

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 28, 2016

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending November 25, 2016

Building 9995/Fire Protection: Last week, a sprinkler head located inside radiologically-contaminated ductwork in the analytical chemistry facility (Building 9995) discharged unexpectedly and flooded several areas of the facility. The fire department responded to the scene promptly, isolated the water supply to the facility, and initiated recovery actions with guidance from the spill response coordinator and representatives from nuclear criticality safety (NCS), radiological control, industrial hygiene and industrial safety. As part of the cleanup effort, radiological control technicians ensured that any flooded areas of the facility were controlled for potential radiological contamination, surveyed, and decontaminated as necessary. At no point during the response did radiological contamination spread beyond the facility boundary. The recovery team made sufficient progress in spill cleanup to allow most analytical chemistry operations to resume within 24 hours of the event.

Following the spill cleanup, CNS fire protection engineers visually inspected the sprinkler head and found that it had suffered a mechanical failure at the arms that connect the base of the head to the deflector. CNS has contacted the manufacturer to determine if any other heads at Y-12 were produced as part of the same lot and if any other customers have experienced a similar failure. The sprinkler heads in this ductwork are corrosion-resistant and are scheduled for replacement every five years (this particular head had approximately two years of service life remaining). This fire suppression system is not credited in the Building 9995 safety basis.

Highly Enriched Uranium Materials Facility (HEUMF): The high efficiency particulate air (HEPA) filters that are part of the credited safety-significant HEUMF secondary confinement system (SCS) reached their 10-year maximum life criterion on November 20, 2016. The 10-year limit is codified in CNS's HEPA filtration procedure, consistent with DOE directive recommendations. Earlier this month, CNS determined that replacement filters had not been procured in time to allow for filter replacement prior to exceedance of the 10-year limit. CNS issued a nonconformance report extending the life of the filters for 90 days and identified two compensatory measures: to perform an aerosol test on the existing filters and to perform monthly reviews of the pressure drop across the filter bank. CNS has initiated procurement actions, and the replacement filters are being tested at the DOE filter test facility prior to shipment to Y-12.

Material-at-Risk Reduction: Last week, CNS Y-12 readiness assurance personnel completed an implementation verification review (IVR) of the safety basis supplement that authorizes the storage of legacy materials in HEUMF (see 9/30/16 report). These materials are currently stored in the 9215 Complex and their transfer to HEUMF will represent a key achievement in site risk reduction efforts. The IVR team identified four findings that generally involved failures to fully implement controls or supporting assumptions in the safety basis supplement. HEUMF operations management resolved all findings prior to completion of the IVR. The safety basis supplement is now effective and CNS plans to begin transferring the subject legacy materials to HEUMF next month with the goal of completing the transfer campaign next quarter.