

October 2, 2013

NOTE TO: File PROJ0734

FROM: James Shaffner, Project Manager                    **/RA/**  
Low-Level Waste Branch  
Environmental Protection  
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Division of Waste Management  
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Office of Federal and State Materials  
and Environmental Management Program

SUBJECT: SUMMARY OF A PUBLIC MEETING BETWEEN THE U.S. NUCLEAR  
REGULATORY COMMISSION STAFF AND THE U.S DEPARTMENT OF  
ENERGY STAFF AND CONTRACTORS CONCERNING REQUESTS FOR  
ADDITIONAL INFORMATION RELATED TO A PROPOSED WASTE  
DETERMINATION FOR CLOSURE OF H-AREA TANK FARM AT THE  
SAVANNAH RIVER SITE

On August 29, 2013, the U.S. Nuclear Regulatory Commission (NRC) staff convened a public meeting with the U.S. Department of Energy (DOE) technical staff and contractors. The meeting was held at the Village Center, 230 Village Green Blvd., DOE Suite 220, Aiken, South Carolina. The purpose of the meeting was to allow NRC staff to discuss and clarify Requests for Additional Information (RAIs) which NRC staff formally provided to DOE on July 31, 2013. The DOE staff and contractors were invited to provide conceptual strategies for responding to the RAIs if they were prepared to do so. The DOE's responses to the RAIs will allow NRC to complete a Technical Evaluation Report regarding the draft basis for closure of H-Tank Farm and the related performance assessment as part of the NRC's consultation role per Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005.

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Enclosures:

1. Summary of August 29, 2013 Public Meeting
2. August 29, 2013 Public Meeting Participants
3. NRC August 29, 2013 Slide Presentation

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**ML13260A275**

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## Summary

### Public Meeting between the Nuclear Regulatory Commission and U.S. Department of Energy Staff regarding H-Area Tank Farm Section 3116 Consultation

August 29, 2013

9:00 a.m. – 2:00 p.m. (scheduled, meeting actually concluded at 12:00 p.m.)

Both the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) staff offered brief opening remarks affirming the purpose and desired outcome of the meeting. The NRC staff provided a brief summary of the NRC's role in the consultation process per the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (NDAA) and the three criteria that will be addressed in the Secretary of Energy's waste determination. The criteria relate to the need for deep geologic disposal (Criterion 1), removal of highly radioactive radionuclides to the maximum extent practical (Criterion 2), and the ability to meet NRC performance objectives for Low-Level Waste disposal contained in 10 CFR Part 61 (whether less than or equal to the concentration levels for Class C waste, Criterion 3A, or exceeding the concentration levels for Class C waste, Criterion 3B).

The remainder of the meeting focused on the contents of a presentation by NRC technical staff (Enclosure 3). During the presentation, the NRC subject matter experts discussed Requests for Additional Information (RAIs) and clarifying comments associated with the three NDAA criteria. There were no RAIs (or clarifying comments) associated with Criterion 1.

The NRC staff noted that the major differences between the two tank farms at the Savannah River Site (i.e., F-Tank Farm (FTF) and H-Tank Farm (HTF)) are the submerged or partially submerged state of several tanks in HTF, the contaminants in several HTF annuli and different relative ratios of radionuclides in the inventories.

The NRC staff discussed RAIs related to Criterion 2 which focused on documentation of the process and decision points regarding waste removal from various types of tanks. The NRC staff acknowledged that there are likely to be unique considerations for each tank. During the discussion, DOE staff said it would provide periodic updates of tank cleaning technology (e.g. ref. V-ESR-G-0003) during the monitoring phase. The NRC staff is seeking criteria for deployment of various cleaning technologies and attendant constraints. Further, NRC staff is looking for feedback on optimization, including process samples and timing thereof. NRC staff also considers analysis of success to be a useful tool to better understand removal efficiency. NRC staff also reiterated comments that were made during consultation for the F-Tank Farm that are relevant to HTF. The NRC staff communicated that an objective of the Criterion 2 review is a transparent understanding of the cost and worker risk of contaminant removal versus the potential long-term risk of contaminants remaining in place.

The NRC staff then discussed RAIs related to Criterion 3 which focused on several areas including the inventory assignments, waste release and near-field transport modeling, and hydrology and far-field transport modeling in the HTF Performance Assessment. Regarding

Performance Assessment in general, the NRC staff highlighted clarifying comments in which it is seeking transparency in the use of expert judgment to inform arguments for or against including various features, events, and processes as well as impacts of biosphere modeling changes.

Regarding inventory assignments in the HTF Performance Assessment, the NRC staff summarized RAIs concerning uncertainties in waste volume and characteristics in tank annuli and the representativeness of Tank 16 annulus samples. The NRC staff also discussed seeking clarification between the FTF and HTF processes. The DOE indicated in its response to the RAI that it will clarify how information was extracted from the Reboul report (SRNL-STI-2012-00479, Rev. 3). The DOE noted that Tank 16 samples will be used to make annulus cleaning decisions. The DOE acknowledged that although the characterization of sample concentration results will not be available for almost a year, DOE was able to measure the depth of contamination during the sampling process. The depth measurements will help to inform estimates of volume of material in the annulus.

Regarding waste release and near-field transport modeling in the HTF Performance Assessment, the NRC staff described the underlying rationale for many of its RAIs – namely for DOE to provide adequate support for the representation of significant barrier capabilities in the HTF Performance Assessment and defense in depth. The NRC staff then summarized its RAIs in this area. Specific RAIs from the NRC staff include the effect of deleterious species on liner integrity, the longevity of chemical conditions on radionuclide release, solubility limiting phases and associated uncertainties, consideration of preferential pathways in the modeling, and the appropriateness of modeling the near-field domain using an unsaturated rather than saturated modeling approach. The NRC staff also summarized clarifying comments related to groundwater inleakage, the mineralogy of the grout assumed for geochemical modeling, basis for cement-leachate impacted sorption model parameters, grouting plans for transfer lines, and the validity of boundary conditions supporting corrosion modeling. The DOE indicated that it understood NRC's RAIs and noted the utility of NRC's barrier analysis graphic that was included in the FTF Technical Evaluation Report.

In response, DOE indicated that it intends to provide model support runs regarding water conditioning. The DOE also noted that because of technetium solubility, DOE believes that it can make the case that most of the technetium will be removed during tank cleaning and the residual inventory will be small. The DOE also noted that preferential pathways are analyzed in the various other cases, and that they take all analyses into account in decision-making. The DOE noted that a change in base case would trigger a mandatory LLW Disposal Facility Federal Review Group (FRG) review and add years to the process. The DOE noted that it was easier to add additional sensitivity analyses than to revise existing base case analyses.

Regarding hydrology and far-field transport modeling in the HTF Performance Assessment, NRC summarized its RAIs which focus on concerns regarding HTF PORFLOW model calibration, namely the adequacy of the calibration results, targets, and processes. The NRC staff also summarized clarifying comments related to vertical and transverse spreading and dilution factors applied in the probabilistic modeling. The DOE suggested the likelihood of an integrated response to address these RAIs.

During the public comment period, a member of the public questioned the clarity of information in NRC's meeting notice and offered suggestions for improvement. He also inquired as to the next HTF public meeting. (NRC noted that it would be after NRC's Technical Evaluation Report (TER) was published). However, it is possible that there will be some public teleconferences in the interim to provide clarifications regarding DOE's responses to the RAIs.) The same member of the public had several other questions and comments for DOE about aspects of the Savannah River Site that were beyond the scope of this meeting.

The DOE staff stated that it understood the RAIs and suggested an October-November timeframe for response. Both the RAIs and responses will be available on both agencies' public websites. The NRC staff committed to a four month timeframe for completing its TER once it received the RAI responses from DOE.