**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

September 11, 2020

**TO:** Christopher J. Roscetti, Technical Director
**FROM:** Matthew Duncan and Brandon Weathers, Resident Inspectors
**SUBJECT:** Oak Ridge Activity Report for Week Ending September 11, 2020

**Radiological Protection:** Y-12 radiological protection personnel recently issued a quarterly evaluation report. Through the third quarter of fiscal year 2020, CNS reported six personnel contaminations. So far in the fourth quarter, one additional person was contaminated. The maximum contamination level detected in these events was below the threshold for being reportable per DOE Order 232.2A. The number of personnel contaminations at this point in fiscal year 2020 is a notable decrease from fiscal year 2019, when 38 contaminations occurred. The current fiscal year had an extended period of reduced operations due to the COVID-19 situation (see 4/10/20 report). CNS tracks the rate of personnel contaminations per 10,000 radiological work permit entries to normalize the data based on the level of work activities. This metric showed that the decrease in the number of personnel contaminations also correlated to a much lower rate of personnel contaminations per radiological work permit entries. CNS found that 90% of the radiological protection issues identified in the third quarter were related to control of boundaries, posting and labeling, contamination control, and housekeeping.

Radiological protection personnel performed an organizational surveillance of the external dosimetry program's compliance with DOE Standard 1095-2018, *Department of Energy Laboratory Accreditation Program for Personnel Dosimetry*. The reviewer identified nine findings and fourteen weaknesses. Among the findings, the reviewer found that the program was understaffed at the technician and technical support levels and this understaffing prevented the program from performing ongoing monitoring of program metrics and continuous program improvement. The reviewer also found that dosimeter reader maintenance was not being performed in accordance with the governing procedure. Personnel had not performed weekly maintenance on one reader for several weeks, but continued to use it for routine dosimeter processing. Overall, CNS concluded that Y-12 has a compliant external dosimetry program with respect to the requirements of the Department of Energy Laboratory Accreditation Program.

**Nuclear Criticality Safety:** Last week, CNS nuclear criticality safety personnel discovered an electrical motor that was not complaint with the large geometry exclusion area (LGEA) program requirements that apply to the location where it was found. The motor did not have the appropriate marking to indicate that it had been approved by nuclear criticality safety personnel to be left unattended in the LGEA. Personnel responded appropriately per the applicable abnormal operating procedure and established administrative control of the area. In June, CNS maintenance personnel installed a new motor for a pump assembly in this area and the old motor was stored near the pump assembly until it was discovered last week. Maintenance personnel turn over waste from their work activities to production personnel for disposition. This is the second event in the past two months where production personnel were not fully cognizant of nuclear criticality safety aspects regarding the disposition and handling of waste from maintenance activities. During the critique meeting, the attendees noted ongoing corrective actions from the first event. Earlier this year, a CNS independent assessment team identified significant issues with the LGEA program (see 1/17/20 and 3/15/20 reports).