January 14, 2011

NOTE TO: File

FROM: Maurice Heath, Project Manager **/RA/**
Low-Level Waste Branch
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

SITE: Savannah River Site, F-Tank Farm

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON DECEMBER 14, 2010, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION STAFF AND U.S. DEPARTMENT OF ENERGY REPRESENTATIVES CONCERNING REQUEST FOR ADDITIONAL INFORMATION PERTAINING TO THE DRAFT WASTE DETERMINATION AND RELATED PERFORMANCE ASSESSMENT RELATED TO THE CLOSURE OF THE F AREA TANK FARM AT THE SAVANNAH RIVER SITE (DOCKET NO. PROJ0734)

On December 14, 2010, the U.S. Nuclear Regulatory Commission (NRC) staff and representatives of the U.S. Department of Energy (DOE) and contractor personnel, held a telephone conference call to discuss the NRC staff requests for additional information (RAIs) submitted to DOE on December 3, 2010 (Agencywide Documents Access and Management System (ADAMS) accession no. ML103190402).

The conference call was used to discuss the staff's request for additional information to ensure that each question was clearly understood.

Enclosure 1 provides a listing of the telephone conference participants. Enclosure 2 provides a brief summary of the discussion during the teleconference.

Docket No.: PROJ0734

Enclosures: As stated

CONTACT: M. Heath, FSME/DWMEP
(301) 415-3137

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OFC	PM:LLWB	LA:LLWB	PM:LLWB	BC:LLWB	PM:LLWB
NAME	MHeath	AWalker-Smith	JShaffner	GSuber	MHeath
DATE	1/11/11	1/11/11	1/11/11	1/14/11	1/14/11

LIST OF PARTICIPANTS
TELEPHONE CALLS WITH DEPARTMENT OF ENERGY
SAVANNAH RIVER SITE, F AREA TANK FARM

December 14, 2010

Participants	Affiliation
C. McKenney	U.S. Nuclear Regulatory Commission (NRC)
G. Suber	NRC
C. Barr	NRC
C. Grossman	NRC
G. Alexander	NRC
J. Shaffner	NRC
M. Heath	NRC
L. Spardley	NRC
R. Pabalan	Center for Nuclear Waste Regulatory Analyses (CNWRA)
X. He	CNWRA
D. Pickett	CNWRA
L. Howard	CNWRA
R. Green	CNWRA
L. Suttora	Department of Energy (DOE) Headquarters
S. Ross	DOE, Savannah River Site
B. Hays	DOE, Savannah River Site
S. Thomas	Savannah River Remediation (SRR) (DOE Contractor)
M. Mahoney	SRR
T. Robinson	SRR
M. Layton	SRR
L. Romanowski	SRR
K. Rosenberger	SRR
S. Thomas	SRR
L. Bagwell	Savannah River National Laboratory (SRNL)
M. Millings	SRNL
G. Flach	SRNL
M. Layton	SRR
T. Robinson	SRR
J. Donnell	SRR
R. OBryant	SRR

CONFERENCE CALL BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION STAFF AND U.S. DEPARTMENT OF ENERGY REPRESENTATIVES REGARDING SAVANNAH RIVER SITE, F-AREA TANK FARM

DECEMBER 14, 2010

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of the U.S. Department of Energy (DOE) held a telephone conference call to discuss, in general terms, the NRC staff requests for additional information (RAIs) submitted to DOE on December 3, 2010.

RAI-MEP-1

Information on removal of highly radioactive radionuclides (HRRs) to the maximum extent practical (MEP) for Type I and III/IIIA tanks could be enhanced.

Status: The question required clarification. The NRC staff explained that it is looking for current tanks status and/or current use of tanks (sample results after tank cleaning, challenges of waste retrieval) and process information. DOE understands and requires no additional clarification.

RAI-MEP-2

Additional information regarding removal of HRRs to the maximum extent practical is needed for Type IV Tanks 18 and 19 that have already been cleaned.

Status: The question required clarification. The NRC staff was looking for clarification of figures and data relating to cleaning technology deployments and campaigns. The staff also needed more information on the engineering evaluations and processes used to select technologies for implementation. DOE understands and requires no additional clarification.

RAI-MEP-3

Insufficient information is provided in the waste determination regarding DOE's process for identification, evaluation, and selection of cleaning technologies for F-Tank Farm (FTF) tanks yet to be cleaned.

Status: The question required clarification. The NRC staff was looking for clarification on the process that was used for the selection and implementation of waste removal technology. DOE understands NRC's concern and requires no additional clarification.

RAI-MEP-4

It is not clear that the technologies implemented to retrieve waste from Type IV tanks and that are under consideration for Type I and Type III/IIIA tanks will remove HRRs to the maximum extent practical. There is no clear linkage between the Criterion 2 demonstration and the revised performance assessment (PA) results.

Status: The question required clarification. The NRC staff explained that it is looking for additional information regarding removal of HRRs to the maximum extent practical. DOE understands NRC's concerns and requires no additional clarification.

RAI-MEP-5

The DOE process or strategy for considering developments in waste tank cleaning technologies that occur after the waste determination process has been completed is not apparent.

Status: The question required clarification. The NRC staff was looking for additional information on the process DOE used to select the waste tank cleaning technologies. The staff also needed clarification on methods or processes used to determine additional work needed on removing waste to the maximum extent practical. DOE understands NRC concerns and requires no additional clarification.

RAI-IE-3

The maximum infiltration through the geosynthetic clay liner from 1,800 to 10,000 years appears to be constrained to 12.45 in/yr in the HELP simulations.

Status: The question required clarification. The NRC staff was looking for additional informatiion on the technical basis and clarification on the 12.45 in/yr cap on net infiltration that appears in the simulations. DOE understands NRC's concerns and requires no additional clarification.

RAI-NF-4

The PA should reevaluate the carbon steel tank liner failure times for the base case using consistent equations and approaches for modeling liner failure.

Status: The question required clarification. The NRC staff was looking for additional information on whether the corrosion on the tank wall is assumed on only one side. DOE understands and requires no additional clarification.

RAI-NF-6

Provide a technical basis for excluding the effects of reinforcing and pre-stressing steel on cementitious material degradation and steel liner corrosion.

Status: The question required clarification. The NRC staff was looking for additional information on the technical basis for excluding degradation and corrosion effects in various tank types. DOE understands and requires no additional clarification.

RAI-NF-8

Additional confidence is needed to provide reasonable expectation that co-precipitation with iron phases will constrain plutonium (Pu) and technetium (Tc) to such low dissolved concentrations under oxidizing conditions. Consideration should also be given to modeling a certain percentage of Tc existing in a more soluble form.

Status: The question required clarification. The NRC staff was looking for additional information on the technical justification for concentration limits adopted for Plutonium (Pu) and Technetium. (Tc). DOE understands and requires no additional clarification.

RAI-NF-15

Justify lack of consideration of a Condition 2 waste release scenario (as characterized on page 263 of the revised PA) in the PA analyses.

Status: The question required clarification. The NRC staff was looking for additional information on Condition 2 (evaluated consequences and/or waste release scenario). DOE understands and requires no additional clarification.

RAI-NF-16

DOE should evaluate the impact of early release (e.g., from existing leak sites or leak sites that may form prior to depletion of the entire thickness of the steel liner due to general corrosion) or justify why this mechanism for waste release should not be evaluated in the PA.

Status: The question required clarification. The NRC staff was looking for information on the impact of early release of waste from the tank system, the base case and alternative configurations. DOE understands and requires no additional clarification.

CC-NF-3

Section 5.6.2.1.2 of the PA discusses the use of solubility controls to model contaminant release within PORFLOW. However, the PORFLOW model files indicate that a Kd approach was utilized to model contaminant release. It appears that an attempt was made to implement solubility control in the model through use of a K*d* specified for three different time periods corresponding to (i) initial conditions, (ii) time period after the first chemical transition, and (iii) the time period following the second chemical transition. Clarify why a K*d* approach was used to simulate solubility control in PORFLOW, a code which allows specification of a solubility limit to limit dissolved phase concentrations without use of a K*d*. Documentation should provide a transparent description regarding how solubility control is implemented in the PORFLOW model and point out any limitations in the approach used and any corresponding impact on performance assessment results (e.g., inability to simulate, or simulate a transition to, no solubility control).

Status: The question required clarification. The NRC staff was looking for clarification on why the K_d approach was utilized in PORFLOW to model contaminant release. DOE understands and requires no additional clarification.

CC-NF-9

The moisture characteristic curve utilized in the FTF PA for the grout, annulus, and contaminated zone within the PORFLOW model appears to be inconsistent with literature values for other cementitious materials (Rockhold et al., 1993; Savage and Janssen, 1997; and Baroghel-Bouny, 1999). Moisture characteristic curves are relied upon to determine the flow through unsaturated materials. The use of inaccurate curves for cementitious materials can artificially constrain

infiltrating water, thereby delaying chemical transitions and reducing the flux of contaminants out of the tanks. DOE should use a more appropriate curve and indicate how the change in the curve impacts the dose results.

Status: The question required clarification. The NRC staff was looking for clarification and additional information regarding the moisture retention curves. DOE understands and requires no additional clarification.

RAI-FF-1

Explain and provide the technical basis for the hydrologic flow and transport modeling treatment of the variably grouted, Calcareous Zone in the lower zone of the Upper Three Runs aquifer (i.e., UTR-LZ).

Status: The question required clarification. The NRC staff was looking for additional information on the risk significance of the Calcereous Zone. DOE understands and requires no additional clarification.

RAI-FF-5

DOE should provide a stronger basis for the assumption that a compliance point located 100 m horizontally downgradient of the FTF boundary in each aquifer zone is sufficient for evaluating compliance with the 10 CFR Part 61 performance objective.

Status: The question required clarification. The NRC staff was looking for information on the basis for assuming compliance with Part 61. The staff also needed an enhanced resolution version of Figure 5.2-4 for additional clarification. DOE understands and requires no additional clarification.