

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 4, 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 May 4, 2012

Board staff members Michael Dunlevy, David Gutowski, and William Linzau were on site this week.

**Emergency Preparedness (EP):** After conducting more than 60 smaller drills in preparation, SRS conducted their most complex evaluated EP exercise ever. The scenario simulated the impacts of a design basis earthquake (DBE) that knocked out normal power in H-Area and disabled many utilities. At the tritium facilities, falling debris was assumed to damage several reservoirs whose tritium gas was subsequently ignited by sparking electrical wires. The DBE caused a partial collapse of the H-Area Old Manufacturing (HAOM) stack onto HAOM, crushing exhaust ducts, while the H-Canyon stack liner collapsed. At H-Tank Farms, the initial earthquake caused a high-level waste leak into a diversion box while an aftershock caused a nitrogen gas tank to leak. Unlike the training drill, the evaluated exercise also simulated damage across SRS and surrounding communities including the failure of the Par Pond dam. Players and controllers were further challenged when real, unplanned telephone problems limited the functionality of the conference call system used for Emergency Operations Center (EOC) briefings, facility discussions, and controller coordination during much of the exercise. After the completion of the evaluated exercise, a smaller group of EOC players spent an hour discussing how they would start planning recovery actions for the entire site on the day following the DBE.

The participating control rooms focused on how wind direction could affect the plumes from releases at their facility or neighboring ones. In general, the control rooms and SRS Operations Center handled a barrage of inquiries and alarms, focused resources on priority response actions, and exhibited good command and control. H-Tank Farms quickly deployed several field teams. The Technical Support Room pursued many issues and quickly started planning for recovery. While control of the exercise was good in H-Canyon and Tritium, several controller issues in H-Tank Farms led to problems. For example, it was not clear that all the personnel in H-Tank Farms were aware of the simulated DBE because the only mass communication to facility personnel was by hand-held radio. Despite multiple requests for information, the H-Area Emergency Coordinator and the EOC were also unaware of most of the operational events occurring at H-Tank Farms. While the actions at the tritium facilities were generally well thought out and coordinated between the field and the control room, a lack of questioning attitude by several personnel led to delays in assessing the damage to HOAM by the fallen stack as well as the radiological conditions across the tritium facilities.

**H-Tank Farms:** SRR revised the procedures and began the maintenance on the telescoping transfer pump. (See April 6 - 27, 2012 reports). The extremity dose rates appear to be as expected. The teams that trained for this high radiation task are using the long handled tools to remove the packing. Several teams will be required to accomplish this task.

**235-F:** One of the two exhaust fans has been inoperable since a fuse to a control circuit failed after a diesel generator load test (see April 20 report). SRNS approved a response plan to allow troubleshooting activities that required shutting down the remaining operable exhaust fan, which was not allowed by a Limiting Condition for Operation.