

FINAL MEETING SUMMARY

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

*January 12, 2011
Richland, WA*

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This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and Introductions

Susan Hayman said the December meeting summary had just recently been sent to committee members, and suggested the committee postpone approval of the summary to allow more time for review. The committee agreed to adopt the December and January meeting summaries at the February meeting.

Dale Engstrom, River and Plateau Committee (RAP) vice-chair, welcomed the committee and introductions were made.

Shelley Cimon said that EnviroIssues is starting a new facilitation contract with the Hanford Advisory Board (Board or HAB). Susan said they are very happy to have been selected to continue facilitation support for the Board. She appreciates the confidence in their work.

Dale announced an upcoming full-day workshop to discuss vadose zone technology. He said that tribal nations, the Washington State Department of Ecology (Ecology), and the State of Oregon believe there are some alternatives being overlooked for the vadose zone. The workshop will be

held Wednesday, January 19th at the Ecology office. He said there would be invited speakers discussing techniques to clean up the vadose zone beyond what is being considered right now. He said an RSVP would be appreciated.

Radioactive Solid Waste Burial Grounds (Joint Topic with PIC)

Dale complimented last October's solid waste burial ground workshop. He said the committee discussed this in December, and it is time to prepare advice on the topic. In his opinion, the problem is that this is a huge task with many differing opinions. Dale said the purpose of this agenda item is to hear the RAP committee's thoughts on how they should proceed with advice.

Dale handed out a document entitled Draft Advice Exploration - Radioactive Solid Waste Burial Grounds. He said the handout incorporates all the comments he's received up to this point, and the advice points identified at the December RAP Committee meeting. Dale proceeded to review the draft advice points organized into the following nine categories:

- Inventory, volume of waste
- HAB characterization comments
- Caisson comments
- Groundwater monitoring
- Risk
- Post-1970 waste
- Pre-1970 waste
- Worker safety
- General advice

Characterization Advice Points – Committee Discussion

Dale said the characterization section considers the progress made up to this point. He said the agencies examined burial ground records, which allowed them to characterize the burial grounds. He said many of the burial grounds do not have good records. Dale read through the possible advice points and asked if the committee was comfortable with the advice as read.

- Maynard Plahuta asked about the trade-offs between the amounts of characterization necessary versus spending the money on actual cleanup. He said they could use the “observational approach.” Dale said that was a good point. He noted that it was important to know what was in the burial grounds in order to protect workers.
- Dick Smith said the whole purpose of the characterization is to protect groundwater. He said characterizing by push probe (angled holes) under trenches would be a good way to determine if the burial grounds are leaking. Maynard asked how confident they would

feel about those probes. Shelley said she would rather err on the side of caution in order to protect the public.

- Jerry Peltier said they will never reach one hundred percent confidence of knowing what is in a trench. He said they should do a preliminary analysis that gives them a large enough confidence level to be able to start excavation and cleanup. Jerry suggested implementing a monitoring program once they start digging to deal with the unexpected. He added they need to take on assumed risks to start the cleanup and they needed to move forward.
- Jean Vanni said the Board already has provided advice on characterization. She would like to add advice that the agencies follow a methods-based approach, like Ecology has advised in the past. Jean said she also supports the observational approach.

Agency Perspectives

- Briant Charbonneau, U.S. Department of Energy – Richland Operations Office (DOE-RL), said they have to characterize the nature of the hazard and the hazard is connected to groundwater. He said the indication of what has happened over the past forty years is a pretty good guess as to what the future hazards will be. He said there will be a barrier over the top of the Inner Area to prevent plants and animals from entering the site in addition to using institutional controls. Briant added that complete retrieval would mean reburial within about a mile of where the material was excavated. Briant discussed the Environmental Restoration Disposal Facility (ERDF) as an example where contaminants were buried about seventy feet below the surface in a lined trench. He said people have different views on lined trenches.
- Rod Lobos, U.S. Environmental Protection Agency (EPA), suggested differentiating the advice points to specific trenches. He said they could expect to use one plan for trenches that have a lot of data and another for trenches where data is fragmented or nonexistent. He added that they are required under the Resource Conservation and Recovery Act (RCRA) to determine the nature and extent of contamination for every trench when information is absent. He discussed how different caps might be needed at different sites, which could range from very simple designs to more robust caps at sites with more contamination.
- Ron Skinnarland, Ecology, said people have a lot of anxiety about the final remedy because of the different kinds of trenches so it is unlikely they will find a universal remedy. He said they need to develop a work plan on how to answer all the questions. Ron said they needed to develop a characterization plan this year.

Committee Discussion

- Gerry Pollet said they had received good information from University of Washington (UW) public health students. They know chemical waste was used at the canyon facilities and the Plutonium Finishing Plant (PFP), but they know very little about chemical wastes at the Hanford Site overall. He said the US Ecology site is a lesson; there were dozens of chemicals present in large quantities. Gerry said they need a system that vents gases and treats them for a significant period of time. He added that they can't plan for this system if they don't characterize the wastes.
- Maynard followed up on Briant's comments. He said they know ERDF will need to be monitored far into the future. However, he was concerned that people would lose track of contaminants if they were left at various locations. Maynard added that the cost over time for moving waste and monitoring ERDF would likely be less than years and years of monitoring capped sites. He suggested examining long-term, lifetime monitoring and surveillance costs.
- Shelley asked about possible advice point number five. She wants to understand what went into the ponds prior to burial grounds being placed on top. Shelley said it may be more important to dig out what is underneath the trench.

Caisson Advice Points – Committee Discussion

Dale reviewed the possible advice points under the HAB Caisson Comments section.

- Jerry thought the caissons were used for high-level radioactive waste. He said they should be more concerned about the caissons than the trenches.
- Dale said he thought the caissons were scheduled to be dealt with and removed. Doug Hildebrand, DOE-RL, said a small set of caissons will be removed. Three-fourths of them will either be left in place or dug up. He said that some caissons with high dose rates and some with transuranic (TRU) waste will be retrieved.
- Dale asked if the issue was related to a split between pre-1970 and post-1970 waste. Briant said the reason the caissons were segregated was because of the dose. The material could be low level and short lived, but with a high dose at the time of burial.
- Dale asked whether each caisson would be evaluated for its risk. Doug said they would.
- Dick asked where caissons with high dose rates will it be placed. Briant said "dose" is not a category. The question is whether something can be isolated and stored for 300 years until the material no longer poses a risk.
- Shelley said they have decided the TRU caissons will be removed. She asked for clarification on whether they had made a decision on the other caissons. Doug said there is a decision process underway.

- Susan Leckband said TRU applies to waste created after 1970. She asked whether some caissons were buried prior to 1970 and if those would be classified as TRU waste if they were excavated. Doug thought all the caissons were buried after 1970. Gerry asked whether they used process-based determinations. Doug said some were process and some were hot cells. Briant brought up the example of when he worked at the 324 Building. He said the physical equipment in the hot cell was exposed to dissolving and reprocessed fuel. They cleaned out the equipment as much as possible and then put it in containers. Briant said it was surface contamination where they knew the nature and source.
- Tom Carpenter asked whether it was better to spend money now for remediating burial grounds versus spending money in the future after a burial ground fails. He said it will be much more expensive to cleanup a burial site after it fails.
- Shelley asked about subsidence and the configuration of material in the trenches. She said those are factors that weigh into how they approach trenches, and a better understanding is needed. She said they may have to exhume more than just radioactive content.

Groundwater Monitoring Advice Points - Committee Discussion

Dale moved into the groundwater monitoring portion of the handout. He said DOE reports their groundwater monitoring is done accurately and Ecology is monitoring the process.

- Ron said that based on the monitoring information available Ecology does not think there has been a release of contaminants to groundwater. However, they do believe there have been some releases. He added that the available information does not include every square foot of buried waste. He said they currently have a well monitoring network on the perimeters of the waste management areas, but they do not know what is happening near the burial grounds inside of those perimeters.
- Gerry disagreed that the groundwater monitoring meets RCRA requirements and he doesn't want people believing such a monitoring system for the solid waste burial grounds exists, such as at ERDF. He said some burial grounds have no down-gradient monitoring at all.
- Ron said he could see adding an agenda item or session in the future about groundwater monitoring systems. He said it is an important issue to keep in mind, but the issue does not need to be settled today.
- Jean Vanni thought there should be a workshop on groundwater monitoring. She agreed with Gerry's statements and suggested looking at how the monitoring fits into the larger groundwater operable unit approach.
- Dale mentioned a comment he had heard about groundwater wells becoming dry so that samples cannot be taken and the dry wells become noncompliant. He said the vadose monitoring approach might be useful to address the dry well issue.

Dale read the background and possible advice points as in the handout.

- Jerry said he is not interested in the groundwater monitoring wells. He said once they identify that a problem exists, the battle is already lost. He said waste needs to be characterized and removed before it can enter the groundwater.
- Gerry said soil column monitoring would be useful for early release detection. Gerry read some content about groundwater monitoring problems he would like to include that was in the last version of the document. He thinks it is important for the Board to summarize the reasons to be concerned about the lack of groundwater monitoring and to emphasize the need for soil column monitoring with a contingency plan.
- Harold Heacock said they are being quite prescriptive with these points. He suggested the committee move away from this type of advice and focus on the policy issue. Dale agreed.
- Jean said the Board should advise that groundwater monitoring needs to be equal to or better than the regulations. She said there are regulation choices that allow monitoring under CERCLA instead of RCRA; which is why the monitoring is considered to be adequate right now.

Risk Advice Points – Committee Discussion

Dale read through the possible advice points under the Risk section of the handout.

- Dick said the whole point is to keep contaminants out of river. He said use of the Central Plateau will be limited. If DOE classifies the Central Plateau for industrial use, they will be able to monitor for risks. Gerry said the Core Zone is for waste management and the burial grounds are on the outer limits of the Core Zone. He said outside of the Core Zone they are cleaning to unrestricted use levels.
- Shelley said compliance is the issue. Jean said the Yakama Tribe would disagree. She stressed the needs to focus on the Central Plateau and ensure it meets the criteria for unrestricted use. Jean does not agree that they only care about the risk of contaminants reaching the Columbia River.
- Harold said they should be realistic on the limitations of resources. The Board should establish some degree of prioritization in the advice.

Agency Perspectives

- Briant said DOE embraces most of what he heard the committee saying about groundwater monitoring. DOE examines all the data and the systems to ensure they are collecting all the relevant data. He said DOE does not stop when their process meets requirements for compliance with the law; they also work to make the process adequate to meet their goals. He said it is critical to have a subsidence study on characterization and that risk is incredibly important. He added that the regulations drive them to use risk as the factor to determine whether action is required.
- Emy Laija, EPA, said having a compliant RCRA monitoring system is important and EPA supports Ecology.
- Ron said these are all good questions. He asked whether the topic would be discussed at the next RAP meeting. Susan Hayman said the committee needed to set a process to deal with the advice. She said either she or Dale would need to collect all the information for the issue managers to discuss before the topic returns to committee.

Additional Committee Discussion

- Steve Hudson suggested the committee examine all the advice, extract the main overarching principles, and add more detailed points later. He added that Liz Mattson would be a good resource. Dale said he would work on reaching higher principles and Gerry and Shelley offered to help.
- Liz thought they needed an issue manager meeting about the draft. She said they could use the existing version and focus on the principles before sending it out for comment. Shelley said they needed comments on the remaining portion of the document that was not discussed (starting from the Post-1970 Waste section). She said once they had comments on the last sections then they could have an issue manager meeting. The committee agreed.
- Susan Leckband said they should consider keeping some of the important details identified in the current draft as a white paper. She said a policy level advice point could be: “we recommend installation of a soil column sampling system that will detect radionuclide and chemical contamination before it reaches groundwater.” Maynard said a white paper could be an attachment to the advice. Jerry agreed with Susan Leckband. He said they could offer a second piece of advice if needed and cautioned against losing good, detailed information when offering advice at the policy level.

Dale decided that, based on time, the committee needed to conclude this discussion. He asked committee members to read through the handout and give him feedback on the draft advice. Susan Hayman said she would send out the draft advice, but asked committee members not to worry about tracking changes. Gerry asked the committee to send comments about concepts on the last sections. The committee set January 28 as the deadline for comments on the initial concept draft. They decided to hold an issue manager meeting in early February on the advice

and have the issue managers bring a clean advice draft to the RAP meeting in February. The committee decided to bring the advice to the Board in April.

Hanford Artifacts Advice

Maynard introduced the draft advice regarding Hanford artifacts. He said there are areas in the Hanford Site that have historic artifacts and he is concerned these important pieces of history are being lost as the cleanup progresses. He said the National Historic Preservation Act (NHPA) contains regulations for preserving items with educational, research, and economic value. He commended DOE on the major progress they have made, especially within the last year. He said DOE has hired additional staff within their own organization and Dr. Ines Triay, Assistant Secretary of Energy – Environmental Management, has placed value on the preservation aspect of Hanford. Maynard thought the Board should offer some advice on this topic.

Agency Perspectives

- Paula Call, DOE-RL, said she appreciates the advice. She said DOE has recently announced a new senior management position and creation of an “Office of the Future”. This office examines future uses of an area after cleanup has been completed. She introduced Jill Conrad as the new Tribal Affairs Manager, and Tom Marceau, who is working for the Hanford Mission Support Alliance Contract.
- Jill Conrad, DOE-RL, said the advice is timely and thoughtful. She said DOE has reorganized so the cultural and historic resource work is now part of the Tribal Affairs office. She said they tried to increase staffing levels commensurate with America Recovery and Reinvestment Act (ARRA) funding; DOE currently has a record number of archeological investigations occurring. She said Tom was prepared to discuss the 300 Area specifically, and other Board concerns.
- Emy said Dennis Faulk is a big supporter of the B Reactor Museum, as well as other important artifacts. EPA supports the advice.
- Cheryl Whalen, Ecology, said Ecology does support preservation work, although they do not play a formal role.

Committee Discussion

- Jerry said Hanford holds a great deal of history about how the United States developed and protected its nuclear arsenal. He said the facilities that stored plutonium, such as PFP, might be more interesting to the public than B Reactor. He was concerned that many of

the processing facilities were being torn down when the public should be able to tour them.

- Maynard said many of the buildings do need to be torn down. He added that some unique tools can be preserved, but he doesn't envision keeping many facilities open, except possibly some of the signature facilities. Maynard said properties that predate the site are interesting to preserve as well.

Tom provided an overview of DOE's process for historic preservation at the Hanford Site. He said the process started in 1994 with a programmatic agreement to retain artifacts from the Manhattan Project and Cold War. There is a provision in that agreement that there are 190 representative properties on the site. They examined each property in order to begin identifying items for retention. Tom said they looked for any artifacts, records, photographs, machinery, etc. that would be worth retaining for historical value.

Tom said in 1997 and 1998 professors, archivists, and archaeologists developed guidance documents to determine what should be preserved and how. DOE and contractors then began to systematically walk through all of the buildings described in the agreements. They looked at unique artifacts from plutonium production, to radiation processes, to research labs – all procedures conducted at Hanford were represented. This process amounted to a ten year effort that was completed in 2006.

Tom said once items had been flagged for possible retention they needed to develop a process for making final decisions on the artifacts. He said DOE makes all final decisions. One major criterion for selecting artifacts is whether the object is one of a kind; if the item was developed exclusively for Hanford. Each item of possible interest was tagged in orange and those items cannot be removed or destroyed until final decisions are made. The tagged items are reviewed and a recommendation is made on whether it should be retained or not. He said they also tagged several items of the same type in order to ensure they would obtain the best sample. For example, they tagged many ceramic ash trays knowing only a few would be selected for retention. Tom noted that the decision to retain an item can be made over and over again, but the decision to destroy something only happens once. He said DOE contractors take this point very seriously. Tom said the Board's advice is well-timed. Historic preservation on the site has been a long term effort and it needs a push from Headquarters to ensure the effort succeeds.

Committee Discussion (continued)

- Susan Hayman confirmed that the committee wanted the advice presented at the February Board meeting. She asked if there were any changes to advice.
- Shelly said "coordinate effort with all interested agencies" should be added to the first bullet. Maynard said they should add that this effort requires DOE senior management support.

- Bob Suyama said he is not sure whether all contractors on site are familiar with the information Tom presented. Bob thought the advice would help make contractors more aware. He said the draft advice was missing the Native American cultural piece. He noted that they had discussed the Cold War and World War II, but were missing the whole story of Hanford by not including the tribes.
- Bob suggested taking poster-grade photographs of items that could not be preserved, such as the PFP processing lines. Tom said they were continuing to use large format cameras with black and white archival film to document items that could not be salvaged. Bob suggested adding a statement to the advice about continuing the photographic documentation.
- Jill said this was the first year they conducted an all-DOE and contractor management training, which included the cultural resource review process. The training was successful in building interest for additional training for the contractors. Jill said DOE was also offering employees a cultural historic resources tour of the site given by Tom Marceau and Mona Wright, which does include Native American and historic items of interest. She said they also offer the tour to the Board.
- Gerry said there are many people who believe that preserving a massive reactor in the middle of the Hanford Reach Monument is inappropriate. He said they expect other energy facilities to be taken down once they are no longer being used. Gerry said the reactor scars the monument and there are questions about whether it is even safe. He questioned how they managed to put bright orange flags on historic artifacts when they couldn't flag items over health and safety concerns. Gerry said they also need to include what happened to the waste as part of the history, but cannot leave contaminated lines in place because they are considered unique and of historic value.
- Paula clarified that B Reactor is not within the boundaries of the Hanford Reach Monument. It is a quarter mile from the boundary.
- Susan Hayman asked Gerry if he would need to see changes in order for this advice to move forward. Gerry said he would. He said he has no concerns over the advice regarding the artifacts, but he does not agree with the advice regarding the facilities. Maynard said the advice was not recommending that PFP or other facilities be preserved.
- Dick asked what was going to happen to the artifacts. He said the best choice would be to display them in an annex to B Reactor. Maynard said part of the advice includes a recommendation to create a facility for the public to view the artifacts. Dick suggested adding that the facility should be B Reactor. Gerry disagreed. The committee decided to leave the language as it is in the draft advice.
- Jean suggested removing the last bullet. She said they should also edit the 2nd bullet to state that the Board advises DOE contractors to require cultural resource sensitivity training for all personnel. She stressed the importance of not dismissing the tribes.

- Liz suggested revisions to the third and fourth bullets to include experiential learning. She said they want to capture an experience in order to convey information into the future about what Hanford was, such as allowing people to experience going through air locks.
- Liz suggested creating video tours with former employees who worked in buildings that would be torn down. She asked whether there was currently any web presence.
- Harold said he strongly supports the advice, especially the last sentence in the last bullet. He said the Bruggeman Warehouse and other pre-Hanford items need to be preserved. He noted funding will be needed for preservation. He suggested using the community outside of Hanford who are interested in the historic items on-site.

Susan Hayman suggested they try to reach consensus on the advice during the January committee call if they want to bring the advice forward in February. She said Maynard and others would need to edit the current draft and resend the new version for comment. Susan Hayman said the committee should provide specific wording suggestions to Maynard. Jerry offered to help with the next draft.

Columbia River Outfalls/Intake Structures

Due to time constraints, Shelley proposed tabling this discussion until the February RAP meeting. She said she and Dick met yesterday with contractors and agency representatives, and had tremendous support to look at the issue of outfall structures, specifically N and K areas. She said they will know more soon about the biological consideration decision being made for N as well as the staging for K.

- Shelley said she would prepare a written issue manager update and circulate it to the committee. Committee members should provide questions and comments back to Shelley prior to meeting in February.
- Jean said the only time constraint might be if DOE wants to act immediately after the biological assessment. She said they need time to review that document. Mark French, DOE-RL, said the window of opportunity was lost in the winter. He said they have a window this summer when there will be a time for review of the biological opinion from the U.S. Fish and Wildlife Service. He said the issue is not as time-critical as it was previously.
- Dick said this action was another example of what happens when the committee receives information too late and too close to actions being taken. He said if the issue managers had received the information they received at yesterday's issue manager meeting at an earlier time, there would not have been so many questions or concerns about it.

- Paula said N area structures are pending further documentation, but K is moving forward. Rod Lobo reiterated that K and N are on different schedules. Shelley said the staging begins in February for the June remediation of K.
- Paula asked that she and Peter be kept in the loop. She said their job is to provide the Board with the right resources.

The committee agreed to table the Columbia River Outfalls/Intake Structures topic until the February meeting. The RAP Committee apologized to agencies representatives who came specifically to discuss this topic.

Update on Contamination Found at Building 324-B Cell

Mark French, DOE-RL, said that Washington Closure Hanford is developing a plan to remediate the contamination discovered under B Cell in Building 324. He said the first step is to further characterize the waste. A monitoring well is being constructed this week. He said they are working with Pacific Northwest National Laboratory (PNNL) on developing different types of survey probes to take measurements under B cell in order to determine the isotopes in the soil. He said it will be four to six months before they know how to move forward. He said they will update the Board as they learn more, but at this time he did not have additional information.

Committee Discussion

- Shelley asked if the new characterization well was going in because of the breach. John Price, Ecology, said there was already a plan to install a well. After the breach, they “optimized its location” to target the pipelines in order to monitor the best radiant in groundwater movement, which will allow them to recognize a contaminant in the soil.
- Jean said she believed Building 324 was a RCRA facility with a closure plan. She said if there is an abnormal occurrence as closure activities proceed, there is supposed to be a contingency plan. She asked to see the plan. Rick Bond, Ecology, said he is not aware of a plan, but he believes they are working on developing one. Jean said the plan is supposed to go out for public comment and review. Susan Leckband said Jean was referring to contingency plans in the RCRA permit. Mark said Building 324 is a non-permitted temporary storage and disposal facility. It is not a RCRA facility.
- Susan Leckband asked whether there would be a plan for this incident and whether there would be an opportunity for comment. Mark said he would have to check on that. Rick said they would be accepting comments, but there would not be a formal comment period.

- Gerry said at the last meeting there was not down-gradient groundwater monitoring. Now they just heard about one being put in. He said this is a good update that will be important for RAP to track. The committee agreed to continue receiving monthly updates.

River Corridor Baseline Risk Assessment Plan (Joint Topic with HSEP and PIC)

Dale introduced the River Corridor Baseline Risk Assessment (RCBRA) topic. He said the RCBRA sets up the Remedial Investigation/Feasibility Study (RI/FS) and the final Record of Decision (ROD). Dale said the RCBRA must be completed and approved before moving forward into final cleanup plans. He said the document is important because it covers various exposure scenarios and identifies levels of risk at the Hanford Site.

John Sands, DOE-RL said there would be an opportunity for the Board to review and provide informal comments, but there would not be a formal public comment period. Barb Wise said the RCBRA is available online at the Hanford events calendar page.

John said this information was presented at the issue manager meeting the previous day and he tried to incorporate the feedback he received. John said his presentation would provide history on how the RCBRA feeds into CERCLA with a focus on the results of the analysis. John presented the first set of slides covering the set-up of the RCBRA and background on how the document was created. He discussed the high-level process of historic and future soil cleanup processes. He said the process began in the 1990's with qualitative risk assessment that led to interim actions, which are currently being implemented. John said they considered a range of scenarios and compared those against current scenarios. John said that the current cleanup efforts are mostly meeting the interim record of decision (IROD) objectives. He said sites that have thresholds of risk beyond acceptable levels will be subject to further evaluation.

Committee Discussion

- Dick asked what would happen on sites that had already been cleaned up. Nick Ceto, DOE-RL, said that would be outlined in the RI/FS. They will develop preliminary cleanup levels for human health, ecological health, and groundwater and compare those levels to the remediated sites to verify whether cleanup was successful. Dick asked about sites that had not been remediated yet. Nick said they considered risk on the available data and concluded they probably would have to cleanup all the sites where they initially thought cleanup would be required.
- Gerry said the Model Toxic Control Act (MTCA) requires specific notices that explain exposure scenarios and consequences. Gerry asked why Ecology did not require public comment on RCBRA since this document would act as a gatekeeper for further decision documents. John said the notice requirement in MTCA is dependent on the results. He

mentioned the 300 Area as an example. John said the interim ROD was based on industrial standards, but all the waste sites (except for a few) meet the criteria for unrestricted use so the cleanup was much better than expected. Nick said there is a process for the public to provide formal comments on the proposed plan. However, the RCBRA is not a decision document.

- Gerry said he was concerned about the risk levels for Native Americans. Nick said they do recognize projections of high risk to the tribes. DOE has spoken with them and sent letters to Tribes describing the unacceptable risk projections. Nick added that DOE intended to reduce the uncertainty in order to better identify the risk.
- Liz said that the majority of the group received the RCBRA a week ago. She said the purpose of the discussion is to better understand what the document says. They will then discuss the public involvement process.

Jim Hansen, DOE-RL, reviewed the slides addressing the multiple scenarios included in the RCBRA. He said the scenarios were developed during the data quality objective (DQO) process in 2005 and 2006. After the initial scenarios were developed, tribal scenarios were added to meet the needs of the tribes.

Jim described the local and broad area risk scenarios. He said the two scenario types refer to the type of data being used. Local area scenarios are specific to a certain waste site where all exposure comes from that site, regardless of size (e.g. size of table or football field). He said there are 156 cleaned up waste sites with cleanup verification package data. Jim said verification samples were collected from the bottom and sidewall of an excavated hole. He said all samples were taken at depth, but they assumed the samples were coming from the surface so estimates were designed to be very conservative. Jim said samples were collected on or near un-remediated waste sites from the top six inches of soil.

Jim moved into the slides covering local area risk. He described the commercial scenarios which included scenarios for industrial/commercial workers and resident monument workers. Jim said the residential scenarios included subsistence farmers, and Native American residents from the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and Yakama Tribe. Jim gave an overview of the broad area scenarios next. He noted the only difference under the tribal scenario is that DOE does not assume tribes are living on the site. They retained the other exposure pathways for the tribes. The RCBRA provides broad area scenarios for: nonresidential tribal, avid angler, avid hunter, and casual hunter.

Jim said they also looked at an interim action record of decision (IAROD) scenario. This scenario is based on “baseline residential exposure”, which is residential unrestricted use of the Hanford Site. He said the way they look at risk has changed over the years.

Committee Discussion

- Susan Leckband asked whether there are separate exposure scenarios for children and adults, since children presumably have higher risks from the same amount of exposure. Jim confirmed that children are treated separately.
- Liz asked for an explanation of risk ranges. Nick said a cancer risk of 3×10^{-4} is equivalent to three people in ten thousand. He said the EPA risk range is one person in ten thousand. Larry Gadbois, EPA, said fifteen millirem (mrem) was determined by the Washington State Department of Health during the first ROD, so that number was adopted for use in the RCBRA.
- Nick said they exceeded the agreed upon cleanup goal. Jim said that means they are at or below fifteen mrem for a dose base at most sites. Then there is a risk that exceeds 3×10^{-4} . They based cleanup decisions on fifteen mrem, but they are now considering a risk basis approach. They are asking whether the fifteen mrem limit is protective based on a standard EPA threshold of one in ten thousand. Jim said they were protective based on the one in ten thousand level at 145 out of 156 sites. He said for the few other sites where they were not protective at that level, the materials will decay within seventy five years so the risks will cease to exist.
- Liz asked how synergistic effects are captured in the fifteen mrem limit. Jim said the number is a cumulative dose. He said he understood from his training that synergism is interactions between two things; exposure to one enhances exposure to the other so affects become cumulative. Liz said they need a better definition of cumulative and synergistic since they did not have much information.
- Jean asked what cleanup standard value under what regulation is going to be used. She is hearing that the RCBRA is evaluated using work done under an IAROD. She said when different scenarios were used the site met those cleanup standards under those IARODs. She said almost every single closure verification package out of Ecology states they met the interim ROD. These packages do not state what the anticipated final cleanup standard will be. Nick said there are other sites that need to move into the RI/FS. He said there are other screens they must pass through (ecological, groundwater, etc.), which they are not talking about today. He said they use the current 2007 MTCA standards.
- Dale said this risk assessment (RA) was done with 156 sites that were available when the study began. He said Jean was talking about sites that have been remediated since then. The new sites ones will be added in as they move forward.
- Jim said the interim action did not consider ecological receptors. It was assumed that if human health was protected, ecological health would be protected as well. He said that is not true today so they are addressing ecological thresholds in the proposed cleanup goals (PRGs). Jim said the Ecological Assessment, Volume 1 will be coming out in a few months with a series of PRGs.

- Gerry asked if there were separate analyses for male and female farmers. Jim said scenarios are not separated by gender. Gerry asked if tribal nonresidents were assumed to drink river water in the scenarios. Jim said they were. Gerry asked about the resident scenarios. Jim said residents are assumed to drink groundwater. The camper is assumed to bring their own water.
- Jonathan Matthews said the Nez Perce Tribe is following the US Ecology site. The site is not classified as a CERCLA site, but there is a lot of uranium that has the potential to eventually migrate off-site. Once that happens it would become a CERCLA site that needed to be included in the RA. Jim said that is outside the scope of the RCBRA. It would be in the Central Plateau. Jonathan asked what it would take for US Ecology to be considered part of the cumulative risk. Dale said this was off-topic, but a good point that they would note.
- Gene Van Liew asked what the shoreline fishing boundary was in the scenarios. Jim said it was along the river corridor from the BC Reactor area to the 300 Area. Gene asked about fishing above Vernita to Ice Harbor Dam. Jim said they did have reference areas above Vernita.
- Gene asked if they are looking at game that migrates for the avid hunter scenario. Jim said that is one of the areas of uncertainty identified in the RCBRA. They calculated risks as if the game animal stayed on the waste site, which is not realistic.

Jim continued with the presentation by discussing why sculpin was used as the fish sample. He said the reason they chose to use this type of fish is because they are small and resident to a small area. They are not migratory, so sculpin represent a maximum type exposure. Further documents will take other fish species into account.

Jim discussed the nonresident tribal scenario slide and said tribes do have unacceptable risk levels. Jim then described the occupational scenarios and risk results.

Regulator Perspectives

- John Price, Ecology, said they had just started reviewing the document last week. He made the general observation that the risk assessment is very technical and difficult to discuss in public venues. He wondered about three questions – is what they did to work toward the IAROD goals acceptable, is there still residual risk that must be acted on, and should they do something about residual risks? He answered the first two questions affirmatively and in answer to the third question he said they were not yet sure what action to take next. John said there was a lot of arsenic from the orchards that contributed heavily to the risk, such as some of the risks to groundwater. He said they have a snapshot in time that will help them progress, but there is still a lot of work to be done.

Committee Discussion

- Shelley asked how many sites were receiving step-out sampling. Jim said thirty trenches and twelve to fifteen waste sites.
- Shelley asked about replacing residual radiation analysis (RESRAD). John Sands said they have talked about replacing it with Subsurface Transport over Multiple Phases analysis (STOMP). Nick said RESRAD would definitely be used in the final RI/FS. He said they encourage starting to use it now.
- Shelley asked about the chromium trenches that were remediated in the IA, but that do not meet ecological standards. John Price said there will be a report on 100 D and H. He assumed there would be some percentage of sites that would need additional cleanup, but they need to assess those sites.
- Dick asked what part of the area was comprised of orchards since the arsenic is a result of orchard spraying. Jim said orchards comprised about seven square miles out of two hundred thirty. Nick said they have it mapped. Dick said he wondered about what fraction of tribal gathering will occur in the locations with arsenic. Nick said they would be addressing that with the tribes. Jim said there is an elevated risk even at background levels. He said the RCBRA is presented with and without arsenic.
- Jean asked whether they could assure that certain sites would decay after 75 years and whether the projections included institutional controls. Jim said that institutional controls will not be used in this particular site since they decay naturally.

RCBRA - Next Steps

- Dale said the authors want to know if:
 - The RCBRA is readable
 - The right methodology is used
 - The document tells the story
 - The executive summary is useful
 - Any information is missing from the document
- The Board is invited to provide feedback until February 17. Dale said they have an opportunity to read the RI/FS documents when it becomes available in September and provide formal comments through that process. He suggested providing comments on both the RCBRA and the RI/FS.
- Susan Hayman suggested the issue managers should decide how they want to provide feedback. Dale suggested writing comments in a letter format. Shelley suggested holding a sounding board at the Board meeting.

- Susan Leckband said the RCBRA might be too technical for the full Board. She said a presentation with a sounding board was more suited for committee. She asked if there was a different way to frame the document. Gerry thought the presentation would be useful for the public and the Board. Liz disagreed. She said the presentation is too technical for the public. Maynard thought the presentation would work for the Board.
- John Price said the first ROD proposed plan will be out by the end of September. He assumes the Board will provide advice on this. Larry added that the agencies would also like detailed and insightful advice from the Board on the RI/FS. Harold suggested having a Board briefing in February, but said they did not have enough information to present advice.

The committee decided on the following path forward:

- The RAP Committee will provide feedback on this document to Susan Hayman by January 28.
- Issue managers will review feedback and identify next steps
- Board presentation in February, committee framing, and then a sounding board
- Advice in April
- Summer workshop about the RIFS/proposed plan

K-East Reactor Decommissioning – Issue Manager Report

Harold Heacock gave a brief overview of the status of the K-East Reactor Decommissioning. He said the Board had been following the work at K-East Reactor, which was originally going to be cocooned like the other reactors on site. There are substantial amounts of iodine underneath the reactor and major demolition is needed to remove it. Harold said as an alternative, DOE considered dismantling the reactor now rather than cocooning it for 75 years. DOE demolished some air cooled reactors previously, although those were much simpler in size and complexity.

DOE has issued several reports on dismantling K-East. The Board issued advice on K East last November that stated DOE should study this in more detail before continuing. DOE completed their study and announced that they will continue to evaluate some of the options. The current plan is to continue cocooning per the original plan and ROD.

Agency Perspectives

- Ellen Degahn, DOE-RL, said DOE will continue cocooning because dismantling the reactor core is not as much of a site priority as previously thought. DOE is also characterizing soil around the reactor.

- Paula said an action memo will not be released on the engineering evaluation/cost analysis (EE/CA) until the documents are completed, but they are communicating their progress.
- Rod Lobos, EPA, said they will need a new EE/CA by the time the reactor is out of the cocooning stage. He did not think the dismantling would happen.

Committee Discussion

- Harold said there is limited funding. If one reactor is treated a certain way, there will be pressure to treat all reactors this way and money will be taken away from other work. Shelley said if they aren't dismantling the Reactor, they should let it go.
- Dick said he read the current plan and thought it was good. His chief complaint was that some of the information available months ago wasn't made available even after they asked for it. Susan Hayman asked if the Executive Issues Committee (EIC) wanted to discuss this. Paula and Susan Leckband said they would. Paula apologized for not understanding the committee's intent and not searching for the relevant information. She said after they gave her a title, it was easy to find the information. Paula said they needed a layered approach for document requests.

Committee Business

- Shelley said they should set criteria, starting at the EIC level, for what RAP decides to take on since the year will be busy.
- Susan Leckband said she thought sounding boards are valuable, but time at Board meetings is limited and there are four other committees. Shelley said it is incumbent on the issue managers and committees to give the Board priorities.
- Liz said the EIC could use a substantive meeting about this, not just the evening meeting.
- The committee addressed items they had identified to follow-up on – *see transcribed flip chart notes Attachment 1*.
- Jonathan asked about how the Board contacted tribes to hear their input (*Follow-up item #10, Attachment 1*). Susan Hayman said she thought the request was for the tribes to come to the full Board. Maynard cautioned about the government-to-government relationships with tribes. Paula said DOE could approach the tribes to see if they are interested in sharing their thoughts on RCBRA with the Board. The committee will provide Paula with an outline on what they would like from the tribes. Jean asked to be involved in drafting the request.
- Potential February meeting topics:

- 324 Building update – Shelley, 30 minutes
- RCBRA Update, next steps based on Board input – Dale, Liz, Shelley, Tony, 60 minutes
- Outflows/intakes update – Shelley, 60 minutes
- 6-month committee accomplishments – 30 min
- 6-month committee business and workplan – 45 min
- RCRA permit – TBD. Potential PIC issue, or joint.
- SWBG advice – Dale, 120 minutes

Attendees

HAB Members and Alternates

Tom Carpenter (phone)	Susan Leckband	Dick Smith
Shelley Cimon	Liz Mattson	Bob Suyama
Dale Engstrom	Jerry Peltier	Gene Van Liew
Harold Heacock	Maynard Plahuta	Jean Vanni (phone)
Steve Hudson (phone)	Gerry Pollet	

Others

Wayne Johnson, DOE	Dieter Bohrmann, Ecology	Drew Butler (phone)
Paula Call, DOE-RL (phone)	Rick Bond, Ecology	Dale McKinney, CHPRC
Briant Charbonneau, DOE-RL	Elis Eberlein, Ecology	Janice Williams, CHPRC
Jill Conrad, DOE-RL	Ron Skinnarland, Ecology	Nicole Addington, EnviroIssues
Nick Ceto, DOE-RL	Ginger Wireman, Ecology	Susan Hayman, EnviroIssues
Mark French, DOE-RL	Emy Laija, EPA	Hillary Johnson, EnviroIssues
Jim Hansen, DOE-RL	Rod Lobos, EPA	Duane Jacques, WCH
John Sands, DOE-RL		Jeff Lerch, MSA
Doug Hildebrand, DOE-RL		Tom Marceau, MSA
Alex Teimouri, DOE-RL		Barb Wise, MSA
		Anna King, NPR
		Jonathan Matthews, Nez Perce Tribe
		Brett Simpson, Vista Engineering
		Maria Skorska, WRPS

Attachment 1 – River and Plateau Committee Transcribed Flip Chart Notes

Comments – HAB Advice SWBG

1. Characterization advice pts
 - Trade-off between degree of characterization vs. “just cleaning it up”
 - Use findings to determine how much to continue digging up/when to stop → monitor the process
 - Follow a “methods-based”/observational approach for C.O.C.

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1. Characterization (cont'd)
 - Use of angle probes under trenches
 - EPA → write advice for different
 - Kinds of trenches/groups of trenches
 - Characterization & remedy/cap
 - Lack of knowledge about chemical waste
 - Venting of volatile gasses
 - Process that encourages DOE to “process” sites with known contents

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1. Cont'd Characterization
 - Subsidence – config of material in trenches
 - Have to evaluate cost – maybe better than capping & monitoring
 - #5 – concern not with characterization above ponds, but material in ponds
 - Need for sufficient characterization to spend \$\$ now, rather than more in the future.
2. Caissons
 - Add “even if they are removed”
 - Should have more concern w/caissons (more radioactive materials)
DOE: “High dose”

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2. Caissons (cont'd)

3. Groundwater monitoring

- GW monitoring system for SWBG not compliant w/RCRA (BGs w/o GW monitoring down gradient)
- Soil column monitoring may be more beneficial – early release detection & response plan
- Vadose zone monitoring approach
- “Thorough” → “compliant”
- GW may show contamination that currently exists, that leads to need for soil column monitoring

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3. GW monitoring (cont'd)

- Monitoring should be equal or greater than minimum reg. requirements
- DOE → Needs to be adequate

4. Risk

- Add Dale’s “opening comment”

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Overall thoughts

- Limited resources, may need to prioritize
- Organize advice by “overarching principles”
- “Winnow down” to policy advice, and put other detail in a white paper, or stratify into subsequent advice

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Comments on HP Advice

1. Expand preservation of processing facilities (PFP) – may be more important/equal to B Reactor
2. Bullet #1 – include coordination with other agencies
3. Add reference to Native cultural resources (tribal related)
4. Photo grade poster photos, continue & encourage

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Comments on HP Advice

5. Facilities vs. artifacts – concerned that advice proposes to retain PFP – problem w/that
6. Concerned with “success” of B Reactor – still an open
7. Preserving what is sacred to other cultures (prehistory)
8. Remove last bullet
9. Second bullet → require cultural sensitivity training
10. Bullets 3 & 4 → think “experientially”
-What this place was. Don’t want to lose this

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Comments on HP Advice

11. Video tours?
12. Web presence? – Cult program surveys, etc. (1996 – 2006)
13. Last sentence, last bullet → funding problem

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1. How are synergistic effects captured in minimum?

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-
1. How to communicate risk?
 - Diff between synergistic/cumul.
 - Other
 2. What cleanup standard under which regulation will you use?
 - Will other sites need to go into feasibility study? (DOE → yes)
 - Will use current MTCA stds
 3. Useful to have a chart that show risk range, remediation goal, MTCA, etc. → ease of comparison
 4. How can HAB/Public have meaningful review/dialogue before decisions are made (e.g. before RI/FS out)

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5. Better explain how at 75 years rad w/decay below threshold
 - What actions does this include? Instit. Controls
 6. River component sampling in River – when will this come out
 7. How are wastes like those assoc. with soil under K-East Reactor (and others like them) being addressed – contributions to area-wide risk BRA

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Follow Up

1. Sufficiency of groundwater monitoring assoc. with SWBG (possible workshop) – How it fits in with O.U. groundwater (below SWBG?)
2. SWBG feedback to Dale (through Susan H) + draft by Jan 28
 - Followed by IM meeting in early Feb to bring draft advice to Feb RAP
 - Target April Board mtg for advice
3. Cult/Hist perspective tour
4. HP Advice → Maynard, Jerry to rework advice in prep of discussion on committee call Tuesday AM (GTM)

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5. Outflows/Intake IM update – Shelley prepare in coord w/Paula C
Susan H. to distribute to committee, send ?? to Susan H to get to Shelley to frame Feb.
committee discussion
 6. Continue monthly update on Bldg 324-B
Add more time
 7. Public process for RCBRA
 8. How to communicate risk (thinking ahead for plans)
 - Difference between cumulative & synergistic
 9. Uranium potentially coming from U.S. Ecology sites →
What are triggers to make CERCLA?
EIS says it will eventually reach groundwater. Where is this addressed?

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Follow Up

10. Provide RCBRA input to Susan H. by Jan 28
 - Issue managers review feedback and identify next steps/potential advice – April
 - HAB presentation w/sounding board (Feb?) “policy level” presentation
 - Summer workshop on RI/FS docs
 - HAB hear from tribal perspectives
 - DOE check w/tribes on behalf of HAB
 - Issue managers suggest topics
11. Conversation w/agencies regarding request for documents/info → “layered request” →
EIC w/agencies

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