

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 24, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending December 24, 2021

A year end summary of key developments at Oak Ridge.

Oak Ridge Environmental Management: Isotek completed processing the canisters that were selected for the Building 2026 Oak Ridge Oxide Processing campaign (see 6/28/19 report). With the last canister of the campaign, Isotek successfully performed an additional refinement in the thorium extraction process to improve the purity level. Isotek recently completed integrated testing of the equipment that will be used for the Initial Processing Campaign in the hot cells. Isotek plans to start the Initial Processing Campaign in 2022 once the contractor and federal operational readiness reviews are completed.

Y-12 Projects: CNS installed the electrorefining gloveboxes and associated major equipment in Building 9215. CNS is finalizing the electrical installation and should transition into commissioning in 2022. Chemical operators have been performing work using a prototype electrorefining system with surrogate material for several years to gain operating experience and provide feedback on the operating procedures. The resident inspectors have monitored the operators work on the prototype system and consider this a good example of integrating operators into the process prior to readiness activities (see 9/3/21 report).

The Building 9212 Transition Strategy Program isolated eight out-of-service systems. CNS considered one of those systems, a chip burner and calciner, to be the most complicated system deactivation that they have completed in Building 9212. The chip burner and calciner deactivation job was performed in seven phases and resulted in the removal of approximately 2 kg of U-235 holdup. Importantly, isolating the chip burner and calciner resulted in disconnecting the out-of-service portions from two active systems. CNS has completed one of the ten Building 9212 system isolations planned for fiscal year 2022.

Building 9206 personnel completed 18 system deactivations and removed approximately 4 kg of U-235 holdup. Notably, they are finished with deactivations for all major systems that were used to process enriched uranium. Their upcoming work in fiscal year 2022 focuses on depleted uranium systems.

Uranium Processing Facility: CNS submitted revision A of the documented safety analysis and technical safety requirements to NPO for review and approval (see 9/17/21 report).

The structural shells of the Main Process Building, the Salvage and Accountability Building, and the Process Support Building are complete with some openings in each building for the installation of large equipment skids and gloveboxes. This year, several large pieces of process equipment were moved into the buildings, including tanks and portions of the casting glovebox line. CNS also began the concrete footing installation for the connector between the Highly Enriched Uranium Materials Facility and the Uranium Processing Facility.