

## 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 2, 2015

Staff member R. Jackson was at Y-12 to observe an independent peer review of the Uranium Processing Facility project.

**Nuclear Criticality Safety (NCS):** This week, CNS reported a deficiency in an NCS analysis. A concern with the subject analysis was initially raised last May when an engineer questioned an assumption regarding the configuration of fissile material for a set of drums in Building 9215. In June, after determining that the assumption could not be supported, NCS personnel performed an informal scoping calculation and found that the configuration of the drums would not remain subcritical during a water ingress upset condition. This week, after approximately three months attempting to gather additional information, CNS reported the deficiency in the NCS analysis and evaluated the deficiency as a potential inadequacy in the safety analysis (PISA). Operations Management department personnel determined that the deficiency had no potential to impact the Documented Safety Analysis and exited the PISA process; however, questions remain regarding the adequacy of the existing NCS control set for these drums. Per NCS direction, facility personnel segregated the drums and prohibited further handling without NCS permission. During the fact-finding meeting for this event and subsequent discussions with CNS and NPO management, the site reps raised a concern regarding the timeliness with which this deficiency was reported, the PISA process was entered, and compensatory measures were identified.

**Building 9204-2/Aging Infrastructure:** Last week, CNS Engineering arranged for a structural engineering consulting firm to conduct an evaluation of a concrete floor supporting Kathabar dehumidifying units on a rooftop structure of Building 9204-2. Preliminary observations from the consultant indicated that the degradation is worse than previously documented. Visual and non-destructive evaluations revealed that, in some locations, the concrete floor and rebar have thinned and the metal decking and steel frame members supporting the floor have indications of significant corrosion. Based on the consultant's preliminary observations, CNS management restricted access to the area until additional decking material can be installed over the degraded concrete. This degradation is in a different location from the recently discovered cracked concrete beam (see 7/10/15 report) and the spalled concrete slab from last year (see 3/21/14 report). The structural engineering consultant will continue his evaluation later this month.

**Training:** Last week members of the Board's staff observed a facility-level drill associated with retrieving an incapacitated operator from inside the Building 9204-2E environmental room. For purposes of the drill, one of the operators inside the environmental room went to the floor and became unresponsive. An operator outside the environmental room went to the shift manager's office and simulated a 911 call and returned to his work station. Another outside operator entered into the environmental room to assist removing the suit from the incapacitated individual. Members of the Y-12 Fire Department, who were pre-staged just outside of the Material Access Area (MAA) of the facility, responded and entered the environmental room. For ease of accessing the facility, the firefighters did not bring a gurney to the scene. In the event of a real emergency, the firefighters would enter the MAA through an emergency door with a gurney or backboard. Per the drill scenario, the firefighters were able to revive the injured operator, who then exited the environmental room under his own power, concluding the drill. The drill coordinator discussed much of the drill scenario with the participants prior to executing the drill, creating more of a practice and coaching, vice test, environment. Overall, the site reps believe this drill was a valuable learning experience for the Fire Department and operators.