DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 12, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Clinton Jones, Resident Inspector
SUBJECT: Oak Ridge Activity Report for Week Ending July 12, 2024

Site Water Supply: The resident inspector (RI) attended an event investigation and the subsequent critique for a city water line break that supplies the only in-service water tower for the site (see 6/21/2024 report). The Y-12 Field Office (YFO) maintenance program manager arranged a walkthrough of the system based on several new questions that were raised by both YFO and the RI about the categorization and maintenance of the control systems for the filling and swapping of the water towers. Prior to the walk through, the RI reviewed the Y-12 National Security Complex Safety Analysis Report (SAR) that was effective as of June 12, 2024. The description of the water towers includes detail about automatic refill of the tanks when they drop below a certain level and automatic transfer between tanks if the in-service tank falls below a specified minimum level. The current condition of the water towers contradicts these statements due to the automatic fill and transfer system being non-functional for approximately 5 years. The utility operators are tasked with manually filling the tanks, checking water levels, and manually transferring site water usage between tanks to maintain water quality. Due to this automatic system being non-functional, the site accepts added risk by relying on personnel to perform duties that were originally automated and losing the ability of the system to shut down water usage independently when the levels reach the required reserve for the fire protection system. In addition to the site SAR, the alarm response procedure for the tower water system was outdated. It references the automatic notification system that is non-functional in the description as well as automatic functions of the system such as pump starts/stops and valve manipulation. After the walkthrough that included personnel from YFO, CNS, and the RI, categorization questions were resolved, and CNS took an action to address the discrepancy in the SAR. The RI is following the issues related to the automatic control system in the water towers and the needed updates to both the alarm response procedure and the site SAR.

Building 9215: The RI attended an event investigation and the critique for oil that was signed off to be released from radiological controls and restrictions for recycling but failed a last line of defense radiological activity monitor. In March of 2024, a production support specialist initiated the process to have several drums and intermediate bulk container poly-totes of used oil, from the depleted uranium process area, sampled to allow recycling and "free release" from radiological controls so the oil could eventually be shipped off site. The sample crew obtained samples of the oil and did not note any separation during the sampling process. The results of the sampling from the plant lab fell within the limits for free release. Radiological control technicians (RCT) are required to perform surveys with hand-held radiological friskers for radiation levels as well as smears to evaluate for loose surface contamination on any items that are to be free released from radiological controls. The RCTs performed the required surveys on the oil drums and totes prior to the shipment being sent through the main portal gate and did not detect any discernable levels of radiation or contamination, but the oil set off the main portal radiation alarm. After the shipment of oil was returned to the building, a noticeable separation of layers had occurred within one of the totes. CNS plans to resample the tote using the separation process to verify the results from the initial sample and evaluate the sampling process moving forward.