

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 8, 2018

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending January 5, 2018

Building 9212: In the last week of calendar year 2017, Enriched Uranium Operations (EUO) personnel began the “briquette blitz,” during which it is dedicating all casting resources to briquette processing for a period of several months. EUO management planned this campaign in order to significantly reduce the number of briquettes in storage after several storage boxes containing briquettes exhibited signs of thermal stress from uncontrolled exothermic reactions (see 8/18/17 report).

In order to begin the briquette blitz, Nuclear Criticality Safety (NCS) engineers had to address their recent observation that the casting NCS evaluation does not consider the possibility for inadvertent uranium accumulation under casting line hoods (see 12/15/17 report). EUO suspended casting operations in December as a result of this issue. NCS engineers recently issued a temporary addendum to the casting NCS evaluation that established new mass limits under the hoods, mandated weekly inspections and/or cleanouts of certain areas where uranium accumulation had previously been identified, and authorized resumption of casting operations. They are currently developing a new suite of NCS controls that they will implement in a revision to the NCS evaluation later in calendar year 2018.

Building 9204-2E: An assemblyperson inadvertently selected an incorrect alarm set point for a unit that was loaded into an oven in December. The assemblyperson scanned a barcode to automatically input the correct oven temperature profile but was also required per procedure to manually enter an oven alarm set point. He selected the incorrect set point from a table included in the procedure’s appendix that applied to several different units. Because this alarm set point was lower than the maximum temperature included in the correct temperature profile, workers identified the issue when the oven warmed to the set point temperature and alarmed. In response, workers shut the oven down and facility management suspended operations. This week, CNS held a fact finding meeting to further discuss the issue. During the meeting, attendees noted that there was no impact to the unit. They also identified that the procedure appendix utilized by the assemblyperson was not clearly written and they thus committed to revising the procedure appendix. Because the event was the result of an unclear procedure, the resident inspectors attended the fact finding meeting. The resident inspectors noted during the meeting that a similar event recently occurred in Building 9204-2E after an assemblyperson inadvertently entered incorrect parameters while processing a part (see 12/8/17 report). In that case, the assemblyperson also chose the incorrect parameters from an unclear appendix that applied to several different parts. In response to the resident inspectors’ concern, facility management noted that they have evaluated whether similar procedures might also require revision and concluded that no additional revisions were required.

ORNL Solid Waste Storage Area (SWSA) Operations: This week, UCOR declared a potential inadequacy in the safety analysis after confirming that two chemical traps stored in a building in SWSA-5 contain UF₆. This introduces a chemical hazard that is not analyzed in the Melton Valley Solid Waste Storage Area documented safety analysis. UCOR is finalizing compensatory measures and has initiated an unreviewed safety question determination.