

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 8, 2008

TO: T. J. Dwyer, Technical Director
FROM: M. P. Duncan and M. T. Sautman, Site Representatives
SUBJECT: Savannah River Site Weekly Report for Week Ending August 8, 2008

H-Canyon/HB-Line: A recovery plan was approved specifying the actions taken to place the H-Canyon receipt tank in a safe configuration (see 8/1/08 report) and the prerequisites to allow the tank's agitator to be started (so that additional samples can be taken), to transfer the existing solution to another uranium storage tank, and to allow further transfers into the receipt tank. The safety of the existing configuration has been confirmed by analyzing the fissile content in the solids in a receipt tank sample and performing a uranium mass balance. The recovered solids are mostly corrosion products that absorb neutrons (i.e., Fe, Cr, and Ni) and the nitrogen in the nitric acid also increases the safety margin. The 4 uncredited filters in HB-Line appear to be functioning as designed although they can allow greater than trace quantities of uranium solids to pass through. A positive Unreviewed Safety Question was declared because this last fact increases the frequency of occurrence of an accident evaluated in the Documented Safety Analysis. Discretionary operations in H-Canyon and Phase I/III processing in HB-Line were put on hold this week. An Engineering team investigated breakdowns in their past reviews of flowsheets and facility interfaces. As the team's recommendations get implemented, H-Canyon and HB-Line operations will start resuming next week in a phased manner.

When the staff examined the feasibility of H-Canyon/HB-Line supporting a longer mission last year, the staff was concerned about the immaturity of life extension efforts and the fact that degradation issues would not be found if they were not looking for them. In the ensuing 16 months, the contractor has been slowly developing a process for scoping life extension reviews and conducting life extension screenings, time limiting aging analyses, and aging management reviews. A pilot review is to be conducted this fall on the process cooling water structures, systems, and components (SSC). After reviewing the procedures to be used for this process, however, it is not apparent that this process is the best use of limited resources for generating timely results that can be prioritized and translated into physical improvements to support upcoming processing campaigns. Based on the examples provided, the process will probably generate a lot of paper, much of it background information and results that likely will not provide overly insightful information (e.g., carbon steel components need to be evaluated for general corrosion and stainless steel ones for wear and fretting). Eventually, these mostly paperwork reviews may lead to the establishment of aging management programs that may actually require field inspections that identify degraded SSCs, but that probably will not occur any time soon. In the Site Rep's opinion, the available resources could probably be better spent expanding the field inspections currently conducted and fixing known issues.

A worker, cutting up hundreds of feet of discarded breathing hoses in the Railroad Tunnel, accidentally severed his own breathing hose to his plastic suit. He was near the exit and left the area safely.

Tank Farms: The F- to H-Tank Farm transfer will be resumed this weekend with a minimum flow rate specified in order to reduce the accumulation of solids in the transfer route. (See 8/1/08 report)

F/H Laboratory: The new High Activity Drain system has been tied in, but is not in service yet. Although controls had been put in place to prevent any solution from being added to the drains, process water leaked past a valve inside a shielded hot cell and contaminated the water inside the tank. Management is taking actions to address the four day gap between when the unexpected contamination was found in a sample and when appropriate actions were initiated.