

Meeting Notes: Retrieval Completion Certification per the Consent Decree

Meeting Date: March 1, 2012, 1:00 pm

Location: 2440 Stevens Center, room 2212A

Purpose: Continue discussion of the Consent Decree requirement for a written certification that DOE has completed retrieval of a tank and the practicability evaluation to forego a third technology.

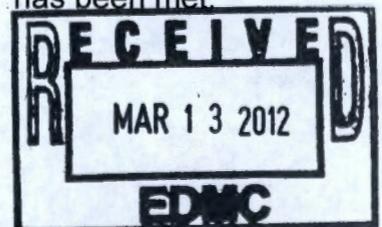
Attendees: Jeff Lyon, Ecology, Nancy Uziemblo, Ecology, Mike Barnes, Ecology, Chris Kemp, ORP, Bob Lober, ORP, Mike Peloquin, WRPS, Mike Connelly, WRPS, Jeff Luke, WRPS, Susan Eberlein, WRPS

Background:

Consent Decree 08-5085-FVS (State of Washington v. Steven Chu, US Department of Energy) section IV.B.5, requires that "When DOE completes retrieval of waste from a tank covered by this Decree, DOE will submit to Ecology a written certification that DOE has completed retrieval of that tank." (page 7) The details of this written certification have not previously been defined.

Topics discussed:

- The final meeting notes from the meetings on February 9 and February 16, 2012 were signed.
- Mike Peloquin handed out a revised draft of the Practicality Evaluation to Forego a Third Technology (Attachment A).
- Mike Barnes raised a concern on the appropriateness of using a Best Basis Inventory (BBI) estimate for residuals in tank C-104. Retrieval methods that preferentially remove soluble components may tend to leave increased concentrations of insoluble components behind. Mike believes that the Pu concentration in C-104 may exceed the BBI estimate at end of retrieval.
- The action was taken to arrange a meeting with Jacob Reynolds to discuss the BBI estimate as applied to C-104.
- The group stepped through the outline in Attachment A.
- Nancy Uziemblo suggested additional clarifying words to be added to the title.
- Chris Kemp requested that it be clarified that "technology" refers to "retrieval technology".
- The Limit of Technology (LOT) section was discussed. If a request to forego a third technology is required, there may be no citable documentation in place demonstrating that the LOT has been met on the second (or possibly even first) technology. Thus the LOT section in practicability evaluation to forego a third technology needs to provide enough detail to demonstrate the LOT has been met. The wording of the outline was revised.



- It was reiterated that the LOT criteria for technologies other than modified sluicing have not yet been established.
- It was noted that the description of the waste at the end of the second retrieval technology deployment should include physical description and photographs.
- It was recommended that a standard table or list of potential technologies be developed to include at the beginning of section 4. The candidate technologies should include those identified in the Hard Heel Waste Retrieval Technology Review and Roadmap (RPP-RPT-44139).
- Language in 5.0 stating that "DOE and Ecology agree" was deleted, to avoid misleading the reader about the extent of any agreements.
- The use of the BBI was discussed. It was decided that the BBI estimate of inventory was appropriate for the start of retrieval, and for the end of the first retrieval technology deployment (if available). In all other cases, an estimate should be provided that includes discussion of the basis and limitations of the estimate.
- It was reiterated that post-retrieval sample data will not be available for the Practicability Evaluation, but will be included in the Retrieval Data Report.
- It was agreed that there was not significant value in updating the BBI based on the volume at the end of the second retrieval technology, but prior to completing the final sample analysis.
- At the end of the meeting, there was additional discussion of the method that was available to evaluate the residual waste volume at the end of caustic cleaning in C-108. The liquid displacement method is planned; however, the 20,000 gallons of liquid that will be in C-108 at the end of caustic cleaning may not be sufficient to completely cover all residual waste piles. A follow-on discussion with retrieval engineering (Blaine Barton) will be set to discuss the proposed process in more detail.
- The next meeting has been set for Tuesday March 6 at 1 pm. Chris Kemp will send out a meeting notice.

Actions:

- Set next meeting location for March 6 at 1 pm. (Kemp)
- Arrange a meeting with Jacob Reynolds to discuss the BBI estimate as applied to C-104. (Eberlein)
- Arrange a meeting with Blaine Barton to discuss the methodology for estimating residual volume at the end of second retrieval for C-108. (Eberlein)
- Send out updated outline before next meeting. (Peloquin)

Concurrence:

CK 3-13-12

Chris Kemp, ORP

Date

Jeff Lyon 3-13-12

Jeff Lyon, Ecology

Date

Attachment A: DRAFT

PRACTICABILITY EVALUATION REQUEST TO FOREGO A THIRD TECHNOLOGY

Pursuant to Consent Decree 08-5085-FVS
(State of Washington v. Steven Chu, US Department of Energy)

NOTE: Discussions with DOE-ORP, TOC and Ecology have resulted in this outline. This document may change based on new information or improvements. Any of the parties may request changes to this document, in which case they will jointly revise the document.

1.0 INTRODUCTION

2.0 SUMMARY OF TECHNOLOGIES DEPLOYED

2.1 First Technology Discussion

Includes Performance Graphic

2.2 Second Technology Discussion

Includes Performance Graphic as appropriate

3.0 SUMMARY OF VOLUME AND DESCRIPTION OF RESIDUAL WASTE

3.1 Estimate of waste removed

3.2 Estimate of residual waste remaining

3.3 Description of residual waste remaining

1. Description for the basis of the estimated inventory
2. BBI Inventory estimate

4.0 EVALUATION OF 3rd TECHNOLOGY FOR WASTE RETRIEVAL

4.1 Rationale for 3rd technology selection

4.2 Process description overview

4.3 Performance assumptions – Include an estimate of how much additional waste each candidate technology could retrieve, based on waste form/configuration at end of second technology

4.4 Estimated volume and inventory reduction. Develop table of key constituents and estimated inventory reduction of third technology: ⁹⁹Tc, ⁹⁰Sr, ¹³⁷Cs, Total Uranium, Actinides, Cr, Nitrates

5.0 EVALUATION OF PRACTICABILITY

The evaluation of practicability will address, at minimum, Criteria 5.1, 5.2, and 5.3. Other criteria may be included as appropriate. DOE and Ecology agree that the estimated inventories used in this document will be from the most recent TWINS BBI database, however, this information may be modified to estimate the volume/mass and inventory of key constituents in a specific tank after the deployment of the second technology for the comparisons performed in this document.

5.1 Inventory Risk Reduction Evaluation

1. The key constituents of concern that will be estimated and evaluated are: ^{99}Tc , ^{90}Sr , ^{137}Cs , Total Uranium, Actinides, Cr, Nitrates
2. An update will be made using the estimated volume remaining in the tank following the deployment of the 2nd technology
3. Provide basis for inventory estimates for each retrieval technology and prepare two tables
 - i. Table 1 provides the estimated inventory of the key constituents for the following
 1. BBI estimate at the start of retrieval
 2. BBI estimate at the end of first technology
 3. BBI estimate at the end of 2nd technology
 4. Estimate of inventory at the end of 3rd technology that takes the volume down to 360 ft³
 - ii. Table 2 provides the estimated inventory removed for
 1. Deployment of first technology
 2. Deployment of second technology
 3. An estimate of what would be removed if a 3rd technology is deployed to reach 360 ft³
 4. Total inventory of key constituents removed if retrieval reaches 360 ft³
4. Compare the estimated inventory of waste removed by the 3rd technology (Assumes the 3rd Technology is able to reduce the volume of waste in the tank to at least 360 ft³) and the waste remaining in the tank after the 3rd technology to the following:
 - i. Maximum inventory found in retrieved tanks that have a retrieval data report (RDR)
 - ii. Sum of inventory found in retrieved tanks that have a retrieval data report (RDR)
 - iii. Estimate of total inventory remaining in tank residuals from the latest HTWOS run to support the system plan (i.e. ORP-11242 REV 6) with the appropriate caveats because HTWOS has not taken into account the caustic dissolution or deployment of 2nd and 3rd technologies with their residual inventory estimates.
 - iv. Estimate of total inventory leaked to the vadose zone in WMA C (RPP-RPT-42294, Rev. 1, Hanford Waste Management Area C Soil Contamination Inventory Estimates)
5. For each candidate technology, note any differences between the end state of 360 cubic feet, and the end state that a technology could realistically expect to achieve (see 4.3 above)

5.2 Evaluation of impacts to worker safety from 3rd technology

- a. Qualitative estimate and basis of worker exposure for the tank retrieval up to the time the process was halted.
- b. Estimate the exposure to the selected third technology and compare to the total exposure estimate. Provide a qualitative evaluation for the estimate basis.

- c. Qualitative estimate and basis of the predicted industrial lost time and recordable accidents associated with deploying a third technology.
- d. Other applicable qualitative comparisons based on technology selected.

5.3 Evaluation of Mission Impact from deploying 3rd Technology — This criterion assesses the potential for the alternative to impact WTP, impact overall schedule and impact to continuing retrieval of other tanks or other mission priorities. This criterion does not require additional model runs (e.g. HTWOS model), but will address mission impacts qualitatively. This may include any of the following:

- a. Schedule Impacts To Other Tank Retrievals From Deploying Third Technology
- b. Impacts To Achieving Consent Decree Milestones
- c. Impacts to WTP (e.g. impacts from Na and Al)
- d. Other Impacts to Mission
- e. Estimated schedule for the 3rd Technology —Total duration for installing, operating, and demobilizing of the particular technology and includes the confidence for achieving the scheduled end date.
- f. Ease of Implementation for the 3rd Technology —This criterion refers to the level of difficulty that each alternative may include when installing, operating, and demobilizing equipment, instruments, etc. It also includes the level of project and technical risk associated with implementation.

5.4 Evaluation of Potential for Exacerbating Leaks.

5.5 Cost estimate for deploying third technology -Total cost for installing, operating, and demobilizing the particular technology and includes confidence for completing within the indicated estimate

5.6 Evaluation for facilitating tank closures

6.0 ADDITIONAL INFORMATION – as applicable

7.0 CONCLUSIONS