DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 9, 2011

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 December 9, 2011

Solid Waste Management Facility (SWMF): SWMF had previously sent a large steel box of transuranic (TRU) waste to H-Canyon for repackaging. Repackaging of these boxes is required to allow the waste to be sent to the Waste Isolation Pilot Project (WIPP). In 2006, this box had been assayed and found to have ~ 293 Pu-239 fissile gram equivalent (FGE). H-Canyon repackaged the waste into multiple smaller containers, including at least a pair of standard large box-2s (SLB-2). This week, as part of the WIPP certification process one of the SLB-2 containers was assayed and found to possibly contain 1157 FGE. If correct, this amount of fissile material would exceed the approved limits for repackaging, remediation, and transportation of the boxes. While there was a very large uncertainty associated with this assay, SWMF took appropriate actions and notified both H-Canyon and F-Canyon that a potential problem existed with the assays of drums and boxes being sent to them. SRNS paused work until engineering and criticality evaluations could be completed to allow the site to resume work. The SLB-2 in question will be assayed using the more accurate neutron assay device to determine the actual contents of the box. SRNS expects this assay will confirm the initial assay, which showed approximately 293 FGE. If the original assay is not confirmed, SRNS will have to determine what actions they will take to confirm the contents of other large steel boxes before remediating the waste.

SWMF personnel were moving concrete culverts from Pad 2 so that they could unload the contents and send them for repackaging or remediation. They observed a 3-4 inch diameter damp spot along the seam of the concrete joint of one of the culverts. Radiological operations personnel probed the spot and found greater than 10,000 dpm α in the seam. Appropriate steps were taken to move personnel away from the culvert and to cover the contamination so that it would not spread. A small amount of contamination was also discovered in a foot print and on the cribbing that was used to support the culvert. No one was contaminated and the contamination did not spread outside the immediate area. While determining the extent of the spill, SWMF prohibited personnel from entering the facility. The site rep observed the activities in the shift manager's office while SMWF personnel were responding to the casualty and thought they actions were appropriate. At one point, however, communications became garbled and H-Area made an incorrect announcement that "protective actions" had been taken. This announcement implied a much larger casualty than actually occurred. This announcement was corrected within a few minutes. Activities were later returned to normal.

In an unrelated incident, a worker in cell 11 remediating TRU waste had a positive reading on the portable air sample worn inside his protective clothing. A bioassay has been taken and preliminary results should be available within a week.

Building 235-F: SRNS conducted an emergency preparedness drill simulating a fire in the Old Metallography Lab that spread to the Plutonium Fuel Form Facility. During the scenario, the exhaust fans continued to exhaust air through the sand filter. A small amount of contamination was assumed to be released. Although no contamination was assumed to extend past the Building 235-F fence line, the Area Emergency Coordinator issued a Remain Indoors. Personnel at F-Canyon, F/H Laboratory, the Waste Solidification Building (WSB), the Mixed Oxide Fuel Fabrication Facility, and surrounding buildings sheltered. (F-Tank Farms did not participate). Many aspects of the response were simulated (e.g., fighting the fire inside the building, turning off ventilation, evacuating personnel from the adjacent trailers, decontamination of fire fighters). The scenario did not examine how the surrounding facilities would deal with a significant radiological release. For instance, the WSB construction workers sheltered inside the partially constructed WSB. While the exterior doorways had swinging wooden frames and plastic sheeting across them, this location would provide limited protection in a real event due to the several inch gaps around the door edges or the several square foot hole cut in a plastic sheet to allow cables to pass through.