FINAL MEETING SUMMARY

HANFORD ADVISORY BOARD
TANK WASTE COMMITTEE MEETING
May 10, 2007
Richland, WA

Topics in this Meeting Summary

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, Tank Waste Committee (TWC) Chair, welcomed everyone and introductions were made. Changes to the February meeting summary were discussed and the summary was adopted.

Discussion of Supplemental Alternative Treatments Study and Early Operation of the Low Activity Waste (LAW) Facility Report

Delmar Noyes, Department of Energy – Office of River Protection (DOE-ORP), presented the supplemental alternatives study and early LAW report. A request was received earlier from DOE headquarters to study the possibility of starting the LAW early. The study provides a picture of costs and schedules, and a discussion of risk and programmatic challenges. Delmar said when the new Estimate at Completion (EAC) schedule was released it was determined that the LAW was the only facility able to open early. DOE also received a request to do a state of knowledge study. This study will compare supplemental treatment and early LAW and examine whether or not to continue with bulk vitrification demonstration testing. They are in the process of putting together the study to assist DOE in confirming a path forward. DOE is using a technology readiness assessment process developed by the National Aeronautics and Space Administration (NASA) and the Department of Defense (DOD) to evaluate the maturity of all potential technologies being considered. The assessment uses standard questions to determine a technology's readiness for use and/or construction. Delmar said the purpose is to provide a picture of where the department is, and to consider other technology

improvements since they chose bulk vitrification. The study is scheduled to be completed by the end of June, so it can influence the 2008 or 2009 funding schedule to pursue waste treatment options. Delmar clarified the purpose of the study is to provide information and not to make suggestions either way.

Regulator Perspectives

Ed Fredenburg, Department of Ecology (Ecology), responded that Ecology supports ORP looking at a variety of options beyond bulk vitrification. Ed said Ecology is in favor of anything that speeds up the early operation of LAW facility. Ed explained there are some advantages of early LAW including being able to ramp up the work force. If LAW proceeds then there will be some valuable lessons learned before they start the next facility. They will also be able to free up tank space, as long as that is met with retrieval. On the other side, Ecology wants to be sure that speeding up LAW to 2014 or 2015 does not delay the Waste Treatment Plant (WTP) 2019 start up date. This is a pre-conceptual study, but there is a concern about recycle scrubber liquids, and ensuring iodine and technetium is in the glass, if there is not a recycle process. The liquid effluents contain radionuclides that would normally get removed in the WTP Pretreatment Plant; these might not be removed in the early LAW startup and those impacts would have to be evaluated. Ed said Ecology is remaining open minded to the possibilities.

Committee Discussion

- *Is this study different than the bulk mission completion study?* Delmar said it is the same study just a different name.
- *What are the technology requirements needed to complete this mission?* Delmar explained the purpose is to help inform those near-term decisions and compare and contrast those decisions on how well the pathway chosen can get them to an endpoint. The technologies all have different scenarios in terms of risk, profile, cost and schedule. ORP is developing scenario examples to compare and contrast different options to provide further information.
- *Are you considering baselines when you develop the scenarios so that they create a realistic and complete picture?* Delmar said they designed the scenarios to be comparisons, not to represent specific combinations. ORP tried to include known examples to address east west availabilities. Although the scenarios avoid addressing reality, they provide information to make decisions based on alternatives comparison. ORP can provide legislators with schedule and budget information to compare and contrast relevant decisions. He said the intent is not to take these options and implement them, but to give legislators some information to make decisions. The Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS) is doing some similar scenarios. Delmar is in touch with the EIS team so they can integrate and share information as they are doing similar work.
- Pam Larsen expressed her anxiety about the iodine and technetium not getting taken out in the pretreatment process. She encourages Issue Managers to discuss getting technetium treatment back in pretreatment. This would ease the burden on the

contractors to develop technology to get the contaminants out after treatment. Other committee members shared her concern.

- *In a document sent out last week, DOE said the responsibility of early LAW will be put on tank farm operations contractors. Can you explain that?* Delmar said the concept as it stands now is that the feed delivery, pretreatment and handling of waste to LAW is assumed to be in the tank farms, not WTP. The difference is if LAW is started up first DOE would have to create another pretreatment facility because WTP will not be up yet. Most of the additional funding and activities would lie in the tank farm side, and most of the activities are covered in the baseline funding.
- *Will these reports be publicly available?* One is already on the ORP website. The other one will be available on June 30th. Delmar reiterated that it will not be an engineering study; they are just compiling information on the challenges for each path.
- *One of the concerns is the presumption about how the processes will perform, and then move forward based on that presumption. For example, with bulk vitrification there have been technical concerns about the uniform abilities. Is there any information about risks, probabilities and vulnerability?* Delmar responded ORP is trying to incorporate that information into the study. From Delmar's perspective, however, they are only at the phase of deciding if they move forward or not. They have not made a decision to move forward yet.
- *Will the technology change the amount of sodium?* Delmar said they are trying to evaluate that. ORP has a low number and a high number (60-90), and are using both in each scenario to evaluate how the sodium will effect each option. The longer the mission goes out, the less treatment is needed. So one of the questions the study asks is how much treatment is needed based on the timeline set forth.
- Al Boldt wanted to clarify the sodium issue. The pretreatment sodium is used to wash out the aluminum; the flow sheet does not adequately address the amount of time it would take to process the waste. The sodium could double or triple the LAW waste, and has a significant impact on the projects. Ed thought what Al was referring to is the flow sheet on the demonstration. He said when that testing is done Ecology will have a better handle on how much sodium needs to be added and if DOE's equipment is adequate. He has not heard numbers as large as what Al mentioned, but acknowledged that it could be an issue if the numbers turn out that high. He is expecting to get the numbers back by 2008.
- *Dirk Dunning asked if there is more detail about the sodium issue.* Delmar said he will have to get the WTP construction managers to address the committee. He knows that there is some issue with how much sodium needs to be used and a concern has come up that more than estimated amount might be needed. Delmar said the whole system is built on caustic system; there are some technologies that are under development that DOE is looking at to avoid the problem.
- *The plans for LAW 2 say that it is intended to be built with two melters, can you confirm that?* Delmar explained that with LAW 2, the facility could be designed around the cooling process so that more melters could be used. ORP is trying to

figure out what to fight for in funding: bulk vitrification, LAW 2, or something else. The point is to get all of the information into one report so DOE can examine all options. DOE can not compare elements to other sites because other sites have different waste characterizations and different scenarios so they need to base it on Hanford's constraints. Delmar's group is trying to put the pictures together in a fair and unbiased way; it can't lean towards one technology or another. Delmar said each method has its limitations and DOE needs to be able to understand those.

Demonstration Bulk Vitrification System (DBVS)

Dick Smith provided an overview of the Issue Manager work on bulk vitrification and LAW 2. He expressed some disappointment as the work review did not examine the full mission question. Dick said it was challenging to verify the data without the supporting cost data. After their second meeting, they understood better that the report was driven by what Ecology asked to see it in. DOE allocated eight million dollars for startup and operations for bulk vitrification for eight lines of operation, which did not look realistic to the subcommittee.

The group also questioned the comparison of LAW 2 to bulk vitrification from a programming point of view. Dick said it would have made more sense to look at 4 East and 4 West because the baseline called for 4 and 4. Dick said the bulk vitrification cost numbers are soft because they are a long way from complete staffing estimates and other information needed to understand the costs. Dick said this needs to be revisited, and was hopeful that Delmar's new study will provide more details than this report did.

Ben Harp, DOE-ORP, provided a review of the process so far. DOE evaluated 24 technologies and selected three for further review. Bulk vitrification was selected and a testing program was developed. The project baseline design and cost estimates are complete. An expert review panel made recommendations that were incorporated into the design, schedule and costs. Ben said DOE completed three engineering-scale melt tests, and installed a full-scale dryer to be tested in June. He provided a project execution schedule outlining activities through 2012 and outlined remaining challenges including issues with Molten Ionic Salt, Confinement Strategy, Dryer Validation, and System Complexity.

The last time he addressed the committee, they were doing the second or third engineering study to see if the technetium issue was resolved. The studies showed that it seems to have been resolved; the waste does not leach out and is not liquid. ORP has done several tests this year and will do the last full scale test to close out some technical issues. He invited the committee out in June to look at the testing technologies prior to the Board meeting.

Ben said the design is finalized and will go into construction in 2008 or 2009. By 2011 they will be into operations. There are three design packages out. One is tank structure and DOE is completing design on that. The final decisions have received buy-in and are

just waiting on the safety information for final review. For the dryer demo, DOE is planning to do a test prior to June to prepare for the June test.

Regulator Perspectives

- Ed Fredenburg said Ecology is continuing to review the design packages. He wanted to address the comparison of LAW 2 versus bulk vitrification cost estimates that Dick discussed. Ed said there are differences in processes and differences in startup costs. There is an independent cost estimate being done, which may modify the largest cost estimate. This is the basis for the larger bulk vitrification facilities being investigated there and new information may be available soon.

Committee Discussion

- *Based on the funding information provided at yesterday's budget meeting, what do you envision as the likely path forward for DBVS?* Ben said when DOE gets the testing done and Delmar's group has finished their study, it will all go for approval. If it gets approved, DOE will apply for supplemental funding of $1.5 million in 2008. DOE would then need to have supplemental funding in 2009 to proceed with construction.
- *What supplemental funding do you need in 2009 to go into construction?* Ben said DOE needs $40 million.
- *One of the standards is "as good as glass." The committee is hearing that there are problems with the technetium in the glass process. Does that change this standard?* Ed said when Ecology says "as good as glass" they mean the product and the secondary waste stream. Ecology will look at both of those as they evaluate the technology. The technology will not be considered "as good as glass" as long as the waste stream and product still have contamination issues.
- *During the Issue Managers meeting, a reference was made to the last large melt test that went on several hours longer than it was supposed to. Can you share what happened with that?* Ben said in the last scale melt, a temperature was reached that was excessive and went on longer than expected. He said it was a conduct of operations problem which skewed the results. ORP has made some modifications since then to make sure the tests do not get above those temperatures again. ORP is doing a review before the next test so they have a range they know not to exceed.
- *Do these tests support activity or define a likely path to choose between bulk vitrification or LAW 2?* Ben said this activity figures into the milestones. Delmar's work is more focused on what ORP knows today and what they might do for supplemental technology in the future; DBVS is one part of that.
- Dick said the committee needs to wait for Delmar's alternatives study to come out before they can move forward. Ken Gasper asked if the committee could bring an update to the Board about what they have heard today and at the Issue Manager meeting. Ken said he is hopeful that at the June meeting ORP could also share the

increased confidence that will come from the May dryer tests. He said he does not think an extensive discussion is needed, but there has been enough work that has gone on that the Board should be updated.

- Al wanted to address the issue of the technetium and iodine in the demonstration bulk vitrification test. There is no place for the waste stream to go except effluent treatment. There is a permit posted on Ecology's website to change the waste criteria allowed in the Environmental Restoration Disposal Facility (ERDF) so that the effluent waste from the demonstration project can be accepted there. DOE made a decision to purge sulfate from the scrubber beds; unfortunately it also purged technetium which led to an unacceptable solid. DOE has not included the technetium recycle possibilities into any of the studies. Al warned of starting an unacceptable trend of sending contaminated waste to ERDF.
- Dirk said that when ERDF was sited it did not get the risk analysis that it would today. He said DOE does not know how the new waste form will affect risk. Julie Atwood, Bechtel Hanford, Inc., said the Environmental Protection Agency (EPA) is the lead certifier and the committee should have them talk about this issue. If the waste form created is slated for disposal at the Integrated Disposal Facility (IDF) or ERDF it would have to meet acceptance criteria. Julie said the Effluent Treatment Facility (ETF) solids come over in drums, get put in vaults and are filled with grout. If the drums are contaminated with technetium they will get pushed into other methods. Dirk said the effluent treatment system is not designed to take bulk vitrification waste; it tears up the reverse osmosis membranes. Ed suggested tabling this issue and bringing it up as a separate agenda item at the next meeting when the correct people are there to answer the question.
- Ed said Ecology is requiring that the capability to remove technetium be retained as a part of pretreatment, so it does not get into secondary waste because there is uncertainty about secondary waste and performance. Ecology's position is that until they know more about those wastes they can not accept it. Pam added that the committee should look at what they have done at other sites with technetium 99.
- *The budget choices are supposed to be made sooner than the system plan, but ORP is not requesting more money until it gets validated.* Ben said DOE is not ready for funding right now; they need to get to design first. Pam said that in 2007, DOE will get three million, to proceed with design. Ben confirmed this and said DOE is almost done with design and only needs $1.5 million to complete.
- *TWC was told that more power is needed than what there is to power bulk vitrification. Have you considered long term planning to address the shortage of substations?* Ben said DBVS will be operational before WTP so it is not a concern for the demonstration. He has not looked at the issue long-term yet. Ed Revell from the City of Richland relayed his experience of doing power flow studies and the implications of when new facilities come online. The surplus from the Bonneville system is now gone. They might not have the capacity to support large loads if they all come online at the same time.

Tank Waste System Advice #192

Ken Gasper provided a brief introduction to the topic. The subcommittee has been engaging in a good series of meetings with ORP, and ORP is developing an updated response to Advice #192. Based on these discussions, programmatic risks are of particular importance to the committee.

Steve Wiegman, DOE-ORP, indicated a resurgence in the risk management program which is a major focus of their waste management program. DOE would like to have a discussion in the near future on their secondary waste management at ERDF as the tank farm schedule might be impacted by the WTP.

Greg DeWeese, a contractor for DOE-ORP, clarified that they are not talking about human health risks; this process is based on failure mechanisms that can change the project success. DOE has a formal seven step risk management process that is applied. The tank farms have a big scope and DOE has managed risks by splitting them into three sections. If it is a project risk, they do not want to see senior managers deal with it; their focus is on critical risks. The remainder of his presentation included lists of risks that were broken up by Federal Risk Management items and Tank Farm Contractor Risk Management items.

Ken Jordan, CH2M Hill, said CH2M Hill elaborated on the lists of risk management items. Ken maintains a risk management plan, including 71 critical risks identified through talking with project managers and technical experts. DOE is interested in the TWC feedback on the list of risks. He explained that projects and subprojects maintain their own risk management. Technical, facility-related, and programmatic risks are all considered. The ability to affect project scope and schedule defines a risk. These are separated into categories; 19 lie in tank farm system and infrastructure. There are near-term and long-term groupings: near-term is within the next five years and long-term is anything beyond that.

Don Woodrich, YAHSGS, reviewed the Baseline Flow Diagram and the Planning Baseline Schedule. Don said the schedule lines up with the river protection projects schedule put together last fall that assumed WTP would start up in 2015. The diagram and schedule outlines the process for WTP start up and the associated action timeframes. The systems study will reflect the delay in the WTP project schedule and will recalculate completion dates for the mission in the early fall. This diagram provides an overall schedule in the baseline and the impact of the WTP delay.

Committee Discussion

- *Regarding the programmatic risks, are infrastructure and piping included?* Steve confirmed that it is all part of the same issue that will help the program proceed and be successful.
- *Did you look at historical risk studies over the years?* Ken Jordan said DOE did look at the both existing risk lists and historical documents.

- *Where is the risk assessment for the WTP?* Ken Gasper said a presentation was provided at the Issues Manager meeting on the WTP version but there is not enough time to discuss it today. WTP has its own separate process. He said he knows the group had particular interest related to Advice #192 to focus on tank farms, but can go back and get the equivalent presentations on WTP if the committee remains interested.
- *Al said he would like to see the owner/operators presentation.* Steve said they can have a specific conversation on how they are including the operators or contractors in this. This is difficult to answer as DOE does not know who will be the operator.
- *When you evaluate a risk, do you look at the dependent risks? Is this step just identifying risks and then there is another process that you go through after?* Ken Jordan confirmed that more will occur in the next update. Susan Leckband asked if there are some points of insertion for new technology or methods not available here. Ken said the decision points are in handling plans that include new technologies.
- *Why is infrastructure not included on the federal risk? Did infrastructure come up and how does it fit?* Ken Jordan said it is included in tank farms as infrastructure availabilities. Infrastructure will affect the tank farm success, so it was put in that area instead of federal. They are working on an agreement between DOE-Richland Operations Office (DOE-RL) and ORP to provide infrastructure. ORP can then identify if they have mismatches that give them technical risks. Maynard Plahuta wanted to note that he thinks it should be placed on the federal side. Steve said he can take that idea back and look at how it interacts with infrastructure and site services.
- Ken Gasper wanted to emphasize some points on the topic from an Issue Manager's perspective. He thought the amount of slippage directly related to budget profile was upsetting. The impact from slippage on tank farms is huge. The target budget allows one tank retrieval in 2008 and 2009. WTP construction is restarting in October of 2007 but only a small amount of progress is made in 2008 and 2009. Ken said it is difficult as an Issue Manager to look at these facts, and listen to budget discussions, and maintain credibility for the schedule created because the impact is so visible.
- *With the budget presented, is the implication that it will take a long time to retrieve the tank waste?* Ken Jordan said it will be difficult to have a system plan that will get beyond the 2008 - 2009 timeframe because it is dependent on minimal funding. Steve explained that DOE is dependent on the WTP plant being done before they can do more than minimum safe operations. $690 million is as much as the department is willing to budget until they demonstrate they can do it.
- The TWC heard there is a 10-year lead time for power transmission regardless of which option is selected for supplemental treatment. It is a risk that needs to be on the horizon. Ken Gasper suggested that the committee asks ORP to come to the June Board meeting and make a summary presentation on this subject, including technology costs and schedule and the risk work.
- *What kind of program do you have to get management buy-in on the risk approach?* Ken Jordan said ORP has developed handling options in the baselines. For each risk

identified there is a risk manager identified, too. ORP reports to risk managers monthly and briefs the senior management team quarterly. Buy-in does exist and it does take a commitment to make it work. There were a dozen people participating in the process, taking the time to identify the risks. Rob Davis asked if somebody would bring the supporting documentation to the next Board meeting for the group to evaluate.

- *Committee members agreed that a quick overview of the risk management process and a review of some particular risks would be helpful.* Steve said in the June meeting he can take some of the risks and show the committee how they are managed and display the risk management process. Committee members will provide risk examples to the Issue Managers.

TC&WM EIS Update

Mary Beth Burandt, DOE-ORP, summarized both the vadose zone workshop and the technical review workshop on calibration of flow field. The discussions provided a good opportunity for all who are participating to understand each other's viewpoints and to make sure the groups are not talking past each other. Mary Beth said DOE had a technical review group that worked on the base model; the next step is calibration of the flow model. The calibration is closer to the field data so that is positive. The next meeting on June 6th will focus on the methodology and the Model Technical Review Group (MTRG) will meet on June 11th.

Dirk said from his perspective the meeting went very well. He is convinced DOE is looking at the same issues, but is not sure they are speaking the same language as they are so complex. Dirk has been researching the alternate flow model and base model. There is a confined aquifer where the old flow channel went through fractured areas. Under the 200 East Area, water is moving below the basalt. One well apparently had high levels of technetium in the confined aquifer; however, insufficient data cannot support this. He encouraged ORP to come back and re-explain what is happening there. He also noted that it is difficult to determine what is happening below the basalt as it cannot be seen. This makes it difficult to determine how much is below the basalt, if the plumes are moving and, more importantly, how to deal with it. Dirk questioned if the model should be changed to reflect these uncertainties and asked the committee how they should advise DOE on this. Dirk said the problem can not be computed because the model is on such a huge scale and cannot be scaled up to the 200 East Area.

Committee Discussion

- *How does the confined aquifer affect the TC&WM EIS?* Mary Beth said DOE is reviewing and discussing what Dirk described but may not be able to model it. She said as far as the model computation, there is not the computational ability to use the model in real life scenarios. She explained that they cannot do one vadose zone run through the whole site. They are breaking it up to work within a computational

limitation. Mary Beth said DOE thinks they have a path forward and they will describe the computational limitation in the TC&WM EIS.

- Dirk said if the technetium is there in high levels, DOE is seeing one measurement on it. He questioned the potential of the contamination and the evidence of recharge not being addressed. He was concerned that more contamination and the flow of plumes from the combined aquifers will show up down the river. Mary Beth responded that DOE looked at the well on the other side of the river because they were challenged on that assumption. The river is acting like a sink and will need more data of the contaminated aquifer. DOE will address this in the report.
- *What is the status of the progress on the TC&WM EIS?* Mary Beth commented that she is pleased with the progress and it is not as daunting as it seems. She reviewed the short term impact areas of air modeling and transport that are being addressed now along with the long-term impacts of ecological and human health. These factor into the critical path for groundwater modeling and the discussions ORP is having with DOE-Headquarters (DOE-HQ).
- *When will the draft TC&WM EIS be ready?* Mary Beth said it will be ready by March of 2008.
- *What model requirements exist?* Mary Beth said there was a good discussion about this in the afternoon at the workshop. A common reaction is that it is a computer problem which is not the case. ORP has evolved in their thinking about high volume discharges and modeling in three dimensions as it changes your answers and its applicable uses. Although it has not been done before, ORP wants to do it. They are trying to address the technical challenge of modeling dry waste and other kinds of waste. Other modeling examples are going well but they tend to talk about those with challenges.
- *How are you feeling about your ability to integrate and have a TC&WM EIS that is a blueprint for the risks to be dealt with?* Mary Beth said from writing the document that DOE has a handle over the processes and interaction with waste management issues. The challenge is how do you take a complicated issue that has had a lot of criticism and present it? She is certain the data is there and that the technical people can explain it, but the complexity and magnitude of the issues complicates its deliverability. She does not want to overwhelm people.
- *Have you looked at it from a permitting position such as allowing technetium at ERDF?* Mary Beth said she is not as concerned about that piece because DOE has the ability to tag where the material is coming from. For example, if a high amount of nitrates was found, Mary Beth can tell you what waste streams it came from and where. However, she is not able to discern where the 19 constituents came from and where. DOE can pick those with the highest interest.
- *Are there lessons learned being incorporated into groundwater modeling?* Dirk said he does not know if there was a lesson learned. He said he can not imagine any waste site that requires less than three dimensional at a high enough resolution to see what needs to be seen. The groundwater flow is important, and understanding how the

water gets from the surface to the groundwater and right now he thinks DOE does not know that.

- *This is a complicated problem, but it begs the question: are we trying to do better when we could just do good enough? What is the impact on the answer you get and the risks you are trying to predict?* Dirk responded that you need to understand the plusses or minuses to know if the measurement is accurate, and there is not anything telling them the plus or minus amount. DOE has to be able to know if their model is working and right now they do not know what the risks are. Rick asked how deep does the study need to go? Rick said there are a limited amount of alternatives that some people would consider good enough. He suggested the committee should do another update before March of 2008 and check back in on this topic.

Committee Discussion on Values for Tank Closure & Committee Business

The committee deferred their discussion on clean tank closure values to a future committee meeting.

Committee Business

The committee reviewed the following future committee topics:

- What are the committee's priorities in response to Advice # 192 and missed milestones? Is LAW startup important and a discussion about alternatives?
- ERDF waste acceptance criteria and the plume to pump and treat (joint committee agenda item with the River and Plateau Committee (RAP)).
- Sodium waste concerns: Ask Ecology to discuss increase in waste and associated concerns and a path forward. They have acknowledged the problem but have not addressed what they are going to do.
- Funding for tank farms: how much is left to do the work? Harold Heacock will take the issue back to Budget and Contracts Committee (BCC). Ken Gasper will write a short summary on concerns to give to Harold to bring to the BCC.
- Maynard asked if there is there going to be anyone from the outside to review and look at the assumptions that were used for the alternative study. The committee will review the study in August if it is made available.
- Emergency planning for double shell tanks.
- Presentation from Dirk looking at major issues with TC&WM EIS.

Committee members determined a June meeting and conference call were not necessary.

The following TWC topics will be reviewed on the Executive Issues Committee (EIC) call for inclusion at the June Board meeting.

- Update on the Issue Manager work on DBVS
- Response to Advice #192 and associated programmatic risk assessments
- Update on TC&WM EIS

Handouts

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

- River Protection Program Supplemental Treatment Program-DBVS Status, DOE-ORP, CH2MHill, May 2007.
- RPP Baseline Flow Diagram.
- ORP Planning Baseline Summary Schedule, River Protection Project (DRAFT) (Impact of WTP Startup Slipping), 4/17/07.
- Observations, Questions, and Comments Arising from the 4/17/07 Tour of LAW 1, Al Boldt, R. Davis, KA Gasper, RI Smith, April 30, 2007.
- Tank Farms Risk Management Program, Greg DeWeese DOE-ORP, Ken Jordan CH2MHill, May 10, 2007.

Attendees

HAB Members and Alternates

Al Boldt	Harold Heacock	Maynard Plahuta
Rob Davis	Rick Jansons	Wade Riggsbee
Dirk Dunning	Pam Larsen	Dick Smith
Ken Gasper	Jerri Main	

Others

Mary Beth Burandt, DOE-ORP	Ed Fredenburg, Ecology	Julie Atwood, Bechtel
Greg DeWeese, DOE-ORP	Jeff Lyon, Ecology	Ken Jordan, CH2MHill
Ben Harp, DOE-ORP	Sharon Braswell, Ecology	Ed Revell, City of Richland
Delmar Noyes, DOE-ORP		Cathy McCague, EnviroIssues
Steve Wiegman, DOE-ORP		Emily Neff, EnviroIssues
		Annette Cary, TCH
		Don Woodrich, YAHSGS