

**FINAL MEETING SUMMARY**

**HANFORD ADVISORY BOARD  
JOINT TANK WASTE AND HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION  
COMMITTEES**

*May 9, 2012  
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 & Introductions**

Susan Leckband, Hanford Advisory Board (HAB or Board) chair, welcomed everyone to the joint two-day meeting between the Tank Waste Committee (TWC) and Health, Safety and Environmental Protection Committee (HSEP). She said the primary focus of this meeting is to come to consensus on potential Waste Treatment Plant (WTP) advice points that will be brought forward at the June Board meeting. Susan L. said she is facilitating the meeting.

Dirk Dunning, TWC chair, said that he believed the committee had sufficient time to review the April TWC meeting summary and it was approved as initially sent to committee.

Mike Korenko, HSEP chair, moved to approve the April HSEP meeting summary. There were no objections so the committee approved the summary with one clarifying correction from the U.S. Department of Energy (DOE).

Tiffany Nguyen, DOE-Richland Operations Office (RL), said asbestos had been a topic at the April HSEP meeting. She brought copies of the sampling test results that were requested during that meeting. She also brought copies of the all-employee memo that was sent regarding asbestos. Tiffany said the test results were basically “good” and below the permissible exposure limit. She said a fact sheet is available as well.

Jessica Ruehrwein, EnviroIssues, reviewed the agenda for the two-day meeting. She said she would be working with Susan Hayman, EnviroIssues, to ensure all points are accurately captured with the goal of reaching consensus on draft advice.

### **Debrief of Recent Events\***

Committee members provided brief updates of several recent events that have occurred over the course of Board safety culture advice development.

#### *February Sounding Board*

Keith Smith provided a summary of the major points heard during the Sounding Board at the February Board meeting. He said almost all comments stressed the desire for a WTP that works. Many Board members also indicated that there needs to be a vibrant safety culture. This safety culture should be institutionalized to survive the changes in contractors and management that are endemic at the Hanford Site. Keith said other comments included concerns that there appears to be reluctance from contractor management to embrace criticism. The Hanford Site should encourage an open system of communication and a collegial attitude that allows free conversation about problems that exist. Individuals who do not like to have their work criticized should not be in positions of authority. Keith said other concerns from the Sounding Board related to how the functionality of WTP appears to be at risk.

Susan L. said that the purpose of the Sounding Board is to provide the depth and breadth of Board commentary to the Tri-Party Agreement (TPA) agencies. Sounding Boards are incredibly valuable to all the agencies, although they are not responsible for responding to comments expressed during a Sounding Board. Susan L. said comments from the February Sounding Board were provided to the Defense Nuclear Facilities Safety Board (DNFSB) prior to their hearing.

#### *DNFSB hearing review*

Becky Holland, HSEP vice-chair, said the DNFSB held a public meeting on March 22 at the Three Rivers Convention Center in the Tri-Cities. She said this hearing did not seem to be as hostile as the prior meeting in Richland in terms of the overall tone and questions posed. Becky said she noted several key points that were brought up repeatedly. Jessie Roberson, vice-chair of DNFSB former DOE Assistant Secretary for Environmental Management, did not believe nuclear safety was being evaluated in WTP design. One of the panel members was concerned that if the process is not understood, the hazards cannot be understood. Becky said that seems to be one of the biggest problems at WTP besides the safety culture issues. DOE does not have knowledge of the waste stream that will be treated at WTP because of the complexity of the waste. Any problems should be resolved before waste is ever brought to WTP. The hearing also included questions about the operating license and documented safety analysis. There should

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\* Please see Attachment 1 – Transcribed Flip Chart Notes for key points/follow up actions recorded during the committee discussion.

be a clear understanding of input from the tank farms in order to buy into the waste acceptance criteria (WAC).

Liz Mattson said the hearing was broken into two sections: technical issues and safety culture. She said the hearing was live-streamed throughout the entire day so people could watch even if they were unable to travel. Liz said she was not very impressed by some of the answers given about safety culture; answers were vague and abstract. She said there is still a reliance on broken systems and it is not clear where someone can go for help with a concern. At the hearing, Jessie Roberson raised the point that it is important to know how we got to where we are today to be able to go forward and not repeat the same mistakes.

Dirk said the technology discussed at the hearing was fascinating. The panel was made up of people who did not appear to necessarily get along, but they spoke in unison even though there were different perspectives. Dirk had the impression that DOE at least recognized what the major technology concerns are and are working on paths to resolve those concerns. Dirk said he was not persuaded DOE understands what safety culture is and what the problems are that they really should be addressing, but he was impressed by the amount of work done by David Huizenga, DOE-Office of Environmental Management (EM), and others to address safety issues. Dirk added that there is a disconnect between DNFSB and DOE; they are not using the same words.

Keith said DOE does seem to recognize that they need to put their own house in order before being able to effectively work with the contractors on those same issues. Keith added that it becomes increasingly expensive to resolve any issues the further into design you are.

#### *WTP open house*

Liz said the open house was well-attended. There were many stations with experts at each one. The Washington State Department of Ecology (Ecology) had a table in the middle of the room to discuss their perspective on WTP. Liz said the open house is a step forward in the public involvement process, but it does not represent complete public involvement. There are additional opportunities for public involvement during Board meetings. Liz said the open house did have a section on safety culture and she was able to have a long conversation with some DOE employees about the issues. There was a willingness to engage on the issues and DOE answered some tough questions. She added that the posters from the open house will be provided by DOE-ORP for anyone who is interested.

Liz asked about who provided funding for the open houses and if anyone had considered asking the Public Involvement Committee (PIC) to provide input on future open houses. DOE offered to follow-up on the funding question.

Becky said there were a lot of displays at the open house. She appreciated how Newtonian and non-Newtonian vessels were explained. There were samples of what the glass would look like once the waste is processed through the WTP. Becky said she and Liz spoke with several DOE employees and were able

to share their input on how safety culture might be improved. Becky believes this input was taken under advisement and appreciates that.

Susan L. said she attended the WTP open house in Richland with an open mind. She thought the people standing at the exhibits were very open and she asked some tough questions. Susan L. thought the exhibits were interesting and she hopes there will be more events like this. Many people made suggestions and asked questions, but she was unclear whether comments from the public were being captured.

#### *Review of DNFSB Meeting*

Dirk said in advance of the DNFSB hearing, select organizations were contacted by the DNFSB to schedule a meeting with the chair. Four meetings with four separate groups: the tribes, the state of Oregon, the Board, and local community leaders were held. Dirk said the meetings were very formal. DNFSB operates within a more adversarial, non-consensus process as opposed to the Board which is focused on coming together as a common group. DNFSB requires legal counsel be present whenever two members of the Board meet. Dirk said Oregon discussed their major concerns and why the state was involved. He shared some of his own concerns on safety culture and technical issues with DNFSB. Dirk said the DNFSB senior technical staff and Board members seemed to have many of the same basic concerns. He said Susan L. did a wonderful job representing the Board and explaining the process. The DNFSB was very impressed that the 32-member Board is able to reach consensus on advice. The DNFSB was also impressed with the Sounding Board.

Keith said he worked with DNFSB at the ground level. He shared several major concerns, including the need for the design process to incorporate functionality and safety before construction begins. Keith asked for the DNFSB analysis of why the promised safety management program had not taken hold at the Hanford Site. Keith said he heard two different replies to this second point: 1) there was a failure to institutionalize so the safety culture model was unable to survive contractor or management changes within DOE; 2) part of the failure was from DOE not successfully communicating the requirement enough to contractors and senior management.

#### *Community leadership discussion on DNFSB*

Pam Larsen said community leadership was given an opportunity to speak with DNFSB during a hearing in Los Alamos. Community Leadership also met with DNFSB when they were in Richland. The staff was encouraged to meet with local elected officials and Pam said her group was first on the list. Pam said she discussed the challenges with K Basin in the early days and found there were common items to speak with DNFSB about. She described the priority to build WTP and resolve the issues in a constructive manner, recognizing that the tanks in the ground pose a risk to the community. The agriculture community and regional economy could be affected if there is an earthquake or tank breach in addition to the impacts on safety and health. Pam said Savannah River facility was also discussed, including the challenges they faced and the differences in their facility compared to WTP. The conversation also included the need to balance the criteria of the Comprehensive Environmental Response and Liability Act

(CERCLA) with decision-making approaches. DNFSB is not required to include cost as a consideration, unlike taxpayers. Pam said they also encouraged the DNFSB staff to consider their words as they proceed with meetings. It is important to recognize that people in the Hanford region work at the tank farms. DNFSB should approach the safe working culture issues constructively instead of with animosity. Pam thought the conversation was productive overall.

#### *Agency perspectives*

Steve Pfaff, DOE-Office of River Protection (ORP), said the Sounding Board was excellent and will help DOE understand some of the Board's concerns without waiting for the formal advice. He said the consensus process is very powerful, but it is also useful to hear from the Board members directly without having their opinions smoothed over in advice. The Sounding Board helps provide context for where the advice comes from. James Hutton, Chief Nuclear Safety Advisor to DOE-EM, travelled specifically to the Board meeting to hear the Sounding Board. He crafted the DOE response to the DNFSB report and was in charge of the DNFSB 2011-1 Response Team. Steve said his team had many conversations with James as DOE-ORP developed their own Safety Culture Improvement Plan. Steve added some of his own personal reflections on the Sounding Board as well as on the DNFSB hearing. He said the public expressed concerns about how they had been involved peripherally or been directly affected by layoffs. Steve said he did not believe DOE was prepared to speak to that and could have better engaged those people.

Erika Holmes, Ecology, said Ecology was pleased to be invited to speak about WTP at the open house. She is curious what will change with WTP going forward and if people will become fatigued with quarterly events. Erika is pleased with her experience at the open house and believes it is important for the public to have a place where they can ask questions and get information.

Dan McDonald, Ecology, said hearing the different perspectives at the Sounding Board was very informative. He was able to understand boundaries of thought and the variety of perspectives. He noted the importance of having a solid definition on what safety culture means before offering suggestions on how to fix it.

#### *Committee Questions and Response*

*Note: This section reflects individual questions, comments, and agency responses, as well as a synthesis where there were similar questions or comments.*

C: It is hard to understand statements regarding not having knowledge of the waste stream. DOE has been characterizing the waste for decades and taken multiple measures on each tank. What is the Board suggesting that DOE should do differently?

C: Several Board members stated that many tanks have not been measured enough to get representative samples. Less than half the single-shell tanks (SSTs) have been sampled. The Board will not be advocating a specific solution. DNFSB has said there is a fundamental issue with needing to understand samples well enough to be able to bound the characteristics and behaviors for the design process. That has not been done. The most difficult waste is being held off as a problem to answer later, which is not an

acceptable approach. DOE and the DNFSB have recognized that there are surprises in the waste stream, such as plutonium particles larger than expected.

C: Much of the DNFSB process is based on the Nuclear Navy Review Process. Within this process there is a group designed to have strict oversight. No social interaction of any kind between oversight staff and the individuals they oversee is permitted. The role of the DNFSB is to determine technical issues and resolve those issues. The DNFSB is not necessarily hostile; they ask direct questions and want direct answers.

C: DOE is responsible for the cost, schedule and safety of the Hanford Site. Those three elements should be balanced, but the priority should be on safety. Congress pressures DOE on the cost aspect and the State of Washington pressures DOE on the schedule aspect. There is no voice pressuring DOE on the safety aspect. DNFSB plays that role to some extent by disregarding cost and schedule. A U.S. Nuclear Regulatory Commission (NRC) approach would be useful at the Hanford Site. The DNFSB is playing an appropriate role in the effort to get straight answers and the DOE-Office of Health Safety and Security (HSS) is beginning to play a role as well. Both DNFSB and HSS are under a lot of pressure right now. There is currently a bill under consideration in Congress to subordinate the DNFSB under the National Security Agency (NSA), disallowing the DNFSB from ignoring cost and schedule considerations and completely changing the performance-based review. Another bill currently being debated would disband the HSS altogether. These two bills, if passed, would have serious consequences on the ability to weight safety concerns.

### **DOE Documents\***

#### *DOE Implementation Plan and HSS report overview*

Tom Carpenter, Hanford Challenge, reviewed background information and his concerns regarding the DOE Implementation Plan and HSS report. He said HSS security officials provided a briefing to the committee several months ago. The Implementation Plan comes in response to DNFSB recommendation 2011-1 and safety culture letter. The letter was quite critical and pointed on issues related to safety culture at WTP both within DOE and within Bechtel. The DNFSB letter also included recommendations, including that DOE address safety culture at the highest level throughout the entire complex. The implementation plan addresses areas of concern that DNFSB described, including some of the root causes that led to safety culture issues. Bechtel is also doing its own safety culture oversight assessment. Tom said the specific interest in WTP began with a DNFSB recommendation to examine some of the circumstances leading up to concerns.

Tom said he was disappointed the Implementation Plan predated the HSS report by two weeks. It would have been better to see the HSS report beforehand. The resulting Implementation Plan could have been more complete by taking into account information from HSS.

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\* Please see Attachment 1 – Transcribed Flip Chart Notes for key points/follow up actions recorded during the committee discussion.

*R: DOE noted that the plan was required to be issued at that time. (It predates the HSS report by two weeks.) It does address some information from HSS and will be updated, which will hopefully be completed before the public hearing is complete. The update will occur sometime after the May 22 public hearing.*

Tom said he would editorialize the Implementation Plan. He said the Plan does describe balancing performance, cost and schedule to improve safety. He was disappointed that the performance measures reported to DOE-Headquarters are based on cost and schedule when the purpose of the DNFSB letter was to prioritize safety above all other considerations. Tom said the Plan seems to be about trainings, pronouncements, town hall meetings, etc. as opposed to specific details on what improvements will be made in terms of safety. The report does not contain a lot of detail about what will happen when there are allegations of reprisal, which is a key issue. Managing perception is very important, as the NRC determined a long time ago. DOE is slowly making progress, although that progress does not show up very effectively in the Implementation Plan.

Tom also offered his opinion on the HSS Report. He said the report was one of the most hard-hitting HSS reports and HSS went out on a limb. This report is the second put out by HSS on the Hanford Site. The first report was issued in October 2010. That report concluded that everything at the Hanford Site was basically okay with a few pockets of problems. That report received a lot of heat over how it was conducted because of allegations that managers escorted employees to HSS meetings in order to encourage certain answers, among other concerns. DNFSB asked HSS to re-do their investigation. The second report looked at DOE-ORP and BNI separately and was issued in January 2012. This report was based on an NRC approach and used organizational psychologists to help design the review. This review included surveys, focus groups, and interview protocols from the commercial industry that were evaluated against nine criteria from NRC. DOE-ORP and Bechtel were examined separately.

Tom reviewed some of the major findings from the report. Within DOE-ORP there does not seem to be a fear of retaliation, but there is a reluctance to raise concerns because employees do not believe those concerns will be addressed. Bechtel employees were somewhat fearful to raise concerns because they believed there might be retaliation. DNFSB found widespread reluctance to raise safety concerns in many Bechtel employee groups. The construction schedule was found to be an underlying cause of some of the safety culture issues with particular tension between the engineers and nuclear safety workers. Corrective actions were instituted for management to improve how they listen and work with employees through improved safety communications and training.

Tom concluded by saying the reports were a major wakeup call to the system that lead to a great deal of reflection, especially on what information is still not known and how to manage the unknown. There are formal recommendations and requirements for response from the secretary level down through to the worker level. DOE is working to improve safety culture on a daily basis. The local DOE offices are clearly taking the recommendations very seriously.

*Agency presentation on ORP Safety Culture Improvement Plan*

Steve briefed the committees on the DOE-ORP Safety Culture Improvement Plan. He discussed the Integrated Project Team – 12 individuals who worked full time for six weeks to develop the Plan. He viewed the Plan as a living document that if done right would always be a living document. Steve encouraged committee members to provide feedback. He outlined the mission and background as well as near-term improvement actions and next steps (Attachment 2). He said DOE management determined early on that if they were going to be successful, they would need to make safety culture improvement a full-time job. Steve also provided a handout of Safety Culture Integrated Project Team (IPT) snap shots (Attachment 3). He also handed out the Safety Culture Improvement Plan (Attachment 4). He announced that Pamela McCann was the new DOE-ORP issue manager tasked with building the issue management system underlying this Plan.

#### *Regulator perspectives*

Dan said conceptually this is an excellent start. One element that could be more articulated in this report is how safety and risk are balanced with cost and schedule. He said he often does not hear about how safety improvements are related to elements such as material design and process or training of management and workers. It is important to validate methods to ensure there is consistency in the maintenance of a safety culture. He asked members if there was agreement with ORP's definition of safety culture.

#### *Committee Questions and Response*

*Note: This section reflects individual questions, comments, and agency responses, as well as a synthesis where there were similar questions or comments.*

C: DOE-ORP did a great job in this process without leaving any comments out. DOE's definition of safety culture is good. Integrated Safety Management (ISM) is an important aspect of safety culture at the Hanford Site. There are obviously deficiencies with ISM integration; it is only being applied to operations and not design or behavior. DOE should reconsider allowing the committee to conduct a values workshop in order to understand the principles of behavior that are important for a strong safety culture.

Q: How will DOE know if their deliverables are meeting the mark?

*R: Deliverables will be sent to DNFSB. DOE will receive feedback in a letter on the Implementation Plan as a whole for DOE. DOE's goal is to develop actions with measurable progress. The nine near-term actions will be complete by May 2013. DOE can show the Board progress made by DOE and receive feedback from the Board on any potential areas of improvement in implementation.*

Q: How will managers be held accountable?

*R: DOE is unsure at this point. Part of building strong safety culture and measuring progress is speaking with many people. There are some activities coming up in the near future like sending out safety conscious work improvement surveys. There will be safety conscious worker training*

*and the DOE National Training Center is also developing a program. Surveys will be one mechanism of evaluating management performance. This information will be sent to higher levels of DOE management who will make determinations of how to hold people accountable.*

C: The term “underlying value” should be used in place of “priority.” Priorities change and the importance of safety should never change from being the overriding priority.

C: The training process at the Hanford Site is a concern for many people. Training needs to be effective and hands on. Lecturing is not really training.

C: DOE has listed a number of activities to date, but actions will be much more important than the number of meetings held or number of people surveyed. Behaviors must match spoken words. One alleged reprisal can have lasting impacts. The Implementation Plan does not seem to address that, other than saying there should not be any reprisals. There are a lot of good points in DOE’s Implementation Plan. It is the beginning of a process that will take a long time. People will watch DOE’s response to new allegations very closely. There is also nothing that deals with the cost and schedule pressures from Congress and the State of Washington. Can DOE incorporate approaches from the NRC model? The Implementation Plan contains a lot of language about teams. Teams are important, but it can turn into an either “you’re on the team or off the team” issue. The report does not go far enough in many respects. Hanford Challenge put together a simple improvement plan with four points for DOE to follow that the organization will post on their website.

C: There does not appear to be complete agreement between DOE offices on what is happening. The offices do not seem to share the same definition of safety culture.

*R: DOE did not have a definition of safety culture until November 2011. The definition was quickly created using ISM guidance. DOE incorporated behavioral scientists to conduct a better review and evaluate the data available at the time. This improvement plan is only for DOE-ORP staff. A large part of the HSS report deals with Bechtel directly who will have their own improvement plan. Bechtel was found to have a larger issue with fears of retaliation than DOE.*

C: The response to the accountability question raises some red flags. The first response was that DOE does not know. The root of this whole issue is accountability. Accountability could be a huge driver for getting people to raise concerns.

*R: The safety improvement effort is larger than the DOE Improvement Plan. Part of the improvement efforts involves confronting management with concerns. There does have to be some accountability and that will be determined at higher levels of DOE management.*

C: There is a requirement in the Naval Reactor Office that all concerns are brought forward. Not bringing up a concern results in a sort of reverse reprisal. There are consequences to not voicing concerns that are very effective in ensuring accountability.

C: There seem to be four separate major issues. 1) The plans for WTP began without really understanding the issues or having a strong technical basis; thus, WTP is currently being built without resolving the technical issues that should have been addressed much earlier. 2) When a major project begins momentum builds and the work continues whether it is on the right track or not. Concerns are being raised, but since DOE is in the middle of the project, they are not receptive to questions and outside comments because they are trying maintain the set schedule and budget. 3) Is DOE project management listening? If they are listening, how are they acting on concerns and are they communicating resolutions? 4) Have the outstanding technical and safety issues been identified and resolved or are we going to continue discovering issues further down the road?

C: Are there safety records for the Hanford Site from the Department of Labor that show an increased number of injuries? Construction has one of the highest injury groups of all professions. Are there epidemiological studies to determine if there is an increased number of worker illnesses or loss of work time? The Department of Public Health does not seem to be saying anything about increased health risks to workers on the Hanford Site. Tests should be included with the training requirements. There could be penalties if an employee fails a training test and they should not be able to work at the site until they pass all training requirements. The Hanford Site does appear to have a pretty good health and safety record. Safety and the functionality of the WTP will have to be determined in the future.

C: Construction at the Hanford Site is extremely safe compared to industry standards. Events do happen all the time that are frightening, but fortunately there have not been any fatalities or serious injuries so far. There is a large problem with energy control and lock out. The concerns around safety culture are not necessarily focused on the day-to-day operations, but on future occurrences. If you do a decent job building something so that nobody gets hurt during construction, it does not mean the facility is safe.

Q: How will the requirements for safety culture be incorporated in the Resource Conservation and Recovery Act (RCRA) Permit?

*R: Ecology said that safety issues tend to be more behavioral in nature as opposed to operational. Some issues may find themselves in the technical or design components of the RCRA Permit. The operating conditions will come to Ecology as DOE prepares to begin running WTP.*

### **HAB Perspectives\***

#### *Other approaches*

Dirk gave a presentation on other approaches to safety culture (Attachment 5).

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## *Committee Questions and Response*

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C: The word mitigation was used in different ways in Dirk's presentation. Mitigation was used in the context of adding additional design considerations to counter problems with the design. Designs should either be passively safe or there should be design controls and engineering controls. Risks should be mitigated when designing a project. Millions of gallons of corrosive waste are going to travel through WTP. Mitigation allows for high velocity prototype tests to ensure the design is correct. That is mitigation from a project management perspective.

Q: Dirk, what do you feel the important message is from this presentation for a potential advice concept?

*R: Safety culture is not all about epidemiology and operational safety. That is part of it, but is not the center of what safety culture is about. The goal is to design a facility that avoids any potential safety issues to the greatest degree possible.*

Q: There must have been a number of engineers who have approved the WTP design at some point. Can an engineer speak to the Board about whether they agree or disagree with the concerns being raised?

*R: Holding a professional engineering license makes that engineer legally responsible for the design throughout the rest of their life when they sign-off on a design.*

Q: Does the Board believe WTP engineers did a poor job?

*R: WTP is a design-build project. Conditions change as more information is obtained and the project receives heavy criticism. WTP is a unique facility that has not been designed before so there are many challenges.*

C: At the Hanford Site in the 1970s money was subtracted from people who did something wrong. Award fees have been changed and gutted. There are artificial fees. Determining an award fee would be very difficult at the Hanford Site. The Board advice should include that there should be some fundamental changes in how DOE runs business at the Hanford Site. There is a need for outside help, but there is a fundamental difference between how DOE operates and how the Navy operates.

*Review of WTP safety culture framing questions and identify key issues and concepts*

The committee reviewed the 17 framing questions (Attachment 6). The first review focused on identifying any points that were missing and clarifying responses that were unclear. The second round of review identified those points that would be suitable for potential background and those that could be potential advice points.

- **Question 1: What are people hearing and/or doing that is causing concern and what are those concerns?**

- The systems that are supposed to be available for employees to raise concerns are not effectively resolving those concerns. This is based on statements from workers and DNFSB findings.
- Anytime there is a radiation leak or small release it makes front page news. We have to be careful about what the media reports on because they often detract from the real issues. The media fuels many of the public's concerns. It is important to not feed misunderstanding. Perception is reality.
- **Question 2: What are the root causes and drivers that led to the problems?**
  - The problems at the WTP are mostly related to the pulse jet mixers and a misunderstanding of the waste streams. The problem is with design of WTP. There is a series of related problems in that the safety culture does not support the design process.
  - An award fee is missing, which would not only be applicable for the WTP. DOE is so focused on an award fee that they do not pay attention to award fee criteria. The question of administering an award fee is how you can put an award on research. Award fees do not apply to the WTP construction process or other one-of-a-kind actions.
  - WTP is fixed cost plus award fee. There are additional fees if contractors meet milestones. The cost should be fixed cost so there is no incentive to complete work faster.
  - The contracting vehicle approach is creating problems. There is usually a chain of events that lead to disasters; any one of these events not occurring could lead to a different outcome.
  - The black cell approach being accepted at the very beginning of WTP design is part of the root cause of these problems. There was not a sufficient evaluation of the technology. DOE has started along a path and does not want to change direction. There should have been enough experience at the time to know there were concerns with the design.
  - The problems initially started when DOE decided to privatize WTP construction and operations.
  - The design approach turned out to be an unviable approach. The contractor's ideas were accepted without much analysis. The costs become more expensive than initially thought so another contractor was hired to conduct the work less expensively. No one realized how difficult the process would really be.
- **Question 3: What current and future consequences are we dealing with as a result of these root causes?**
  - There should be something under this question about worker issues. Potential worker safety problems are a criticality issue.
  - There is the possibility for decreased throughput.

- Repeating the same mistakes is a future consequence of not evaluating lessons learned. Problems managed in the same way will lead to the same problems reoccurring.
- **Question 4: Why didn't ISM catch the problems in the design phase?**
  - The issue is that the design was not considered within the parameters of ISM and it could have been applied. Why wasn't ISM applied? It might not have been applied because it was not required to be. ISM at WTP was not instituted until around 2009.
  - Ecology asked whether the committees feel ISM is relevant and should have been applied. The question could be "should ISM have been applied?"
  - Safety culture is defined in DOE orders with ISM as the mechanism that drives safety culture. It is interesting to consider whether ISM should have been applied or if there should have been a different approach.
  - ISM was just emerging from the conceptual phase during the WTP design phase. DOE orders included ISM under risk mitigation for technical risks. Neither was done really well. ISM is thought about during demolition, but it is less often considered during construction.
  - The project management order was appropriate at the time. ISM would apply to decisions going forward, but does not apply to what occurred in the past. The discussion of ISM might be more appropriate for background as opposed to an advice point.
- **Question 6: What needs to change at a policy level so these problems don't happen again?**
  - Point C under Question 6 in Attachment 6 states that DOE culture should change, which is another way of saying that the culture should change independently of the rotation of DOE management and contractors. Safety should be a permanent aspect of the Hanford Site that is institutionalized.
  - The transition process between DOE senior management and contractor senior management should include an assessment of leadership principles of behavior. The Board does not need to include specifics about what that process would be. There are process tools that can help ensure caring managers are selected for projects.
  - The Board has asked DOE to make ISM and safety a first priority in previous advice, but contracts are given wide latitude in how to interpret what is in their contracts with DOE.
  - System drivers are cost and schedule; that is what DOE has been able to work with and there were unfortunate results from those drivers. The issue is systematic and the system drivers need to change in order to make a difference. The predominant driver for safety has to be independent of DOE. Who is driving safety as a priority? Currently the DNFSB is acting in this role.

- HSS could act as the driver for safety if the office is empowered, authorized and funded. It would be better to have an entity other than DOE overseeing and pressing the safety priority, but that does not have to be the case.
- The system needs to be grounded in reality instead of reporting what management would like to see. The same issues are brought up all the time, but they never get recorded in the system so it appears that everything is going well. There is no truth in what is occurring on the ground. An independent organization holding DOE accountable for system drivers could be helpful.
- The reality is that cost and schedule are the primary drivers. Safety is third. Congress will not provide funding if you start disagreeing with them.
- Another way to consider drivers is that the award fees are driving the results as opposed to the reality. It is an artificial system, which has become the reality. Artificial drivers come up with results that are unwanted.
- The reality of this whole process is political appointments and changes in administration. People in management should have the attitude that they work for the people below them. The people in the highest levels of management should prioritize safety above everything else.
- **Question 7: What are the technical issues that have not been identified and how can DOE create safe mechanisms for finding out what they are?**
  - After a system is fixed, there are still questions from a long period of time that may never have surfaced. If there is no effort to identify those concerns they may never be known and resolved. There does not seem to be any fix for this identified yet.
- **Question 8: What is the process to resolve the technical issues?**
  - There seems to be a good process for identifying technical issues further into the design. It is difficult to resolve issues in a compressed timeframe.
  - There have been two dissenting professional opinions (DPOs), according to the HSS report, that were validated. There is a process in place that could work. One is on the black cells and erosion/corrosion issues. One of the DPOs has taken years to reach a resolution base. There should be a more timely process that people can trust.
  - Would a process to resolve an issue be different than the process to identify an issue? The resolution process is part of DPO.
  - Bechtel uses the problem evaluation request (PER) process for employees to raise concerns. The process is very slow and gets overwhelmed. Bechtel should fix that problem under DOE guidance. The Board could include this as an advice point.
  - The design review team for WTP should have identified technical issues up front. Is there a process to identify issues?

- **Question 10: What implications do these WTP issues have regarding management for the entire site?**
  - WTP could be the focus of separate Board advice. There are some concerns that are specific to WTP and some concerns that apply throughout the Hanford Site.
  - Ecology noted that DOE is considering the tank farms and WTP as one system. There is an integrated project team consisting of representatives from both contractors and DOE that are conducting a full lifecycle review of WTP and the tank farms. These two entities can be considered together for Board advice especially since they face many issues that are separate and unique from issues occurring across the rest of the Hanford Site.
  - The committees should determine how to format the advice. There could be a few broad statements and then advice focused more specifically on WTP and tank farms. The initial concern was whether WTP will operate successfully and then a number of other concerns were raised as the WTP question was investigated.
  - There is nowhere to send waste from the tank farms. That issue cannot be addressed by the Board. The Hanford Site has been identified as one option for disposing of waste, which is a huge concern.
  - DOE has a project underway to build storage vaults that will be able to hold waste canisters for 50 years.
  
- **Question 11: What actions by DOE would indicate or demonstrate change in the right direction?**
  - Another aspect to consider under this question is what contract changes DOE could make that would help mitigate safety concerns in the future. DOE influences the contractor through the contract. The Board does not need to specifically advise what those contract changes should be.
  
- **Question 13: How should safety culture be defined and what are the issues related to safety culture?**
  - It would be almost impossible for the Board to identify or define safety culture. The advice could instead focus on important elements of safety culture instead of trying to create a definition. There are several definitions that seem to be reasonable.
  - The DOE definition is good. That could be used for the purposes of Board advice.
  - DOE has defined safety culture as being part of the culture, which is generally related to behavioral issues. The design process is very important and it is almost a separate category. DOE has asked the Board if we agree with DOE's safety culture definition and DOE does not often ask directly for the Board's opinion.

HSEP and TWC members were then asked to review the questions again and determine which points would be most useful as advice and which points would fit into the background section. The questions

were printed on poster-sized paper and placed around the room. Board members were given different colored stickers to mark their choices directly on the posters – one color indicated a potential advice bullet and the other color indicated background. The purpose was to identify broad issues and concepts, not to vote on favorite points. Jessica and Susan H. will categorize those items identified with a sticker overnight to determine if there are patterns that emerge and which items have the most agreement. The results will be shared during the next day's meeting and the Board will then review and discuss the potential advice concepts.

### *Employee Concerns Program*

Tom and Becky developed draft advice points related to the Employee Concerns Program (ECP) (Attachment 7). The committees were asked to decide if this advice should be included as part of the WTP safety culture advice or if ECP advice should be separate. Tom provided a handout outlining DNFSB findings on ECP (Attachment 8).

### *Committee Questions and Response*

*Note: This section reflects individual questions, comments, and agency responses, as well as a synthesis where there were similar questions or comments.*

C: ECP is not the only system intended for employees to raise concerns that is broken. Contractors have a different system. Is ECP being considered specifically because of the recent scrutiny it has been receiving? ECP advice could be expanded to include other programs.

C: The advice is written on the premise that the Board is advising DOE so it does not evaluate the contractor ECP. The Board can advise DOE to track and benchmark ECP from contractors, but it is not appropriate for the Board to offer advice on contractor programs.

C: DOE has minimum requirements and does investigate contractor programs. The advice is oriented toward DOE programs and could be expanded. ECP is the top tier program and then there are additional tiered programs within the contractors. DOE manages the contractors. The Board can advise DOE to investigate more thoroughly or better ensure all employees are safe.

C: There will be a HSS report issued in the spring that examines the ECP along with safety culture across the Hanford Site. DOE is evaluating best management practices and conducting benchmarking of the DOE program. DOE-RL and DOE-ORP will be conducting a survey in June 2012 of the Hanford workforce that focuses on organizational culture and safety conscious work environment.

C: DOE-ORP's safety culture improvement plan does have some points under near-term actions about how to improve ECP. There are good elements in the plan that could be tied to advice. The advice could be shortened since many of DOE-ORP's recommendations are elements that the Board would likely recommend. The Board can agree with specific points in the Improvement Plan and offer a few additional ideas.

The committees decided ECP should be a separate piece of advice. One advice point or mention of ECP may be incorporated into the WTP safety culture advice with a note that more advice would be forthcoming. HSEP will further refine the advice during a potential June HSEP meeting or possibly during a call. The June Board agenda is already full so the advice would likely need to be brought forward at the following Board meeting. The Issue Managers, Tom and Becky, will continue working on the draft advice. Tom will expand the background and add supporting references.

*Tank Closure and Waste Management Environmental Impact Statement Update*

Dirk said there was a discussion during the joint TWC and River and Plateau Committee (RAP) meeting topic Tank Closure and Waste Management (TC&WM) Environmental Impact Statement (EIS) of bringing forward advice prior to issuance of the Record of Decision (ROD) (Attachment 9). TWC and RAP talked through a variety of issues and potential advice points. Dirk and John Howieson revised the draft advice after the discussion. Board members were asked to review the draft and voice any concerns or objections. The committees would then determine whether or not to move forward.

**Attachments**

- Attachment 1: Transcribed flip chart notes
- Attachment 2: ORP Safety Culture Improvement Plan presentation
- Attachment 3: Safety Culture IPT Snap Shots
- Attachment 4: DOE-ORP Safety Culture Improvement Plan
- Attachment 5: Presentation on other approaches to safety culture
- Attachment 6: Summarized answers to 17 safety culture framing questions
- Attachment 7: Employee Concerns Potential Advice Points
- Attachment 8: DNFSB Finding – Employee Concerns
- Attachment 9: Draft HAB Advice on the Final TC&WM EIS

**Attendees**

HAB Members and Alternates

David Bernhard	Rebecca Holland	Liz Mattson
Antonel Brooks	John Howieson	Vince Panesko
Tom Carpenter	Steve Hudson (phone)	Maynard Plahuta
Sam Dechter	Mike Korenko	Dick Smith
Dirk Dunning	Pam Larsen	Keith Smith
Laura Hanses	Susan Leckband	Margery Swint
Harold Heacock	Jeff Luke	Jean Vanni

Others

Pamela McCann, DOE-ORP	Erika Holmes, Ecology	Suzanne Heaston, BNI
Steve Pfaff, DOE-ORP	Dan McDonald, Ecology	Nicole Addington, EnviroIssues
Tiffany Nguyen, DOE-RL		Susan Hayman, EnviroIssues
		Jessica Ruehrwein, EnviroIssues
		Sharon Braswell, MSA
		Barb Wise, MSA
		Anna King, Northwest Public Radio