20 hours of oversight per week by Action Office Representatives (AORs). The October SSW monthly report indicates that October was the sixth consecutive month in which the number of visits exceeded the number planned. This increased oversight can be attributed to the standing order and efforts to revitalize the SSW program (see 9/18/15 report). The standing order was recently cancelled as CNS management noted improved procedural compliance in Building 9212 and an overall decreasing trend in identified areas for improvement. The October SSW report indicates that a future area of focus will be improving the communication between Production line management and SSW personnel to ensure that oversight is arranged for unique, high-hazard Production evolutions.

Aging Infrastructure: Late last week, a portion of the Y-12 site lost electrical power due to a failed component (a degraded fuse cutout insulator) associated with a power line transformer. The failed component caused a cascading loss of power event that affected Buildings 9720-5 and 9206. Both buildings lost power and had to conduct unplanned entries into limiting conditions of operation (LCOs) due to loss of operability of their criticality accident alarm systems (CAASs). CNS's Power Operations personnel and line crews were able to replace the failed component and restore power in about three hours. Upon restoration of electrical power, operations personnel restored the CAASs operability, performed surveillances to ensure proper function, and exited the LCOs.

NPO Oversight: The NPO organization does not have a structural engineer on staff and the site reps have previously noted to NPO management that this is a weakness in their ability to provide oversight of CNS's actions to address the ongoing structural degradation at Y-12. NPO recently arranged for a structural engineer working for DOE's Oak Ridge Office (ORO) to be detailed to Y-12 for several weeks to provide structural oversight support. The site reps accompanied NPO and DOE personnel on a walkdown of areas with noted structural degradation in Building 9204-2 (see 10/2/15 report). In addition to the walkdowns, the ORO structural engineer is reviewing the design calculation for the steel frame that CNS plans to install under the cracked concrete beam discovered earlier this year (see 7/10/15 report).