

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 17, 2017

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending January 13, 2017

Building 9212: This week, CNS maintenance personnel replaced degraded flexible tubing on the primary extraction (PX) system. The site representatives reviewed the associated work instruction, observed portions of this work, and provided suggested work instruction improvements to the responsible maintenance supervisor. The tubing was originally installed as part of a metal production improvement project outage on the PX system, but degraded shortly after installation (see 12/2/16 and 6/3/16 reports). The replacement of this degraded tubing represents the last maintenance job planned as part of the PX outage, which began in May 2016.

Transuranic Waste Processing Center: The site representatives observed mock-up training held to familiarize North Wind operators with the tools and procedures necessary to complete upcoming carbon cap installation and remediation of previously macro-encapsulated, unventilated waste drums. These activities are included in a revision to the facility documented safety analysis that the acting OREM manager approved in November 2016. Operators will install carbon caps over existing filter vents on drums known to emit radon. These caps are designed to capture radon without interfering with the credited ability of the filter vents to prevent accumulation of hazardous gases within the drums. During mock-up training, the site representatives observed the simulated use of a new tool that will be used to verify that carbon caps, once installed, do not block the flow of gases from drums to the surrounding atmosphere. The site representatives noted that operators felt comfortable providing feedback during the mock-up training and generally believe that such feedback will result in improvements to the associated procedures.

Safety System Impairments: Within the last week, CNS encountered three conditions that resulted in unplanned limiting condition of operation (LCO) entries on safety-significant systems. Two of the conditions affected the secondary confinement system (SCS) for the Highly Enriched Uranium Materials Facility. The first involved a ground fault that resulted in the failure of an air handling unit (AHU). The on-duty shift manager subsequently entered the LCO for inoperability of the SCS isolation function because the SCS relies on AHUs to support the SCS's smoke detection and automatic isolation capability. CNS engineers performed a field evaluation of the AHU and identified an abrasion on a portion of electrical insulation that may have caused the ground fault. The second LCO entry was identical to the event that occurred several weeks ago in which a short duration loss of power event shut down several AHUs and impaired the SCS (see 12/16/16 report). The site representatives plan to meet with CNS system engineers next week to discuss SCS reliability.

The third condition was an alarm in the plant shift superintendent's office that indicated a potential issue with criticality accident alarm system (CAAS) annunciation capability on the roof of Building 9998 (part of the 9215 Complex). Upon being notified of the alarm, the Building 9215 shift manager attempted to perform a voice test in the affected area, but the intermittent nature of the alarm made it challenging to coincide the test with the alarm. As a result, the shift manager could not definitively verify CAAS audibility during the alarm condition and entered the LCO for partial loss of annunciation as a conservative measure. The condition also affected the Building 9212 CAAS and required an analogous LCO entry. The responsible system engineers are evaluating the cause of the alarm and have yet to determine whether the alarm created a condition that rendered the CAAS inoperable.