

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 May 23, 2014

M. Dunlevy was at Y-12 to augment site rep coverage.

Oxide Conversion Facility (OCF): Last week, the site rep observed a vendor, with support from Enriched Uranium Production (EUP) personnel, successfully overpack the suspected leaking hydrogen fluoride (HF) cylinder into a Department of Transportation-compliant configuration and transport the container off site (see 5/2/14 report). The vendor participants received specific training on OCF hazards and operations and were able to practice with the HF dock forklift and an empty cylinder prior to the operation. The Y-12 Fire Department (FD) stationed an Incident Commander at Building 9212 during the operation in the event that an emergency response was required. No HF detectors alarmed during the operation. In the coming weeks, B&W plans to observe vendor activities to inspect and repair the HF cylinder.

Building 9212/Nuclear Criticality Safety (NCS): This week, EUP personnel completed the first Primary Extraction (PX) raffinate transfer to an uncontrolled NCS geometry tank since the in-line gamma radiation monitor (gamma monitor) was found to be inoperable (see 4/11/14 report). The gamma monitor remains inoperable; therefore, to support this transfer, NCS management approved an addendum to the criticality safety evaluation for the PX process. The addendum captures a new NCS control strategy that will be used temporarily until the gamma monitor is returned to operability. The new strategy requires EUP personnel to verify that the ²³⁵U concentration in the raffinate stream is acceptable prior to transfer using two measurement techniques. The first technique involves measuring the ²³⁵U concentration of two independent raffinate samples using Kinetic Phosphorescence Analysis (KPA). This technique existed prior to the gamma monitor operability issues and is credited as a Specific Administrative Control. The second technique is new and measures the ²³⁵U concentration in the raffinate using in situ non-destructive assay (NDA). Engineering personnel demonstrated the effectiveness of the new control through a series of experiments that compared the ²³⁵U concentration in the raffinate stream measured using in situ NDA to the concentration measured using KPA.

Fire Protection: Last weekend, during a surveillance test, Y-12 FD personnel discovered that there was no water supplied to the Building 9826 fire suppression system. Building 9826 is a non-nuclear facility outside the protected area; however, the fact-finding meeting for this event identified some preliminary contributing causes that were similar in nature to the inadvertent isolation of the fire suppression system in Building 9201-5 (see last week's report). For example, both incidents resulted in part from an overreliance on inadequate piping drawings. Utilities and FD personnel are in the process of verifying that each of the 410 fire protection systems at Y-12 have a water supply by flowing water at each system's main drain valve.

Transuranic Waste Processing Center (TWPC): As reported last week, UCOR declared a potential inadequacy in the safety analysis (PISA) based on new information indicating that certain stored drums have a potential for a detonation. This week, the TWPC contractor, WAI, also declared a PISA based on the same new information. TWPC stores legacy containers with similar packaging configuration and contents for which a detonation hazard may be applicable. TWPC facility management has issued a Timely Order to prohibit handling these types of containers until a more thorough evaluation can be completed.