

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Steven Stokes, Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending November 7, 2014

R. Rauch was out of the office this week. Staff members D. Andersen, Z. Beauvais, R. Jackson, D. Kupferer, and R. Oberreuter were at Y-12 to discuss the revised Safety Design Strategy for the Uranium Processing Facility with NPO and CNS.

Building 9212: Tray dissolver units are used to dissolve uranium metal for processing and each unit is connected to a ventilation system with a scrubber. Stack 47 supports a separate ventilation system that draws from a hood over the tray dissolvers. This separate system provides additional protection to the workers by capturing contaminated vapors released when the lid of a tray dissolver is opened during operation. The hood directs these contaminated vapors to a fan on the roof and out stack 47 but there are no scrubbers or high efficiency particulate air filters in this system (hood, fan, and stack). In addition, the probe in the stack that monitors this exhaust is designed to capture dry particulate but this monitoring system is not designed to capture and monitor the amount of vapor-born contamination released.

On October 20, 2014, a CNS Environmental Sampling Services (ESS) work crew was changing out filter paper in the stack monitors for exhaust stacks 47 and 114 when they noted abnormal stains on the exterior of stack 114. It appeared that a brownish substance had been ejected from stack 47 onto stack 114 and the surrounding roof. The ESS crew notified the 9212 Balance of Complex Shift Manager who then contacted the Clean Air Compliance Engineer, Radiological Controls (RADCON), and Nuclear Criticality Safety personnel. RADCON personnel surveyed the area and identified that the ejected material had low levels of contamination (the highest reading near the stacks was about 8,000 dpm/100 cm² alpha) and was spread over an area of ~2,800 square feet on the roof of 9212 and ground-level areas adjacent to the facility. The Shift Manager directed the fan associated with this stack secured and RADCON established radiological boundaries. After the fact finding meeting, personnel from the Processing and Supply Operations and the RADCON organizations conducted decontamination of roof and ground areas to the extent practicable. Operations personnel have sent samples of this material for analysis to assist in verification of the source. CNS is creating a corrective action plan, which is scheduled to be completed by December 17, 2014. In addition, the CNS Y-12 Engineering Senior Technical Advisor said that CNS will evaluate this event with the perspective of minimizing worker dose to as low as is reasonably achievable.

Building 9202 (Technology Development): CNS Y-12 Development managers have extended the suspension of all the organization's hands-on work from what was originally only planned for a one-day pause (see 10/10/14 weekly report). This on-going suspension has allowed for completion of an extent of condition review that looked at adverse physical conditions in the work spaces and the initiation of an independent review of work control documents. The CNS Development manager arranged for a member of the Readiness organization to perform a thorough review of the work packages to ensure appropriate hazard analysis and pedigree of controls are identified. Packages have been prioritized and will be individually released to resume work once identified issues are corrected.

Transuranic Waste Processing Center (TWPC): The contractor has determined that an unreviewed safety question exists associated with the cylinder detonation hazard that was not evaluated in the safety analysis (see 10/24/14 weekly report). The pressurized cylinders have been placed into a concrete cask and the cask has been separated from the hot cell. Workers installed a metal transport lid on the cask and isolated it from other waste containers.