

## INTEROFFICE MEMORANDUM

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SRR-CWDA-2015-00158

Revision 1

March 4, 2016

TO: S. A. Thomas, 705-1C

FROM: M. H. Layton, 705-1C *M. H. Layton* 3/4/16

REVIEWED BY: *Kent H. Rosenberg* 3/4/2016

K. H. Rosenberger, 705-1C

### **H-Tank Farm Type I and Type II Tank Special Analysis Base Case Model Inputs**

In FY2016, WDA will be producing an H-Tank Farm (HTF) Type I and Type II Tank Special Analysis (SA). The purpose of this memo is to document any proposed HTF Base Case model input revisions for incorporation into the HTF conceptual model. The current version of the HTF conceptual model is the version utilized for the Tank 16 SA (SRR-CWDA-2014-00106, Revision 1).

An evaluation of the current Dose Calculator document (SRR-CWDA-2013-00058, Revision 1) was performed to identify any dose calculation inputs requiring revision. This evaluation involved reconsideration of the individual inputs identified in SRR-CWDA-2013-00058 and a review of the reference documents used to derive the inputs. No inaccurate inputs were identified and no revisions to any of the reference documents were discovered. Based on the review performed, no dose calculation inputs have been identified as requiring revision.

A review of the current HTF Base Case conceptual model inputs was also performed to identify inputs requiring revision (e.g., updated distribution coefficients). The *Savannah River Site Liquid Waste Facilities Performance Assessment Maintenance Program-FY2016 Implementation Plan* (SRR-CWDA-2015-00152, Revision 0) was also reviewed. The areas surveyed to identify proposed updates to HTF conceptual models and model inputs include:

- 1) Inventories at closure
  - 2) Soil and cementitious materials distribution coefficients
  - 3) Liner and cementitious material degradation modeling
  - 4) Solubility and transition time modeling
  - 5) Grout hydraulic conductivity
  - 6) Closure cap modeling
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The primary change proposed to the HTF Base Case model is a revision to the HTF Type I and Type II Tank Inventories, which was addressed through Revision 6 to SRR-CWDA-2010-00023, *H-Area Tank Farm Closure Inventory for Use in Performance Assessment Modeling*, which has already been issued as part of SA development.

The only other change proposed to the HTF Base Case model is updating the Reduced Region II cement  $K_d$  values for iodine. An iodine  $K_d$  value of 2 mL/g will be used instead of 9 mL/g for Reduced Region II cement. This change is based on preliminary information provided by SRNL and is conservative in that it allows for more rapid transport of iodine through cementitious materials. This change addresses, in part, an NRC concern regarding uncertainty surrounding the iodine  $K_d$  values used in the HTF PA [ML15301A710].

### **References**

SRR-CWDA-2010-00023, *H-Tank Farm Closure Inventory for Use in Performance Assessment Modeling*, Savannah River Site, Aiken, SC, Rev. 6, January 2016.

SRR-CWDA-2013-00058, *Dose Calculation Methodology for Liquid Waste Performance Assessments at the Savannah River Site*, Savannah River Site, Aiken, SC, Rev. 1, July 2014.

SRR-CWDA-2014-00106, *Tank 16 Special Analysis for the Performance Assessment for the H-Tank Farm at the Savannah River Site*, Savannah River Site, Aiken, SC, Rev. 1, February 2015.

SRR-CWDA-2015-00152, *Savannah River Site Liquid Waste Facilities Performance Assessment Maintenance Program - FY2016 Implementation Plan*, Savannah River Site, Aiken, SC, Rev. 0, December 2015.

ML15301A710, *Technical Review of "Tank 16H Special Analysis for the Performance Assessment for the H-Tank Farm at the Savannah River Site"*, SRR-CWDA-2014-00106 Rev. 1, U.S. Nuclear Regulatory Commission, Washington DC, February 2015.

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