

**FINAL MEETING SUMMARY**  
**HANFORD ADVISORY BOARD**  
**RIVER AND PLATEAU COMMITTEE**

*March 9, 2011*  
*Richland, WA*

<b>Topics in this Meeting Summary</b>
---------------------------------------

Welcome and Introductions .....	1
Update on 324 Building – B Cell Contamination.....	2
CERCLA Five-Year review.....	4
Radioactive Solid Waste Burial Grounds .....	8
River Corridor Baseline Risk Assessment.....	12
618-10/11 Briefing.....	17
Committee Business.....	19
Handouts .....	20
Attendees.....	21
Attachment 1: River and Plateau Committee Transcribed Flip Chart Notes.....	22

<p><i>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.</i></p>
--

**Welcome and Introductions**

Pam Larsen, River and Plateau Committee (RAP) chair, welcomed the committee, introductions were made, and the committee adopted the February meeting summary.

Pam said Susan Hayman forwarded an email with announcements of interest to the Hanford Advisory Board (Board or HAB) about staffing changes at the U.S. Department of Energy (DOE). Susan Leckband, Hanford Advisory Board (Board or HAB) chair, said these are good moves. She is not sure who will be the DOE-Office of River Protection (DOE-ORP) manager yet, but there has been a lot of speculation. Pam said she is concerned about a void in leadership with so many individuals changing or leaving their positions.

## **Update on 324 Building – B Cell Contamination**

Don McBride, technical services manager for Washington Closure Hanford (WCH), provided a handout titled “River Corridor’s 324 Building B-Cell Contamination.” He said a sizable amount of contamination was discovered in the soil under B-Cell from a breach in the cell’s liner. Don said over the course of the previous year, WCH demolished the building to allow a drill rig to be placed next to the building with a push underneath. He said they found up to 10,000 RADs (radiation absorbed dose) per hour (R/hr) in soil radiation changes over the last few weeks. WCH presented at a waste management conference in Phoenix to solicit interest among the vendor community and to share information across the DOE complex. He said they have generated interest and are already receiving ideas and technologies for how to address the situation. The handout Don provided is an example of the material available at the conference.

Don said WCH is finalizing the data quality objectives (DQOs) for retrieving a physical sample of the material. He said WCH finished the analysis using non-intrusive measures with the sample probes under the building through Pacific Northwest National Laboratory (PNNL). PNNL measured temperature, neutrons, the gamma energy spectrum and other indicators. The information corroborated some of their expectations and corroborated some of their fears. Don said since the analysis did indicate the presence of neutrons, they cannot rule out the presence of Transuranic (TRU) materials. He said this confirmed the need to take a physical sample and is what is driving the DQOs.

Don said they are hoping to finish the process next week. WCH is also in the process of finalizing the contract for the next round of drill pushes. He said WCH is anxious for a hydraulic hammer unit to conduct more robust geo-probe pushes to determine the downward extent of contaminant migration. Don said WCH should be approximately three to four weeks away from the point where they will be able to start the next round of geo-probing at steeper angles that reach deeper into the ground. He said the final number of pushes has yet to be decided. The current excavation plan allows three more pushes, but anything that they place in the ground could become an obstacle later. The final number will depend on what is found after further sampling. If the first push is predicted to show low levels of contamination and WCH does find the expected low levels, then that would indicate the downward extent has been bounded and further pushes would be unnecessary.

### *Committee Discussion*

- Dick Smith asked what the actual status of B-Cell is as containment. Don said B-Cell remains a category two nuclear facility, meaning it still has ventilation and confinement. He said WCH placed a thin layer of grout across the entire bottom of the cell to minimize the amount of dispersible radioactive material and seal any breach in the bottom liner. Dick said the safest, most sanitary way would be to take out the bottom layer. Don said that is one option they are considering and it does include an associated nuclear ventilation system. A major consideration is the structural integrity of the cell.

- Pam asked when RAP should put the topic on the agenda again. Don said that would depend on the level of interest. He said there would not be a lot of changes from one month to the next, but they will continue to update the committee as requested.
- Dennis Faulk, U.S. Environmental Protection Agency (EPA), asked how much information was necessary to bound the degree of contamination beneath B-Cell. He said that once the contamination is bounded it would be a good time to bring the topic back to RAP. Don said they will have more information in about a month on the downward step. The bounding question will depend on the sample. Shelley Cimon said as the Issue Manager (IM) on that topic she will keep track of progress and determine whether it should be on next month's RAP meeting agenda.
- Pam said during a previous discussion, Wade Riggsbee stated he had written a paper when the spill occurred. Don said he had not heard about that. He said they do have a Pacific Northwest Lab (PNL) document associated with the cleanup of B-Cell that referenced the spill, providing an estimate of the magnitude and what had occurred. Don said it would be helpful to get a title or document number for Wade's paper. Pam said Wade had made the comment that they knew there was a spill and the next morning it was gone so they were aware of what had occurred.
- Shelley asked if new vendors expressed interest in the Hanford Site at the waste management conference. Don said there were hundreds of vendors and DOE provided information from the Hanford website with contact information, fact sheets, and other materials. He said that information is available for contractors to solicit DOE. DOE has a team specifically focused on indentifying and selecting the best options.
- Vince Panesko asked where the groundwater level is. Don said the groundwater is 55-59 feet below the surface. The bottom of the building is 11 feet below the surface. He said he does not know the exact downward extent of the contamination, but believes it is somewhere around 20-30 feet.
- Vince said he heard in a statement that groundwater monitoring near B-Cell did not identify the building as a source of contamination, which would indicate there has not been lateral movement. He asked about whether wells were located on the B-Cell site or if they were located further away. Don said WCH previously provided an illustration in a presentation to RAP that shows where the wells are. He said they are down-gradient of the groundwater flow pattern. Hydrologists have said the groundwater motion is relatively fast, so any contamination would be visible within months. Don said there is high confidence that the contamination has not reached the groundwater.
- Vince asked if the waste removed from under B-Cell would be taken to the Environmental Restoration Disposal Facility (ERDF). He asked if there was a limit at ERDF. Don said he was unsure whether the material would be permitted at ERDF. He said it depends on the sample and whether they can safety retrieve the materials. Don said some of the material would not meet the requirements for ERDF and may be moved to

the Central Waste Complex (CWC). Dennis said TRU and Class C waste cannot go to ERDF.

### **CERCLA Five-Year review**

The committee moved into the next agenda item, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Five-Year Review.

Cliff Clark, DOE-Richland Operations Office (DOE-RL), said he does not have very much new information on the topic. He said the process was proceeding as planned and was on schedule. The contractors are working together to prepare the initial information and report. Cliff said DOE was working closely with EPA and the Washington State Department of Ecology (Ecology), who were providing feedback and support. Don said they included some EPA and Ecology people on the integrated project team. DOE is expecting a preliminary draft document from Mission Support Alliance (MSA) by early May. Don said he has not seen anything formal so he cannot provide judgment yet. However, he has heard feedback both internally and from the agencies that the document seems to be well done. Cliff said there is high probability that the final report will be delivered to EPA in November.

Dennis introduced Chris Guzzetti, EPA, who has been working extensively on the CERCLA Five-Year Review. Chris provided a handout outlining EPA's guidance for the review.

Chris said they carefully examined EPA requirements to ensure they are applied in the review. He said they are working closely with DOE. EPA has identified major steps required for conducting the review from EPA guidance. Chris said the technical assessment piece really stands out and the most important component is the development of protective statements. Chris reviewed three important questions to ask for technical assessments.

- Question A: Is the remedy functioning as intended by the decision documents?
- Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid?
- Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

He said the answers to these questions lead to issues and recommendations, which is how the protective statement is determined. Chris said EPA does retain final authority to ensure the Five-Year Review adequately addresses all the questions. Chris said EPA has watched as the document develops.

### *Committee Discussion*

- Dale Engstrom said he remembers going through this process when the second Five-Year Review was announced. He said RAP and others held meetings to discuss how unhappy they had been with the first Five-Year Review. Dale said they had heard the second

review would be similar to the first so the Board prepared a great deal of advice opposing that. He asked if DOE was listening to Board advice on the second Five-Year Review as DOE was working with EPA and Ecology. Cliff said DOE received a lot of advice and comments on the second Five-Year Review. DOE reviewed all these comments and addressed all the advice and concerns insofar as possible. He said many of the comments received were outside the scope of the Five-Year process, but DOE did try to address those that were within the scope. Cliff said part of addressing the concerns involves working much more closely with EPA and Ecology to ensure DOE meets their expectations. Cliff added that EPA does make the final judgment on the protectiveness statements developed by DOE. They must be able to demonstrate that the activities they conduct will result in a protective remedy. Cliff said DOE has modified the format to make the document clearer and easier to read, especially for technology concerns and performance technology assessment. Cliff said he is confident the Board will be more satisfied with the third Five-Year Review than with the first two. He said DOE is not planning a formal public comment period for this review, but DOE will have the draft available for informal public review and comment after EPA and Ecology have reviewed it. He said they do expect to receive some comments from the public and will take those into account when preparing the final document.

- Rick Bond, Ecology, asked about comments Ecology provided several months prior about elements missing in the document. He said some records of decision (RODs) were not covered, among other things. Cliff said they are working closely with the agencies to capture all necessary information. He said Rick's concern was being addressed.
- Susan Leckband asked how EPA and Ecology feel about not having a formal comment period for the public. Dennis said the Five-Year Review is a DOE document subject to EPA's process. He said DOE is here today providing the opportunity to comment. Dennis added that there is a point when DOE can be too accommodating, which can dilute the intent of the Five-Year Review.
- Susan Leckband said she appreciates the opportunity to review the document. She agrees that many people do not understand the intent of the Five-Year Review. She asked if the document only examined remedies in accordance with RODs. Dennis said that was correct. He said they may find scientific studies that determine one cleanup level is no longer protective for a certain chemical so mediation becomes necessary, possibly through institutional controls. Dennis said it is important to remember that the Five-Year Review does not make changes. The review makes recommendations to codify decisions.
- Susan Leckband asked, relevant to EPA's Question C, if DOE would consider additional contaminants other than those originally identified in the review if a new contaminant was discovered at a site where it had not originally been remediated. Dennis said the review does cover that. He said if they can answer all three of the questions, they have covered the scope of the review. Dennis said that they also must consider elements such as land use changes, including changes like houses being built on industrial lands.

- Dale said one part missing from the review is where DOE would examine whether remedial actions, as defined in the RODs, were carried out properly and if the actions were effective at removing or decreasing contaminants. He said this was the largest conceptual complaint he had heard about the first two Five-Year Reviews. Dale brought up the example of the 300 Area where actions to remove the contaminants were not effective. Dale said he understands the groundwater monitoring is part of that effort, but there needs to be a real effort to determine the effectiveness of remedial actions. Dennis said he remembered that concern. A portion of the previous Five-Year Review did include the need to collect more data. He said there would be a large discussion in the current Five-Year Review on how DOE is able to draw their conclusions. Dennis said the information was available in many cases, but it was not presented as a compelling argument in the document. He added that many of the actions have been interim actions and they are still waiting for the final ROD, which is different from many other Superfund Sites.
- Vince said he shares Dale's concerns. He said the public hears generalities and that the CERCLA process with the Five-Year Review will maintain protectiveness, but the public is unsure what the final outcome will be. Vince said he would like to see more data and examples for a few sites to allow the public to understand how protectiveness has been maintained. Dennis said that is the purpose of the review and all the information will be included, which will sometimes show that there is not a level of protectiveness. He said DOE is still reviewing all the information and will provide it when they finish the review, which will be in about six months. Cliff said the reason DOE engaged EPA so heavily was because they wanted to ensure EPA was satisfied.
- Vince asked who will manage the Five-Year Review if, in the future, DOE is no longer responsible for the site. Cliff said at that point Legacy Management will be responsible for the review. Vince said part of the statutory requirement mandates continued Five-Year Reviews. He said, from a public standpoint, he would like to know who will be monitoring these sites. He is concerned that there is no public comment requirement since the whole process can be conducted without any outside entity monitoring. Dennis said EPA is monitoring the process. Vince said they are relying on the regulations and excluding the public.
- Cliff said some of the details RAP is asking for can be found in a number of other reports, such as the groundwater report and annual environmental report. He said DOE uses those sources when examining questions. The Five-Year Review includes a lengthy list of references. Cliff said the reference documents provide the in-depth details that may not be included in the report. Vince said the Hanford Site is large and using the reports mentioned by Cliff would be problematic because if any one contaminant increases, it cannot be connected to a specific site. Cliff said those two reports were just examples; there are a large number of reference documents and technical reports that identify DOE's data sources for making evaluations.

- Pam said that the main concern in the first Five-Year Review was the contaminant plume in the 300 Area. She asked if DOE has a sense of major topics that they could share for this review. Cliff said he did not have detailed information. He said the uranium plume in the 300 Area is still a question and they still do not have a remedy. Cliff said there was a similar problem with chromium. They have not found the source of chromium in groundwater, but they are still looking. He said this report will reflect the fact that they still do not have a good solution for the uranium in the 300 Area or the chromium. Cliff added that 324 Building, B-Cell was also an issue, but it would not be part of the current Five-Year Review because it was not an issue at the cut-off date for inclusion. He said the Five-Year Review will not offer a solution; those decisions are made in the RODs. Cliff emphasized the importance of the Board focusing their attention on the ROD because they can have a major influence on what the remedy might be through the ROD. Dennis agreed with Cliff. He said at this point in time they have not moved to final decisions. Dennis added that the difference in this review is that there are new systems for chromium coming online so DOE is in a better position to capture the chromium, even though they still have not found the source.
- Susan Leckband said there are mechanical things that can be done in the Five-Year Review to ease its review. She suggested identifying the areas in source documents where data used to justify the report was located. Susan said when the draft report is issued the reference documents need to be made publicly available at the same time for individuals to review. Pam said DOE could use footnotes.
- Vince said he remembers hearing that the Five-Year Review is supposed to be protective, although Cliff said the ROD should be the focus area. Vince said he is concerned that the Five-Year Review is not a thorough review and that there are big holes in this report, which is supposed to be the public's safety net. Dennis said he hopes when the document is available, the Board will not see those holes. Vince expressed interest in being an issue manager on the topic.
- Dick asked how EPA's three questions were presented in the report. He suggested having a table in the report to show the original situation and the current situation to determine if remedies were effective. He asked if that was being presented or if determinations were more arbitrary. He said he would like to see salient points about the areas of concern, whether they are improving, and what the next steps are. Dennis referred to Idaho's recent Five-Year Review report as an example. He said it is broken up by different waste area groups and each ROD is described. Dennis said the report reviews the technical assessment and provides all the information used to frame answers. The report describes the steps that led to the conclusion of whether there is protectiveness or not. He said he expects the Hanford review to be similar. Dick said he only wants the main characteristics that determine whether the site is protective or not. Cliff said there were graphics to that effect, but they might not have been presented in an easily understandable way.

- Dick asked who would conduct the Five-Year Review after the final ROD is issued. Cliff said that as long as the federal government maintains control of the site, an entity of the federal government will conduct the reviews. The obligation for the review does not stop if contamination still exists.
- Dick said he is concerned that there is no formal response to comments. He said it is very unsatisfying if someone takes the time to make thoughtful comments and is never told whether their comments are considered. Pam said the agencies have to respond to Board advice. Dick said he is more concerned about personal letters that do not receive any sort of response.
- Pam asked if RAP would have another conversation about this in May. Cliff said they will have a draft of the Five-Year Review in early May and will review and refine the document until DOE feels it is ready to release. At that time, DOE will provide the draft to EPA and Ecology, as well as make it available for the public to review. Susan Hayman suggested putting the topic as a placeholder in June. Dennis suggested it may be appropriate to consider draft advice at the October RAP meeting and bringing advice to the Board in November. Cliff said the document will be finalized in November so the September Board meeting would be better for advice. The committee agreed to put the topic as a place-holder in August.

### **Radioactive Solid Waste Burial Grounds**

The committee moved into a discussion of the Radioactive Solid Waste Burial Grounds (SWBG), which is a joint topic with the Public Involvement Committee (PIC). The committee was given a handout of the Draft Advice on the 200-SW-2 Radioactive Solid Waste Burial Grounds.

Dale said the SWBG topic has been ongoing and he appreciates that DOE is inviting comments early. He said the topic was huge, as evidenced by the long length of the draft advice. Committee members were provided 15-minutes to read through the draft document before discussing it.

In framing the discussion, Dale said there were several RAP discussions on SWBG, and a sounding board was also held on this topic at the end of the October Committee of the Whole on SWBG. Issue managers have also met several times to discuss this topic. Dale said he compiled all the comments into one document, then grouped the comments by topic. The draft presented today represents a coalition of many ideas from many individuals. He said he is working to make it more succinct and that the purpose of today's discussion is to refine the draft into a version RAP would like to send to the Board.

Dale said they should review the draft by sections, starting with the background. Susan Hayman edited the document on-screen (also available through GoToMeeting) with tracked changes during the discussion.



### *Background Section Comments*

- Pam said she attended a workshop the previous week on DOE Order 435.1 where she asked DOE-Headquarters (DOE-HQ) about TRU waste at Hanford. She said she believes the date when the waste was generated should not matter when classifying waste as TRU or not. Pam said the response she received was that pre-1970 waste would be handled under CERCLA. She asked if EPA was examining burial grounds with pre- and post-1970 material. Dennis said they had many discussions about this and they are considering pre-1970 waste.
- Deborah Singleton, Ecology, said that the first paragraph seemed to indicate that the agencies do not have any knowledge of chemical constituents. She said they do have knowledge about the chemicals. The sites contain Resource Conservation and Recovery Act (RCRA) waste. Dale said the draft actually stated that waste disposal knowledge was “minimal”. He acknowledged this might not be an appropriate word. He said at the last meeting he was told that there was a process output and good information on the disposal of radioactive waste. However, there were not good records kept on chemical waste because it was not considered important. There are anecdotal stories and evidence about various wastes being disposed of in the burial grounds, so there are many areas where they are unsure what materials were put in the ground.
- Maynard Plahuta asked how confident they were in the numbers presented. He expressed concern about whether the Board should use specific numbers. Dennis said the Board needs to provide a reference for any specific numbers and be cautious about the numbers selected to include in advice. Gerry Pollet said most of the numbers used were taken from agency memos at the December meeting. He said everything is cited so the numbers are on solid ground. Dale said the numbers came from materials presented at SWBG workshops and public meetings. He said some information was taken directly from DOE charts and figures.
- Liz Matson said it is important to acknowledge the pre-1970 waste and that the Board is concerned about it. Gerry said they know for a fact that there are multiple times more pre-1970 TRU elements than what is in the retrievable waste. They do not know the exact amount or where it is, but they do know it is a larger amount. Gerry said it is important to say there is more TRU than what is in the retrievable because it drives some of their values for what should be retrieved.

### *Characterization Section Comments*

- Susan Leckband said unless the Board is talking about something that DOE is required to do by law, they should use “should” instead of “must” throughout the advice document.
- Doug Hildebrand, DOE-RL, said the section about the Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS) reads that impacts have

not been considered 10,000 years into the future. He said DOE considers burial grounds over the next 1,000 years since that is practical for the agency. He said estimates are used for projects and not for decision-making. Doug said the Nuclear Regulatory Commission (NRC) uses 10,000 years as their limit for considering impacts into the future. DOE does calculate through 10,000 years, but they only really consider 1,000 years because 10,000 years is beyond DOE's modeling capability.

- Doug said when modelers are trying to build confidence in their model, they add more years of data. There are 65 years worth of data for the Hanford Site. Once DOE projects beyond 65 years the level of uncertainty increases.

#### *Groundwater and Soil Column (Vadose Zone) Monitoring Comments*

- Doug pointed out that by referencing US Ecology's experience, the Board appears to be using the analogous approach to give guidance to DOE, while at the same time advising DOE not to do that on a burial ground basis. Dale said US Ecology claimed they did not have a problem because they knew what material was going in the trenches, but then later determined there was a problem. He said he understands Doug's point about using an analogy to describe DOE's actions and then telling them not to use analogies.
- Gerry said the analogy is useful because it describes what to expect at the trenches. They know there is more chemical waste in DOE trenches than the current estimates. By including the analogy, they are able to provide lessons learned from the 200 Area that can be applicable to the SWBG. Gerry said the US Ecology website has a briefing memo and cites materials from the December meeting. Maynard questioned what the analogy added to the advice. Maynard said the first sentences provide all the information he needs and removing the analogy would be more impactful. Gerry said the analogy is necessary because they are a similar set of unlined trenches that have released contaminants, as documented through Model Toxics Control Act (MTCA) investigations. Gerry said he would reluctantly agree to the change in the draft advice, but cautioned that the agencies will question the source of the Board's concerns. Shelley said the Board does not need to build a case; it is up to DOE to show the Board that a case does not exist. Their point can be made in the first two sentences of the paragraph without the analogy. Gerry said he wanted to note that the basis for their concern came from contractor data and the US Ecology website, specifically the Remedial Investigation Contractor Report.
- Elis Eberlein, Ecology, asked whether the Board would really be able to make the judgment that the entire burial grounds have no groundwater monitoring and that others have minimal monitoring of "highly questionable value." Dale said the Board did question whether the well network captured the plumes that might be present. The wells are not reporting any contamination and the conclusion being made is that the groundwater is clean. Dale said the Board is concerned that data may not be valuable; they are questioning the source. Dick said this statement suggests the monitoring is of questionable value, but he is not sure if that is true. Dale said there are reports being created from the groundwater monitoring data around SWBG stating that since they have

not found contaminants in the groundwater, there is no contamination. The Board is saying the well network might have issues that make the data generated from the wells inaccurate for producing the picture necessary to confirm whether there truly is not any contamination in the groundwater. Susan Leckband said she understands Elis' concerns and they will re-word that sentence. Deborah clarified that they are not saying contaminants are not in the groundwater, they just are not getting data that indicates contamination exists.

#### *Advice Point Comments*

- Susan Leckband questioned why they were including advice for 2017. Gerry said the Board was criticizing the regulatory path forward. They are advising that 2017 is too long to wait for a plan and they would like to see excavation as mitigation earlier than 2017. Gerry said they want a cumulative analysis and risk assessment on the results of the investigation. Susan said that should be a separate bullet and the information is covered in another area of the advice. Gerry said the later advice discusses accelerating the timeframes. Maynard suggested incorporating the sentence into another advice point.
- Maynard said they should use “advise” in the advice section rather than “support” throughout the document. He said “support” should be in the background section.
- Dale suggested combining characterization advice points. He said typical surface characterization methods will not be appropriate for the outcomes the Board desires. Dale said the Board should advise using the Observational Approach as the preferred alternative for trench remediation, where materials would be partially excavated and removed when possible. He said this approach would be less painful and less costly, although there are some trenches which do not contain contaminated materials and would not need to be excavated. He asked how the Board would propose conducting a costly remediation technique that would require digging up all the trenches for an examination to determine whether materials could remain on site. Dale suggested using uncertainty principles to examine records and determine which trenches have reasonable amounts of information and which trenches are the most likely to require excavation or have the most hazardous materials. Dale said he agrees with the opinion of many other Board members that they should dig up trenches if questions exist on what the trench contains.
- Deborah asked if Dale described what the Board would define as “fully characterize.” She said the Board’s description indicated that DOE would need to excavate all trenches before making decisions. She said that is not possible in some areas because of possible risks to the worker. Dale said fully characterize means knowing what is in the trenches on a foot by foot basis. He said ten feet is not sufficient for characterization because there are contaminants that do not radiate that far.
- Dick said a push probe would be the best option because of safety and exposure concerns. Dale said the problem with using a probe is that there is a risk of puncturing chemicals and causing a release when they are unsure what is down there.

- Dick suggested examining underneath the trenches in suspect areas if the concern is protecting groundwater.
- Jean Vanni said one of the advice bullets does capture these ideas. Jean suggested combining aspects of several bullets and editing the wording of other bullets, which was changed on-screen or noted. She said the Board needs an advice bullet on lifecycle costs and institutional controls into the future.
- Doug asked for clarification on if the Board was asking for DOE to assure a public comment period for the Remedial Investigation/Feasibility Study (RI/FS) or if the advice point referred to the follow-up workshops DOE committed to. Gerry said he heard criticism at public meetings and from Board members that there was not a plan to return to the public and explain how their comments were used. Gerry said DOE committed at a Seattle public meeting to hold public meetings in the fall or early in the coming year with a proposed plan for investigation. Gerry said it was important to include in the advice that the Board does expect the agencies to return to the public.
- Doug said the draft is due in late 2011/early 2012. DOE anticipates holding a workshop to go over DOE expectations over the next three to four months as they write the report. Deborah said the final revised plan is due to Ecology on December 31, 2011. She suggested holding the workshops as early as August/September. Dale said they did not need to include a date in the advice.

The committee was unable to comment on all the draft content and decided to return to the SWBG advice comments later in the afternoon.

### **River Corridor Baseline Risk Assessment**

Dale introduced the next agenda item – The River Corridor Baseline Risk Assessment (RCBRA), which is a joint topic with PIC and the Health, Safety and Environmental Protection Committee (HSEP). The purpose of the discussion is to review and finalize the draft advice.

Dale said there had been some question as to whether the Board should provide comments on the RCBRA. He said after issue manager (IM) and RAP discussions, they decided the Board should offer some advice. Dale provided a handout of the latest version of the advice (a link to the RCBRA, Volume II Draft C was previously sent to the committee through an email link). The committee was given ten minutes to read through the draft advice. Dale said they would follow the same process for comment as they had for the SWBG advice discussion that morning, where the committee members and agency representatives offer comments on each section separately. Susan Hayman edited the draft advice on-screen (also available through GoToMeeting) during the discussion.

Dale said the risk assessment (RA) is part of the CERCLA process. The RA helps to identify contaminants of concern and identify the pathways that drive the most risk. Dale said at the same time, the risk helps determine cleanup levels to be set later in the RI/FS process, leading into the

workplan and ROD that determines what the end result will be. He said the RCBRA is a very important document for the Board to pay attention to. On the other hand, Dale said the document is between the Tri-Party Agencies. He pointed out that the Board has been allowed to review the document, but have not been officially asked to provide comments.

Dale said speaking about the concept of risk is very difficult. Dale said he captured all comments and discussions that came from RAP and IM meetings on the RCBRA and summarized them in the draft advice. Dale said he was especially interested in hearing from the regulators about how they feel the document was written and if there are any glaring errors or inconsistencies.

### *Agency Perspective*

- Jim Hansen, DOE-RL, agrees that the RA process is very complicated with a lot of terminology and guidance. He said there was some flexibility within certain areas on how risk is considered. Jim said he read through the advice before the meeting and had some comments on the language chosen. He wanted to bring up potential misconceptions and spend some time on topics that were difficult to understand that fed into the process. Jim added that the RA is only one piece.
- Jim wanted to make clear that the RCBRA will identify multiple preliminary remediation goals (PRGs). Additional PRGs will be identified in other documents. Groundwater protection PRGs will be identified in the RI/FS. He said there are multiple components coming in for consideration; the RCBRA does not set a cleanup goal. Jean said the RCBRA does define the PRGs since they are preliminary and are then further refined.
- Jim said DOE does go through a conceptual design plan (CDP) for remediated waste sites to identify those that are ready to move into the Feasibility process and those that need further action. He said the process for data collection at the remediated waste sites included 1995 through 2005. Jim said many sites have been remediated since this timeframe. These sites will feed into the RI for consideration. Dale said the sentence Jim was referring to stated DOE should identify if a site needed further attention or not.
- Jim said that, as with any complicated model or evaluation, there are multiple ways to obtain a valid analysis. He said DOE evaluated methodologies in RCRA. He said their interim action ROD for determining whether a site is completed or not undergoes slightly different methodologies. Jim said that because of the error associated with all models, a site may appear to have a slightly elevated risk when there is no risk or a site may not appear to pose a risk when it does. He said the RCBRA does not make a determination of which sites are included and which are not. That decision is made in the RI.
- Jim said the RA considers all available information to determine the contaminants driving the potential risk and the pathways driving that risk. It evaluates what should be considered and what is important to know about the waste sites. The committee agreed to remove the sentence.

- Jim said applicable or relevant and appropriate requirements (ARARs) do not factor into PRGs. Larry Gadbois, EPA, said they can be used as part of the RA. He said arsenic is a classic example of that.
- Jim said DOE is identifying preliminary PRGs. He said the draft advice includes a sentence stating that they will identify all PRGs. It is actually in the proposed plan that the cleanup goal is proposed using all the available information. The proposed plan is set and locked in the ROD. Dale said DOE used the language that the RCBRA “provides preliminary remediation goals” in a presentation. Jim said there is other language in that presentation stating that PRGs are identified by other documents. Everything will be combined with other papers and assessments which will be taken together in the RI/FS process to be considered in a comprehensive RA in the future.
- Jim said all residential scenarios have high risk. He reminded the group they have multiple scenarios, one is a basic scenario for after the interim action RODs and another is for a monument worker. He said only a few sites are currently above the threshold. Jim said it is an over-generalization to state all residential scenarios have unacceptable risk. Dale said the point is that every residential scenario failed for at least one or two waste sites. He said they could clarify that point further. Jim said that residential scenarios should be qualified as possible or potential risk since there are currently no people residing at the site. Larry said that is DOE language. Maynard said the scenario describes people living at the Hanford Site. It is hypothetical, but that hypothetical risk is high. He said it does not make a difference whether someone is living on the site or not currently. Jim said there is not a realized risk based on current land use. Dale said DOE created a possible residential scenario, saw it was unacceptable and is now trying to qualify whether it is a scenario or not. Susan Leckband said the point is an opinion of the Board and they could add language to state “the Board believes there is an unacceptable...” Dick said he does not think the entire Board thinks the risk is unacceptable.
- Jim said DOE questions why the Board would not consider analysis from the RA as a baseline assessment of groundwater. Dale said it was because the screening assessment was conducted over a limited number of wells over a limited time. Dick asked what the requirements are to be considered baseline. Dale said this was going to the place where there was not a good groundwater RA conducted as part of the package since DOE talked about how the groundwater assessment was coming much later. Dale said what was done here is a screening level assessment, not a full assessment of groundwater. Jim said the further analysis on where plumes are moving is a fate and transport issue in the RI/FS. The spatial and temporal analysis will come from new data analyzed in the RI/FS. Dale said there is spatial and temporal variability where samples taken from different times of year and at different times of day will differ depending on when the sample was taken. He said the river level can differ by feet within even a few hours so there is huge variability in terms of time. He said the sampling does not represent a snapshot in time of what is occurring in the River Corridor.

*Background Section – Committee Discussion*

- Dale said the draft advice states that casual users of the River Corridor have acceptable levels of risk. The sentence following states that all residential users have unacceptably high risk. Jim said the caveat to this is that DOE evaluated 156 waste sites for the analysis. They used a reasonable maximum exposure (RME) from surface sites for each. He said the analysis does not necessarily include all the sites that have been remediated.
- Dick said he is concerned about how DOE evaluated the information. He said the analysis for residential users not including any backfill was overly-conservative, as opposed to the statements in the draft advice that this approach is appropriately conservative.
- Dale said when DOE conducted the cleanup verification data packages, those samples fed into the residential scenarios. He said they did not use those samples for the casual user. DOE used samples from around the area. They cannot use the 156 remediated sites since it is inaccurate for the casual user. Jim said the RCBRA does not determine what is examined and what is not. DOE is considering a range of possibilities.

#### *Advice – Committee Discussion*

- Susan Leckband did not think advice bullets two, four, six or nine are advice. She said they are opinions. Maynard agreed.
- Dale said it is hard to obtain an overall picture of risk in the River Corridor without having all the parts. Keith Smith said they could advise DOE to provide more thorough information.
- Liz asked if it was feasible to examine both risk documents together before thoroughly evaluating the risks. Dale said the comment deadlines for the Human Health Risk Assessment and Ecological Risk Assessment make it impossible to comment about both at the same time. Jim said the documents are vastly different and are only related to the point that they generate potential cleanup numbers, either using the same or similar data. They do not work together until the ROD.
- Dale said since they know the process is going to happen and they do not have a lot of power it might not make sense to advise something that will not happen.
- Jean asked if they can add an advice point to not create a final PRG for human health until the human health, ecological health, and groundwater risk assessment are all available. Dale said each would have a PRG. Jean said the process cannot work that way. There are elements that drive the cleanup. She said the ecological level is usually the level required for cleanup standards. John Sands, DOE-RL, said the RI/FS considers all this. He reminded the committee that the RCBRA does not make decisions.
- Jean said she wanted the second advice bullet to read that the Board would like the deadline removed which prevents them from examining the RA documents together. Shelley said she does not know if the deadline should be different. She said the RI/FS is the important document and sometime between now and that decision she would like a

workshop where they can consider everything that will inform the RI/FS. Jean said they should be able to see all those documents before the RI/FS is prepared.

- Dick said he is concerned that the analysis is based on an ultra-conservative basis. He does not like how the backfill in the pits were sampled. Jean disagreed. She said Ecology acknowledges multiple sites will fail anticipated cleanup levels. They are asking DOE not to backfill to ensure the risk is not reduced simply because of 15 feet of dirt. Dick said they would achieve faster cleanup to the interim level if the analysis was based on the knowledge of the backfill process. Jean said a baseline RA is not supposed to consider any remediation. The Hanford Site is already contaminated so there is no baseline and DOE wanted to be conservative by not using the backfill allowance. Jean said she appreciates that they did that. Dick said if a baseline assessment was conducted before any remediation, they should not use data from the holes. Data should be used from un-excavated holes, although that would make their contaminant numbers higher.
- Jim wanted to clarify that the cleanup goals did not use any verification. The verification data was the data in the RA that determined risks. DOE looks at background risk to determine acceptable concentrations of contaminants. He said when they use cleanup values in remediation it is not based on cleanup verification data. They determine what concentration would be protective of human health, which does not consider the depth of contaminants.
- Jim reminded the committee that the baseline RA is designed to inform the remedial decision. He said some of the advice poses fundamental issues regarding timing and accuracy. He said items identified in the EIS as occurring two years ago had yet to occur. He said what is written in the EIS is not necessarily going to occur and the timing may change.
- Jim commented on advice point number five. He said DOE would not be using the level of subsistence farmer for the non-residential or tribal scenario because of the significant uncertainty identified in the document. Jim said he was trying to work with tribes to address uncertainty and to understand what the real uptake and contamination is.
- Larry said DOE has said several times they are not going to slide back to contaminant levels higher than originally proposed. The advice could be for DOE to have final cleanup levels at least as protective as interim actions. Beth Rochette, Ecology, said overall the new numbers are lower than the old.
- Dick asked if they consider the new MTCA rules acceptable. Jean said MTCA rules were acceptable if they consider all pathways and if they use the current default method provided in the regulations. There are very few levels that would be less stringent. Dick said if they are going to accept the new MTCA for part of the cleanup levels, they have to accept the new MTCA for all contaminants and not worry about possible back-sliding.

The committee agreed they would not get through remaining advice points in the time allocated. They decided to move onto the next agenda item to accommodate speakers. The committee agreed to a committee call to further discuss the advice using GoToMeeting and email to



continue editing the draft.

### **618-10/11 Briefing**

Shelley said Jamie Zeisloft, DOE-RL, would provide an update on the status of the 618-10 and 618-11 Burial Grounds. She said the committee had a presentation on the topic in December and since that time there have been quite a few changes.

Jamie said he was the project lead. He said the focus has been on the start-up of activities. There is a lot of work required to prepare for this. Jamie said DOE finished the start-up preparations for the 618-10 burial grounds. The facilities are in place, WCH has trained a crew, and they have gone through the start-up review process so they are prepared to move onto the next step, which is to dig “surge” trenches.

Jamie said waste is pulled from the waste disposal trenches into the surge trenches. They are able to do a partial sort and view the material before disposal. Crews begin by excavating the surge and then follow-up with excavation of the trenches themselves. Crews will begin work on 618-11, performing geophysics to define the waste site, which is part of non-intrusive characterization. Prior to the geophysics work, crews will define the boundary of the trenches through the use of a cone penetrometer. After that, the geophysics work will begin where DOE mobilizes the site and obtains readings from the penetrometers.

Jamie said DOE is focused on trenches. WCH has two different phases with two excavation crews. One crew will be present to handle any anomalies that are found. He said they will be pulling drums out and processing the trenches. Jamie said they began with easier work and will progress to higher risk, more difficult work with the drums.

Jamie described an image from his presentation that showed the layout of the whole area. He said the Columbia Generating Station is to the east of the burial ground, which is separated by a fence. He said DOE needs to be very careful that they are protecting workers on-site and people working at the generating station. He said they are responsible for safety and ensuring no one is exposed to anything harmful.

Jamie said they are working with NRC on anything requiring a license amendment. He said DOE does have a license and an amendment. He said they will now be meeting to discuss a license for intrusive characterization, which would involve activities such as putting cameras into caissons. They are currently only licensed for nonintrusive characterization. Jamie said once the license has been amended an 18 month process begins and then they mobilize at the site and begin work.

Jamie said DOE was conducting non-intrusive characterization at 618-11. They will be confirming the figure on the map to obtain better delineation through installation of two cones. Jamie said a lesson learned from 618-10 is that some of the information generated was of value and some was of less value. They are trying to apply the lessons, but there is too much uncertainty with that type of waste. The non-intrusive characterization will not be as useful for decision-making so they are decreasing efforts in this area and will focus on the hot spots.

Jamie reviewed the schedule for remaining activities on 618-10. He said they are ready for the geophysics and almost ready for the next step.

#### *Committee Discussion*

- Dick asked if these were the same crews that were on the 618-7 Burial Grounds. Jamie said the management is the same, but other people are different. Nelson Little, WCH, said many of the people were the same and they do attempt to retain the knowledge of experienced workers. Their intention is to use lessons learned from the past and hear from experienced workers.
- Shelley asked about dust suppression. She said at other sites the suppression caused a rise in uranium movement. Jamie said they have to be careful because water used for dust suppression can have a detrimental effect on groundwater. Jamie said they have discussed using a fixative and will cautiously try that. He said they need to wet the material enough so that dust emissions are not generated, but there does not need to be standing water.
- Dick asked what Jamie meant by geophysics. Jamie said geophysics was ground penetrating radar, which allows them to map what is underground and see where the vertical pipe units (VPUs) are in order to place the radar as closely as possible.
- Pam said she recalled barrels excavated in the 300 Area had oil and uranium chips. She remembered it being sent to Oakridge for incineration. They do not have that option anymore. Pam asked what the path forward is when workers encounter barrels with similar contamination. Nelson said he believes barrels would go to the Perma-Fix Northwest Richland facility where the oil would be removed and then the barrels would be disposed of based on the waste it contains. Jamie said there is another facility available to accept the waste, although it is a private sector facility.
- Shelley said the characterization report will be available in August of 2011. She asked if the license for the intrusive characterization from NRC is dependent upon the remediation technology. Jamie said that is not the case for non-intrusive characterization, but it is required for intrusive characterization as part of that license. He said the design for the VPU must be a part of the design submittal that goes into the document request. Jamie said DOE is working closely with NRC to determine what their design needs are.
- Shelley asked if the design process begins before characterization is completed. Jamie said they determined three technologies for further evaluation after the VPU technology workshop. DOE is now focused on one of those technologies or possibly two. They are going to conduct a technology demonstration this summer. Jamie said the ability to handle materials safely is crucial when they are so close to the Columbia Generating Station, which is a challenge.
- Nelson said DOE is considering different alternatives. He said they start with a conceptual design. If it appears the design will not provide the necessary results after the design is 30 percent completed, they will move onto a different alternative. There are three technologies under consideration, but they only want to examine the best solution

that will not expose workers to hazards. Nelson said the concept is to use a mock-up capability with three VPUs. DOE will consult with VPU experts to determine the acceptability of their approach. He said one challenge is how to verify the amount of sampling that must be done to drive decisions. If too much sampling is required, they will need another approach.

- Keith asked if there are records from the labs that might indicate what is in the trenches. Jamie said records are sketchy at best. Keith said the labs should have been keeping records on waste. Nelson said they know the types of waste that originated from the VPUs and that labs did keep records. He said they know the waste stream in terms of chemicals and assume some residue. They are trying to capture all that information, but they do not know where exactly the material is.
- Keith asked if they considered factors such as where the wind was blowing when conducting the work. Jamie said they considered that quite a bit, especially in this situation.

### **Committee Business**

The committee selected Pam to act as RAP chair for another year and Dale to serve another year as vice-chair.

The committee reviewed the follow-up items from the flip charts.

Pam said she spoke with Dale about a follow-up for the Portland Board meeting. She said the issues discussed today are very complicated. She said one problem at the Board meeting is that people need to leave by noon on Friday so she does not believe both pieces of advice will be adopted. She said the SWBG was a priority for the regulators. The second piece of advice is to discuss next steps along with other analysis and remedy selection for the final RODs. Pam said John had indicated RCBRA advice would still be useful if it was delayed until June.

Dale said he would like to complete the advice and he believes the analysis is solid. He said John told him that DOE will be working through the RCBRA process for a while. Dale added the RCBRA is predominantly a TPA process so the Board can miss the April 5 deadline without any adverse consequences. Dale said they would have a RAP phone call to finish discussing the SWBG advice. The RCBRA advice will be carried forward to the next RAP meeting.

Shelley suggested a DOE tutorial to the full Board in June on the process to develop the final RODs because some people are unclear about that process. She said having this understanding is important to develop advice.

Dale said he would further refine the SWBG draft advice before the committee call to incorporate some of the comments discussed at the meeting. He requested RAP members read through the next draft before the call to speed up the process. The committee agreed to hold a call at 10:30 a.m. on Monday, March 14.

As final business, the committee identified the preliminary topics, framing questions and time allocations for the April RAP meeting, including:

- Building 324 – B cell
  - Update on contamination and progress on determining a path forward
- River Corridor Baseline Risk Assessment draft advice (joint with HSEP and PIC)
  - Review and refine draft advice
- PW 1/3/6 and CW-5 and TRU repackaging
  - Update on EPA's comments
  - Update on upcoming proposed plan and comment period
- Update on Columbia River Outfalls and Intakes
  - Update on consultations
- Hanford Site-Wide Permit – Issue Managers' Report (SEPA)

The committee will request a full-day meeting on Wednesday, April 13.

### **Handouts**

- River Corridor's 324 Building B-Cell Contamination: Highly Contaminated Radioactive Material below Building Poses Latest Challenge for Hanford's River Corridor Closure Project. Washington Closure Hanford, February 2011.
- 5-Year Review Guidance. U.S. Environmental Protection Agency.
- Draft Advice on the 200-SW-2, Radioactive Solid Waste Burial Grounds. HAB – RAP/PIC Committees.
- Draft HAB Advice for the River Corridor Baseline Risk Assessment – Human Health Risk Assessment (Volume 2), Draft C. HAB – RAP/PIC/HSEP Committees.
- RCBRA Human Health Calculated Risk, Plus Waste Site Closeout Data, Plus EPA's Default Nation-wide Residential Cleanup Values. March 9, 2011.
- 618-10 & 11 Burial Grounds Status/Update. WCH. March 9, 2011.

## Attendees

### HAB Members and Alternates

Shelley Cimon	Jonathan Matthews	Keith Smith
Dale Engstrom	Ken Niles (phone)	Gene Van Liew
Harold Heacock	Vince Panesko	Jean Vanni
Pam Larsen	Maynard Plahuta	Steve White
Susan Leckband	Gerry Pollet (phone)	
Liz Matson (phone)	Dick Smith	

### Others

Paula Call, DOE-RL (phone)	Dieter Bohrmann, Ecology	Paul Seeley, Cenibark Int.
Cliff Clark, DOE-RL	Rick Bond, Ecology	Jamie Butren, CHPRC
Jim Hansen, DOE-RL	Elis Eberlein, Ecology (phone)	Sonya Johnson, CHPRC
Doug Hildebrand, DOE-RL	Nina Menard, Ecology	Karin Nickola, CHPRC
Cameron Salony, DOE-RL	Beth Rochette, Ecology	Nicole Addington, EnviroIssues
John Sands, DOE-RL	Deborah Singleton, Ecology	Susan Hayman, EnviroIssues
Jamie Zeisloft, DOE-RL	Dennis Faulk, EPA	Reed Kalder, MSA
	Larry Gadbois, EPA	Barb Wise, MSA
	Chris Guzzetti, EPA	Michele Gerber, URS Corp
		Peter Bengtson, WCH
		Duane Jacques, WCH
		Jeff Lerch, WCH
		Nelson Little, WCH
		Don McBride, WCH
		Mark McKenna, WCH
		Mike Priddy, WDOH
		Tom Rodgers, WDOH

**Attachment 1: River and Plateau Committee Transcribed Flip Chart Notes**

---

Follow Up

1. DOE → Follow up on Wade Riggsbee's info on B Cell documentation
2. Committee discussion (detailed) on CERCLA five-year review when doc is available  
(when draft is provided to EPA/Ecology)  
Placeholder for August comm. mtg.
  - Potential advice to require comment response doc.

Page 1

---

Follow Up

3. Issue mgrs to refine SWBG → send out  
Monday 10:30 AM 14<sup>th</sup>
4. Issue mgrs to refine RCBRA → send out

Page 2

---