

June 16, 2005

MEMORANDUM TO: Scott Flanders, Director  
Environmental & Performance Assessment Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Nuclear Materials Safety  
and Safeguards

THRU: Ryan Whited, Chief  
Low-Level Waste Section  
Environmental & Performance Assessment Directorate

FROM: Anna Bradford /**RA**/  
Senior Project Manager  
Low-Level Waste Section  
Environmental & Performance Assessment Directorate

SUBJECT: JUNE 1, 2005 MEETING SUMMARY: MEETING WITH U.S.  
DEPARTMENT OF ENERGY TO DISCUSS REQUESTS FOR  
ADDITIONAL INFORMATION AND PERFORMANCE ASSESSMENT  
FOR HANFORD

On June 1, 2005, staff and management from the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) met to discuss the Request for Additional Information regarding waste retrieval actions for Single-Shell Tank C-106 at the Hanford site, which was transmitted to DOE on January 19, 2005. In addition, DOE presented an overview of the performance assessment analysis being conducted for the site. The meeting summary is attached for your use.

Attachment 1: Summary of Meeting  
Attachment 2: Attendee List  
Attachment 3: DOE Presentation Slides

cc: K. Picha/DOE

Distribution:

A. Ridge      D. Esh      M. O'Shaughnessy      M. Call      M. Thaggard  
C. Brown      N. Jensen

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DATE	6/16/05	6/16/05			

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## **ATTACHMENT 1: SUMMARY OF JUNE 1, 2005, OPEN MEETING TO DISCUSS REQUESTS FOR ADDITIONAL INFORMATION AND PERFORMANCE ASSESSMENT FOR HANFORD**

### **Introduction**

On June 1, 2005, staff and management from the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) met to discuss the Request for Additional Information (RAI) regarding waste retrieval actions for Single-Shell Tank C-106 at the Hanford site, which was transmitted to DOE on January 19, 2005. In addition, DOE presented an overview of the performance assessment (PA) analysis being conducted for the site. This meeting was open to the public and was held at NRC Headquarters in Rockville, MD.

In addition to NRC and DOE staff and contractors, the meeting was attended by representatives from the State of Washington's Department of Ecology and members of the public.

The list of attendees is included as Attachment 2 and the presentation slides used by DOE are included as Attachment 3.

### **Discussion**

During the first part of the meeting, DOE reviewed its draft responses to the RAI to obtain NRC staff's feedback on whether the proposed responses appeared to satisfy the questions raised in the RAI. There were 12 technical comments in the staff's RAI (see the RAIs and DOE's proposed responses in ADAMS under ML051290409) and DOE reviewed its proposed responses to each of the 12 comments. NRC staff stated that, in general, the draft RAI responses were satisfactory and appeared to answer the questions raised.

NRC staff asked clarifying questions regarding the responses to RAI comment #4, #5, #6, #9, and #11 (see Attachment 3 for summary of DOE draft RAI responses). For RAI #4, NRC staff asked DOE to explain its use of the 95<sup>th</sup> percentile upper confidence level for residual waste volume. NRC expressed concern that using the 95% confidence level of waste volume remaining in the tank may lead to the decision to stop waste retrieval earlier because to achieve 95% confidence in waste volume remaining would require more waste to be removed, as compared to using the expected value of waste remaining. DOE explained that the 95% confidence level of volume of waste left in the tanks is calculated after removal operations were stopped, and was not used in the field as a basis for when to stop the removal operations. DOE stated that they would evaluate the implications of using the expected value. NRC staff also stated that it understands that DOE has agreements with its State regulators that DOE must uphold. The representative from the Washington State Department of Ecology stated that the Department did not necessarily mean that the 95% confidence level should be used for determining whether the limits of technology have been reached.

For RAI #5, NRC staff asked DOE to describe its quality assurance (QA) process. DOE responded that they would revise their response to include a description of their QA process. For RAI #6, NRC staff asked DOE to verify the numbers given in the draft response regarding the number of sluicing operations and the amount of water needed to remove waste to meet the 99% retrieval target, because they seemed high. DOE agreed to check the numbers. For RAI

#7, the Department of Ecology pointed out that it would assume unrestricted land use after about 150 to 300 years.

For RAI #9, NRC staff asked for more information supporting DOE's assumption that the waste is homogeneous. DOE stated that the waste contains a small number of chunks of hard material within a larger amount of silty material, and that the silty material was formed from breaking up the chunks. The sample of waste was taken from the silty material. DOE also explained that the residue remaining in Tank C-106 is less than 1 inch deep, and so taking samples is difficult. DOE showed the staff a video of the inside of the tank and the remaining residuals. NRC staff asked whether DOE had samples from similar tanks that showed homogeneity or whether there were other bases for assuming homogeneity. DOE will revise its response to describe its basis for assuming the waste is homogenous (e.g., historical or process knowledge, videos showing the mobility of the waste). NRC staff asked that DOE also describe any material that may remain on the side of the tank, as well as the residuals at the bottom of the tank.

For RAI #11, NRC staff asked why DOE did not provide a lower bound in the uncertainty of the volume estimate. DOE said they calculate lower bounds but are only required to report upper bounds. NRC staff stated that, in general, it wanted to see both upper and lower bounds.

NRC staff noted that the response to RAI #12 contained a good level of detail and appropriately addressed the issue.

DOE stated it would take into account the NRC staff's feedback and revise the RAI responses before formally submitting the final RAI to the NRC.

Following discussion of the RAI, DOE proceeded to provide an overview of its PA (see Attachment 3). The PA that will be submitted is a refinement of past PA's for single shell tank farms. Credibility of the results will be established through a variety of mechanisms, including: code benchmark and verification, calibration to field measurements, sensitivity and uncertainty analysis, peer review, NRC review, and stakeholder communication. The PA will address intruder, atmospheric, and groundwater pathways. DOE stated that alternative scenarios to the base case would be presented to establish the robustness of the performance of the system. The analysis will be performed for 10,000 years and consideration will be given for institutional controls of up to 300-500 years that would limit intruder contact with the waste. The PA will be deterministic and numerous sensitivity analysis will be performed to evaluate parameter and scenario uncertainty.

### **Public Comment**

None.

### **Closing Remarks and Action Items**

DOE stated that it intends to provide NRC with final RAI responses and chapters 1 through 3 of the PA in the near term, followed several months later by the remaining chapters. NRC staff stated it would not develop its Technical Evaluation Report, which will evaluate the information included in the final RAI responses and the PA chapters, until after all the information has been

submitted and reviewed. NRC staff and DOE also briefly discussed a future site tour of Hanford, as well as possible future modification of the Interagency Agreement to allow for additional reviews. Both agencies agreed that the meeting was useful, and the meeting adjourned.

**ATTACHMENT 2: Attendees at NRC and DOE Meeting  
to Discuss RAIs and PA for Hanford  
June 1, 2005**

<b>NAME</b>	<b>AFFILIATION</b>	<b>PHONE NUMBER</b>	<b>E-MAIL ADDRESS</b>
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Jim Lieberman	Member of Public	301-299-3607	jxlrc@comcast.net
Suzanne Dahl	Washington State Dept of Ecology	509-372-7892	sdah461@ecy.wa.gov

Jane Hedges (on phone)	Washington State Dept of Ecology	509-372-7905	
Laura Cusack (on phone)	Washington State Dept of Ecology	509-372-7891	lcus461@ecy.wa.gov
Nancy Uziemblo (on phone)	Washington State Dept of Ecology		
Mike Wilson (on phone)	Washington State Dept of Ecology		
Moses Jarasys (on phone)	CH2MHill		
Delmar Noyles (on phone)	DOE-ORP		
Linda Lehman (on phone)	Jacobs		
Jeff Lyon (on phone)	Washington State Dept of Ecology		