

DRAFT MEETING SUMMARY
HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE MEETING
October 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

Pam Larson, City of Richland and River and Plateau Committee (RAP) chair, welcomed everyone to the meeting and led a round of introductions. Pam reviewed the purpose of the meeting.

Susan Hayman, facilitator, said the Department of Energy (DOE) submitted changes to the August meeting summary. EnviroIssues incorporated changes and language clarifications that did not conflict with the meeting notes. The committee adopted the August meeting summary.

Ellen Mattlin, DOE-Richland Operations Office (DOE-RL), provided an overview of a recent incident at the Plutonium Finishing Plant (PFP). A fire began in the ventilation system of the plant on August 29, originating in an electrical fan that failed. The area was evacuated while the fire department extinguished the fire. Ellen said the fan that failed has been isolated for analysis, and DOE is looking at the remaining six fans to ensure they are operating properly. Four fans are

currently up and running while two require repair. She said there are now weekly tests on each fan that will run until the facility is completely demolished. DOE and contractors will be testing all safety equipment that will be operable until the end of the project in 2015.

Mark Wright, CH2M Hill Plateau Remediation Company (CHPRC), said the PFP has a backup ventilation system that is steam powered. The two steam ventilation system runs on a 30 pound and 100 pound steam system; the 30 pound system builds heat, and the 100 pound system is used to run backup turbines should there be a loss of power and the fans can't function. He said the steam comes from a small boiler package near PFP, which is operated by Johnson Controls. The steam system is only used if the plant loses electrical power.

Ellen provided a short overview of progress at the PFP, noting which areas are ready for demolition. Workers are working on small areas of remote mechanical lines, removing glove boxes, and planning to begin work on the chemical room.

On a separate note, Paula Call, DOE-RL, said DOE recently received a letter from the Defense Nuclear Facilities Safety Board (DNFSB) that expresses concerns with the Waste Encapsulation and Storage Facility and its maintenance program. Paula said DOE will develop an action plan and plans to discuss the issues with the DNFSB. She said she will provide additional information as it becomes available.

River Corridor – Draft 100 K Proposed Plan (joint with PIC)

Issue manager introduction

Dale Engstrom, Oregon DOE, provided an overview of the Draft 100 K Proposed Plan (Proposed Plan), noting that the document was only released to the Board one week ago and many committee members have not had a chance to review it. He said the Proposed Plan is part of the first of the remedial investigation/feasibility studies (RI/FS) to be released for the final decisions along the River Corridor. It sets the approach for how the RI/FSs will be done for the remaining five sites. Dale said the committee will be interested in the assumptions used, proposed cleanup levels, and how conclusions were made based on the analysis used. Dale provided slides detailing thoughts from the issue managers on the Proposed Plan following the committee discussion.

Agency presentation

Jim Hansen, DOE-RL, provided a presentation on the 100 K Area remediation, summarizing the draft RI/FS and Proposed Plan. Jim's presentation is provided as Attachment 1.

Jim said Revision 0 of the Proposed Plan will be provided for public comment after comments from the regulating agencies have been resolved and incorporated. RAP is able to review the Proposed Plan and RI/FS before the regulators have provided their comments/changes. He noted that there may be substantial changes before the document goes out for public comment, and

DOE is not required to respond to every question and comment from the public on this draft. He noted that EPA will write the ROD.

Regulator perspective

Chris Gazzetti, US Environmental Protection Agency (EPA), said EPA is currently reviewing the Proposed Plan and RI/FS and have already provided initial changes to DOE. He said the final version of the Proposed Plan will be ready for official review in the spring, with the record of decision (ROD) to follow at the end of 2012. He suggested the committee review the documents after EPA and the Washington State Department of Ecology (Ecology) provide their comments to see if anything was missed. He noted that Board comments or advice could be provided to the agencies by February.

Brenda Jentzen, Ecology, said Ecology will review the documents according to the memorandum of understanding for document review: Ecology will provide their comments to EPA, who will choose which comments to send forward to DOE. Brenda said Ecology will complete second in-house review on the 100 K Area ROD to see how it might impact the Ecology decision on the D/H Area. Ecology may choose to send those comments directly to DOE. She said she believes there to be a substantive amount of work left to be done on the documents.

Committee discussion

The following are the key points noted during committee discussion:

- EPA is the lead regulator for K Area.
- Waste sites are divided by different sources of contamination; the identification of additional waste sites is typically when a component of an existing waste site is found to have its own characteristics. There are currently 165 waste sites in the K Area.
- The TPA milestone is to submit to the regulatory agencies the six RI/FSs/PPs by December 31, 2012. The documents are a high priority for the agencies and have been fully funded and are on schedule for Fiscal Year (FY) 2012. Three more RI/FSs/PPs are currently over 50 percent complete.
- It was requested that DOE consider a 60 day public comment period on the 100 K Area Proposed Plan, as it is a template for other plans and RI/FSs. The committee acknowledged that the public may want to review the Proposed Plan along with the River Corridor Baseline Risk Assessment (RCBRA) for comparison, and the agencies should be prepared to allow additional time if requested. DOE analyzed exposure scenarios based on the 2007 Model Toxic Control Act (MTCA) standards. The HAB has previously advised DOE not to evaluate with models any less stringent than what was evaluated for the interim action record of decisions (IRODs). RCBRA should provide information on how many waste sites will fail to meet cleanup levels under other reasonable maximum exposure scenarios, including the Native American live along and fish scenario. DOE

provided a handout of a table that should have been included in the 100 K Area RI/FS that identifies cleanup goals and how they were derived (Attachment 2). DOE issued an Errata sheet to address that omission error.

- RCBRA identified cesium and strontium as the radionuclides affecting human health in three waste sites.
- There is concern that the agencies do not know what is and what is not leaching under the reactor sites, including the K Area. DOE has not bore-holed diagonally underneath the reactor sites but does have data that analyzes the groundwater around the reactor sites. A report was recently completed that looked at information from drilling under reactor sites N, K, and H in the groundwater units. DOE will provide a summary of the report at a later time.
- Soil flushing is the act of pushing waste through the soil column to move the mobile contaminants into the groundwater and through the robust pump-and-treat system that protects the Columbia River. Biological infiltration creates conditions within the soil column to reduce contaminants such as hexavalent chromium. Biological injection is the act of drilling boreholes/wells into the “head house” of high contamination area (e.g., chromium) and injecting chemicals into the soils. All three activities are able to be used on site because the pump-and-treat system is able to capture the contaminants released by these activities.
- The method of evaluation used in RCBRA changed to account for clean backfill in waste site pits because of updated EPA guidance that went from calculating radiological dose to risk. The RA looks at cleanup verification data from the bottom of sites, while the RI/FSs will also look at backfill material and other elements.
- A separate evaluation of groundwater is in Chapter 6 of the 100 K Area RI/FS. RCBRA only analyzes current conditions for groundwater. Future groundwater is not evaluated, because there is an active pump-and-treat system in the 200 Area. The Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS) evaluates future groundwater conditions but it is not a requirement for risk assessments. 200 Area plumes and future plumes are not addressed in the 100-K RI/FSs, but will be a big issue for the 300 Area. The 200-UP-1 Operable Unit will evaluate future transport.
- Because contamination under the K reactor was one of the compelling reasons to remove it, the Proposed Plan needs to demonstrate the correlation of waste sites to the data; what contaminants are found below the reactors; and what the remediation plan is for each site. DOE said it heard those concerns and there will be a decision on every waste site.
- Alternative 2 of the Proposed Plan proposes the use of many unproven technologies and will take years to implement. Alternative 3 can be implemented earlier and appears to have long-term effectiveness. It seems to be a viable option. The 100 K Area RI/FS

provides a large table that identified contaminants and remediation plans for each waste site. It is incorporated into the Proposed Plan by reference. More information may be provided in the Proposed Plan as the draft nears finalization.

- Public meetings on the Proposed Plan will tentatively be held in the March 2012 timeframe. These will be TPA meetings. Meetings are tentatively planned to be held in Hood River, Portland, Seattle, and the Tri-Cities.

Issue manager wrap-up

Dale reviewed the contaminants of concern evaluated in the Proposed Plan and noted that many contaminants are left out, including plumes that should be analyzed if the document informs the final ROD. He said some terminology is confusing and the land use scenarios used to determine cleanup levels go against HAB advice. Dale noted that some of the technologies identified for use in the Proposed Plan don't seem likely to work for all contaminants.

Dale reviewed slides (Attachment 3) comparing Alternatives 2 and 3 of the Proposed Plan, concluding that Alternative 3 seems to be the better alternative for the following reasons:

- Alternative 2 depends on unproven or not completely effective technologies.
- Alternative 3 requires shorter implementation time and provides long-term effectiveness.
- A significant amount of contaminants will still remain in the soil past 2037 under Alternative 2, while Alternative 3 removes more.
- Alternative 2 leaves immobilized waste in place; Alternative 3 removes it.
- A few waste sites along the river in the 100 K Area will be left in place under Alternative 2; Alternative 3 will remove them.

Dale said he would like the issue managers to have a lot of interaction with DOE and EPA and to work cooperatively with the agencies to review the Proposed Plan and RI/FS. They want to provide input to the process to make this document a positive example for the remaining Proposed Plans and RI/FS. Dale said Board advice would likely come forward in February, depending on what the issue managers determine after more review of the draft document and interaction with the regulators.

River Corridor Baseline Risk Assessment – Ecological Risk, Vol. 1, Draft C and Columbia River Component Ecological Risk Assessment (joint with PIC)

Agency presentation – Ecological Risk Assessment

Jim provided a presentation on the RCBRA Ecological Risk Assessment. The presentation is provided as Attachment 4. Jim noted that the RCBRA is an overarching document for the River Corridor that will feed smaller documents for each operable unit.

Regulator perspective

Larry Gadbois, EPA, said he reviewed Chapter 7 of the 100 K Area RI/FS for a summary of the Ecological Risk Assessment. He said DOE followed EPA's work plan for the area and did a good job explaining what was conducted and the subsequent results. The cleanup numbers provided in the Ecological Risk Assessment will be the drivers for cleanup on site.

Beth Rochette, Ecology, said Ecology is overwhelmed by the current review process, and will primarily use the Ecological Risk Assessment as a reference for reviewing the 100 K Area RI/FS rather than providing separate comments.

Committee discussion

The following are the key points noted during committee discussion:

- Radiological contaminants are not typically of ecological concern, because in cleaning up radionuclides to be protective of human health, ecological systems are protected. The cleanup levels in the Ecological Risk Assessment were driven by mammals. DOE examined whether screening levels were overprotective but determined to keep the screening levels the same, which is consistent with Ecology levels. Chemicals pose the greatest risk for ecological receptors; mercury will be a challenge.

Tribal representatives at the committee meeting said they will be reviewing the Ecological Risk Assessment from the most conservative perspective, which is the protection of the environment. They will review the document and try to utilize tribal scenarios rather than non-tribal scenarios. It is very early in the process. They need to identify what additional information they will need to gather to make a decision/provide input.

Issue manager wrap up

Dale said Ecology uses the same cleanup levels as are outlined in the Ecological Risk Assessment, with some exceptions along the Columbia River. He said it is not a primary document of concern for the Board, as the Health and Human Risk Assessment will be the Board's focus. Dale suggested committee members send their comments to EnviroIssues and the issue managers as they review the document; comments will be collected to determine if they will provide advice in 2012. He said he would like to work closely with the agencies during the review period and during the development of any advice.

Agency presentation – Columbia River Component Ecological Risk Assessment

Jim provided a presentation on the Columbia River Component Ecological Risk Assessment (Columbia River Component). The presentation is provided as Attachment 5. The presentation covered sampling of fish in the Columbia River and that this data feeds into the River Corridor RI/FS documents.

Regulator perspective

Beth said Ecology has yet to receive the Columbia River Component and is determining how they will treat it, whether as a primary or secondary document.

Larry said the regulators were involved in the data quality objectives process to set up sampling and work plans for the Columbia River Component, but has not seen this RA. . He said they have reviewed most of the data report that resulted from the sampling. He said the agencies took the culmination of work done in the Columbia River into account and identified other data gaps while developing the work plan.

Committee discussion

The following are the key points noted during committee discussion:

- The Columbia River Component features data from new sampling, but also references historic fish data collected on site, including data from the Pacific Northwest National Laboratory (PNNL).
- No contaminants of concern were identified for the N Area, due to the fast dissipation of strontium in water. The biological threshold for strontium is much higher than the drinking water standard, so while the contaminant may be exceeding the drinking water standards, it is nowhere close to the biological threshold.
- Selenium is an element that will be evaluated in the N Area RI/FS. DOE believes no process at Hanford would have released selenium. High levels can affect water fowl. Selenium and chromium were identified as contaminants of concern in the N Area and exceeded water standards downstream in the Columbia River but were eliminated from concern through the refinement process.
- Prior PNNL samplings of the Columbia River were only conducted downstream of the Vernita Bridge. This study was conducted upstream and downstream, and included reference areas from Lake Wallula, the Snake River, and the Yakima River. It focused on radionuclides. Reference areas and irrigation returns influence what fish might have been exposed to. Uranium was found in one irrigation return due to fertilizer that contained phosphorous elements. Fish samples were collected from certain areas within a defined location in order for the samples to be collocated. Fillets from five fish are put into one sample, which is a standard methodology for fish sampling. The sampling uses more fish in order to find a better average and upper limit for contaminants. Fish sampling is normally conducted in human health assessments because people eat fish.

Issue manager wrap up

Dale said he hopes to see the Columbia River Component become a primary document and asked RAP to consider it an important topic. He asked that committee members provide their comments on the document (to be released by the end of the week) to EnviroIssues before Thanksgiving.

River Corridor Baseline Risk Assessment – Health and Human Risk Assessment, Vol. 2, Rev. 0 (Joint with HSEP/PIC)

Agency presentation

John Sands, DOE-RL, provided a review of changes made to the Health and Human Risk Assessment since the previous draft, including changes made as a result of HAB advice. His presentation is provided as Attachment 6.

Regulator perspective

Beth said Ecology submitted comments on the Health and Human Risk Assessment, but rather than go through a comment resolution process, they asked that their comments be addressed in the 100 K Area RI/FS. She said Ecology will be reviewing the RI/FS to see whether or not their comments were addressed; they will resubmit their comments if they were not. Beth said Ecology thinks arsenic should be cleaned up to the Hanford background level, and they will provide input on arsenic issues.

Larry said EPA has provided many comments on previous drafts of the Health and Human Risk Assessment and are now geared toward reviewing the 100 K Area RI/FS to see how their comments were incorporated/addressed. Larry spoke to the different regulating laws within EPA that apply when deciding whether to cleanup pesticides (e.g., arsenic) to background levels or further. He noted that there is a mixed history between where EPA has cleaned up pesticides and where they haven't. He said the final RODs for the F Area and H Area will address how EPA will address the cleanup of pesticides.

Committee discussion

The following are the key points noted during committee discussion:

- The committee discussed their confusion in trying to determine cleanup levels and contaminants in the tables provided by DOE, specifically Table 8-3. Ecology noted that walking through the cleanup levels to understand what DOE is proposing would be a good conversation for a future RAP meeting.
- Arsenic and lead on Site most likely came from the Hanford orchards, and sampling data are consistent with what is available in the historical data. DOE has conducted surveys of the orchards using historical information and aerial photography and believes arsenic and lead to be from the orchards, because they were commonly found together in a ratio that is consistent with those contaminants found in the orchards. DOE is unaware of any processes at Hanford that could have contaminated the ground with arsenic. Parts of the orchards are co-located with waste sites that have interim cleanup decisions in place.

Issue manager wrap up

Dale said an arsenic-based herbicide for slowing the growth of vegetation has been used on Hanford waste sites.

He asked committee members to review the agency responses to the HAB advice on the RCBRA Human Health Risk Assessment and determine if they are satisfied with the responses and results. Satisfaction levels will determine whether the committee goes forward with review of the document on its own, or as a RCBRA package.

Committee Business

Review follow up items

Susan Hayman reviewed RAP follow up items:

1. Potential for 60-day public comment on 100-K Proposed Plan – including workshop on the risk assessment (RAP/PIC)
2. Susan Hayman will follow up with Dick Smith on his questions concerning measurements of contaminants and leaching beneath the reactor sites.
3. Discussion of cleanup levels for River Corridor.
4. Dale will work with the agencies on clarification of Table 8-3 of Proposed Plan and provide an update for RAP.

2012 work planning based on agency/Board priorities

Susan Hayman distributed the Board's priorities for Fiscal Year 2012, noting that RAP will need to look for opportunities for efficiencies and ensure work plans meet the Board's priorities. She asked the committee to consider hosting partial day meetings as webinars.

The committee comprehensively updated their 6 Month Work Plan (Attachment 7) and December Meeting Topics Table (Attachment 8). The RAP Issue Manager Table will be updated at the beginning of the December meeting.

Attachments

Attachment 1: DOE Presentation: 100-K Area Remediation, Summary of Draft RI/FS and Proposed Plan

Attachment 2: DOE: Errata Sheet Summary of 100 K Operable Unit Proposed Cleanup Levels

Attachment 3: Issue Manager Presentation on Proposed Plan Alternatives

Attachment 4: DOE Presentation: RCBRA Ecological Risk Assessment Overview

Attachment 5: DOE Presentation: Columbia River Component Risk Assessment, Vol. 1: Screening Level Ecological Risk Assessment (DOE-RL-2010-117, Draft A)

Attachment 6: DOE Presentation: RCBRA Health and Human Risk Assessment, Vol. 2

Attachment 7: RAP 6 Month Work Plan

Attachment 8: RAP Meeting Topics Table

Attendees

Board Members and Alternates

Shelley Cimon	Susan Leckband	Dave Rowland
Sam Dechter	Liz Mattson	Dan Serres
Dale Engstrom	Sarah McCalmont	Dick Smith
Harold Heacock	Vince Panesko	John Stanfill
John Howieson	Jerry Peltier	Bob Suyama
Steve Hudson	Maynard Plahuta	Gene Van Liew
Pam Larsen		Jean Vanni (phone)

Others

Paula Call, DOE-RL	Dib Goswami, Ecology	Mark Wright, CHPRC
Jonathan Dowell, DOE-RL	Brenda Jentzen, Ecology	Bert Day, CH2M Hill
James Hansen, DOE-RL	Beth Rochette, Ecology	Peter Bengston, WCH
Ellen Mattlin, DOE-RL	Sharon Braswell, MSA	Duane Jacques, WCH
John Sands, DOE-RL	Cole Lindsey, MSA	Jeff Lerch, WCH
Jamie Zeisloff, DOE-RL	Barb Wise, MSA	George Klinger, CTUIR
Larry Gadbois, EPA	Ron Bruce, CHPRC	Alex Nazarali, CTUIR
Chris Gazzetti, EPA	David Dooley, CHPRC	Tom Rogers, Washington State Department of Health
Emy Laija, EPA	Bruce Ford, CHPRC	Susan Hayman, EnviroIssues
Madeleine Brown, Ecology	Sonja Johnson, CHPRC	Melissa Thom, EnviroIssues