

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 19, 2018

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros, Resident Inspector
SUBJECT: Oak Ridge Activity Report for Week Ending March 16, 2018

R. T. Davis was at Y-12 to augment resident inspector activities.

Highly Enriched Uranium Materials Facility (HEUMF): CNS has determined that a potential inadequacy in the safety analysis identified earlier this month (see 3/2/18 report) is a positive Unreviewed Safety Question. Sixteen drums stored in the facility since approximately 2010 contain material forms not currently considered in HEUMF design basis fire analyses. HEUMF facility operations management issued a standing order implementing compensatory actions (e.g., containerization requirements, suspension of hot work activities in impacted storage areas). Safety analysis engineers are currently drafting an evaluation of safety of the situation and justification for continued operations, due in April.

Building 9212/Briquette Blitz: Enriched Uranium Operations (EUO) management paused the “briquette blitz” in response to a recent briquette oxidation event that occurred during crucible loading operations (see 2/23/18 report). During the event, a batch of briquettes spontaneously ignited after operators attempted to dislodge the briquettes from the can in which they were stored. All briquette casting operations were paused immediately after the event. Nuclear Criticality Safety (NCS) engineers subsequently wrote a temporary addendum to the casting operations criticality safety evaluation that further addresses spilled oxide during casting operations. EUO management utilized this addendum to resume briquette processing operations in certain portions of the casting line. The briquette blitz, which utilizes all casting resources to process briquettes, remains paused while EUO and NCS personnel further evaluate the potential for spilled oxide in portions of the casting that are more challenging from an NCS perspective. They are also evaluating improvements to procedures governing briquette processing operations. EUO management is currently working to restart the briquette blitz in April.

Building 9212: EUO management restarted reduction operations last week. They paused operations at the beginning of Fiscal Year 2018 in order to address system maintenance issues and evaluate potential usability improvements to the reactor knockout operations procedure. The resident inspectors previously identified that this procedure contained an excessive number of conditional steps that made it challenging to execute (see 9/1/17 report). The resident inspector reviewed the revised procedure, which also implements an updated NCS control set that engineers developed to prevent unexpected quantities of uranium holdup in the reduction sand separator (see 6/2/17 report), and notes that it is generally improved. The resident inspector also observed reactor knockout operations last week and identified no issues.

Building 9204-2E: Last week, an NPO facility representative identified that a worker did not follow a procedure step while preparing an adhesive used during assembly operations. The adhesive consists of two components. The procedure governing adhesive preparation requires that both components be at room temperature before workers mix them together. One component is stored in an oven at an elevated temperature in order to prevent it from solidifying; workers typically allow this component to cool by setting it in a hood for an approximate period of time. The NPO facility representative questioned whether they were following the governing procedure, given they do not have a calibrated thermometer available to determine the component’s temperature. This week, CNS held a fact finding meeting to evaluate this event, and committed to reviewing the adhesive preparation process for potential improvements.