

DRAFT MEETING SUMMARY

**HANFORD ADVISORY BOARD
TANK WASTE COMMITTEE MEETING**

*August 9, 2011
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) vice-chair, welcomed the committee and introductions were made. The committee approved the February, May and June meeting summaries.

Cathy McCague, EnviroIssues, reviewed the meeting agenda. She said TWC would continue its discussion on the tank closure process including its review of the M-45-80 series of documents, with a discussion on two new reports and a continuation of the discussion on the Waste Management Area (WMA) C Performance Assessment (PA).

Waste Management Area C Performance Assessment

Issue Manager Update

Vince Panesko said he has attended a number of workshops on the WMA-C PA with the goal of determining whether there were any topics the Hanford Advisory Board (Board or HAB) might be interested in hearing more about. These workshops were technically oriented toward modeling. Vince said that while there is a lot of information available, there is much about the Hanford Site that is still unknown. Modeling can be challenging in areas, such as C Farm, where there is a lack of knowledge. Vince said making a policy recommendation now would be premature since the work is still evolving and DOE is gathering more information for C Farm.

Vince said Dirk brought up the question of lateral flow versus horizontal flow in the cribs at previous workshops. Vince said it may be premature to offer advice on this topic because it is a technical issue currently being addressed in the PA. He suggested the Board offer advice on the schedule. Vince pointed out that the Environmental Impact Statement (EIS) is the first item on the schedule. He said that due to the relationship between the EIS and the PA, the EIS has been delayed.

Vince said the Record of Decision (ROD) should be based on decisions within the EIS. The ROD will provide some direction for the PA. He said that the U.S. Department of Energy (DOE) decided that if the PA results were issued too early it would appear that decisions were being made prior to the EIS. This would not be consistent with the National Environmental Policy Act process. Vince said DOE stopped some portions of PA activity until the EIS is issued. The EIS is currently scheduled to be issued in early 2012.

Vince referred to a schedule provided in June by Chris Kemp, DOE-Office of River Protection (DOE-ORP). This schedule included the EIS and PA along with closure documents and the Waste Incidental to Reprocessing (WIR) document. Vince said he appreciates how the schedule illustrates the closure documents. He is interested in the two year period between 2012 and 2014. The milestone is at the end of 2014 for closure plan approval.

Vince said he is hoping to obtain some clarification on how certain actions can apparently begin prior to receiving permits from the Washington State Department of Ecology (Ecology). He said the Board should be concerned that the delay of the EIS causes the PA to be delayed and compresses the closure document schedule in order to still meet the milestone for closure.

Vince said the TWC previously expressed concerns about the impacts on the 2014 closure document deadline and the 2019 milestone for final closure of WMA-C. Vince said Jeff Lyon, Ecology, also shared concerns about the 2014 deadline as well as the September 30, 2015 deadline for submittal of closure permits to Ecology. He said Jeff believes these dates do not provide enough time to complete closure by 2019.

Vince introduced the revised draft of the PA advice. He said DOE was already addressing the first advice point regarding updates to the WMA-C PA schedule. The second advice point states that the Board would like to know what the impact of WMA-C PA delays will be on the closure documents and whether the 2014 milestone can be met. Vince said the advice asks for routine updates from DOE with a focus on the impacts of schedule delays and programmatic uncertainties. The fourth advice point recommends including float time in the schedule for unanticipated events. Vince said the major theme of the advice is how to handle uncertainty by asking what the uncertainty is and what the critical factors are and communicating this information to stakeholders.

Agency update

Chris said he would address TWC's questions about uncertainty. He said the schedule for C Farm was created to meet the 2019 milestone set in the consent decree. Chris acknowledged that the schedule is very challenging and there is no float time built in. Chris said the 2015 closure schedule from the Tri-Party Agreement (TPA) milestone must be compressed to late 2013 or early 2014 to meet the closure deadline.

Chris summarized the PA results to date. He said DOE is beginning to use features/events/processes (FEPs) based on International Atomic Energy Agency criteria. He said the Hanford Site is ahead of others in the DOE complex on the use of FEPs. DOE is developing Parameter Sensitivity and Uncertainty Analysis for the initial WMA-C PA as well as examining pre-closure and post-closure cases.

Chris said the majority of tank spills resulted from overflow in the tanks or pipelines. He said the number of tanks that leaked is much smaller than those that overflowed. Chris said DOE will follow the Resource Conservation and Recovery Act (RCRA) to address groundwater contamination. Chris said in the next month Ecology should issue a draft Single Shell Tank (SST) closure permit, which will be available for review near the end of the year. The permit will include a requirement for DOE to prepare a closure plan. Chris said DOE knows there is radionuclide contamination within the tanks and will work with Ecology to develop a closure plan for the radioactive residual constituents in the tanks.

Chris described the work needed for WMA-C Closure. He said a Corrective Measures Study needs to be completed that evaluates the options for soil removal and remediation. A WMA-C Closure Demonstration is then required, including evaluations of tank removal, pipeline closure, diversion boxes, and catch tanks. These demonstrations lead to the WMA-C Closure Plan. The WMA-C PA evaluates the long-term risk associated with many of the options and ultimately makes a decision.

Chris said there are a number of possible outcomes for WMA-C closure, including: clean up everything, clean up many things, retrieve and reduce, leave a lot behind, or take no action. He said the option to clean up everything would require excavation to the groundwater level. The clean up many things options allows some tanks to be left in place while others are removed. Another option is to retrieve all the liquids and spot clean the soil. Chris said the option to leave a lot behind is not included in the milestones because DOE is required to make risk-based decisions that are reviewed by nuclear regulatory agencies. Chris said the take no action option is not a reasonable alternative and is not being considered.

Chris said there are many components necessary in order reach a decision on WMA-C closure. He said involvement among key stakeholders is critical early in the process. Chris said the PA itself is not a technical process, but understanding what information should be included in the PA is challenging. The most important element is tank closure. Chris said Appendix I of the Tri-Party Agreement explains the entire process for SST system waste retrieval and closure.

Regulator Perspective

- Beth Rochette, Ecology, said the advice is good and illustrates what DOE should be considerate of. The schedule appears to be compressing. She said Ecology needs adequate time to review and evaluate the various components of the PA. Receiving all the documents at one time is not ideal. Beth added that she does not want to interfere with the schedule and would like DOE to remain on schedule.

Committee Discussion

- Dirk said the Hanford Site suffers from a number of “wicked problems.” He defined wicked problems as those problems where there is not enough information about the problem to begin addressing it, while information cannot be obtained without beginning to address the problem. Dirk said the fundamentals of how material is moving through the soil are still unknown. Understanding how materials move is important because the risks and amelioration methods can change. Dirk said he wonders about the amount of guess-work and how that impacts the processes. Dirk said he is concerned about using probabilistic risk assessments. He said one difficulty is that models focus on those elements that have the greatest likelihood of being part of the answer, but there are questions when factoring in uncertainty. The current models estimate what is most likely to happen, but do not estimate the likelihood of not knowing what will happen. Dirk said caps and barriers are being advocated as part of the solution at the Hanford Site. However, if the geophysics is incorrect and if water is moving laterally through the soil the barriers may have no impact.

- Liz Mattson asked about the impact of uncertainty on the schedule. She said decision drivers may lead to decisions being made quickly as opposed to being made thoughtfully. She said it is important to weigh quality work with meeting the milestones. Liz feels like the schedule aspect has more power and weight than it should. Chris said the consent decree negotiators are thinking at a completely different level than those actually doing the work. It is important to do quality work, meet the milestones, protect workers, and protect the public. Chris said it might be helpful to discuss how to determine whether work is being done well. He said DOE is not taking a haphazard approach with soil work. He said the entire process is iterative where many interests can offer their opinions, aside from only Ecology. Chris said the schedule is a driver, but DOE also balances quality and a number of other factors.
- Vince referred to the WMA-C schedule that Chris provided to the TWC in June. He asked whether one item needed to be completed before the next could begin. Vince said the schedule from Appendix I showed many processes happening in parallel. Chris said the schedule he handed out is a simplified version of the process. He said there is not a beginning and that much of the work is conducted in parallel. Chris said Appendix I could be visualized in multiple ways.
- Vince asked if the 2012 date for completion of the EIS as shown on the schedule is accurate and where the ROD fits in. Chris said the ROD will be issued six months after the EIS is finalized.
- Vince asked if there would be an opportunity to comment on the EIS. Dirk said comments would be allowed, but there would not be a response to comments. He said unlike the draft, the comments would only go in one direction.
- Vince said he is attempting to understand the 2012-2014 WIR document and permit. Chris said the permit will include language indicating that DOE will prepare a closure plan. The closure plan will go through a comment resolution with Ecology that will require a public review. The permit itself will set the conditions under which the work can be performed. The public comment period will ensure the public accepts whatever conditions are in the permit.
- Vince asked when the work can actually begin. He said retrieval is occurring, but he wonders when the work will begin on what would be considered the closure plan. Chris said DOE is hoping to receive a permit in 2014 and begin closure work after that.
- Vince said he is confused about the component closure actions on Chris's schedule handout. Chris said DOE must receive the permit in 2014 so the documents must be

completed early in order to begin closure milestone activities. He said the chart indicates the milestone, but DOE will complete the work early.

- Dick Smith said there is groundwater contamination in some areas. Contamination must be removed from the soil in those areas. Dick said not everyone believes this to be a feasible or viable option. He said soil flushing is a relatively non-destructive process that may be effective at cleaning out contaminants. This process could be expanded to groundwater cleanup efforts. Dick said the issue should be explored more carefully. He said there is a lot more material in the ground than in the tanks, which the PA substantiates.
- Bob Suyama asked about the budget. Joni Norton, DOE-ORP, said there has been a lot of discussion on budget within the DOE offices. She said DOE-Richland Operations Office (DOE-RL) needed to change many of their priorities for the next few years because of a national directive to reduce deficit. She said DOE-RL has a definitive idea of where their priorities lie, while DOE-ORP is still debating where funding should be spent over the coming few years. Joni said the consent decree and TPA are two different regulatory frameworks. The consent decree is a court ruling, while the TPA is an agreement among the three agencies. She said DOE considers funding to meet the consent decree for retrieval activities that address short-term impacts. The TPA can be delayed for completion in the future. Joni said moving waste from SSTs into tanks with better integrity and preparing the waste feed for the Waste Treatment and Immobilization Plant (WTP) are high priorities. Joni said the PA contains a large amount of data that DOE does not want to lose so completing the PA is a high priority. This data can also be used to make retrieval decisions in addition to closure decisions. Joni said the rest of the schedule is unknown until DOE determines the budget figure for 2013. Joni said DOE does not want to set an unrealistic baseline and wants to maintain a realistic schedule. She added that decision-making is not solely based on the regulatory framework; DOE also considers risk.
- Jeff Luke said there are two types of uncertainty with the WMA-C PA. Technical uncertainty concerns questions such as how material is flowing through the soil. The other type of uncertainty is the uncertainty of the schedule. Jeff said he remembers discussions 20 years ago about the uncertainty of flow patterns through the soil. Jeff said he appreciates Dirk's comments on lateral flow, but the bigger concern is the budget and actually completing the work. Jeff said 20 years from now there still might not be enough information to answer every question on how material moves. He cautioned the TWC to be certain of the impact their advice could have. Jeff said he does not want the Board to

hinder any work by advising DOE to gather more information before continuing the work.

- Susan Leckband said she likes the advice. She said that although the conversation is technical, the advice is at a policy level appropriate for the Board. Susan asked if there is an opportunity or need from the agencies to hear advice from the Board on what funding priorities should be. Joni said these discussions take place during budget submittal, which is the point where the Board is usually involved. Joni said the other budget exercises are so regular and so diverse that it would be difficult for the Board to stay involved.
- Al Boldt said he believes there is a need for DOE to issue a document of discontinuity for the vadose zone and effects on water flow. He said a one dimensional flow model was used for decades. Disconnects with lateral and vertical flow have been observed on the Hanford Site. Al asked what conclusions can be drawn from the data that is available. He said a cover could make contamination worse if it diverts flow through existing contamination. He said the layers that might have lateral flow can be suspected because of the geology. Al said if flow direction can be identified from core samples, a cap can be tilted in the desired flow direction. Al said this process could continue for decades. DOE should examine what is already known and any data that can be generated in six or nine months can influence closure later.
- Dirk said Al described a high-level bullet point, which he is not sure fits in with the current draft advice. Al said the committee could add the point or it could go into another piece of advice. He simply wanted to point out the issue and use it as a basis to start discussions. Dirk suggested returning to the issue for a future piece of advice.

The committee had no additional comments on the draft WMA-C PA advice. The advice will be presented to the Board in September. Editorial comments prior to the Board meeting should be sent to Vince.

Single Shell Tank WMA-C Resource Conservation and Recovery Act/Comprehensive Environmental Response, Compensation and Liability Act Integration White Paper

Issue Manager Review

Dick said the authors of the Single Shell Tank WMA-C Resource Conservation and Recovery Act (RCRA)/Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Integration White Paper compiled all the laws and regulations that deal with the topic, but he found it a bit difficult to understand. Dick said he wanted a more simple-minded explanation. Dick added that he is unsure how one dealt with the two risk limits mentioned: 10^{-4}

and 10^{-6} . Dick said he was under the impression that RCRA was much more restrictive in terms of allowable risk than CERCLA. He asked how to reconcile the much more limiting conditions in RCRA with the somewhat less limiting conditions under CERCLA. Dick asked whether the conditions are additive. He said this is a difficult subject and that the low-level details were less important than how DOE reaches the end point.

Agencies Review

Chris provided an overview of the RCRA/CERCLA Integration White Paper. He said a number of workshops were held with Ecology, DOE-ORP and contractor staff. Chris said they discussed the White Paper as part of the M-45-80 series on how to complete the entire closure. He said the WMA-C closure process is described in TPA Appendix I. The tank systems are governed under a RCRA citation with requirements for how tank liquids, dangerous waste and nucleotides are handled. Chris said he received questions from Dick and Dirk, which he would address.

Chris said any cleanup work, whether conducted under RCRA or CERCLA, should be equivalent. One standard should not be more or less restrictive than the other. He said one risk assessment is completed. Chris said there is one way to analyze risk and one basis to determine risk. There are not multiple methods. He said whether cleanup is conducted under both U.S. Environmental Protection Agency (EPA) and Ecology as co-leads or as separate leads; the intent will be the same.

Chris said the intent of RCRA is what it was promulgated to do in 1976; to cover active manufacturing plants from cradle to grave. RCRA regulates chemicals from the moment they are brought into a plant through processing and disposal. CERCLA was enacted to handle egregious events in the country, such as Love Canal.

Chris said Appendix I describes who the lead agency is. Ecology is the lead agency for the SST WMA. EPA will work with Ecology, although Ecology will be leading the effort. Chris said Ecology also leads CERCLA cleanup along the 100 Areas, excluding the SST area. He said Ecology is very conscious of ensuring the work is coordinated and completed correctly.

Regulator Perspective

- Brenda Jentzen, Ecology, thanked Chris for his excellent explanation of the White Paper. She said the paper is fairly detailed. It is a communication tool used by DOE and Ecology. Brenda said the paper clarifies information for mutual understanding between the agencies. She added that the White Paper does not make decisions; it only helps communicate what the regulations are. She said Ecology uses applicable or relevant and appropriate requirements to resolve any differences. Brenda said Ecology has control of

the chemicals under RCRA and control of the waste under Model Toxics Control Act regulations. She said the required risk level is 10^{-5} , which is applied when conducting closure.

Committee Discussion

- Dirk asked how different waste types are determined. Chris said the CERCLA framework is used.
- Dirk said he dealt with RCRA in the early days for the state of Oregon. He said EPA first administered RCRA starting in 1976, although states were not given authority to regulate under RCRA until 1987. Dirk said these regulatory considerations are not something the Board can address.
- Liz asked about the interpretation of requirements since requirements in the regulations can be interpreted differently. She asked if there would be a better way to describe the document instead of calling it a “communication tool.” Chris said he is not sure what interpretation would be helpful. Brenda said she is unsure if the White Paper went into detail on how to interpret the various regulations. She said attorneys would likely be consulted about what the requirement is if there is an interpretation question. Chris said the conditions and requirements will be outlined in greater detail in the Ecology permit, which will remove interpretation.
- Liz asked how regulations are applied based on how the document is read. She said she understands where the legal piece fits, but there are a lot of assumptions on how to apply the regulations. Chris said there are permit conditions that comply with other permits, which is expected by the regulators. Chris used the tank farms as an example. He said the contractor creates a permit compliance paper that explains very specifically how the contractor will comply with the conditions.
- Joni said there is a technical understanding of how to complete the work. She said the methods can be written into a regulatory decision that will be followed-up on in five years or be added to the RCRA permit with closure. She said there are several frameworks that cross the lead agency barriers. Joni said DOE considers the best and most efficient approach given the resources and interpretation of the regulator frameworks. She said DOE writes integration papers to help understand this process. Closure documents will be submitted at this time, which will be enforceable.
- Dirk said that the Hanford Site is unique in that there is a single regulatory agency. He said it is a rare case where Ecology undertakes CERCLA work without authorization. EPA is the lead agency under CERCLA, although Ecology is conducting the actual work.

- Dick suggested offering a presentation on Appendix I to help the committee and the Board understand the WMA-C closure process. He said there were a lot of decisions made when developing the Appendix that are not necessarily obvious.
- Chris provided a handout detailing the closure schedule for WMA-C. He proposed that the committee study the schedule and then he could return to discuss it and answer any questions. Dirk noted that this schedule is a much more detailed version than the conceptual models shown earlier. He said the schedule needs to be amended to fit DOE's closure plan submittal dates. He advised the committee to keep Joni's comments in mind about DOE not having budget guidance out yet. DOE might have different information in October depending on what the budget is. Chris said the information being presented is what DOE knows right now.

SST WMA-C Pipeline Feasibility Evaluation

Agency presentation

Chris reviewed the Pipeline Feasibility Study. He said Ecology wanted one source of information detailing what is known about the pipelines in WMA-C. DOE documented all the available information including the effort required to remove, treat, and dispose of the contamination plus how easily the pipelines could be characterized and the risks of leaving pipes in place in meeting the 2019 closure date. He said the SSTs have been taken out of service and there is no longer hose-in-hose. Materials cannot be moved into or out of tanks unless it travels through a compliant retrieval system. Chris said characterizing the pipelines will be very difficult, especially for the desired level of detail for WMA-C. He said there have been talks about initial scoping and the uncertainty of what the pipelines contain. The Feasibility Study details the implementation of any characterization and closure that would be necessary for the pipelines.

Regulator perspective

- Nancy Uziemblo, Ecology, said she wanted to address the question of moving forward now that the Feasibility Study is available. She said Ecology's first need is to determine the necessary pipeline characterization for closure, including the volume and contents of the pipes. She said their second need is for characterization in conjunction with retrievals. She said DOE must determine what can be accomplished within the timeframes. She said activity in the C Farm needs to continue. Nancy said Ecology's third need is for complete closure in 2019, which is in the consent decree.
- Nancy also noted two focus points for how WMA-C closure can be accomplished. The first is that there must be compromises. She said there is only so much time, money,

information, room, technology, etc. to reach the 2019 milestone. Nancy said all the points need to be addressed. The second focus is that of Ecology – to protect human health and the environment. She said the reason for oversight is to ensure those goals are being met. She said the reason the PA is being completed together is to consider the risk for all the various elements. Closure will protect human health and the environment.

Committee discussion

- David Bernhard said there appears to be a volume of 2,000 cubic feet in the pipes. He said the 360 figure is probably about right, but there is no data to assess the number. Chris said DOE could choose pipes for characterization, but the results will be inadvertently biased in one way or the other. The assumption in the PA currently is a worst case for all 22 miles of pipeline.
- David said the risk is probably overstated, but this approach does save money. Chris said DOE is open for suggestions on how to smartly conduct these types of investigations in a cost saving manner. David said there seems to be a preference for grouting. Chris said part of landfill closure would include leaving pipes in the ground. He said with landfill closure, materials will be buried eight to ten feet below the current surface with many feet of barrier cap.
- Dick said he did not recall seeing a cost analysis of the options. He said it might be possible to remove all the pipelines for less cost than characterizing the pipelines. He asked why money should be wasted on characterization when all the pipes could simply be removed, which would be his preference. He said these types of considerations need to be explored carefully before making decisions. Chris said there are some cost estimates in the study, specifically excavation costs. He said he would obtain more information and return to the TWC.
- Laura Hanses said there has been a lot of technology development around retrieval and closure. She asked whether anybody was considering better ways to characterize. Chris said there are people working on developing better technologies for characterization. The Feasibility Study is an encyclopedia of what is known. Joni said Section 5 of the document is all about technology for characterization.
- Susan encouraged the committee to follow the issue in terms of what could be reduced budget scenarios. She asked the TWC to consider what other elements would be impacted if DOE did enhance characterization. She hopes the agencies will keep the committee informed and involved as they are all very concerned about the budget.

- Dirk said in most cases the pipelines were flushed during retrieval. He said high level waste is defined by the source. Dirk asked how that determination can be made without determining the materials that are actually present. He said removal decisions cannot be made without knowing this information.
- Vince said he is conflicted about this complex topic. Data is available for which lines have been flushed. He thought DOE could use this information to determine whether a pipe needs to be removed. There are also records for lines that have been plugged. Dirk said the pipes that were plugged likely still have high level waste and are higher risk than pipes that have not been plugged. The other pipes with potentially high level waste are those that have leaked somewhere in the line, especially pipes with leaks that are unknown.
- Vince said there have been discussions about excavated soil, which would leave pipes hanging 15 feet in the air. The technology does not exist to move past all the pipes that would be in the way. The tank removal documents state there are 19,000 curies of cesium in the tanks. If soil is excavated to five feet below the soil level 5,900 curies would be left in the vadose zone. Vince does not think there would be a very large amount of cesium found if a PA was conducted for the pipes. Dirk said there is complex chemistry involved, particularly with phosphates.
- Susan Eberlein said pipelines extending out of the area must be considered along with pipelines in the area. She said this is the reason a number of individuals must be involved.
- Joni said the Feasibility Study is all about how DOE makes decisions on which pipes will stay and which will be removed. A lot of that decision-making is based on what the risk is. She said this leads to a very structured decision-making process. DOE moves to the regulatory framework. There are PAs to determine what risk remains if a certain tank is closed. DOE must estimate what material is in the pipes and what is in the tanks by going through the RCRA/CERCLA framework. Joni added that DOE undertook a tank removal study several months ago, which assists in future decision-making.
- Vince said there is soil contamination around the pipelines. The current plan includes placing a cap over the top. Dirk said that would be the case in any cleanup scenario except for clean closure. Vince said clean closure is not really clean since excavation will only reach five feet under the tanks. He said there is relatively little material under the soil. Even after digging 15 feet underneath the tanks there would be a small amount of contamination. The use of a cap would be another protective feature. Dirk said caps may not be helpful if what appears to be happening is actually happening, but there is no clear solution.

- Al said DOE removed the Nuclear Regulatory Commission (NRC) from the process. DOE would declare the waste to be high level if NRC continues to be uninvolved. NRC reviewers took the position that the waste is high level. Dirk said the waste needs to be retrieved to a greater degree than is possible. Al said the NRC determines what the cost is and what the risk is. Dirk said DOE is fundamentally doing the maximum amount possible to remove waste. He added that if pipes have already been flushed, this is likely not an issue anyway.
- Dick said they could let all high level waste settle into the ground so that it would no longer be considered high level waste. Dirk said the TWC could put the WIR issue on the calendar again when DOE can discuss it and note that this is a high priority item for the committee.
- Harold Heacock said there is currently nowhere to store high level waste. He asked if it would be better to leave the waste in place where it is somewhat protected. There would be a risk of spreading the contaminants if they are excavated. Vince said that question is not being discussed. Harold said he would rather DOE not remove material when there is nowhere to place that material. Dirk said there are a whole series of staging issues. Harold said it will be many years before there is a high waste repository.
- Vince said waste determination is beginning in October this year. The draft will not be complete until August 2012 with the final slated to be complete at the end of 2013. He said the committee is premature on the issue and can wait to develop advice. Dirk suggested bringing up the topic again in January. Vince said DOE will not have anything to discuss until 2013.

Committee Business

- The committee discussed topics for the September meeting. Harold said he would develop a set of questions for agency representatives to answer regarding the 2020 vision. The Issue Managers (Vince and Dirk) will prepare some questions to assist in a presentation on Appendix I with agency representatives.
- Cathy asked if the committee had comments on the detailed schedule provided by DOE and if they would like to have further discussion. Vince said he would like to know how DOE makes their critical path. He does not think the committee will gain anything from looking at the schedule since there is a great deal behind how a schedule is developed. Vince said he would like a simplified version.

- Vince said the decision has already been made on the schedule for several items. Vince said he suspected DOE has not shared the schedule earlier because there are items in the schedule that might not hold up based on the EIS. He said the committee should have a discussion on the implicit decisions imbedded in this schedule. Cathy said the committee could let DOE go through the schedule and then focus on any areas of special interest to the committee.
- Liz said the overarching question in the advice that Vince wrote regards updates. She asked why the schedule is not online and why it does not get updated every time something is delayed. Dick said that would be very challenging and would require approval from management plus additional DOE processes.
- Cathy said the committee has not discussed yet the Defense Nuclear Facilities Safety Board (DNFSB) letter. She said the Health, Safety and Environmental Protection Committee (HSEP) is also following the issue. Vince said TWC may want to join HSEP for their discussions. He provided a handout of the DNFSB letter.
- Tom Carpenter said DOE was accepting comments on their response to the letter as well as accepting comments on the DNFSB response to the response. Tom said many comments are from WTP employees, which validate the concerns over safety culture. He said DOE had a certain amount of push-back, but it appears that DOE has now accepted the letter and will incorporate some of the recommendations.
- Dirk advised that the Board stay away from the whistle blower aspect and instead consider advice as related to safety culture. He said safety falls within the purview of HSEP and TWC is concerned with how the DNFSB letter impacts the technical aspects of WTP. There may be impacts to the schedule, which is already very tight.
- Laura said she sees the concerns as integrated. WTP will ultimately be integrated with the same contractors. She said the same issue will be seen down the road because of this integration.
- Dirk said the difficulty is with the language itself and issues relating to the technical issues beginning 20-25 years ago. He said if there is good quality work, safety culture and processes are addressed. Dirk said fundamentally underlying all of this is the question of whether the technical plans will work. There are technical issues raised that derailed the WTP project and need a solution, which DNFSB discusses couched within safety culture issues. Dirk said the entire WTP will fail if aspects do not function.
- Laura asked how there can be confidence in the facility if workers do not voice concerns. Harold asked if this is an isolated technical issue or an underlying generic issue for the whole facility. He does not think the committee should look at the technical specifics at

all. Harold said from a policy point of view, the committee should be interested in whether the problem is generic or not.

- Tom said he believes about five people from WTP commented on the DNSFB website with specific comments about the safety culture. They shared very specific and surprising information. There is some indication that DOE technical staff are in disagreement with management about a path forward for completing some of the work on some of the pretreatment tanks.
- Tom said ensuring the design of the tanks is sufficient is a very critical issue. He said the DNFSB is looking at whether there is sufficiency for mixing high level waste in the mixers. The high level mixers design closed as of last year and the DNFSB conducted confirmatory testing. Of the five tests conducted all showed failure because of significant corrosion in the piping. These pipes are supposed to last 45 years. Tom said he has pictures showing holes in the pulse jet mixer pipes. There was also sludge in the pulse jet mixers, which Bechtel had to spray off. This cannot be done when the mixers are operational. Tom said the technical staff is very concerned about these results and the Board should be looking at how management is analyzing the situation.
- Vince said the committee would like to hear more on the issue in September with HSEP. He said without knowing anything else and just based on what the TWC was told, he would like to know the status of the design and whether it will work.
- Harold said the important considerations are if the design is functionally adequate and safe. If it does not meet these criteria, the Board needs to find out what will be done to correct the problems so WTP can perform the required functions. Harold cautioned against focusing too much on personal views and the allegations of an individual. Dirk agreed with Harold and said the committee will focus on the big picture.
- Dirk said that the Board's role is to offer policy level advice, not act in an oversight role. He encouraged the committee to exercise caution in how they approach the issue.
- Harold asked what the committee means by "safety." He said the TWC is more concerned with the operability of the plant than safety. Al asked if the same management pressures are applied against technical decisions. Dirk said the word safety is being used in a broader sense than it has traditionally.
- Dirk returned the committee to the WMA-C PA advice. There were no further comments on the draft. Vince said there are some parts of the document that could be firmed up and will likely be addressed the Board meeting. Consensus was reached at the committee level to bring the advice to the Board at the September meeting.

- The committee decided not to hold a call in August. There will be a meeting in September, which will be scheduled to accommodate time for the joint topic with HSEP.

Handouts

- WMA-C PA: Schedule as of Sept 2010 – From WIR Document.
- Now Is the Time to Discuss Closure. June 9, 2011.
- PA Advice---Draft 4. Hanford Advisory Board, August 8, 2011.
- WMA-C Closure. Chris Kemp, DOE-ORP, August 9, 2011.
- PA Workshop Objectives and Approach.
- Draft 2019 Schedule. July 26, 2011.
- Recommendation 2011-1 to the Secretary of Energy: Safety Culture at the Waste Treatment and Immobilization Plant. Defense Nuclear Facilities Safety Board, June 9, 2011.

Attendees

Board Members and Alternates

David Bernhard	Harold Heacock	Vince Panesko
Al Boldt	Rebecca Holland	Dick Smith
Tom Carpenter	Susan Leckband	Robert Suyama
Dirk Dunning	Jeff Luke	
Laura Hanses	Liz Mattson	

Others

Ted Jenninoes, DOE-ORP	Brenda Jentzen, Ecology	Paul Seeley, Cenibark Int.
Chris Kemp, DOE-ORP	Beth Rochette, Ecology	Nicole Addington, EnviroIssues
Jim Lynch, DOE-ORP	Nancy Uziemblo, Ecology	Cathy McCague, EnviroIssues
Pamela McCann, DOE-ORP	Ginger Wireman, Ecology	Sharon Braswell, MSA (phone)
Joni Norton, DOE-ORP	Rebecca Gerhart, EPA	Reed Kaldor, MSA
Josh Thornton, DOE-ORP		Susan Eberlein, WRPS
Doug Hildebrand, DOE-RL		Keith Quigley, WRPS