

FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
TANK WASTE COMMITTEE MEETING**

*October 14, 2010
Richland, WA*

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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

Dirk Dunning, Tank Waste Committee (TWC) chair, welcomed everyone and introductions were made. He said there was a minor correction to the notes and Pamela McCann, Department of Energy-Office of River Protection (DOE-ORP), said she would like a chance to review them. The TWC approved the September meeting summary based on the roles and responsibilities of the Chair reviewing and recommending the committee adopt the summary.

Closure Plan Preliminary Planning (joint with River and Plateau Committee)

Dirk said there is a timeline to start looking at the information regarding tank closure discussed in TWC meetings and to decide what information would be useful for public consumption. He said it is important to think of how these discussions tie together and commented that this is the beginning of the overall tank closure discussion.

Vince Panesko, issue manager, said based on the last Waste Management Area C Performance Assessment (PA) workshop, he is not sure there is a clear definition of closure. Washington State has requirements, and the TWC needs to understand these requirements to better understand closure. He said Appendix I of the Tri-Party Agreement (TPA) has closure requirements, which TWC also needs to have a full understanding of the role this plays in closure a. Vince mentioned that the closure process is not fully understood. He said the key concept discussed at the PA workshop is that DOE Order 435.1 only applies to the tanks, and DOE’s responsibility ends with the tanks in terms of long-term disposal. He said anything outside the tank is not covered in the PA. The hope is that the Comprehensive Environmental Response, Compensation, and

Liability Act (CERCLA) process will address what is under the tanks. He said there are many complexities with tank closure, and commented on the need for a better overall understanding.

Chris Kemp, DOE-ORP, handed out a graphic showing the Hanford tank cleanup status. The graphic illustrated which tanks have been retrieved, tanks with limited technology, tanks in retrieval progress, and tanks next in line for cleanup. He said DOE has implemented the use of hot water in C-111 in an attempt to break up the hard-heel crust in the tank. He said DOE is in the process of cleaning C-104 and hopes to complete retrieval soon. The sluicing technology is a primary technology used at Hanford that came from Savannah River. He said DOE also uses the Mobile Arm Retrieval System (MARS) for tanks with a leak status, and an inductor is used to create a vacuum to bring up the waste. He added that there are also sluicing ends on the MARS.

Chris said there are different methods used to clean tanks, and he thinks that Appendix I was developed to inform the closure of tank farms and is the information DOE plans to use to guide their processes. He said Appendix I considers residuals in the soil and the vadose zone contamination down to the groundwater.

Regulator Perspective

- Jeff Lyon, Washington State Department of Ecology (Ecology), covered why it is important to talk about closure early in the process. He provided a graphic interpretation of the TPA milestones using a train track and showed the process for retrieving tanks with the Hanford Site being clean by 2057. He also provided a poster of the Waste Management Area C timeline and the assumptions. He said the soils corrective measures implementation process will be done by about 2016 and groundwater work for operable unit BP-5 will be completed in 2015. Jeff said tank waste retrieval for C Farm is scheduled to be done by 2014 and tank residual samples analysis will be done by 2015. He said the permitting process to close the farm is important because it sets a precedence of how the information is communicated with the public. He said the demolition plan will be done by 2019 and was worked through with TPA involvement. He added that there is work to accelerate this process.
- Jeff noted there are a lot of decisions coming and many closure topics for public forums. He reviewed four topics he would like to see in public workshops: an overview on what closure means, risk assessment and performance assessment, soil remediation and groundwater impacts, and ancillary equipment and closure demonstration. He said closure of the tanks will be a CERCLA PA, meaning soils will be considered along with all potential impacts. He said it is important to understand the Resource Conservation and Recovery Act (RCRA) and CERCLA processes, and how these regulations affect the process. He suggested simplifying the data for communication purposes.

Committee Discussion

- Dirk said the waste management discussions are focused on landfill closure and clean closure, and other options are in the composite analysis. Chris said clean closure is an option in the composite analysis. Dirk suggested that these pieces need to be understood by the TWC.
- Vince said the status sheet for the tanks is very helpful in understanding the progress. It will be a challenge to deal with the hard-heel crust in the tanks. He then asked if the permitting process in the closure plan includes the vadose zone and groundwater. Jeff said these topics are included.
- Vince asked if the closure plan includes plans for addressing contamination. Jeff said there are different authorities involved, and the TPA gave certain agencies leads on different issues. He said Ecology is the lead for the tank farms and can get help from other agencies. The permit will have soil and groundwater conditions, and the TPA will have milestones for these actions.
- Wade Riggsbee asked if the tank lead is responsible for groundwater and vadose zone. Jeff said the goal is to collaborate with the other agencies to address groundwater and the vadose zone.
- Pam Larsen asked what authority DOE-Headquarters (HQ) has for tanks. Chris said there are certain decisions under Tier I and Tier II of 435.1 that determines what decisions DOE-HQ can be done, such as waste determination. He also noted that the TPA discusses Tier I and Tier II determinations as well.
- Pam asked how the Secretary of Energy makes decisions. Chris said depending on the decision; the Secretary provides approval for waste that is no longer High Level Waste (HLW). Jeff commented that there is a document provided for decisions that DOE-HQ signs.
- Harold said there are other issues such as how long closure will take and what the funding requirements are. He said different tank farms will require different actions and it would be useful to have the overall picture for closure of the tank farms. It is still unclear as to what clean actually means. Jeff said the first workshop will try to answer these types of questions. Chris added that by 2019 Waste Management Area C has to be closed.
- Shelley said there are different ideas for how tanks will be closed and there needs to be architecture for this decision making. She said the TPA decisions should be collaborative. She asked about the role of the Nuclear Regulatory Commission (NRC) in the PA and if there is collaboration between the work being done on Order 3116 and on 435.1. Chris said the radiation determination for tanks will be done under 435.1 and under 3116. NRC's involvement is to streamline the process and make it similar between the two decision making processes NRC is not a regulator, but they are a reviewer of the PA. Jeff said the TPA brings in NRC to review documents. Chris added that there is correlation between order 3116 and 435.1 and the intention is to collaborate during rewriting.

- Jean Vanni said it would be helpful to fully understand 435.1 and 3116 and the role they play in closure. Dirk said sorting out the laws and how they apply would be a good topic to cover.
- Pam said the site-wide RCRA permit will be reviewed early next year and suggested that the TWC keep this overlap in mind regarding committee workload.
- Maynard Plahuta said it seems as if the TPA takes precedent over the other laws and regulations. Jeff said the TPA suggests that all the information should be covered in Appendix I, which integrates the regulatory processes. Keith Quigley, Washington River Protection Solutions (WRPS), said the process can get confusing. DOE and the State have different roles, but closure is only done once and all of the criteria have to be met. He said tank farm closure includes addressing the associated soils and the closure of individual tanks does not; there are different approval processes for each.
- Maynard said if TPA regulations are met, will all laws be met. Jeff said approvals will happen under different areas, but it will all be under TPA.
- Jeff Luke suggested generating a list of topics for the workshop and asked the TWC if they want this to be a DOE workshop or Committee of the Whole (COTW). He wanted to make sure there are representatives present to speak to the regulations and talk about how the regulations are integrated.
- Pamela said the technical issues and administrative pieces are still underway and timing might be an issue. Dirk said there are priority issues that the Hanford Advisory Board (HAB or Board) and Ecology have, and this topic was a priority issue brought to the HAB. Jeff said the vision is to have an open workshop where the HAB can point out issues that might be potentially confusing to the public. This will help to provide understanding so that the 90 day comment period will provide enough time to go through the formal process.
- Pam said there is a lawsuit regarding the use of Order 3116. She said the cleanup budget is authorized federally, and there is a school of thought that says the federal government is still liable for RCRA waste. The armed services committee of the House of Representatives and Senate are under the impression that Order 3116 covers them from liability regarding waste. Dirk said the integration of these laws is important in understanding the process and information on the lawsuit can be incorporated.
- Jerry Peltier asked if tank farms or the actual tank is implied with the use of the term closure. Chris said the term closure refers to tank farms.
- Jeff Luke suggested “tank farm C closure” as a title of the workshop to let people know what is being discussed.
- Liz Mattson said starting with a bigger picture would be helpful for the public since there are many aspects of closure.
- Larry Lockrem said for the regulations it would be helpful to have someone at the meeting who knows 435.1 and Order 3116. Chris said Marty LeTourneau did this

for the whole HAB. Jeff Luke suggested doing this presentation again and making it a part of the workshop.

- Dirk said the initial workshop will be to lay out the process of how closure works, and there will be other workshops on detailed aspects.
- Jeff said products of these workshops should be considered.
- Dave Rowland said people need to understand that there are legal considerations for some of these decisions.
- Vince volunteered to generate a summary of regulations that apply to closure for the COTW. Jeff Luke said he would like Vince to present this information and the committee concurred. Jean suggested having a chart to help describe the process.
- Maynard asked if there will be a product from the meetings regarding 435.1 and Order 3116.
- Vince said a goal of the workshop should be to understand Appendix I and other related regulations. Chris suggested that everyone read through Appendix I prior to the COTW.
- Jeff said understanding applicable regulations and how they relate should be a goal of the workshop.
- Larry said a goal of the workshop should be getting everyone on the same page.
- Dirk said understanding the ancillary equipment should be a goal of the workshop.
- Maynard said the workshop should provide an understanding of the Natural Resources Defense Council lawsuit.
- Jerry suggested putting a link to Appendix I in the notes. EnviroIssues emailed to the TWC a link to the Appendix after the meeting on October 18, 2010.
- Jerry said to close tank farms; there are TPA regulations that have to be met to meet the milestone. He said each agency has requirements under State and Federal law, and it is important to understand these requirements.
- Jeff said there is a lot of time spent on paperwork. He suggested showing what closure looks like prior to discussing the regulations that made the closure possible. Dirk said learning about the routes involved with closure is important.
- Liz suggested the workshop include a discussion of regulations and how changes in waste form definitions can effect regulations and actions.
- Dave said the permitting process should be explained in the workshop.
- Dick said he is interested in learning about what can be done under the regulatory framework and what the endpoint will be.
- Susan Eberlein, WRPS, said discussions over soils and pipelines in the tank farms would be appropriate to discuss in later workshops.

- Shelley said external issues, such as waste forms without waste pathways, should be addressed.
- Dirk asked if December is too soon for a COTW on tank closure. The TWC suggested a COTW in January.
- Madeleine said not to let the site-wide permit release determine the timing of the COTW. Ecology is flexible and will be respectful of other dates.
- The TWC tentatively planned for the COTW to be held either on the COTW placeholder for December 2 or January 6.
- Jeff said having Board advice adopted by the end of next year on closure would be helpful.
- Dirk will bring forward the COTW topic and time on the Executive Issues Committee (EIC) call and will work out the details.

System Plan Rev 5 & 6

Harold said the Board remains concerned with the overall planning of tank farm cleanup. He said the primary focus is on tanks and the vitrification plant, but there are many other issues to be addressed as well. He said the System Plan encompasses all of the considerations regarding process issues with flow sheets and material balances. He said the focus for the System Plan is on the process and technical aspects, more than the budget. He said System Plan Revision (Rev) 4 was good but there were some policy issues. Some of these details have been flushed out, but there have not been many open discussions on the System Plan since Rev 4 with the Board. He identified some items that require more discussion such as the potential need for more evaporators, a path forward and a budget.

Regulator Perspective

Dan McDonald, Ecology, said Ecology met with DOE-ORP this morning and the assumption listing for Rev 5 is now available. These are the assumptions being considered for Rev 6. DOE-ORP is reviewing Ecology's comments and plan to have further discussions on whether to accept or modify these assumptions. He said the H2 models have been analyzed, and there will be a decision made on the initial assumptions with potential modifications for the process flowsheet. Dan said there is information to support changes in the model because these changes show what the impacts are to other elements. He said Ecology and DOE-ORP will be going through the line items and agreeing or changing them as needed. The model generators will then let them know if the changes are doable.

Dan said DOE is processing their scenarios, and Ecology has processed theirs. By Monday, Ecology is going to have the large items addressed on the assumptions, including throughput and how everything will work. He said in a few weeks this information will be distilled to a point where the modelers can run interim models to see

if the assumptions will work. Dan noted that there will have to be testing, but he wanted to give the committee the most current information as of this morning.

Dan said Ecology took the assumptions from Rev 5 and looked at the line items to see if there is need for modification. He provided an example of a modification that was made and said Ecology took the Aluminum Removal Facility (ARF) out of the System Plan all together and tried putting in an enhanced waste facility. He said different cases can be interchanged to gauge the potential impacts for each line item element. He said the model shows what the cumulative impacts are. Dan added that Ecology is attempting to integrate closed end issues and assumptions into the System Plan and by next Friday they should have a fairly good idea of what the scenarios might look like. He said Ecology is working collaboratively with DOE-ORP and the modelers to meet requirements and assure that the assumptions are valid.

Committee Discussion

- Jeff Luke asked who canceled the meeting to discuss Rev 6. Harold said DOE canceled the meeting. Jeff Lyon said TPA Milestone M- 62-40 requires that DOE and Ecology have their scenarios submitted by October 31st of this year for Rev 6.
- Dick said Rev 5 did not change much from Rev 4.
- Pam said there should be someone from DOE present for this discussion. Cathy McCague, EnviroIssues, distributed the Rev 5 assumptions and noted that DOE-ORP was not scheduled to support this topic.
- Dirk said timing is a problem and last year there was only 30 days to review the System Plan. He said the process needs to be set up so the agencies and the HAB have a chance to review and provide input.
- Harold said there are public policy issues with the System Plan process. He said there needs to be communication on the policy issues, impact to schedule and funding with the Board. Dan said until the scenarios are modeled, Ecology will not know the time impacts and or the cost impacts.
- Vince asked if there is an annual milestone for the Systems Plan. Dan said yes, it is an internal DOE milestone, not TPA milestone. There is an iteration of the System plan every 36 months that DOE and Ecology reviews, which is a TPA milestone.
- Vince asked when TPA M-62-40 is due. Dan said the scenarios for Rev 5 are due October 31st. Jeff Lyon said the System Plan Rev 6 would then be published a year later (October 31, 2011).
- Vince asked when there will be an opportunity to see the System Plan. Dan said first the assumptions, then scenarios are made available and last the final System Plan will come out. He said the assumptions will be ready by October 31st, it takes 8 to 9 months run the model and if need be, modify it to get the final document ready. Jeff Lyon said documents can be viewed upon request, but only to look at.

Dan said even if someone looked at a document during this process, it is still subject to change since the models are running.

- Harold said Ecology represents the public, and there should be adequate communications back to the public.
- Dirk asked if the TWC could have the dates for when there could be input to the System Plan. Shelley said if the assumptions change the HAB might be able to offer some value.
- Jeff Lyon said there is a milestone package, and the HAB might want to see if the goals can be communicated through these milestone packages. He commented that Ecology is doing the best they can.
- Maynard said it is important to get involved early in the assumptions process. Dirk said the TWC needs to look at the schedule and the opportunities to weigh in to see if the System Plan process needs to be fixed.
- Dick said the TWC can review the scenarios before it is set in stone. Jeff Lyon said if there is time to meet between now and the end of the month, Rev 5 can be reviewed. Dan reminded the committee that every three years Ecology is formally involved in the assumptions and System Plan process.
- Jerry said when Rev 6 comes out and the Board provides advice, the ideas will be integrated into Rev 7. Dan said the System Plan is the technical underpinnings for cost and schedule and is a layer of the lifecycle cost and schedule report. He said there are two issues: advice for the actual System Plan and advice for the timing for commenting on the System Plan. Jeff Lyon said Rev 6 will not be published for a year, and which gives little time to comment. He said maybe Ecology can present to the HAB on Rev 6 and have discussions to integrate ideas into Rev 7. He said legally there is not an opportunity for input. Harold said as a public agency there is an obligation to communicate with the stakeholders.
- Dirk said the timing of the cycles and deadlines are the issue, and there could be advice on the timing. Dan said there could be presentations every three years to gain input, as Jeff Lyon suggested. Jeff Lyon said Rev 5 is almost out and should be reviewed to provide input for other iterations of the System Plan. Dan said there is value in going through the assumptions for Rev 5.
- Sharon Braswell, Mission Support Alliance (MSA), reminded committee members that the full Board will be receiving an update on the Lifecycle Cost and Schedule Report.
- Pam said there was previous advice on Rev 4. Dan said he has looked at the advice on Rev 4, and there have been conversations as a result. Pam said the HAB should develop a timeline to determine when there is availability to look at documents and comment. She added that the HAB advised that every 3 years was too long for revisions.
- Jeff Luke said all these issues can be addressed with a piece of advice saying that the Board desires involvement in the development of assumptions. He said the

agencies can develop a timeline or modify the milestone to allow for public involvement. The advice can point out those two choices. Dirk said when there is a timeline developed, it acts as the baseline. There are multiple actions running at the same time. Jeff Luke said it might be good to request that the milestone be revised to include public input, then all parties are obliged.

- Pam asked if there was a response to the last System Plan advice. Harold said no. Dirk said there is an Ecology response posted.
- Harold said he would draft the advice regarding the System Plan. Jeff Lyon asked if the TWC wants to recommend that the TPA change the milestone for public involvement. He said the advice could say that the Board wants involvement and a timeline that makes this possible.
- Larry suggested that Jeff Luke work with Harold on the advice.
- Maynard said the milestones approach might not be the best angle to take, the HAB involvement might be received better.
- Jerry said some of the assumptions are associated with the latest consent decree and asked if the System Plan document drives this. Jeff Lyon said DOE looks at scoping years in advance, but they are only assumptions made for planning purposes. He said the System Plan does drive some of the planning but not the decisions. Dan said the milestone dates the TPA chose probably drove the assumptions. Dirk said the documents are affecting each other.
- Jeff Luke asked if the HAB would like to request that the milestone be modified in the System Plan advice. Dirk said the advice is requesting there be a process for public involvement and coordination of the System Plan and the Lifecycle Cost and Schedule Report.

Defense Nuclear Facilities Safety Board (DNFSB) Debrief

Dick said he was impressed by the depth of the questioning at the Defense Nuclear Facilities Safety Board (DNFSB). He was not expecting the discussion to be as detailed as it was, and it was very educational. He thought the DNFSB did a good job of asking pointed questions. He said it was an operational meeting, not a policy meeting.

Jerry asked how many HAB members were present. Dick said 5.

Dirk described the structure of the meeting and said there were about 256 people in the room.

Harold said the formal proceedings and the briefings were very thorough. He said when discussing the tank mixing there were conflicting views, but the DNFSB were well briefed and knew what questions to ask, and there were some divergent views. Jerry said there is a litigation based on the technical merits and asked if this was addressed. Dirk said the DNFSB did discuss the litigation. He said each segment was five hours long.

Jerry asked when the report will be issued. Dirk said he is not sure but suggested to check the DNFSB website for more information.

Dick said DOE committed to a large scale testing program. Dirk said there were many questions about the pulse jet mixers, and there will be a full scale mock up produced quite quickly. He said the outcome is that the critical testing needs to be done by early 2012, and these changes need to be made with the contractor, making it a tight schedule.

Maynard asked about the size of the full scale mock ups. Dick said it will be modeled after the size of the critical tanks.

Dirk said the DNFSB discussed what stimulants need to be used to simulate all the waste streams. He said there are different behaviors with liquids and some of the tank wastes do a combination of these behaviors. He said it was found that with modifications to the pulse jet mixers, the tanks could be mixed.

Dirk said there were questions raised about criticality control issues including sections on deposition velocity and on piping of the hot cells and what would happen if they were to explode. The initial response was steel yields and it is designed to swell. He said the other issue discussed was supplemental treatment. He said this was to ensure the vitrification plant will operate well.

Larry said the politics surrounding supplemental treatment are frustrating.

Dirk said there will be a written transcript. The video that was taken is high quality and suggested the TWC watch it.

Maynard asked if the DNFSB discussed the validity of waste going into the vitrification plant. Dirk said yes, and the DNFSB was not necessarily comfortable with what they were told. Harold said there is a schedule to meet, and the idea is to get a plant built and change it as needed.

Dirk said he has looked at information on pulse jet mixing and issues with the plant, and there are some policy issues that the HAB could follow.

Larry asked if there is a point where the research stops and the facility is built. Dirk said there has to be fundamental research that will have to be discussed and followed. He said he will be finding issues for the HAB to look at.

David Bernhard, Nez Perce Tribe, said there is not a lot of pre-testing occurring, which is why the pre-treatment is so important.

Committee Business

The TWC discussed the 6month work plan

Dirk proposed that the TWC not meet in November since it will be a shortened committee week due to the Veteran's Day holiday.

Maynard said if the COTW is held in December, the TWC might want to consider meeting in November. Madeleine reminded the members there is also a full board meeting which Dirk can talk about the COTW meeting in his committee report.

Maynard brought up the fact that 242-A evaporator needs a lot of water. Jerry said he was at the infrastructure presentation also and there is redundancy in the system.

Dirk asked if the Waste Treatment Plant budget topic will be ready for December. Harold said he will check with the Budgets and Contracts Committee.

Dirk said DOE-ORP may not be ready for steam reforming discussions, and he proposed to push it into January or later.

Madeleine said site permitting can be discussed whenever TWC is ready. Dirk said this topic may be covered as part of the COTW.

Jerry asked if TWC received all the deliverables for supplemental treatment. He said there were presentations, but he is not sure they got the documentation. Cathy said she emailed out the link to these documents a few months ago and are available on DOE-ORP's website.

Dirk asked about the leak loss assessment and the heal removal roadmap. Sharon asked if DOE-ORP is ready if TWC wants to talk in January. Dirk said yes.

Jerry brought up the issue of using garnet saws to cut the tanks. Dirk said DOE and the contractors are proposing cutting large holes for MARS with garnet, and the question is if this has the potential of damaging WTP operations and if there are better alternatives. Jerry said a diamond blade could be used, as there is documentation showing why garnet is potentially bad. The TWC agreed to get a presentation on this. Dirk suggested having this presentation in December.

The TWC agreed to meet for a half day in November. The tentative list of topics is WTP budget (joint item with BCC), closure planning, 242-A evaporator, and Waste Management Area C Performance Assessment.

Handouts

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

- Hanford Tank Cleanup Status, DOE-ORP.
- WMA-C Timelines, Ecology.
- Appendix B – Key assumptions and success criteria, DOE.

Attendees

HAB Members and Alternates

Shelley Cimon	Rebecca Holland	Maynard Plahuta
Dirk Dunning	Pam Larsen	Dave Rowland
Harold Heacock	Larry Lockrem	Wade Riggsbee
	Vince Panesko	Dick Smith
	Jerry Peltier	Jean Vanni

Others

Chris Kemp, DOE-ORP	Dieter Bohrmann, Ecology	Cathy McCague, EnvirIssues
Pamela McCann, DOE-ORP	Madeleine Brown, Ecology	Blair Scott, EnviroIssues
	Jeff Lyon, Ecology	Sharon Braswell, MSA
	Dan McDonald, Ecology	Susan Eberlein, WRPS
	Kristi Wolfe, Ecology	Keith Quigley, WRPS
		Michele Gerber, URS