Summary Notes from 14 May 2007 Savannah River Site F-Area Tank Farm Performance Assessment Input Meeting and Follow-Up Teleconference
27 June 2007

Attendees: Representatives from Department of Energy-Savannah River (DOE-SR), DOE-Headquarters (DOE-HQ), the U.S. Nuclear Regulatory Commission (NRC), the South Carolina Department of Health and Environmental Control (SCDHEC) and the U.S. Environmental Protection Agency, Region IV (EPA-IV) participated in a video and telephone conference on 14 May 2007, and a follow-up teleconference on 27 June 2007.

Discussion: DOE is pursuing final closure on the F-Area Tank Farm (FTF) located at Savannah River Site (SRS). At some point in the future, DOE and NRC will consult on waste determinations for these tank closures; additionally these tanks will be closed in coordination with EPA and SCDHEC in accordance with the Federal Facility Agreement for the Savannah River Site and the State-approved closure plans pursuant to the State Industrial Wastewater permit. The DOE, NRC, EPA, and SCDHEC met for the fifth in a series of technical exchanges on the proposed inputs for a revision to the FTF Performance Assessment (PA). The technical exchanges are intended to capitalize on early interactions between the agencies with a goal of improving DOE's FTF PA. Technical discussions allowed for the clarification of general modeling parameter values and identifying other specific questions. Future meetings for additional input parameter topics were discussed with the next meeting planned for 14 June 2007 to discuss F-Tank Farm closure cap conceptual model.

Topics: The specific topical area discussed during the meeting was the basis for estimating the residual inventory that will remain in the waste tanks and ancillary equipment after waste removal and cleaning.

Summary: The following summarizes the discussion during the meeting, by topical area.

- DOE noted that the Tank 17 through 20 inventories for the FTF PA will be based on measurements of residual solids as described in the respective characterization reports.
- DOE noted that the concentrations of radiological and non-radiological constituents in the residual material will be estimated for the remaining tanks

using data from the SRS Waste Characterization System (WCS)for the FTF PA. The total radionuclide and non-radiological constituent inventories in these 18 tanks will be estimated for the FTF PA by multiplying the estimated residual solids volume by the estimated concentrations.

- DOE noted that after a tank is cleaned, the estimated inventory used in the FTF PA for that tank will be replaced with the actual inventory for that tank, which will be developed from the residual material volume combined with analytical concentration data from a statistically based sampling program of the residual material.
- DOE plans to add a sketch to the residual inventory inputs package for the FTF PA to clarify that 1/16th inch of sludge averaged across the tank floor is proposed to be used for the PA model inventory volume estimation purposes.
- DOE plans to add a sketch to the residual inventory inputs package for the FTF PA to represent the expected sludge configuration after tank cleaning (piles, clean areas, etc.) for comparison and explain how volume estimates are calculated.
- DOE plans to compare Tanks 18, 19, and 5 actual residual inventory values with WCS predicted residual inventory values and assess any needed adjustments to the FTF PA model residual inventory values.
- DOE plans to revise the discussion of 1/16th inch residual level in the inputs package for the FTF PA to clarify that it is a planning assumption of volume and that the curie/mass inventory (calculated from volume x concentration) is important to modeling.
- DOE plans to add a paragraph to the residual inventory inputs package for the FTF PA to explain that Tanks 18 and 19 contain zeolite and that chemical cleaning is not planned for these tanks because oxalic acid is ineffective on zeolite.
- NRC staff noted that the WCS system may not characterize the inventory of long-lived radionuclides with sufficient accuracy for use in the FTF PA based on data presented to date. NRC staff believes that the residual inventories of radionuclides need to be confirmed by measurement of samples.
- NRC staff noted that the use of overly optimistic assumptions regarding the final inventory needs to be substantiated with post-treatment sampling data to

demonstrate compliance with the performance objectives. DOE plans to manage any significant uncertainties with respect to cleaning effectiveness and concentration data (e.g., uncertainty with residual volume or mass estimates and WCS data) with pessimistic assumptions regarding the final inventory in the FTF PA, when appropriate.

- DOE plans to footnote 0.00 values for inventory estimates that are based on non-detectable data or replace values with estimates based on the minimum detectable concentration data. NRC staff noted that comparisons of sample to predicted (WCS) values may not be useful for radionuclides that were not detected given the large minimum detectable concentration values for certain radionuclides.
- DOE plans to provide additional wording in Section 2.2 of the residual inventory inputs package for the FTF PA to make it clear that the oxide film in the transfer lines is being considered the equivalent concentration of the sludge solids.