DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 11, 2017

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending December 8, 2017

ORNL Solid Waste Storage Area (SWSA) Operations: The resident inspectors recently observed UCOR waste drum retrieval operations in SWSA-5 (see 11/3/17 report). The activity included several new specific administrative controls (SAC) to address a postulated deflagration-to-detonation transition (DDT) hazard. Following completion of the activity, the resident inspectors evaluated the applicable documented safety analysis (DSA) and UCOR administrative procedures to identify programmatic opportunities for improvement and/or broader opportunities to improve the implementation of credited controls.

The resident inspectors recently met with UCOR and OREM representatives to discuss two primary observations from this evaluation. First, the level of detail in the UCOR procedure on work package usage could be improved. UCOR administrative procedures allow workers to use work packages (vice technical procedures) for high hazard, single use activities. However, these administrative procedures contain no guidance on the applicability of more rigorous execution techniques (e.g., "in-hand" use, placekeeping, reader-doer) for high-hazard or infrequent activities. Second, the resident inspectors identified some structures, systems, and components (SSC) that were not credited in the DSA, but whose failure would result in a SAC failing to perform its safety function. Citing the critical role of these SSCs and relevant language from DOE-STD-3009-94, the resident inspectors questioned whether they warranted safety-significant (SS) classification. Such a designation would drive more specific performance criteria and in turn better demonstrate the effectiveness of the overall control strategy. OREM and UCOR representatives do not believe these SSCs warrant SS classification. Though specific performance criteria were not developed for these SSCs, they noted that the SAC bases in the technical safety requirements (TSR) contained detailed information regarding how the SSCs would perform their support functions. The resident inspectors plan to have additional discussions with OREM on these topics.

Highly Enriched Uranium Materials Facility (HEUMF): This week, during a TSR surveillance of the SS diesel fire pump, workers noted a lack of flow from the associated coolant system. As such, HEUMF facility management reported a performance degradation of the diesel fire pump. Workers identified the same issue during a TSR test in November; in response, they replaced a solenoid valve on the system and successfully returned the diesel fire pump to service (see 12/1/17 report). Maintenance personnel replaced the solenoid valve again this week, and also replaced several upstream components that they believe may have contributed to the issue. Facility management has committed to further evaluating the components removed from the system to better identify the cause of the recurring maintenance issues.

Building 9204-2E: An assemblyperson inadvertently selected incorrect parameters for a part that was processed in early November. Later that month, a production support specialist identified the issue while preparing a second part for processing. CNS held a fact finding meeting this week to further discuss the issue. During the meeting, attendees identified that the assemblyperson picked the incorrect parameters from a procedure appendix that specifies processing parameters for various part types. They noted that the appendix includes entries that have not been used for many years, and that the appendix is written in a manner that may lead to confusion. As such, they committed to revising the procedure appendix. A product engineer ultimately determined that the part was acceptable for use.