

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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TO: Steven Stokes, Technical Director  
FROM: William Linzau and Rory Rauch, Site Representatives  
SUBJECT: Oak Ridge Activity Report for Week Ending January 29, 2016

**Building 9212:** In October 2015, an operator filled a sample bottle with contaminated material beyond a nuclear criticality safety (NCS)-based procedural mass limit. The contaminated material was a specific type of sand used in Building 9212 reduction operations that contains residual amounts of uranium-235. The responsible engineer for this system needed to send a sample of the sand to the site's Analytical Laboratory for analysis to determine the sand's particle size distribution as an input for a planned design modification. The responsible supervisor instructed the operator to collect a representative sample but did not give instruction on the quantity of material required nor note the NCS limit of 100 grams for uranium-bearing solids in sample bottles. The operator collected a sample that weighed 197 grams.

Earlier this week, an operator packaged this sample along with several other samples for transfer to the lab. The governing packaging procedure instructs operators to check to make sure the samples are within required NCS loading limits. Personnel missed a step in this "Reference Use" procedure that required verification that each container in the sample carrier was not over the specified NCS limit. After the sample was transferred from Building 9212, lab personnel immediately identified the overloaded condition and took administrative control of the sample. As part of the corrective actions from the event, CNS management directed temporary compensatory actions for all sample collection activities in Building 9212 to have direct oversight. In addition, all sample transfers to the lab have been suspended until associated procedures and processes are evaluated. Of relevance, senior supervisory watches (SSWs) had previously identified examples of less-than-adequate "Reference Use" procedure performance. CNS Y-12 Production management had been working for several months on a standing order that improves the performance standards for "Reference Use" procedures. The order, which was issued this week, removes the allowance for operators to perform procedure steps from memory.

**Nuclear Safety Oversight/Technical Procedures:** The CNS Y-12 Production organization's Action Office is staffed with a set of representatives (AORs) who are responsible for providing conduct of operations oversight and mentoring for Y-12 Production facilities. Historically, there has been approximately one AOR assigned to each Production facility, but a shortfall in AOR staffing following contract transition forced the three remaining AORs to increase their scope of coverage temporarily. Production management has recently hired three additional AORs.

This week, the site reps shadowed an SSW visit that doubled as a training session for one of the new AORs. The SSW representative and AOR observed a Building 9204-2E canned subassembly (CSA) dismantlement operation that had recently resumed after a several year hiatus. Operators used a technical procedure that was written in a generic fashion such that it could be applied to the dismantlement of CSAs for several different weapon programs. The procedure could be performed as written and the operators demonstrated good formality during its execution. However, the generic nature of the procedure made its execution cumbersome as the operators were required to mark an unusually large number of steps as "N/A" (not applicable) and make several awkward transitions between different performance subsections of the procedure. Recognizing these shortcomings, the responsible process engineer was observing the operation to gather information to be used for the development of a new procedure dedicated to this CSA type. The new procedure should be available in the next six weeks.