

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 12, 2010

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 November 12, 2010

H-Canyon: DOE determined that dissolution of spent nuclear fuel (SNF) is a new start which cannot begin under a continuing budget resolution. Furthermore, dissolution cannot begin until DOE issues a Supplemental Analysis and amended Record of Decision. In light of this, DOE-SR is evaluating their options and requested SRNS to evaluate three planning cases:

- DOE approves SNF processing by 1/31/11.
- DOE does not approve SNF processing by 1/31/11 and SRNS is requested to provide a processing plan to complete all non-SNF missions (e.g., enriched uranium/plutonium (Pu) metals and 400 kg Pu) for fiscal years 2011 and 2012.
- DOE does not approve SNF processing by 1/31/11 and SRNS is requested to develop a preliminary deinventory and flush plan to remove bulk (not residual) special nuclear material from H-Canyon, Outside Facilities, and HB-Line while maintaining the facilities in a high state of readiness as required by public law (ability to restart within 30 days of notification). Processing would be limited to the disposition of low assay Pu, dissolution of highly enriched uranium (HEU) fines from Los Alamos, and processing the current HEU inventory

The site rep observed workers in fresh air hoods decontaminate the highly contaminated hot gang valve corridor hut (see last week's report). Additional surveys of the previously removed leak collection device (LCD) found very high contamination (200 mrad/hr β - γ) on parts of it. Furthermore, a hood worn by the worker who initially removed the LCD was located and also found to be highly contaminated. The radiological control inspector who performed the contamination survey of the LCD prior to its removal did not document those results and was not present during its removal. Luckily, the worker who removed the LCD was not contaminated despite not wearing the appropriate personnel protective equipment or having any radiological monitoring performed during the removal. Then it appears that the construction workers showed up two days later to install the hut in the unmarked high contamination area. Once again, no RCIs were present to perform any radiological surveys before or during the job. Because of the potential for an uptake, SRNS has taken bioassay samples from the workers involved in this job.

H-Canyon and Savannah River National Laboratory personnel conducted a comprehensive degradation and service history evaluation of the structural integrity of embedded piping in H-Canyon. The review concluded that embedded piping can be used for continued operation up to 100 years total service. While 113 embedded lines have failed in F-Canyon and 3 more failed in H-Canyon, 108 of them involved steam and condensate line piping that used a polyvinyl chloride pipe wrap over cork insulation. SRNS believes that the near-continuous use of these steam and condensate lines at elevated temperatures at F-Canyon, coupled with some amount of moisture from curing of its concrete, and the chlorides from the wrapping, caused stress corrosion cracking of these pipes from the outside in.

Saltstone: In accordance with their Management Control Plan, SRR spent the last two weeks performing a series of incremental processing runs (recycle, dry feeds only, clean cap batch tank runs). Engineers and facility management are meeting after every run to review the processing data in detail. SRR encountered some minor equipment and control problems during these runs. SRR is planning to process the contents of the Saltstone salt feed tank on Monday.