

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 26, 2017

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending June 23, 2017

M. Sautman was at Y-12 to augment resident inspector coverage.

Nuclear Criticality Safety (NCS): Last week, contractor NCS staff briefed NPO on the status of actions to address an NPO issue with the NCS analysis of mop use in fissile solution processing areas (see 5/19/17 report). To address NPO's issue, contractor NCS staff developed a new NCS evaluation (CSE) that analyzes spill cleanup and decontamination activities in Building 9212 large geometry exclusion areas. This CSE is approved, but not implemented. CNS engineering management did not give a projected implementation date, but noted that procurement of items required for implementation (e.g., new mop head storage racks) is underway. CNS engineering management committed to provide routine status updates to NPO.

Currently implemented CSEs do not analyze the presence of mop heads during a fissile solution spill. The new unimplemented CSE will resolve this issue by implementing mop head storage racks. However, in the interim, the practice of placing mop heads on the floor in fissile solution processing areas is authorized. During the NPO briefing, contractor NCS staff presented the basis for their conclusion that a spill in the vicinity of mop heads is bounded by current CSEs. NCS staff judged that any absorbed solution exceeding the analyzed spill depth would be sufficiently diluted by the mop head. They also cited anecdotal evidence, such as the fact that they have always found mop heads spaced at least one foot apart. Following the briefing, the resident inspectors expressed concerns to cognizant NPO and CNS staff that the mop head spacing observation was not protected as a control and certain parameters presented were not sufficiently defined. This week, contractor NCS staff presented to NPO personnel and the resident inspectors a previously developed, albeit draft, model of a subcritical configuration that bounds the scenario in question if a minimum of 12 in. spacing is maintained between mop heads. CNS production will issue a standing order implementing the spacing requirement.

Highly Enriched Uranium Materials Facility (HEUMF): This week, an HEUMF worker identified several drums that were erroneously located in open floor storage. Because the drums were coded to reflect that they contained material requiring further characterization, they should have been placed in a temporary staging location where they would have been subject to additional controls. During the fact-finding meeting for the event, facility management identified an error in the procedure used to verify that materials meet applicable safety basis and NCS-related requirements prior to receipt. The procedure erroneously listed the material form sub-code applied to these drums as acceptable. NCS personnel subsequently evaluated the material in question and determined that the drums were authorized for open floor storage. Facility management also identified corrective actions during the fact-finding meeting to revise the procedure and, in the interim, issue a timely order directing that any materials labeled with the sub-code in question be placed in temporary staging. The resident inspectors note that even though this procedure implements NCS and safety basis controls, it is categorized as an administrative procedure and is thus not subject to certain use requirements (e.g., placekeeping, protocols for suspending inadequate procedures) reserved for technical procedures. Additionally, CNS has no process that expedites small revisions to administrative procedures and must utilize timely orders to implement necessary changes while the associated procedure undergoes revision. The resident inspectors shared their concern with CNS management that administrative procedures implementing safety-related controls can remain effective with known errors while they undergo formal revision.