



FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE**

*August 8, 2017
Richland, WA*

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

Opening

Dale Engstrom, River and Plateau (RAP) Chair, welcomed committee members and introductions were made. The April meeting minutes were approved by consensus.

Announcements

There were no new announcements made.

CERCLA Five-Year Review

Dale Engstrom, RAP Chair introduced the topic of the CERCLA Five-Year Review and opened the discussion of the flowchart “Choosing a Protectiveness Determination.” Members took this time to further review the flowchart provided at the June Board Meeting.

Committee Member Questions (Q), Responses (R), and Comments (C):

Note: This section reflects individual questions, comments, and agency responses.

Q: “What is a RAO?”

R: “Remedial Action Objective.”

R: “A Remedial Action Objective is what is written into a record of decision to determine if we are progressing in clean-up. Are we doing what we said we were going to do? Are we cleaning up groundwater to drinking water standards? Are we putting controls in place so no one is exposed to contaminated soil? That is where the RAOs come in.”

Q: “Is this diagram driven by procedure or law. I am not sure what it is we are discussing.”

R: “The CERCLA process is evolving here at Hanford, as you do not see this kind of process at a lot of places that have Super-Fund style cleanups. The CERCLA process has taken us through the concept; What is it that we are trying to do, as the Remedial Objective and is where we are going protective or not? Do you have enough information to know if it is being protective or not? Are there exposures?”

C: “If the ground water doesn’t meet standards, is that protective and will it keep people safe in the short term. Is this what you are driving towards? If so, then we need to be responsible and pass our judgement onto the Hanford authorities.”

C: “These are places at Hanford, as listed on the flowchart, have already received a Record of Decision (ROD). All of the operable units (OUs) that have not received a ROD, are not in the Five-Year Review. The whole Five-Year Review process is about whether we are doing what we need to do to be protective. Some of the objections of this process have to do with much of the 200-Area not having a ROD.”

R: “We do have a decision in the 200-Area, but those remedies have not been constructed yet, so if you look at the diagram when looking at whether or not the trigger was met and you see that the remedy is under construction, you then see that the protectiveness statement for those decisions are deferred, as those remedies have not been implemented yet.”

Q: “What other options would there be regarding the logic of this diagram?”

R: “The top part of the graphic is actually taken from an Environmental Protection Agency (EPA) graphic. The Department of Energy-Richland Operations (DOE-RL) just added the bottom information of the OUs.”

Q: “If a remedy is not working well, what would trigger a better remedy approach?”

R: “Is the remedy still protective? When we had contaminated levels that showed that there could be exposures happening, we had to do something. We need to look at what actions need to be taken. Those are triggers to go out and look at other technologies. If we say this is not protective then that would be a trigger.”

C: “I think we should discuss 200-ZP-1 and ask if it is protective, as there is a lot of things we don’t know.”

R: “When we look at protectiveness, ZP-1 is a groundwater OU. So, in the tank farms and the vadose zones, contamination from those OUs are not being considered when we look at ZP-1. They would be considered if we started to see increased levels of a new contaminate or if we started to see increased levels of contaminants that we know are there. In ZP-1 we are not going to wait until a Five-Year Review to make adjustments to the pump and treat system. That is something that is looked at consistently.”

Q: “What about cost? We implemented something, but it looks like we going to be doing it until 2030. What would trigger going to the industry and looking for better technology in a Five-Year Review? Does that even happen?”

R: “Yes, when it comes to looking at any new technologies that are out, which is part of the effort. There is the one part of the Five-Year Review where you ask is it protective and are people safe, but there is a broader question that is asked. Are there any new technologies that should be considered? That is written into the Five-Year Review process.”

Q: “I look at the top graph of the flowchart and then I see arrows. It says there is one protectiveness statement for each OU that is in the list below. We have apparently agreed that there are many OUs that are not on the table in this lower table of the flowchart. What is the ratio between the OU numbers that have RODs and the OUs that do not?”

R: “The protectiveness statement is issued for a ROD. The ROD identifies all of the OUs, for example, in the last column, 100-FR-1/2 and 100-IU-2/6. Those OUs are in a single ROD, so you will have a protectiveness statement for the ROD.”

Q: “Are there many OUs that do not have a ROD that applies to this?”

R: “Yes, we do have many OUs that do not have a decision, mostly in the 200-Area. For example, BC-1, PO-1, and BP-5, those are interim actions but there are no RODs, so eventually those will need to be included in a ROD.”

Q: “Is this a long-term task to get each one of the OUs to have RODs?”

R: “Absolutely, our current Tri-Party Agreement (TPA) Milestone to complete all of the RODs at the Hanford site in 2042, so yes, it is a long-term effort.”

C: "I think what we need as a committee is a list of the OUs and status of these on a one-page document."

C: "I think what would help are links on the Five-Year Review that would link you back to the ROD."

R: "If you look at the Five-Year Review, the very first few pages have a very concise table that are on an OUs level and explains if the remedy is considered protective. If not, when will it be protective."

Q: "Is the Five-Year Review available?"

R: "It is available on the Hanford website. There was an ad in the newspaper stating that it was complete and ready for the public to read."

Q: "Does that mean all of the listed OUs on the left side column are not going to be reviewed?"

R: "For those OUs that do not have a ROD they will stay in that no-protectiveness statement box until they do have a ROD for them."

C: "We will put this on the workplan for this committee to talk about it in October."

C: "CERCLA was developed as a the superfund idea. The superfund idea came around in the 1970s. In CERCLA, they go through a process, which uses a remedial investigation to identify a problem. Then it goes through a feasible study to determine what remediation processes there are and which is best. After that, there is a public information period where the public is allowed to comment. Starting five years after the ROD is finalized, they have a Five-Year Review."

Open Forum

Dale Engstrom, RAP Chair introduced the topic of open forum. Dale explained to RAP members that the idea behind the open forums is that it provides an opportunity for committee members to bring topics for discussion that may not be on the agenda.

Members took the opportunity to discuss a multitude of different items of importance during this time. Items discussed are reflected below.

Committee Member Questions (Q), Responses (R), and Comments (C):

Note: This section reflects individual questions, comments, and agency responses.

C: "PUREX Tunnel 1 is created from wooden timbers which are stacked up as a square. It is eight rail cars long. Once Tunnel 1 was filled, Tunnel 2 was constructed. Tunnel 2 is built out of steel sheeting. Once they started filling the dirt on top, Tunnel 2 collapsed twice. Since that was not working, concrete beams were added and bolted to the steel for support. Tunnel 2 holds twice as many rail cars as Tunnel 1. So, over the life of PUREX, the workers have been putting contaminated machinery on these rail cars and pushed them into the tunnels. These tunnels have a slight down grade, so whatever rolls down there, stays down there. I believe when they put this machinery, it was measured at about 40 rads per hour of radiation. When Tunnel 1 had its recent failure, the timbers collapsed and the fill dirt fell in. There was an immediate concern that some of that radiation would come out. They did a survey around the Tunnel 1 and the survey determined that they did not find anything. They went back with sand and filled the hole. They decided they were going to fill the tunnels with grout, but they would use the kind of grout that they

could come back and saw out later. A report came out from one of the contractors that the grout they were looking at is the same one used from one of the K-Basins, which is really heavy grout. The contractor has not decided that they are going to do something different. Can they do that?"

C: "There is a letter that came out last week that DOE wants to convene an expert panel, which will review what corrective actions will need to be taken for Tunnel 2. We would like to know about this expert panel?"

C: "Now that we have a greater sense of what may be in the budget, the cesium/strontium capsules issue and the WESF facility got prioritized pretty heavily in the budget meeting. I'm curious now that it looks like there may be more money to work with whether it is on schedule."

R: "Maybe bring this topic to the October committee meeting for an update."

Q: "Are we thinking about land transfers? The monument is there."

R: "Historically, the committees have not been involved with land transfers."

C: "The 100-BC ROD is waiting to be signed."

R: "It is not signed yet."

C: "Jim Hansen has been promoting the idea of shallow rooted plants at Hanford being the reason that a shallower (10 foot) clean up depth would be appropriate for the 200-Area. It has been shown that sagebrush alone sends roots to 25 or 30 feet as a rule. The cleanup depth is one of the cleanup principles the HAB has already given advice on. This committee should start discussing the cleanup principals again and why we don't think this change is appropriate."

C: "I would like this committee have a copy of their workplan at every committee meeting."

C: "It might be worth keep an ear on the process of CH2MHILL being purchased by Jacobs, as it may have an effect on the 324 building and any of the CH2MHILL activities on site."

PUREX Tunnel Update/Emergency Response

Agency Presentation

Dale Engstrom, RAP Committee Chair introduced the topic of the PUREX Tunnel update and Tom Teynor.

Tom Teynor, Federal Project Director with DOE-RL, provided committee members an update on the ongoing progress at PUREX.

Key points from Tom Teynor's presentation include the following:

- The contractor for Tunnel 1 is working with the subcontractors with bid evaluations. The project for filling Tunnel 1 with grout is set to begin in early October 2017 with completion anticipated for the end of calendar year.

- In response to the administrative order with options to proceed with Tunnel 2, it was decided with input from DOE Headquarters to assemble a “Best & Brightest” panel. The “Best & Brightest” panel will look at the options for Tunnel 2 to determine which options are feasible. This will include recommending a path forward.
- Jim Owendoff, acting EM Assistant Secretary, will be reviewing resumes for the “Best & Brightest” panel participants. Recommendations are currently being provided to DOE Headquarters.
- During construction of Tunnel 2, there were two collapses before the concrete arch supports were installed to support the “ribcage” of the tunnel.
- Ecology issued an administrative order on May 10, 2017, directing two corrective actions. Action One was to conduct engineering evaluations of Tunnels 1 & 2, which has been completed. The engineering evaluation report of Tunnel 1 determined that it is an imminent hazard of collapsing again, so the process of grouting the tunnel will move forward as planned. Action Two was to submit a draft report detailing corrective actions to ensure safe storage of waste in Tunnels 1 & 2, which has been completed. There is enhanced maintenance surveillance being conducted. This surveillance uses different types of monitoring devices on top of the soil to detect any kinds of shifts.
- Old records of the tunnels are being evaluated to determine the inventory of the tunnels. Jeff Lerch who is with the contractor, briefly spoke about the information they are looking for while searching the old records. He stated that it is an ongoing process and that there has not been a lot of new information found.
- Tunnel 2 potential options are being reviewed. List of potential mitigation options:
 - No further action baseline.
 - High-Density Polyethylene Cover.
 - Soft-Surface Tent Cover.
 - Hard-Surface Tent Cover.
 - Pre-Engineered Building Construction.
 - Injection of Poly Foam Void Fill.
 - Controlled Collapse in Place.
 - Sand or Clay Void Fill.
 - Grout Void Fill.
 - Stored Waste Retrieval.
 - Surveillance and Monitoring Enhancements.

Tom discussed the next steps for Tunnel 1 & 2. Tunnel 1 will be grouted to improve the stability, provide additional radiological protection, and increase durability while not precluding future remedial actions or final closure decisions. The grouting operations are expected to be completed by the end of calendar year 2017. Tunnel 2 is currently being monitored daily through visual observations and radiological surveys of the exterior. This will continue until the stabilization response actions are completed. A “Best and

Brightest” panel will be convened to perform a detailed alternative analysis for the selection of the final corrective action for Tunnel 2.

Agency Perspective

Stephanie Schleif, Washington State Department of Ecology (Ecology) provided members her perspective on the PUREX Tunnel update and the corrective actions from Ecology. On May 10, 2017 Ecology issued three corrective actions as part of an Administrative Order. Corrective Action One was due July 1, 2017 for an engineering evaluation report of both Tunnels 1 & 2. It was found that Tunnel 1 was at an immediate risk for collapsing and Tunnel 2 had a high risk of a localized collapse. There are certain design elements that are over stressed for Tunnel 2. Corrective Action Two was received on August 1, 2017, which was a draft report of the corrective actions that needs to be taken to continue to store waste in those tunnels. We have already agreed to the pathway of grouting Tunnel 1. For Tunnel 2, we are looking at all of the options. They are suggesting a phased approach to those options for Tunnel 2. The first thing they are doing is an enhanced monitoring surveillance followed up with convening the “Best & Brightest” panel. Ecology agrees that the panel has merit, but want to know schedule for convening the panel and making the decisions for the preferred options. Ecology requested that schedule by August 18, 2018. The main concern with corrective action two is the timing for when corrective action three is due. Corrective Action Three is the draft permit modification that is supposed to detail all of the interim closer steps they are taking for grouting Tunnel 1. When we wrote the Administrative Order, we thought we would have the information for Corrective Action Two and the draft report. The draft permit modification is due October 7, 2017.

PUREX Emergency Response/Take Cover

Richard Bloom, Health, Safety, and Environmental Protection Committee Vice Chair introduced the joint topic of the PUREX Emergency Response & Take Cover practices and Stephen Sanders.

Stephen Sanders provided committee member an overview of the emergency response and take cover during the PUREX incident. There is a report coming out soon with information from the interviews conducted from the workforce and tapes from the emergency management. Department of Health (DOH) was verifying that we did not have a release during the incident and that people were safe. We had a lot of feedback from DOE-RL and Oregon Department of Energy (OR-DOE) regarding the emergency response. We had 10 million plus hits on the website and Facebook during and after the incident. There was people from 68 countries that have looked at the website. We have gone back out to do trainings and inform people in the workforce. Folks are supposed to call the Protective Action Coordinators for relief. We meet every month or so and talk about how we gather different options for take cover actions, etc. During take cover, the people cannot eat and drink, as they could accidentally ingest radioactive substances, which could make them sick. People were doing physical work before the take cover and they were thirsty, so we are looking at that process of take cover. We are trying to figure out smarter ways when a take cover occurs that there are facilities that has restrooms, water, and food.

Committee Member Questions (Q), Responses (R), and Comments (C):

Note: This section reflects individual questions, comments, and agency responses.

Q: “Can you tell us when they will convene this Best and Brightest team and how many?”

Re: “There will be five or six, or more depending on what headquarters decides. They are actively looking for potential candidates with resumes being submitted to headquarters.”

C: “So, we don’t necessarily care about whether it fills under every rail car, we just care if it goes out to the air. So, it really doesn’t have to encapsulate everything at this point in time. It just needs to protect the environment from releases until its cleaned up. I’d like you to take this thought back to your people and tell them that we don’t really have to encapsulate everything we just need to protect the environment. If sand is going to protect it enough, then I’m for sand. You can get rid of sand and you can clean that up. Grout will be harder to do.”

R: “The short answer to your question is the issue of stability, that you cannot encapsulate and ensure support above and beneath. You can actually collapse the rail car.”

Q: “How are you sure that whatever grout mixture you have, is the right one? I don’t know if there has been enough time to have a real assessment of that. I realize that it was successful at K-Basin, but this is apples compared to oranges. The schedule for Tunnel 2 is too aggressive, as I don’t believe there will be enough time to assess the lessons learned from Tunnel 1 in order to write a permit for Tunnel 2.”

C: Ken Niles talked with DOE-RL extensively and was assured that the grout being used was not going to stop the process of remediation later.

R: “I know that the grout mixture has not been decided yet. I am aware they went away from low density grout to higher density grout. Diamond wire saw cutting is a well-known practice and has been successful. These wire saws can cut through steel easily.”

Q: “Umatilla tribe has been asking for the inventory. Do you have any idea of what is in the tunnels? Please give us a date of when you can tell us what is in the tunnels.”

R: “I’ll try and get that information to you.”

Q: “What do you expect to see in order to be able to make the decision, so that you can move forward and what do you plan on, to include public involvement with these decisions prior to having them modified?”

R: “At the July 20th public meeting, Alex Smith with Ecology, spoke a little about what the public process for Corrective Action Two. We have talked about having another public meeting to talk about the options DOE-RL is proposing for Tunnel 2. What we committed to do was to listen to the public concerns after that meeting and take that input to DOE-RL as part of the corrective action.”

C: “What I don’t want to see is a near-surface, transuranic or high-level waste site on the Hanford site.”

Q: “I would like the DOH to give us their perspective of the radiation danger? What would happen to the air, if Tunnel 2 collapses?”

R: “John Martell with DOH: DOE-RL is getting us an application on the process they are going to use and will license that with us. We will be sending more ambient air samplers in addition to the ones that are currently out at PUREX for continued monitoring.”

C: “The emergency response on May 9th went very well. DOE-RL really made a sincere effort to get as much information out the public quickly and to make it possible to answer people’s questions.”

C: “I think the take cover could have been release earlier than it was during the PUREX incident.”

R: “Emergency preparedness has taken some positive action with the task team to provide better solutions. During the incident, we were still gathering information an hour and half in and did not know for sure if there was a release so the importance of keeping the people safe was the priority at the time.”

C: “My suggestion is not to depend on informing the workers of take cover on HGET. In my experience, people do not necessarily pay attention and read through all of the information on HGET, as they are trying to get through the modules quickly.”

R: “We are trying to reinforce the Facility Emergency Response Organization. There is a person that is part of that organization at every building and they have a checklist that they follow during an emergency. We are trying to reinforce the knowledge base.”

PFP Update/Take Cover

Agency Presentation

Dale Engstrom introduced the topic of the PFP Update and Tom Teynor.

Tom Teynor, Federal Project Director with DOE-RL, provided committee members an update on the ongoing progress at the Plutonium Finishing Plant.

Key points from Tom Teynor’s presentation included the following:

- Demolition progress at PFP is underway.
 - Americium Recover Facility (McClusky Room) demolition is complete.
 - 291-Z Ventilation Stack demolition is complete.
 - Fan House (291-Z) is 95% complete. The demolition debris, oils, asbestos, and piping has been removed.
 - Plutonium Reclamation Facility (236-Z) demolition is 44% complete.
 - Main Processing Facility (234-5Z) is 2% complete. The oils, asbestos, chemicals, and transuranic materials were removed. Presentation photos displayed the removal processes. Anything that is transuranic and drain lines that were epoxy filled will go to WIPP.
 - TPA Milestone M-083-00A due date is September 30, 2017.
- The blue stuff that can be seen on the demolished buildings is a fixative that is applied to reduce contamination.
- On June 8, 2017, a Continuous Air Monitor (CAM) alarm sounded at the Plutonium Reclamation Facility (236-Z) during the gallery glove box removal. The area was placed in safe configuration. PFP employees were instructed to take cover. The re-entry team evaluated the CAM and applied

more fixative and immediately stopped work. The site was surveyed and fixative was applied to any contamination found. An egress path was established for the employees.

- The presentation displayed a photo of the Site Map-Radiological Monitoring Stations at PFP. The concerns that they had were the people in the trailers. As a result, over 300 Bioassay Kits were issued. Fecal samples were taken, as it is the most sensitive. The results are coming back and about 4-6 weeks for all of the samples to come back. Once they all come back the people will be informed.
- During the event on June 8, 2017, John Martell with DOH sent out additional air samplers. The isotopic results have come back and it was discovered that Plutonium and Americium were detected just passed the Rattle Snake Barricade. Americium that was detected was three times the value and Plutonium was not as much.
- The levels that were found of Plutonium and Americium meant that there was an issue. The issue is being taken seriously and is in the process of being resolved. The focus will be on the isotopics of Americium. The values found were of concern, but not a threat to public.
- Tom discussed the corrective actions following the CAM alarm incident. These actions included re-sequencing building demolition, revising the demolition work package to ensure water cannons are in the “mist” and not “full stream” mode, and placing temporary HEPA filtered ventilation exhauster units on the PRF canyon to draw a negative pressure on the remaining gallery glove boxes and canyon.

Committee Member Questions (Q), Responses (R), and Comments (C):

Note: This section reflects individual questions, comments, and agency responses.

Q: “What’s a cookie sheet?”

R: “A cookie sheet is a large pizza-like dish. Because of the soil and rock, it is mounted on the level to help us collect a clear air particle sample.”

Q: “What are the changes in protocol, so we don’t see anyone else ingest Plutonium?”

R: “I do personally care about the safety of everybody. What happen here is that someone violated procedure and put the cannon in “full stream” mode instead of a “mist” mode. This is unfortunate and a lesson learned. We have taken strong corrective actions going forward.”

Q: “Will you be giving Bioassay kits to everyone in the surrounding area of PFP?”

R: “That is being discussed and we are looking at those kinds of things.”

Q: “If something were to happen again in the future, would you have a take cover the same as it was or would you expand it to the whole 200-Area?”

R: “This was an isolated incident. We are taking all processes into consideration.”

Q: “From a public perspective, over the last few months there has been a negative trend at Hanford with the PUREX tunnel collapse, and the take cover incident. There was another recent report in the Seattle newspaper recently that 12 out of 60 Bioassay results showed ingested plutonium in workers. How are we going to regain control of those situations? How are we going to gain confidence on the public side? How are you going to approach this particular situation at the September Board Meeting with the public?”

R: “We will be open and honest. We should hopefully have the result data be then. The lab that we sent the fecal samples to, was overwhelmed. We had to prioritize those people that needed to have the samples done initially. More sample results have come back, but we made the decision not to release those results until we have had an opportunity to discuss those results with the people. Once we get the results back, it will have to go through a further analysis process. As far as regaining the public’s trust, that would come with enhancing procedures, more control of the work, and trying to be more focused in those regards, for example the demolition of the Stack at 291-Z. That went off without a hitch. Not to make these other issues light, but there is a lot of good work going on. When we removed those the stubs from the 26-inch vacuum lines, we had 3 or 4 very high performing teams that did not any skin contaminations, no inhalations, or things of that nature. They are all trained and working well. We are not saying that the people that caused the problem are not trained, but it is a lesson learned and an ongoing process. We are ensuring through vigilance and more control of the worksite, that we don’t go forward unless it is safe.”

Q: “I’m curious about the weather. Seems like there were quite a few work days lost in the winter and a few in summer. Do the dates of the bench marks get adjusted when there are lost work days?”

R: “We went to tropical hours for the hottest days of the year. We monitor the folks for heat stress/exhaustion. We are trying to work through the weather issue and find better processes, with having a record breaking winter and summer.”

C: “The fact that this PFP facility is half gone and there has been only one report of someone ingesting something shows that they are doing an exceptional job.”

Attachments

Attachment 1: CERCLA Five-Year Review Flowchart

Attachment 2: PUREX Tunnels Update

Attachment 3: Plutonium Finishing Plant Closure Project Update

Attendees

Board Members and Alternates:

Dale Engstrom	Pam Larsen	Rebecca Holland
Shelley Cimon	Susan Leckband	Gary Karnofski
Jerry Peltier	Richard Bloom	Rebecca Holland

Alex Nazarali	Chuck Johnson	Tom Galioto
Ken Niles (phone)	Emmett Moore	Jan Catrell
Jean Vanni		

Others:

Emy Laija, EPA	Kyle Rankin, DOE-RL	Michelle Anderson-Mair, WA DOH
Kris Holmes, DOE-RL	Ginger Wireman, Ecology	Theresa Bergmen, CHPRC
Tom Teyner, DOE-RL	Stephanie Schleif, Ecology	Jim Alzheimer
Alex Teimouri, DOE-EM	Joanna Morse, Ecology	John Martell, WA DOH
Lindsay Strasser, ProSidian	Melissa Orona, ProSidian	