DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 1, 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 1, 2012

Savannah River National Laboratory (SRNL): In response to site rep comments, SRNS revised their proposed compensatory actions in the draft Justification for Continued Operations for the fire water supply system. The site rep talked with SRNS about the feasibility of the proposed compensatory action to have the fire department directly connect to the A and M-Area fire water supply tanks in the event the fire water pumps encountered an unplanned outage. The Board's staff has provided additional questions (see May 18 and 25, 2012 reports).

235-F: SRNS exited their Technical Safety Requirement (TSR) Response plan without being able to restore exhaust fan #2 to the operable condition as defined in the TSR. SRNS continued to troubleshoot the fan while it was not in service. Later in the week, SRNS noted high vibrations on exhaust fan #1. SRNS took exhaust fan #1 out-of-service to replace a belt. During this repair, neither fan met the definition of operable although fan #2 was in service. The Board staff will be discussing the path forward next week (see April 20 through May 23, 2012 reports).

Nuclear Safety: SRNS has dropped the proposed two-hour release duration assumption for a HB-Line fire scenario (see May 18, 2012 report) and will instead pursue engineered and administrative controls to reduce the material at risk and potential pressurization in the ion exchange columns.

SRNS is recommending the use of a 30 – 70 cm surface roughness for collocated worker dose consequence calculations, depending on the area involved. SRNS is also proposing to use 160 cm surface roughness for normalizing meteorology data per Environmental Protection Agency standards and for calculating the dose consequences for the maximally exposed offsite individual. Finally, SRNS is recommending that Pasquill-Gifford stability classes be based on direct turbulence measurement (i.e., σ_e). SRNS is determining the cumulative impact of the above recommendations on the calculated dose consequences. See August 12, 2011 report.

H-Canyon: DOE will now conduct a graded Readiness Assessment and be the startup approval authority for the resumption of used nuclear fuel dissolution (see May 18, 2012 report). The site rep also observed workers open and inspect a concrete culvert with potentially very high contamination levels. Previous analysis of liquid from this culvert showed up to 150 million dpm α/ml. Due to the condition of the drums and the potential for leaking solution, SRNS developed a new method to remove the drums from the culvert and capture any leaking solutions.

F-Tank Farms: The grout in Tank 19 is not spreading out equally throughout the tank as expected. In some locations, the grout height is within 6 inches of the TSR limit – the spring line at 34 feet. In other locations, the grout level is higher than the historically high liquid level of 32 feet, but fails to reach the 33 feet level where the tank can be considered a radiological facility. SRR engineers with the assistance of DOE are determining how best to proceed.

SRR has shut down the 2F Evaporator while a decision is made on how to reduce the high contamination levels found in the overheads (as much as 10 times more contamination than normal). Operations personnel are developing procedures for flushing the evaporator pot and to run the evaporator with inhibited water to decontaminate the de-entrainment column. In addition, the evaporator feed pump failed upon reaching its end of life and SRR will have to replace it before resuming operations.