

## 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 October 9, 2015

**Building 9995:** Late last month, while performing high capacity evaporator (HCE) operations in Building 9212, alert chemical operators noted that the process condensate had turned an unusual color. Operators immediately made the appropriate notifications and shut down the system. Shortly thereafter, the operators sampled, drained, and flushed the abnormally-colored condensate. Analysis of the samples confirmed the presence of higher than normal chloride levels. The HCE feed for this run included residual material from solutions that were processed at Building 9995 (the site's analytical laboratory) and had been transferred to Building 9212 for processing. Analytical laboratory personnel evaluated the source streams for the samples and found that these solutions had higher levels of hydrochloric acid (HCl) than expected for samples that primarily contain uranyl nitrate and would likely be designated for recovery in Building 9212. During the fact finding meeting, the supervisor for the radiochemistry laboratory in Building 9995 confirmed that less experienced technicians had used HCl to dissolve certain metal samples more frequently than technicians had historically. Further, the governing sample preparation procedure did not provide specific direction on the extent to which HCl should be used. The proposed corrective actions include sampling solutions for chlorides before transfer to Building 9212 and evaluating potential changes to the lab's approach to using HCl.

On a separate topic, NPO wrote a letter to CNS last April providing comment and direction on the efforts to change the hazard categorization of selected nuclear facilities at Y-12 (see 1/9/15 report). In that letter, NPO requested an analysis of alternatives for future operation of the Analytical Chemistry Organization (ACO) considering the ongoing age-related degradation of Building 9995. During the last several years, Building 9995 has experienced equipment failures in systems such as air conditioning, electrical distribution, and utility piping (see 12/12/14 report). Last month, CNS submitted a preliminary analysis with recommendations for options for a more detailed analysis. These options include relocating ACO operations to an existing facility inside the protected area or construction of new facility outside the protected area.

**Material-at-Risk (MAR) Reduction:** Last year, the Uranium Program Manager challenged NPO and CNS to prioritize the acceleration of MAR reduction in the site's enriched uranium processing areas. Recently, CNS completed a safety basis change that reduced the MAR limits in Building 9215 by approximately 63 percent. Last week, NPO approved this change to the Building 9215 Safety Analysis Report (SAR). The reduced MAR limit corresponds to a reduction of estimated off-site consequences from a postulated major fire by 39 percent. Earlier this year, CNS completed a similar change to the Building 9212's SAR (see 6/5/15 report) and plans to introduce reduced MAR limits in the SAR for Building 9204-2E next year.

**Highly Enriched Uranium Materials Facility (HEUMF)/Fire Protection:** In late April, maintenance workers discovered microbiologically-influenced corrosion (MIC) in the fire water piping in the HEUMF pump house during an activity to replace the jockey pump (see 5/1/15). Maintenance and engineering personnel conducted a series of inspections and confirmed that the presence of MIC was isolated to the pump house (see 7/31/15 report). This week, maintenance crews completed replacement of the fire water piping in the pump house and CNS is pursuing the services of a vendor to flush the pump house piping with an anti-microbial solution to further reduce the possibility of regrowth of the MIC.