

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 9, 2010

TO: T. J. Dwyer, Technical Director
FROM: D. L. Burnfield and M. T. Sautman, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending April 9, 2010

Large Container Non-Destructive Examination: The site rep observed the Functional Area Manager(s) assessment of operations to perform computer-aided radiography inspection of large containers in the Low Activity Waste Vault. To perform this operation, riggers move the box to an elevated platform, which is then automatically positioned in front of an x-ray machine by computer-driven equipment. The x-ray machine operators use the computer-operated system to scan the box for non-compliant material and return the platform to the load/unload position for removal and storage. During this assessment, the computer-driven equipment that moves the platform unexpectedly shut down prohibiting the operators from completing the procedure. The operators did not immediately realize that the shift manager needed to approve the required procedure changes. They made the correct decision to call a time out only after being questioned by the site rep and then prompted by the facility rep. The shift manager, with the assistance of the operators and the functional area representatives, modified the procedure to allow movement of the platform; however, the equipment shut down once again. After the site rep identified that one of the air conditioning units in the trailer had been secured earlier in the day, contractor personnel reviewed previous operations and found that the equipment was prone to overheating. E-Area personnel are making further changes to the procedure, and the assessment is scheduled to resume next week.

L-Area: Shielded windows used a zinc-bromide solution as the shielding material during past reactor operations. Facility personnel noticed that these windows were leaking in August 2008. In October 2008, L Area personnel drained the zinc-bromide solution into 22 corrosion-resistant steel drums (55-gallon) and stored the drums in the purification area. However, the chemical inventory was not updated to reflect the zinc-bromide until April 2009, and the documented safety analysis (DSA) was never updated to add the 22 drums of zinc-bromide to the reportable quantity (RQ) totals. The DSA states that hazardous materials in excess of the RQ are not stored in the building. The mass of the zinc-bromide exceeds the RQ by approximately a factor of five. Engineering discovered the DSA discrepancy last week after L Area personnel moved the drums from the processing area to the 910B Fan Room in March 2010. DOE's original report stated, "The liquid was sampled by the lab and had a pH level of less than 1, and was not considered to be a hazardous chemical." Despite DOE's original report, L-Area personnel took immediate actions to post and barricade the area. An outside laboratory later reported the pH to be 0.060. An unreviewed safety question (USQ) is being generated for the storage of this material. The site rep questioned L-Area personnel as to whether a Potential Inadequacy in the Safety Analysis (PISA) should be prepared for the material movements, which did not have a USQ determination prepared.

F-Tank Farm: The site rep attended a fact finding following the inadequate control of instrument calibration sources by an instrumentation technician. The technician was troubleshooting a Tank 28 air monitor instrumentation failure when he was distracted by more emergent work. He failed to control the sources before leaving the area, leaving them in the open on the ground. F-Tank Farm personnel discovered the unsecured sources later in the day, took the appropriate steps to control the sources, and reported the discrepant condition.