DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 13, 2012

TO: T. J. Dwyer, Technical Director
FROM: M. T. Sautman and D. L. Burnfield, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending July 13, 2012

Solid Waste Management Facility (SWMF): SWMF personnel will repackage TRU waste in cell 11. This waste was originally packaged in the SRNL hot cells during the 60s and 70s. SRNS expects this waste to contain both transuranic alpha-emitting waste and high activity βγ-emitting waste. Based upon the dose rates found on the outside of the casks, SRNS personnel conclude the primary isotope of concern may be ^{137}Cs. If this is the case, contact dose rates may be as high as 84 rad/hr on a few casks. SWMF personnel have not previously handled material with dose rates this high in cell 11. SRNS personnel have initiated a Functional Area Manager review of the processes and controls for repackaging this waste.

Tritium: Tritium personnel added a specific administrative control (SAC) to the documented safety analysis (DSA) in 2009 to sample air that is allowed to enter the process systems. This control is nominally implemented when components with hollow compartments, such as tanks or pumps, are connected to the process system. Tritium personnel excluded several components that they considered to be less than 20 liters in volume from this requirement after they showed that 20 liters of air entering the process system could not result in an explosive mixture. As part of this exclusion, they excluded the magnesium beds because while the beds were slightly greater in volume, they were filled with magnesium shavings. SRNS tritium personnel have now calculated the gas volume of the magnesium beds and have now determined that they have been in violation of the SAC because the gas volume is greater than 20 liters.

Saltstone: SRR commenced their Readiness Assessment (RA) for the Enhanced Low Activity Waste Disposal project and Saltstone Disposal Unit 2. Two of the findings will address operational issues. After the grout run demonstration (with water), two stuck valves initially prevented the launch of either "pig." A ball is fired at high pressure through the long pipe to the vault to remove residual grout, which otherwise would start to harden within minutes. Although these are brand new valves, it took operations more than 30 minutes and multiple procedures before they could do a high pressure flush, reposition a stuck valve, and launch a pig. A planned second grout run was canceled while the facility decides how to fix this problem. The second issue involved the diverter valve that determines which vault receives the grout. The valve's handwheel failed during both evolutions, once causing the independent verifier to place it in the wrong position. Other likely findings will address drill accountability and discrepancies between system alignment checklist and the field. Some of the RA team member level-of-knowledge interviews consisted solely of questions provided by the facility; this stopped after the site rep talked to the RA team lead. The site rep also questioned procedure steps that allowed the shift operations manager to ignore an out-of-range reading when another instrument was in-range without any other evidence of which one was providing the correct reading.

Readiness Reviews: On Friday afternoon, DOE informed the site reps of their intent to have the DOE Readiness Assessment (RA) team observe all the dry runs and drills the contractor will be conducting during their Sodium Reactor Experiment used fuel RA, which kicks off next Monday at H-Canyon. The Board staff questioned their plan to do parts of the RA in parallel with the contractor RA because this was not described in the approved startup notification report as required in the DOE standard. Furthermore, the DOE Plan of Action is not approved and the Implementation Plan is still being written. Finally, the Board staff questioned whether parallel RAs are addressed in the DOE-SR procedures per the DOE standard.