

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 29, 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 June 29, 2012

Liquid Waste Operations (LWO): Several safety and conduct of operations incidents have occurred at LWO facilities recently. (See 6/8, 6/15 and 6/22/2012 weekly reports). SRR conducted a Corrective Action Review Board (CARB) to ensure completeness of causal analysis and corrective actions for the three H-Tank farm incidents. Senior management also discussed management expectations for an improved safety culture and the path forward to achieve that improvement. The actions discussed address the need for a safety conscious work environment.

H-Canyon: Workers spent another week unpacking what is likely the most challenging waste container encountered to date. Workers used copious amounts of fixative, water mists (to help knock down airborne contamination), and long-handled tools when handling the highly contaminated drums, several of which were breached. In general, the workers completed the work safely and methodically. However, they did encounter a few problems:

- Last week, debris fell off a drum when it was lifted. This caused a spike in airborne radioactivity that exceeded the protection factor of the workers' plastic suits and set off an air monitor in a nearby airlock. Preliminary results indicate that one worker received a very low inhalation dose.
- Because of communication issues between the field and managers remotely monitoring the job, workers started to remove debris off a drum when that action was not desired. A time out was called when this caused high air activity while one of the workers was downwind.
- A radiation protection manager stopped work when he observed an inspector using a wire to unplug a fixative sprayer without wearing proper hand protection.

Savannah River National Laboratory (SRNL): Researchers completed taking samples from legacy equipment and repacked the box contents (see 6/22/12 report). This week, the team exhibited better waste handling techniques, used tools more, and had more formal control of the work.

L-Basin: A biological and chemical analysis of the "growth" observed on spent fuel containers (see 1/27/12 report) did not detect substances expected from bacterial biofilm formation. However, a very diverse bacterial community is present, some of which have gene sequences that match or are similar to bacteria known to accelerate the corrosion of metal alloys.

Solid Waste Management Facility (SWMF): SWMF personnel are planning to remediate waste packaged at SRNL. This waste consists of various pieces of equipment, glassware, plastic bottles and includes some prohibited items. The waste is stored in concrete casks that often have steel boxes inserted inside the casks. Some of the casks have water inside the steel boxes or in the annulus between the box and the cask. These boxes will have to be dewatered to allow processing. The radiation fields associated with the material in these boxes are calculated to be as high as 84 rad/hour and contain significant quantities of high β/γ emitters as well as TRU waste.

Maintenance: The site rep met with SRNS personnel to discuss the use of paperless procedures to perform maintenance on site. Most SRNS maintenance (with the exception of tritium) is now performed using procedures that are generated, maintained, controlled, and stored using laptop computers. To date the process has worked well.