

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 23, 2017

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending January 20, 2017

Building 9204-2E: Last week, Assembly/Disassembly Operations (ADO) personnel began a new canned subassembly (CSA) dismantlement campaign. The operation did not require a readiness activity; however, engineering and production personnel provided extensive oversight of initial operations. As with other recent dismantlement campaigns (see 1/29/16 report), ADO began operations using a generic procedure that governs dismantlement operations on several different weapon programs. The site representatives observed portions of the activity and found the work crew appropriately methodical as they paused work on several occasions to address procedure, job hazards analysis, and equipment inspection questions. The responsible process engineer also observed these operations to gather information that she will use to develop a procedure tailored to this weapon program.

Safety System Performance: Criticality Accident Alarm System engineers determined that last week's alarms (see 1/13/17 report) did not reflect a condition that impaired the operability of the system. CNS withdrew the performance degradation reported as a result of these alarms.

As a follow-up to other reportable performance degradations, the site representatives met this week with the Highly Enriched Uranium Materials Facility (HEUMF) secondary confinement system (SCS) cognizant system engineers. The purpose of the meeting was to discuss the conditions leading to recent SCS performance degradations and if these conditions reflect an issue with the reliable performance of the system. In general, the conditions leading to reportable SCS performance degradations during the last two years (six total) can be binned into two groups: short duration loss of power events that led to partial activation of the SCS (see 12/16/16 report) and air handling unit (AHU) failures that resulted in an impairment of the system's smoke detection capability (see 1/13/17 report). To address the first bin, HEUMF engineers are implementing a design change that will force the SCS to fully activate following short duration loss of power events (see 12/16/16 report). Regarding the second bin, HEUMF and maintenance engineers have worked to improve the predictive maintenance on AHUs and minimize the potential for unplanned failures. The most recent annual vital safety system walkdown report for the SCS contains a detailed reliability analysis and includes a discussion of these actions. The report also has data showing limited corrective maintenance on the system, timely and satisfactory performance of surveillances and calibrations, and no issues with the execution of scheduled preventive maintenance. Given this data, the system engineers do not believe that these conditions reflect an issue with the reliable performance of the SCS.

Nuclear Criticality Safety (NCS): CNS personnel held a critique this week to discuss an NCS technical deviation (TD) that was erroneously allowed to expire. The TD identified an additional administrative control that allowed workers in multiple facilities to use 2-cylinder chip dollies even though cylinders on the dollies might lean during movement and impact analyzed spacing (see 7/3/15 report). Criticality safety officers and engineers believed that a new spacer installed on dollies to stop cylinders from moving rendered the TD unnecessary and thus allowed it to expire. A week later, responsible criticality safety personnel learned that the spacer did not stop all cylinder movement; as such, the TD was required. Responsible shift managers suspended use of the dollies until criticality safety personnel issued a new TD. During the critique, CNS personnel noted that they did not properly disseminate new information that impacted the TD and also identified that there is no defined process to ensure orderly expiration of TDs. Management from multiple disciplines committed to evaluate and improve the TD process.