



High Level Waste Tank Closures

Since the Savannah River Site (SRS) in Aiken, South Carolina, began operations in the early 1950's, its uranium and plutonium recovery processes have generated liquid high level radioactive waste, which currently amounts to about 34 million gallons stored in 51 underground tanks in the F-and H- Areas. The U.S. Department of Energy (DOE) intends to remove these high-level waste (HLW) tanks from service as they complete their missions. Because the tank systems are permitted under the South Carolina Pollution Control Act, they will be closed under South Carolina Regulation R61-82, "Proper Close out of Wastewater Treatment Facilities." DOE submitted a general plan (DOE 1996) for the closure of all 51 tank systems, which the South Carolina Department of Health and Environmental Control (SCDHEC) approved on July 31, 1996.

DOE also wrote tank-specific closure modules for Tank 20 and Tank 17, the first two tanks to be emptied and closed, to set forth the plans by which DOE intends to close the Tank systems in accordance with South Carolina Regulations. The SRS Citizen's Advisory Board requested three scientists, Dr. Tom Pigford, emiritus, University of California-Berkeley; Dr. Joel Massman, University of Washington; and Dr. Ratib Karam, Georgia Institute of Technology, to conduct an Independent Scientific Peer Review (ISPR) of these Closure Plans. These scientists met with SRS scientists and engineers to discuss their findings, technical comments, and questions.

Many of the scientists questions and concerns focused on the basis for the source term estimates or Multimedia Environmental Pollutant Assessment System (MEPAS) computer code used for the groundwater transport calculations. Other questions focused on the Consolidated Low Strength Material (CLSM) and reducing grout that is being used to fill the tanks once they are empty. The SRS scientists discussed the various models, scientific formulas, and extensive tests conducted to reach the conclusions outlined in the Closure Plans. They pointed out that MEPAS tracks the depletion of the source inventory so that the concentration in the pore water will decrease as the available source decrease. The MEPAS input parameters are all taken or derived from Savannah River Site documents and are specific to the tank farm areas and thus are the most desirable data to use. The CLSM and grouts were thoroughly tested at Savannah River Technology Center onsite laboratories and at an offsite laboratory, Construction Technologies Laboratories, Inc., (CTL) to determine the effectiveness of the grout mixes and to determine the reaction of the CLSM and grouts to the sludge contaminants.

Copies of the Closure Plans are in the official South Carolina library Reading Rooms. Or you may request a copy by calling 1-800-294-8155.