

FINAL MEETING SUMMARY
HANFORD ADVISORY BOARD
TANK WASTE COMMITTEE MEETING
January 10, 2006
Richland, WA

Topics in this Meeting Summary

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This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and Introductions

Rick Jansons, Chair of the Tank Waste Committee (TWC), welcomed the committee and introductions were made. Proposed changes were incorporated into the October committee meeting summary, and the summary was adopted.

Tank Volume Projections from 2009-2015

Roger Quintero, Department of Energy – Office of River Protection (DOE-ORP), presented information on double-shelled tank (DST) volume projections and alternatives for storing tank waste. DOE-ORP achieved Tri-Party Agreement (TPA) Milestone M-46-21, which stipulates the need to implement recommendations from the DST Space Optimization Study and to create adequate DST storage space to accommodate waste from tanks S-112, S-102, C-104, S-105, S-109, S-103, and C-106. DOE-ORP considered four options to increase DST space:

- 1) Share DST reserve emergency space;
- 2) Use previously “restricted” space within DSTs containing waste treatment plant (WTP) staged feed;
- 3) Concentrate evaporator slurries to a higher specific gravity (SpG); and,
- 4) Raise allowable tank levels.

Changes to DST space resulting from implementing these options provides enough DST space to accommodate waste retrieval from tanks S-102, S-109, S-112, and all C-Farm tanks.

Original DST volume projections were submitted to the Washington State Department of Ecology (Ecology) in August of 2004; however, this estimate did not project out to 2015. DOE is able to estimate DST volume projections over the near-term, but it is difficult to project volume estimates beyond the waste retrievals identified to date.

Roger discussed considerations for building new DSTs to address tank volume needs. The most economical approach would be to build tanks in a “four-pack” configuration, at a total cost of \$400 million to \$500 million (roughly \$125 million per tank). It takes approximately seven years from the point of decision to build a new, operational DST.

Regulator Perspectives

- Jeff Lyon, Ecology, said DOE-ORP has made great efforts to ensure there is enough DST space to handle C-Farm tanks. Between 2009 and 2015, there will likely be limited retrieval going on as a result of a lack of DST space. DOE has milestones to meet, but since the retrieval rate is very low, several retrieval milestones will not be met.

Committee Discussion

- Wade Riggsbee commented that the original assumption for building new tanks was based on a “six-pack” configuration. Roger acknowledged the original authorization study did look at a “six-pack” tank configuration, however, a “four-pack” has been determined to be more economical. DOE continues to look at options for making additional DST space available. DOE-ORP will provide interested committee members with the rationale for switching from the “six-pack” configuration to the “four-pack” configuration for tank construction.
- *Pam Larsen asked why DST space projections do not account for waste processed using bulk vitrification?* Roger explained that DOE is looking at that as an option, but not in the current projection, which may not have assumed bulk vitrification would be operational. Moussa Jaraysi, CH2M Hill (CHG), said bulk vitrification would not impact the space available in DSTs. He indicated the DST space projections would change as technologies are considered and implemented.
- *Dick Smith asked what is the tradeoff between evaporation and the cost of a new tank?* Moussa said it would cost much less to run an evaporator campaign than to build a new tank, since the evaporation facility is operational, and there are no start-up costs. Jeff agreed that the cost of developing additional evaporator operation would be an order of magnitude smaller than building a new tank. He explained that it is not a one to one tradeoff. Concentrating evaporators at higher SpG levels is being evaluated to provide increased DST volume.

- *Al Boldt asked what was the cause of the increase in DST space in October of 2004?* Roger said the increase was a result of the adjustment to the fill height in the DSTs.
- *Al asked whether a fill height adjustment would be made to additional tanks?* Roger said that decision has not been made yet.
- Al expressed concern about the clarity of cost estimates, specifically that the cost estimates for building new tanks could under-represent their actual cost.
- Dirk Dunning commented that current DST space projections out to 2009 do not demonstrate long-term impacts. He said the seven-year lead-time for building a new tank does not account for the time required to obtain Congressional funding approval, which takes about three years. Dirk emphasized addressing cost issues early on, looking at tanks of other sizes to determine the optimum size, and to be sure to avoid situations like over-concentrated tanks.
- Dirk expressed concern that DOE's option for sharing emergency space could put restrictions on operations, since if something were to happen in the field, like a tank leak, the Waste Treatment Plant (WTP) would no longer have emergency space.
- *Maynard Plahuta asked whether the DST cost estimates included construction and closure costs?* Roger indicated the cost estimates only reflect construction costs.
- *What is the next milestone for retrieving waste from tanks?* Moussa said a TPA milestone in September of 2006 would open negotiations to determine the remainder of tank retrievals. Jeff indicated a report released in March will make retrieval projections, and a complete evaluation of DST space is due in March. Ecology plans to make a decision in 90 days whether more DSTs are needed.
- Al expressed concern about DOE not acknowledging the vitrification plant delay by attempting to keep cleanup plans on schedule. He said it appears DOE and Hanford contractors need to reevaluate new work schedules, assumptions, data, etc, to determine whether they will be able to assess the direction of waste retrieval.
- The committee discussed the impacts of the WTP delay. There was general agreement that work schedules need to be evaluated a year or two beyond the start-up of the WTP.
- Pam commented that the decision criteria for building new tanks should be evaluated on a periodic basis. Jeff said he would appreciate the committee looking at the process for deciding whether to build additional tanks. He is interested in whether the Board is comfortable with the gap between waste retrieval activities that will occur when the DSTs are full and the WTP has not begun treating waste yet.
- There was general committee agreement to draft advice principles on DST volume.

Tank Closure Environmental Impact Statement (EIS)

Mary Beth Burandt, DOE-ORP, presented information on the recent news release announcing the settlement agreement reached between DOE and the State of Washington (State) over the 2004 Hanford Solid Waste EIS. DOE, with the State as a cooperating agency, will prepare an expanded EIS that will cover the scope of the Solid Waste EIS

and the Tank Closure EIS, as well as include updated, site-wide groundwater analysis. The 2004 Solid Waste EIS will direct ongoing cleanup operations and activities until the new EIS is complete. The expanded EIS will be called the "Tank Closure and Waste Management (TC&WM) EIS." DOE and the State have discussed issues with the Quality Assurance (QA) report and rewrote the memorandum of understanding (MOU).

Regulator Perspectives

- Ron Skinnarland, Ecology, said the agreement to produce an expanded EIS is an important step for waste retrieval activities at Hanford. DOE and Ecology plan to have the EIS document complete in 2008. The agencies will be going through a public scoping process to describe the document creation process, to promote an understanding and basis for the EIS.
- Suzanne Dahl, Ecology, said Ecology plans to have significant involvement in all steps of the EIS development process, and intends to be a hands-on cooperating agency.

Committee Discussion

- *Has DOE agreed the TC&WM EIS is cumulative?* Mary Beth said DOE agreed the new EIS is meant to be cumulative. She said the new EIS would be based on the existing Tank Closure EIS alternatives in addition to waste management activities covered by the 2004 Solid Waste EIS.
- *Will DOE hold hearings on the new EIS?* Mary Beth said DOE plans to release a notice of intent and will conduct public scoping meetings on the expanded EIS.
- *Although DOE plans to use existing data and information to develop the new EIS, will the typical EIS process be conducted?* Mary Beth indicated that from a process perspective, the process would be the same as it would be for starting a new EIS.
- Committee members expressed concern about the timeframe for scoping the new EIS. Mary Beth said DOE plans to issue a notice of intent at the end of January and hold scoping meetings in February. The MOU establishes June of 2008 as the deadline for a final EIS, so DOE needs to have a draft EIS ready in 2007.
- Committee members expressed concern that the public comment opportunities in the schedule for the scoping of the TC&WM EIS are inadequate. If scoping meetings were held in February, the Hanford Advisory Board (Board) would not be able to submit comments and advice until its April Board meeting. The committee discussed preempting DOE's EIS scoping process by developing advice principles for the February Board meeting. Committee members were also concerned about the use of existing alternatives from the Tank Closure EIS, and that scoping input would be limited to determining how to combine the Tank Closure EIS and the 2004 Solid Waste EIS. Mary Beth said DOE plans to go through the appropriate public comment process during EIS development. Conceptually, scoping meetings will use aspects from the Tank Closure EIS and Solid Waste EIS as a foundation from which to discuss the TC&WM EIS.

- *When will the EIS scoping process close?* Mary Beth said the scoping meetings would be held in February, but she was unsure when the process would end, and will get back to the committee with the answer. Todd Martin said the Board wants to avoid giving advice on a broad scope at their February Board meeting and will not have another opportunity to provide advice until the April Board meeting.
- *Considering the settlement agreement, is the 2004 Solid Waste EIS a defunct document?* Ron said the 2004 Solid Waste EIS would be used until the TC&WM EIS is completed. In the interim, Ecology believes the 2004 Solid Waste EIS provides adequate National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) coverage for continued cleanup at Hanford.
- Committee members were concerned about conducting cleanup actions based on existing modeling inadequacies in the 2004 Solid Waste EIS. Ron said Ecology has to do a SEPA analysis to make all permitting decisions, and that decisions for new actions would be made on a case-by-case basis.
- Several committee members believed the schedule for the TC&WM EIS is too optimistic, considering scheduling issues with the Tank Closure EIS. Mary Beth said the TC&WM EIS presents a new set of challenges, and the agencies plan to move forward and address these challenges. Jeff reiterated that a lot of data that will be used in the TC&WM EIS have already been collected and developed, which will reduce the time necessary to develop the document.
- *Which DOE office is responsible for managing the TC&WM EIS?* Mary Beth said the DOE-ORP management team for the Tank Closure EIS remains the core team that will manage the TC&WM EIS. Some additional people have been added from the Department of Energy – Richland Operations Office (DOE-RL).
- Pam was very pleased by news of the settlement agreement. She said the agreement reflects a complete turn-around in DOE's perspective on the issue. She expressed the desire to have the Board commend DOE and Ecology on their settlement agreement.
- Although committee members recognized the settlement agreement as a great step forward for determining national nuclear waste management issues, several committee members remained concerned about the appropriateness of modeling that would be used in the TC&WM EIS. Mary Beth said she is confident in the team composition, and will look at modeling issues and concerns that have been raised. In November, a decision was made by DOE to not use Pacific Northwest National Laboratory's (PNNL) groundwater model for the TC&WM EIS. A commercially available groundwater model (U.S. Geological Survey ModFlow model) will be used instead, which will use current groundwater modeling work that has received QA analysis.
- *Does the use of a commercial groundwater model mean conditions at Hanford are not unique?* Mary Beth said the code being used to run the model will remain the same. A commercial groundwater model was chosen because DOE wanted a model that Ecology could run if they chose to. DOE will work closely with Ecology to develop assumptions and conceptualizations for running the model. As part of the settlement agreement, DOE will have an external evaluation group present as they

develop the conceptual model. DOE is committed to making this as transparent a process as possible.

- *Does the scope of the TC&WM EIS include the bulk vitrification demonstration project?* Suzanne Dahl, Ecology, said the bulk vitrification demonstration project was never in any EIS, and is governed by a separate Ecology evaluation.
- *What role will the Department of Energy – Headquarters (DOE-HQ) play on the TC&WM EIS?* Mary Beth indicated she is responsible for producing the EIS and the National Environmental Policy Act (NEPA) is clear on what is expected of the EIS document manager. She said once the TC&WM EIS is finished, DOE-ORP would send the document to DOE-HQ recommending it be published, and then it would be signed off by the Department of Energy – Environmental Management (DOE-EM) and the Department of Energy – Office of Environment, Safety and Health (DOE-ESH). Mary Beth said she has staff from DOE-EM and ESHO on the TC&WM EIS team, but indicated that until the EIS document is ready for review, all the work is managed and conducted at Hanford. Ron added that the State believes it is important to have a mutually supported document at the end of the process. Some committee members believe the Board needs to have influence on the interface between DOE-HQ and the Hanford field offices.
- *Gerry Pollet asked whether all documents considered in the review and analysis of the 2004 Solid Waste EIS have been unsealed and made available to the public? If not, when will they be available, and will Ecology formally request DOE make them available?* As the agencies embark on developing the TC&WM EIS, Gerry said he would like to review the documents to establish confidence in the data and analysis. DOE-ORP is unaware of any documents still under court seal, but will check and get back to committee. Ron said he believes documents were sealed until the settlement agreement was reached, so he assumes once the settlement is filed, all documents would be available.

Iron Phosphate Glass Report

Dick Smith provided an issue manager report on a technical paper he and Al Boldt coauthored, comparing iron phosphate (FeP) glass processing technology with borosilicate glass (BSi) technology for use at the WTP. Dick presented highlights of the paper, concerns about past decisions, programmatic and policy issues, and recommendations to the TPA agencies.

Dick explained that the paper's evaluation of the low-activity waste (LAW) facility at the WTP is based on melter throughput and cave cooling time. The throughput limitation at the WTP indicates the need for additional waste processing capability. There are only a couple of ways to improve throughput: operational efficiencies, or increase sodium and sulfate waste loadings in glass. According to the paper, a three-melter system may have a 20 percent higher total operating efficiency than a two-melter system. When poured, iron phosphate glass requires less heat to be taken out than borosilicate glass. There is a significant improvement in melter throughput with iron phosphate glass. Iron phosphate

glass has greater potential for sodium oxide loading and sulfate retention than borosilicate glass.

Dick presented a summary of analyses for WTP glass production alternatives, which provide the amount of waste that could be processed using BSi glass and FeP glass with and without bulk vitrification. Dick and Al's analyses indicate that aside from some relatively minor engineering changes, no additional facilities would be required to operate the FeP system at the WTP.

Dick commented that no studies of system life-cycle costs exist to support DOE's decision to delete the third melter from the WTP, utilize bulk vitrification to supplement BSi glass processing at the WTP, and not to consider FeP glass processing technology for the WTP. Dick said analyses of environmental impacts and life-cycle costs are necessary for all treatment alternatives, and the delayed completion of the WTP provides the opportunity to evaluate other treatment options.

Dick outlined recommendations in the technical paper:

- Respond to previous HAB advice, including Advice #139, which requested cost information associated with installing a third melter at the WTP, as well as Advice #183, which requested a cost comparison of implementing bulk vitrification and building additional LAW capacity at the WTP.
- Complete the Milestone 62-08 Report in June of 2006, including FeP glass as one of the treatment alternatives, and develop complete life-cycle costs for all treatment alternatives.

Bill Hamel, DOE-ORP, presented a response to Dick's discussion of FeP glass technology as a treatment alternative for the WTP. DOE's current position is that BSi glass is the baseline treatment alternative for the WTP. DOE has done a lot of work to optimize BSi technology, and there is a lot of work yet to be done. Although available data indicates there may be some positive attributes to FeP glass technology, there is a lack of data necessary to determine long-term performance and confidence in the technology. Data on FeP was collected from only 15 to 18 crucible melts as opposed to thousands of BSi melts in full-scale melters. Due to these data discrepancies and no existing melter design for FeP, DOE does not believe the comparison is valid. Contrary to Dick and Al's technical paper, Bill said existing data indicate current facility design would have to be redone to accommodate FeP glass technology.

Regulator Perspectives

- Suzanne said Ecology has been looking into FeP glass technology as a treatment alternative, and appreciates the efforts of other investigations and analyses. Ecology sees potential benefits from a FeP glass waste form; however, current findings are based on just a few data points. Additionally, it is uncertain what is the optimal test for FeP glass technology, since existing tests were designed for BSi glass. More tests are necessary to appropriately evaluate FeP glass, which would require more crucible melts and building a pilot melter to provide enough data points to qualify the waste

form for the Integrated Disposal facility (IDF). To date, Ecology has not seen data qualifying FeP glass for storage at Hanford.

- Suzanne said Ecology does not think redesigning the LAW facility at the WTP for FeP would be appropriate. The BSi melters were chosen in keeping with early Board and stakeholder principles which said no technology is perfect; pick what is the best available and stick with it. Ecology believes retrofitting the LAW facility by replacing the BSi melters with FeP melters would be a significant redesign project that would slow down retrieval and treatment work. She indicated the current baseline is to build a second LAW treatment facility if bulk vitrification does not work.

Committee Discussion

- Dirk Dunning commented that FeP glass technology has been used for a long time, but not as extensively as BSi glass technology. If DOE needs to pursue the FeP glass alternative, information from Russia's use of the technology should be obtained. He suggested similar concerns exist with bulk vitrification as with FeP glass technology. FeP glass should be evaluated as a treatment alternative, and all alternatives should be given equivalent analysis.
- *How does using FeP glass compared to BSi glass impact the supply of feed material?* First, Bill said the appropriate feed material needs to be identified. The Russians used phosphoric acid, which presents difficult logistical problems. To provide the quantity of feed material for FeP glass requires identifying a bulk source of phosphates. For BSi, DOE had to identify quarry grade material to bring in. There is no advantage to either technology regarding feed material as long as acids are avoided.
- Several committee members expressed concern about the political implications of switching technologies at this time or looking like the current technologies were being second-guessed. This could have substantial impacts on cleanup funds. Members suggested continuing to consider FeP glass as an alternative, but DOE should move forward with existing work with BSi glass.
- Dick explained that their analysis does not advocate DOE shut down work with BSi glass. He said they advocate DOE perform analyses of all the alternatives, including FeP glass technology. Since the facility's melters will have to be replaced at some point, FeP glass technology could be implemented at that point if it is determined to be a better technology. Suzanne explained that replacing BSi melters with FeP melters results in different thermal off-gas production, which would require performing demonstration tests on the facility to set operating parameters for permits.
- *Todd said he understands the agencies' hesitation to consider FeP glass at this point, but asked whether it would be unreasonable for the Board to make recommendations for DOE to consider FeP glass as a treatment technology?* Suzanne indicated it would not be an unreasonable consideration for a second LAW facility, but there are concerns with applying FeP glass to the existing treatment facility. Bill said treatment alternatives for a second LAW facility should consider the complete array of technologies. Paige Knight commented that the selection of supplemental

technologies was not an open and fair process, and she would like the committee to provide advice to DOE to ensure that such decisions are more transparent in the future.

Committee Business

The committee discussed specific actions on several issues:

Tank Volume Projections:

- The committee agreed on the need to draft advice on tank volume projections for the April Board meeting. Issues managers Dirk Dunning and Rick Jansons will develop supporting information and draft principles for advice on tank volume projections, planning, and the WTP delay. The committee expects to develop consensus advice principles at the next committee meeting.

TC&WM EIS:

- The committee agreed on the need to assume a proactive approach to providing comments on the TC&WM EIS. The committee agreed to send a letter from the Board in February, to commend DOE on the settlement agreement regarding the TC&WM EIS, and indicate the Board will have further comments and advice in April.
- Rick Jansons will circulate a list of future meeting topics for distribution to the committee. The committee will agree via email on several agenda items for the next committee meeting.

HANFORD ADVISORY BOARD TANK WASTE COMMITTEE AND BUDGETS AND CONTRACTS COMMITTEE

*January 10, 2006
Richland, WA*

Joint Committee Meeting with the Tank Waste Committee and Budget and Contracts Committee

Bulk Vitrification Schedule

Delmar Noyes, DOE-ORP, introduced Jim Thompson, Federal Project Director for Tank Farms Programs and Projects Division, and Ben Harp, Project Director for retrieval operations, disposal, and storage projects, who were recently hired to fill project director positions.

Jim Thompson, DOE-ORP, presented the approach and status for the bulk vitrification demonstration project. On September 16, 2005 the design and construction approach were stopped. The current approach calls for finishing research and development,

completing design, finishing a validated cost estimate, and developing a resource loaded schedule. The Fiscal Year 2006 (FY06) project costs are \$25.6 million, including testing and the design for a single-line pilot plant. In August, an external independent review team will be coming in from DOE-HQ to evaluate the facility.

Jim said previous Board advice requested an interim report on the bulk vitrification demonstration project in June of 2006. The purpose of the project was to demonstrate the performance of a one-line plant. DOE-ORP will work with Ecology on TPA Milestone M-62-08 to determine an appropriate time to publish a report. Jim said the following information would be available in August of 2006:

- A report containing results of simulant testing completed to date.
- A final design report

Regulator Perspectives

- Melinda Brown, Ecology, said Ecology recognizes the schedule for the bulk vitrification demonstration project is slipping, and potential problems exist as a result. Since many of these problems are being resolved, Ecology believes there is merit in continuing with the bulk vitrification demonstration project. Currently, Ecology believes the full-scale construction cost for a bulk vitrification facility would be roughly equivalent to a second LAW facility. She indicated Ecology would be discussing compliance with TPA Milestone M-62-08 with DOE-ORP.

Committee Discussion

- *Will a single-line bulk vitrification plant be complete by September?* Jim said DOE would soon have the data to inform the decision whether to construct a single-line bulk vitrification pilot plant or put the project on hold. If a decision were made to construct the pilot plant, construction would start in October of 2006 and take one year to make the facility operational.
- *Is there sufficient data to support decision-making criteria for deciding whether to build the bulk vitrification plant?* Jim said the plant design would be finished in June, and then DOE needs time to review data. In the meantime DOE will continue testing bulk vitrification.
- *At what point would DOE decide the project is too expensive?* Jim said that after each test, DOE analyzes the data, which informs the design criteria and glass performance on a real time basis.
- *Is it typical to research the technical aspects of a construction project, while designing the treatment system?* Jim said the major unknown is the glass technology and glass product performance; however, the size of the product is known, so DOE can go ahead with designing the rest of the facility.
- *What if the glass product does not meet performance standards?* Delmar said decision-making criteria consider waste product performance. All the data collected from ongoing tests indicate the waste product will meet performance standards.

Billie Mauss, DOE-ORP, indicated there has not been one test simulation that has not met performance standards. Delmar said treatment of boxes with real tank waste would begin in late 2007. As DOE conducts bulk vitrification tests, Delmar said DOE would share the data with the committee on a real time basis.

- Some committee members expressed concern there is not enough flexibility in the schedule. Jim explained the schedule presented to the committee is very general, but the working schedule is more detailed and flexible. Currently, DOE is a little behind schedule, but this is mainly due to vendor delays. DOE-HQ has four weeks to review the schedule before making recommendations.
- *Has there been one test run that has not produced metal in the waste product?* Billie said all the tests have resulted in small amounts of metal in the waste product. Dirk commented that if DOE cannot produce a glass form in the binary phase, then they have not produced a waste product that meets performance standards. Dirk requested a report of bulk vitrification test results. Billie said DOE-ORP would provide a test report to interested committee members.
- *Dirk asked whether the bulk vitrification test system includes full containment with written approval of the Defense Nuclear Facilities Safety Board (DNFSB)?* Delmar said DNFSB does not typically issue written approval, but said they are comfortable with where DOE is going with the bulk vitrification plant. Jim said full containment means completely covering the plant in a building. While this is not part of the design, Jim said adequate containment would be achieved through pressure and the method of operation; double containment is provided through physical containment and the ventilation system.
- *Will DOE perform at least one “hot” bulk vitrification run by May?* Jim said no radioactive test would occur by May, but DOE will have a full simulant test done by then. Before a decision is made to construct a one-line pilot plant, DOE will perform a full box test. The validated cost estimate includes building and running a one-line test bulk vitrification pilot plant. To develop confidence in the performance of bulk vitrification technology, Jim indicated the pilot plant needs to be operated for a certain amount of time. Based on the performance of the pilot plant, a decision can be made whether to build a full-scale bulk vitrification plant. At this point, a direct cost comparison cannot be made between the bulk vitrification demonstration project and a full-scale treatment plant.
- *Do DOE’s decision criteria for the bulk vitrification plant include secondary waste form performance?* Jim said the decision criteria do include secondary waste form performance. Jim said secondary waste would be a liquid effluent, which would be disposed of at the Effluent Treatment Facility (ETF). Al expressed concern about the amount of secondary waste produced during bulk vitrification treatment, and believes it may be too much to dispose of at the ETF.
- *In June, will DOE have enough information to make the decision whether to move forward with the bulk vitrification plant?* At this point, the life cycle costs of bulk vitrification should be compared against the first viable alternative, which would be a second LAW glass facility. Jim said DOE could not provide good lifecycle cost for the bulk vitrification plant until a full-scale, “hot” test is conducted. Howard Gnann,

DOE-ORP, said DOE's decision whether to move forward with the bulk vitrification plant will be transparent, an external review will be performed, and the public will have the opportunity to provide comment.

- Gerry Pollet appreciated receiving a tour of the bulk vitrification demonstration project by Howard and Roy Schepens, DOE-ORP. In September, the Board was concerned DOE was on a fast track to spend and waste a lot of money on bulk vitrification. *Considering the new Tank Waste and Waste Management EIS, will DOE conduct full life cycle cost estimates to compare all the treatment options during EIS scoping?* When the draft TC&WM EIS comes out, cost estimates would be provided in June of 2007. Howard indicated the EIS is not the appropriate document for choosing the treatment technology, but will provide the environmental impacts of the various alternatives. A technical report must be prepared to compare waste treatment options with the standard LAW vitrification. Gerry believes the public would consider the EIS the document that presents the life cycle costs of the alternatives, and DOE should expect to receive comments accordingly.
- Howard commented that while precise costs for the full scale bulk vitrification plant is not know, current estimates are being used for budgeting purposes through 2009. Gerry requested an e-mail update from DOE on costs and budgets, and/or the schedule for when those figures would be available to the Board. He would like to know what information would be available for comparing the 2006 and 2007 budgets.

Waste Treatment Plant (WTP) Update

Jim Henschel, Bechtel National (BNI), provided the committee with an update on the WTP. Jim explained that BNI focused on improving safety in 2005, and they are seeing good results. In 2006, BNI plans to focus on promoting quality and developing good procedures. Construction of the LAW facility and Analytical Lab is progressing as planned. BNI has resolved most of the technical issues at the WTP, are finalizing the seismic impacts, have increased seismic design criteria, performed a successful high level waste (HLW) canister drop, finished the dynamic analysis, revised the estimate at completion (EAC), and are going through the EAC review process. BNI's main objective this spring is to get the EAC reviewed by DOE, consultants, U.S. Army Corps of Engineers, and an independent review team. At the Secretary of Energy's request, BNI developed two review teams, the EAC Review Team, to provide a complete comprehensive review and analysis of the EAC and the associated schedule, and the Technical Review Team, to review and analyze the WTP Technical Baseline. An Oversight Committee provides guidance to the two committees. A final draft report from the review committees is due at the end of February. Jim emphasized the need to reevaluate the EAC based on \$490 million as the funding figure for FY06.

Howard Gnann, DOE-ORP, said the U.S. Army Corps of Engineers is performing an external independent review of the scope, cost, and schedule of the WTP. A status report is due in mid-March, and the final report is due June 20, 2006. This review is required prior to approval of a new performance baseline.

Regulator Perspectives

- Melinda, Ecology, said Ecology intended to provide reflections on the EAC review report produced by BNI, but they are not intending to comment on forward action. Ecology read the redacted report and briefed upper management. Points of concern for Ecology include:
 - The amount of funding available for the WTP (since DOE is not meeting the original \$690 million figure).
 - An apparent lack of commitment on DOE's part to fund the WTP at the requested level.
 - The delay in the schedule for completing the WTP.
 - The large cost increase for the WTP.
- Melinda said Ecology is anxious to see DOE's revised schedule and path forward for the WTP. She emphasized Ecology's concern that the scheduling, estimating, and planning for the WTP did not reflect the complexities of the project.

Committee Discussion

- *How will black cells be evaluated?* Jim said workers would have to go into black cells to evaluate them. He expects the work would be done inside a vessel, which involves additional safety precautions.
- *How many members of the two review teams are registered engineers?* Jim was unsure, but said he would provide those numbers.
- Gerry was disappointed with DOE-ORP's presentation on the U.S. Army Corps of Engineers 2005 report on the WTP. He said he expected someone would summarize the report and discuss the findings. Howard said he was unclear what the committee's expectations for a presentation were. Jim recommended the committee be patient and wait for the new U.S. Army Corps of Engineers report to come out in March. He believes the U.S. Army Corps of Engineers concern was that BNI did not provide the level of detail for seismic impacts down to every job hour, or appropriately describe the schedule impact. He said BNI does not disagree that the seismic impact information was not sufficient, but believes the rest of the information in their report is well detailed. Howard indicated that the biggest issue in the U.S. Army Corps of Engineers 2005 report was that DOE could not validate the cost and schedule estimate for the WTP. He believes it would be more productive to talk about the issue in March, once the U.S. Army Corps of Engineers status report is released. He expects the U.S. Army Corps of Engineers report to be more rigorous and informed regarding the 2006 cost and schedule for the WTP. Howard said the U.S. Army Corps of Engineers would release a status report in March and the final report in June. Both BNI review teams are scheduled to release reports in February. Howard will let the committee know whether the reports will be available for public review.

- *Why did DOE take nearly a year to release the U.S. Army Corps of Engineers report?* Jim said the problem was the Secretary of Energy had a cost estimate from the contractor that he could not validate. As a result, BNI updated their old EAC report to flesh out the insufficient areas, such as the seismic impacts, and changed the modeling for the financial packaging.
- Gerry reiterated concern that DOE has not supported the \$690 million funding figure. He suggested BNI develop more realistic funding scenarios and show life cycle costs for those scenarios. Jim explained that it is unrealistic for BNI to perform a detailed life cycle cost estimate for every scenario. He estimated that every \$100 million in deferred funding means adding \$140 million at the back end to account for future capital costs.
- *Does BNI have an estimate for the time delay associated with decreased funding?* Jim said that for every \$100 million decrease in funding one month delay should be expected.
- *Is there anything significant about the management recommendations and findings from the U.S. Army Corps of Engineers 2005 report?* Howard said DOE is in the process of increasing its resources for procurement, including adding a senior procurement manager, a staff procurement attorney, and four contract specialists to assist existing contracting staff. Jim said the U.S. Army Corps of Engineers report implied that BNI was not motivated to control project costs, which he said was not true. As an incentive fee contract, Jim said the contract was properly incentivized.
- *Since project costs are now twice the original budget and BNI will not come in under fee, Gerry asked whether DOE plans to renegotiate the contract?* Howard said DOE has not decided, but it would keep the Board informed.
- Keith Smith commented that BNI has gone far beyond expectations in the realm of worker safety. He believes they have set a precedent for management style and worker safety for construction throughout the world. DOE has supported BNI's efforts to retrain managers and workers. *Since BNI has laid off several trained workers, does BNI plan to retrain newly hired workers?* Jim said BNI is committed to training workers as they are hired during different phases of the project.
- *On which funding level is BNI's EAC based?* Jim said BNI is using the \$626 million funding figure, since they could not adapt to the reduced budget in time to release the EAC by December. Jim believes DOE will get \$690 million for FY07, since there seems to be significant Congressional support and much better communication between DOE-Hanford field offices and DOE-HQ.
- *What is the relationship between the Office of Management and Budgets (OMB) and DOE?* Howard said he believes there is a good amount of communication between DOE-ORP and OMB. As of November, Pam said OMB only had information from the U.S. Army Corps of Engineers and did not have BNI's information. Maynard said he hopes the EAC gets to OMB as soon as possible.

Action Items / Commitments

- DOE-ORP will provide interested committee members with the rationale for switching from the six-pack configuration to the four-pack configuration for new DST tank construction.
- Jeff Lyon requested the committee discuss the process of deciding to build additional tanks, to determine whether they are comfortable with the gap between when waste retrieval activities stop due to full DSTs and the WTP is not on line, treating waste yet.
- Mary Beth Burandt, DOE-ORP, will advise the committee when the TC&WM EIS scoping meetings will be held. .
- DOE-ORP will check on the unsealing of HSW-EIS documents and report back to the committee.
- As DOE obtains information from bulk vitrification tests, Delmar said DOE would share the data with committee on a real time basis.
- Dirk Dunning requested a report of bulk vitrification test results. Billie Mauss said DOE-ORP would provide a test report for review by interested committee members.
- Gerry Pollet requested an e-mail update from DOE on costs and budgets for the bulk vitrification funding, and/or the schedule for when those figures would be available to the Board.
- Jim Henschel, BNI, will provide interested committee members with information on the number of BNI EAC review committee team members who are registered engineers.
- Sharon Braswell, DOE-ORP, will let the committee members know whether WTP EAC review reports produced by the U.S. Army Corps of Engineers and BNI review committees will be available for public review.
- Howard Gnann, DOE-ORP, said DOE has not decided whether it will renegotiate the WTP contract, but it would keep the Board informed.

Handouts

NOTE: Copies of meeting handouts can be obtained through the Hanford Advisory Board Administrator at (509) 942-1906, or tholm@enviroissues.com

- Tank Volume Projections, Roger Quintero, DOE-ORP, January 10, 2006.
- Energy Secretary Bodman Statement on Hanford Solid Waste Settlement Agreement, Mike Waldren, DOE Office of Public Affairs, January 9, 2006.
- Settlement Agreement re: *Washington v. Bodman*, Civil No. 2:03-cv-05018-AAM, January 6, 2006.
- Memorandum of Understanding Between the United States Department of Energy, and the Washington State Department of Ecology, for Development of the Hanford Site TC&WM EIS (“TC&WM EIS”).
- Report of the Review of the Hanford Solid Waste Environmental Impact Statement (EIS) Data Quality, Control and Management Issues, January 2006.

- Analysis of Alternatives for Treating Hanford Low-Activity Wastes, Allyn L. Boldt and Dick I. Smith, January 10, 2006.
- Analysis of Alternatives for Treating Hanford Low-Activity Wastes, January 10, 2006.
- Programmatic Oversight of the Demonstration Bulk Vitrification System, James F. Thompson Jr., DOE Federal Project Director for Tank Farms Programs and Projects Division, January 10, 2006.
- Waste Treatment Plant Status Paper, DOE-ORP, January 10, 2006.
- Waste Treatment Plant Update, Jim Henschel, BNI Project Director, January 2006.

Attendees

HAB Members and Alternates

| | | |
|----------------|-----------------|-----------------|
| Al Boldt | Susan Leckband | Wade Riggsbee |
| Al Conklin | Jeff Luke | Dick Smith |
| Dirk Dunning | Todd Martin | Keith Smith |
| Harold Heacock | Vince Panesko | John Stanfill |
| Rick Jansons | Bob Parazin | Eugene Van Liew |
| Paul Kison | Maynard Plahuta | Dave Watrous |
| Paige Knight | Gerry Pollet | |
| Pam Larsen | Mike Priddy | |

Others

| | | |
|----------------------------|--------------------------|-------------------------------------|
| Mary Beth Burandt, DOE-ORP | Melinda Brown, Ecology | Laura Shikoglin, BWXS |
| Howard Gnann, DOE-ORP | Nolan Curtis, Ecology | Jim Henschel, BNI |
| Bill Hamel, DOE-ORP | Jeff Lyon, Ecology | Karen Caddey, CHG |
| Catherine Louie, DOE-ORP | Ron Skinnarland, Ecology | Moussa Jaraysi, CHG |
| Delmar Noyes, DOE-ORP | Gail Laws, WDOH | Fred Mann, CHG |
| Billie Mauss, DOE-ORP | | Felix Miera, CHG |
| Roger Quintero, DOE-ORP | | Dan Parker, CHG |
| Jim Thompson, DOE-ORP | | Joy Shoemake, CHG |
| | | Penny Mabie, EnviroIssues |
| | | Jason Mulvihill-Kuntz, EnviroIssues |
| | | Sharon Braswell, Nuvotec/ORP |
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