



FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE**

*August 9, 2016
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

Pam Larsen, River and Plateau Committee (RAP) chair, welcomed the committee and introductions were made. Committee members adopted the June 2016 RAP meeting summary.

Announcements

Steve Hudson, Hanford Advisory Board (HAB or Board) chair, announced that there would be an orientation for new Board members following the RAP committee meeting. The new members will be in attendance at the September Board meeting.

PFP Milestone Change

Pam introduced an updated on the milestone change to the Plutonium Finishing Plant (PFP). She noted that changes were made to ensure workers were safe as they proceed with the cleanup of PFP.

Agency Presentation

Kris Holmes, U.S. Department of Energy – Richland Operations Office (DOE-RL), stated that the date of milestone (M-083-00A) has changed from September 30, 2016 to September 30, 2017¹. The date was extended to reduce injury by using multiple crews on high-hazard projects to fewer, more experienced crews. Kris stated that workers were encountering more hazards than previously thought. She noted that PFP has been under demolition for the last twenty years. The following sequence of demolition of PFP is:

- Readiness assessment will begin in late August or early September 2016
- Demolition of the reclamation facility, 236-Z will begin in August and last through December 2016
- Demolition of the main processing facility, 245-Z will begin in January and last through May 2017
- Demolition of the stack will begin in March and last through May 2017

Agency Perspective

Stephanie Schleif, Washington State Department of Ecology (Ecology), noted that the components of the milestone have not changed. Ecology told DOE-RL to choose a date that the agency had a high level of confidence in achieving.

Committee Questions and Responses²

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

Q. Is there additional information about the glove boxes that are going to be taken out whole from PFP?

R. [DOE-RL] *Some glove boxes have already been removed whole during demolition.*

Attachment 1: Tri-Party Agreement Changes for Demolishing Hanford's Plutonium Finishing Plant fact sheet (DOE-RL)

Attachment 2: Transcribed flipchart notes

Q. What demolition activities will occur between May and September 2017?

R. [DOE-RL] These are the target date ranges for the major components of the facility. The greater specifics about what work will take place between May and September are unknown. DOE-RL will find out this information and report back to the RAP committee.

Q. What happens after slab on grade work has been completed?

R. [Ecology] The plan is to place the remaining slabs and sub-grade structures into an operable unit (OU) group, which will be incorporated into the remedial investigation/feasibility study (RI/FS) work plan. There is a proposal in the removal action work plan for PFP that issues DOE-RL to remove 246-Z and 242-Z slabs and perform analyses, directly after reaching slab-on-grade.

Q. Does that proposal include the tunnels underneath the facility?

R. [Ecology] Yes, it should.

C. The proposed plan should be demolition, take the slabs to grade, and then continue with the rest of the remediation.

R. [Ecology] The remaining waste needs to be placed into an OU group. The removal action work plan is only for above-grade structures of PFP.

Q. Why is that approach being used?

R. [EPA] The Environmental Protection Agency (EPA) tried to include below-grade structures into the work plan, but the Tri-Party Agreement (TPA) agencies chose slab-on-grade, as stated in the milestone. The sub-grade structures will go into 200-WA-1. EPA is comfortable with the path forward because the areas undergoing remedial action will have more oversight from regulatory agencies.

Q. Is it possible to push the work plan forward?

R. [EPA] EPA went through a recent effort of changing the Central Plateau milestones. The EPA does not anticipate changing those milestones and the subsequent work plan forward in the near future.

Q. Is the EPA willing to take the sub-surface remaining waste without it being characterized?

R. [EPA] The EPA was clear with DOE-RL about not transferring the waste to the EPA without characterizing it. The 200-WA-1 work plan is undergoing edits and has not been finalized.

Q. Was there a discussion between the agencies about staging the work sooner?

R. [EPA] This is part of the investigation for 200-WA-1. The exact date of when the investigation will happen is not defined. The agencies' drivers are the milestones.

Pam Larsen thanked the agencies for their updates and perspectives on the topic.

100 D/H Proposed Plan

Dale Engstrom, issue manager, introduced the background of the 100 D/H Proposed Plan and the consideration of draft advice. The groundwater in the 100 D/H areas are contaminated with hexavalent chromium [Cr(VI)]. Two small pump-and-treat systems were installed to reduce the amount of Cr(VI) from groundwater and are working effectively. There are other locations in the 100 D/H area that are being monitored for contaminants with the use of institutional controls (ICs). Dale noted that the Board drafted advice on the proposed plan for remediation of the 100 D/H operable units. The Board anticipates participating in the public comment period, with the comment in the form of advice or a letter.

Agency Presentation

Nina Menard, Ecology, gave an overview of the 100 D/H proposed plan, including activities that have been completed or decided upon at D/H and the differences between Draft A and the final version (Rev. 0) of the proposed plan. Key points from Nina's presentation³ include:

- At the 100 D/H site, reactor cocooning and unused facility demolition was performed under two CERCLA Action Memorandums.
- Cr(VI) was excavated from contaminated soil from the sub-surface to groundwater. An extra 10 feet of aquifer soils were also removed at 100-D-100. The removal of the contaminated soils has significantly lowered Cr(VI) concentrations in nearby wells, which will reduce the amount of time the pump and treat systems will operate in 100-D.
- Approximately 180 waste sites had remedial actions completed early enough to have a quantitative evaluation included in the RI/FS report. Less than five waste sites remain for interim remedial action and will be evaluated post-Record of Decision (ROD).
- The waste sites located in the Orchard Lands in 100-D and 100-H areas were removed, treated, and disposed until they met the remedial action objectives for all contaminants deeper than 3 feet, except for lead and arsenic in the top 3 feet of soil.
- A partial evaluation concluded that 98 of 101 waste sites can be closed without further action. This evaluation indicated that three waste sites have radiological concentrations that will decay to below residential levels within ten years.
- Pump and treat systems were installed for removal of Cr(VI) from groundwater. Pump and treat capacities were increased and new wells were installed under the 2009 Explanation of Significant Difference (ESD).
- In-situ reduction/oxidation manipulation (ISRM), a barrier for treatment of Cr(VI), was installed at 100-D. The 2009 ESD authorized the expansion of the pump-and-treat system, instead of maintaining the ISRM barrier.

Attachment 3: 100 D/H Proposed Plan (Ecology, 8/9/16)

- The differences between Draft A and the final version of the proposed plan include:
 - The void fill grout remedy has been eliminated from alternatives.
 - Costs were slightly reduced from what was stated in Draft A.
 - Preliminary remedial goal (PRGs) tables were modified to include the PRGs that drive cleanup. PRGs for protection of ecological receptors were removed because the RI/FS concluded that once human health cleanup levels are achieved, residual contamination would not adversely impact populations of ecological receptors.
- Proposed actions that are the same in Alternatives 2, 3, and 4 for soil include:
 - Removal, treatment, and disposal of 104 waste sites.
 - Monitored natural attenuation of 34 waste sites with radiological contamination in the deep zone of soil. ICs will be applied to prevent exposure until cleanup levels are achieved.
 - Two waste sites will achieve cleanup levels through radioactive decay by the end of calendar year 2016.
 - Alternatives 2 and 3 include a proposal to cap the ends of a pipeline in order to protect a maternal bat colony that exists within the underground tunnel.
- Proposed actions that are the same for Alternatives 2, 3, and 4 for groundwater include:
 - Continue operations of the pump-and-treat network.
 - Groundwater will continue to be monitored until remedy completion.
 - Continue to monitor strontium-90 and nitrates sites with ICs to limit exposure.
 - Installation of new wells throughout D- and H-areas, which include new monitoring wells and new extraction and injection wells to support the existing pump and treat system.
- For both soil and groundwater remediation, alternative 3 is the preferred alternative.
- The public comment period on the 100 D/H Proposed Plan occurs between July 26 – August 25.

Agency Perspective

Steve Balone, DOE-RL, noted that the agency is welcoming comments during the public comment period and looks forward to responding to the Board's advice. Steve also informed the RAP committee that Jim Hansen is now managing the 200-Area.

Committee Questions and Responses²

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

Q. Under the interim action RODs, were the remediated sites backfilled?

R. [Ecology] Yes, the remediated sites were backfilled.

Q. How have the sampling criteria changed for Cr(VI)?

R. [Ecology] Deep digs will be addressed with groundwater remediation instead of soil remediation. The values for the sampling criteria are calculated differently, but the TPA agencies have agreed to maintain the cleanup level of Cr(VI), per the interim action standards, which are more conservative than the cleanup levels outlined in the final action.

C. To determine if site-specific testing was thorough, it would be beneficial for people to understand how the sampling values were calculated.

R. [Ecology] There are waste sites that have been excavated under interim actions that will have their evaluations completed after the ROD is signed to verify that the final cleanup standards have been met. Preliminary calculations show that most of the waste sites will meet the final cleanup standards.

Q. At the National Remedy Review Board (NRRB), there was concern about characterization accuracy. Is Ecology hoping to resolve their concerns through the 100 D/H Proposed Plan?

R. [EPA] The decisions made for the 100 D/H Proposed Plan do not date back to communications with the NRRB.

Q. How does Ecology submit a finalized proposed plan when they may discover additional waste sites in the future?

R. [Ecology] Extensive characterization of soil sites occurred before the waste sites were backfilled. Sampling and characterization were completed at interim waste sites cleaned up after 2012. Post-ROD, those sites will be compared to the final cleanup values. If the waste sites do not meet the final cleanup standards, remedial action will be taken.

C. It is confusing for there to be a final ROD proposed and to not have a defined remediation for each waste site.

Q. What radioactive material is predicted to decay within ten years?

R. [Ecology] I am not certain of the specifics.

Attachment 2: Transcribed Flipchart Notes

Q. Did Ecology choose not to chase contaminants found at overlapping waste sites in the Orchard Lands? It is important to keep in mind if there is radiological contamination at the sites.

R. [Ecology] That is correct. The remedial action plan for the Orchard Lands is extensive. The waste was not contributed by the 100 D/H reactors. Only lead and arsenic were left within the top 3 feet of the soil.

Q. What was found in the pipes in the underground tunnel?

R. [Ecology] Hexavalent chromium.

C. The RAP committee would like to finalize advice on the 100 D/H proposed plan at the September Board meeting, but that would be outside of the comment period. One option is to ask for an extension of the comment period, but that may be unlikely.

R. [EPA] Extending the public comment period would not extend the signature date of the ROD, September 30, 2016. The TPA agencies have committed to responding to the Board's product, even if it is received outside of the formal public comment period.

Q. Is Ecology stating that they are comfortable with leaving elements that will not reach groundwater?

R. [Ecology] Cleanup levels for soil are calculated by the threshold of contamination that can remain in the soil, that will not exceed the standards for protection of human health and the environment. Eventually, deep well drilling will be an option at these sites.

Q. What if a hot spot is located during future deep well drilling? At a certain depth, will remaining soil be contaminated still?

R. [Ecology] Hot spot areas should not be left once the soil is at the final cleanup standards. MNAs and ICs are in place to prevent drilling until soils reach the standards outlined in the 100 D/H Proposed Plan. In the future, an individual will be able to drill down to the groundwater, and the soil that is exposed from the drilling will be within safe levels.

Q. What is the longest timeframe for the ICs?

R. [Ecology] The longest IC is in place until 2203. The MNAs and ICs for shallow waste sites will decay by 2038. The MNAs and ICs for long-term waste sites are listed individually in the 100 D/H Proposed Plan (page 32).

Q. What is the longest timeframe for groundwater ICs?

R. [Ecology] For strontium-90, the longest timeframe to expect is fifty-six years.

C. At a recent Tribal Council meeting, the EPA told the Yakama Nation that timeframes would be closer to what the NRRB was requesting. The NRRB suggested to resolve the nitrate and strontium-90 and to ensure that waste sites have clear characterization.

R. [Ecology] Ecology was not present at the Yakama Nation council meeting. Ecology has tried to explain the basis more clearly in the proposed plan.

C. It is concerning that there are no preliminary remediation goals (PRG) for ecological receptors.

R. [Ecology] The most restrictive PRGs are in the proposed plan. If the cleanup standards meet the direct contact standards, it would include protection of ecological receptors.

C. The RAP committee should have a conversation about how the ecological receptor evaluation was performed.

Q. Is there a 100-acre limit for the waste sites?

R. [DOE-RL] There is not a 100-acre limit for waste sites. DOE-RL follows CERCLA practices, evaluating the potential for population effects on birds, mammals, fish, and invertebrates.

C. The Yakama Nation disagrees how these decision points were made. If a waste site is smaller than 100-acres, the population was evaluated differently.

Before concluding discussion of the topic, Ecology provided an update on the status of nitrate plumes in D and H areas. As of 2015, nitrate plumes are essentially removed in both D and H. The plume size that was reported in 2015 is now 0 km². The plume size for strontium-90 has also decreased. Only one well remains above the drinking water standard.

The RAP committee thanked Nina and the agencies for their presentations and perspectives. The RAP committee discussed whether to pursue a letter, rather than advice on the 100 D/H proposed plan. The RAP committee agreed to produce advice, as advice represents Board consensus on the topic and will require a formal agency response. RAP committee members reviewed a draft advice document developed by issue managers and identified several edits before reaching consensus on the language. The RAP committee will present the advice to the Board at the September Board meeting⁴.

Attachment 4: Draft Advice: Proposed Plan for Remediation of the 100 D/H (v0, 8/5/16. Issue managers: Engstrom, Mattson, Pollet, Vanni, Suyama, Cimon, Serres.)

324 Building Closure Plan

Agency Presentation

Bryan Foley, DOE-RL, provided RAP committee members with an update specific to the Class 2 permit modification request (PMR) for the 324 Building Dangerous Waste Management Units Closure Plan. Key points from Bryan's presentation⁵ include:

- The 324 Building is located in the 300 Area on the Hanford Site. The Building supported materials and chemical processing research and development activities.
- The PMR is required by TPA milestone (M-89-06), which proposes to add the 324 Building to Part V of the Permit.
- Ecology issued a letter to DOE, reclassifying the permit as a Class 3 permit modification.
- The 324 Building consists of six dangerous waste management units (DWMUs). Cells B and D were used for dangerous waste activities. Cells A and C were not used for dangerous waste activities and therefore, do not require specific closure activities.
- The 324 Building consists of two vaults, a high-level vault (HLV) and a low-level vault (LLV). Each vault consists of four stainless steel tanks, in which one tank has been filled with grout and stabilized. Both vaults include piping to and from the Radiochemical Engineering Cells (REC). Tank 102, located in the LLV, is the only tank that remains operational.
- The PMR proposes the removal of the REC, HLV, and LLV. Closure activities include removing associated piping and the top 0.5 meter of soil.
- Cleanup of the waste site under the 324 Building is not included in the Resource Conservation and Recovery Act (RCRA) closure scope. It is included in the Final ROD for 300-FF-2 and 300-FF-5 and ROD amendment for 300-FF-1.
- Closure activities will occur as a four-phase process over seven years. The phases include:
 - Phase 1:
 - Cell retrieval (approximately 22 months)
 - Removal of grout and debris, floor removal, and soil removal from B-Cell
 - Backfill waste site
 - Phase 2:
 - Deactivation and demolition of the 324 Building shell (approximately 30 months)

Attachment 5: 324 Building Closure Plan (DOE-RL, 8/9/16)

- Phase 3:
 - Cell and vault removal (approximately 19 months)
- Phase 4:
 - Final remediation and backfill of soil (approximately 15 months)
- The Class 2 PMR process will include the following:
 - DOE-RL will submit the PMR to Ecology, followed by a 60-day comment period.
 - The public will be notified of the comment period through a public mailing list and local newspaper. A public meeting will be held at the Richland Public Library on August 24.
 - Written comments are due to Ecology by September 9, 2016.
 - After the comment period, Ecology will perform a completeness of determination and issue a notice of deficiency. Once those items are resolved, Ecology issues a permit and a 45-day comment period commences.

Agency Perspective

Stephanie Schleif, Ecology, stated that the current closure plan does not reflect compliance with existing milestones. From Ecology's perspective, they expect DOE-RL to comply with the new Central Plateau milestone change package. Stephanie noted that EPA is the lead agency for the closure of the 324 Building waste site and Ecology is the lead agency for the closure of the DWMUs. According to the milestone, the closure of the 324 Building should be complete by 2021.

Committee Questions and Responses²

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

Q. Are the timeframes for the four phases linear or concurrent?

R. [DOE-RL] The timeframes are linear. The waste site cleanup is an optimistic schedule and the scope of the work is undergoing a transition of the contracting company, from Washington Closure Hanford to CH2M Hill Plateau Remediation Company (CHPRC). Milestone M-16-085 requires the work to be completed by September 2021.

Q. Are there expected risks or surprises to this work?

R. [DOE-RL] Discovering additional remediation to perform is an anticipated risk, specifically near B Cell. Contamination moved around the expansion joint in the concrete under the B Cell, allowing contamination to move into the soil.

Attachment 2: Transcribed flipchart notes

Q. What are the funding needs to complete this work?

R. [DOE-RL] Several courses of action were submitted to DOE executives. Currently, the requirements for funding the work are undecided. DOE-RL is anticipating to receive funding to clean up this waste site, similar to what occurred in the previous year. In a couple months, DOE-RL may know more about future funding.

Q. Where were the probes placed to identify the waste sites under the building?

R. [DOE-RL] Probes are facing multiple directions in the B Cell, in the west-side wall.

Q. Will there be an evaluation underneath the ground in the low-level vault, including the use of probes?

R. [DOE-RL] The process is as follows: First, the waste is removed and distributed into the appropriate cell. Second, the shell of the 324 Building is demolished and removed. Third, the contractor cuts up the remaining waste into smaller pieces, including the vaults and the cells. Fourth, the contractor samples the soil from the bottom of the building to see if there is remaining contamination. Probes will not be placed into the low-level vaults, as it would affect the ventilation system and the removal of the waste.

Q. Where was the landfill located?

R. [DOE-RL] The landfill was located southwest of the B Cell.

Q. Are the cells individual or are they a larger unit?

R. [DOE-RL] They are one larger unit.

Q. Why are certain labs that sent waste not included as a DWMU?

R. [DOE-RL] The 324 Building is the lab; the hot cells are where work was performed. The labs did not send any material to the hot cells.

Q. Will the cells be grouted? There could be contaminated soil underneath the 324 Building and limited room in the cells to hold the contaminated soil.

R. [DOE-RL] Yes, the cells will be grouted. Any overflow waste can be removed in boxes.

C. This presentation refers to the closure of the 324 Building, not the waste site underneath the facility.

C. The work under this closure plan can be done under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) but it should be done under RCRA authority.

R. [DOE-RL] The plume located underneath the facility is under RCRA decision 300-FF-5. There are several EPA decision documents that describe the process. The first document is the action memoranda. The second document has a closure plan that states that the six DWMUs need to be removed. The third document states that the waste site underneath the facility needs to be remediated.

R. [Ecology] The shell of the 324 Building will be regulated by EPA. Ecology is the lead agency for the DWMUs.

R. [Ecology] Ecology has not performed their completeness of determination. Ecology is accepting comments on the project and will respond to comments in the public document, after the comment period ends.

C. The length of time to complete this closure plan is a concern. The plan seems well thought out, but perhaps there are other measures that can be taken to meet the TPA requirements sooner.

Q. Is the volume of the waste that will be transferred into the cells well understood? Does the waste include the piping?

R. [DOE-RL] The volume of waste is currently undergoing assessment. The current expectation is that there will be adequate volume within the cells to hold the waste. The waste includes the piping.

Q. If the volume of waste exceeds the capacity the cells can hold, would that require additional permitting?

R. [Ecology] That question will be evaluated by Ecology in the closure plan.

C. The closure plan states that there is not enough room for waste inside the cells.

R. [DOE-RL] The contractor will measure the dose rate of the waste as it is being sampled in order to determine if the waste is placed into a cell or a box for removal.

C. That information should be included in the closure plan to better understand what the performance standards are.

Q. Is the re-route of the old water line, for fire suppression, taken seriously?

R. [DOE-RL] One of the first activities that need to be completed is the re-route of the water line.

Q. If areas underneath the facility need to be remediated with grout, what happens with the grout over time?

R. [DOE-RL] That is part of Phase 4 of the closure plan. Crews will vacuum the grout out and complete the remediation of the waste site.

C. Please include such information in the closure plan.

Q. Washington Closure Hanford performed the engineering for this a while ago. Is CHPRC using that information?

R. [DOE-RL] Yes, CHPRC is using existing information obtained by the former contractor.

The RAP committee thanked Bryan, Rudy, and Stephanie for their presentation and agency perspectives on the 324 Building Closure Plan.

PW 1/3/6 RD/RA Work Plan

Dale Engstrom, issue manager, introduced the PW 1/3/6 Remedial Design/Remedial Action (RD/RA) Work Plan topic, explaining that PW1/3/6 has gone through the RI/FS process, the proposed plan, and the ROD. The next step in the process is the RD/RA work plan. Dale noted that the Board wrote advice on the PW 1/3/6 Work Plan prior to the ROD that was released in 2011. The Board's advice included a proposal to use an observational approach to remove contaminants from the soil.

Agency Presentation

Emy Laija, EPA, presented the RD/RA work plan for the 200 Area plutonium and cesium sites. Key points from Emy's presentation⁶ included:

- The 200-PW-1/6 operable units have both high-salt and low-salt sites. The high-salt sites received highly acidic waste including uranium and plutonium. The low-salt sites received neutral waste.
- The 200-PW-3 operable unit has five Cesium-137 sites located in the 200 East Area. These sites received process waste from the Plutonium Uranium Extraction Plant.
- The 200-PW-6 operable unit are two sites that were determined to have no action necessary.
- The 200-CW-5 has three shallow ditches, one tile field, and one unplanned release site. These sites received cooling water and steam condensate from PFP.
- The 2011 ROD included selected remedies for each waste group. The settling tanks remedy is expected to change from stabilizing the tanks to removing the sludge and tanks completely.
- The EPA received a draft RD/RA work plan from DOE-RL. EPA had several comments to provide on the work plan, including concerns about long timeframes, concerns of increased cost estimates from what was stated in the ROD, a change to the settling tanks remedy (which will require a decision document, either a ROD or decision amendment), and the criteria for additional soil removal from the high-salt sites that have not been discussed.
- The criteria for additional soil removal needs to be developed in a timely manner to support the discussion of the results from the plutonium and americium samples. The TPA agencies have agreed that backfilling the sites will not occur until these criteria have been established.
- The differences between the ROD and the RD/RA work plan include:
 - The ROD assumed open air excavation. The RD/RA work plan concludes that containment facilities and special excavation equipment are required.
 - Excavation volumes are significantly greater in the RD/RA work plan. The slopes of the excavation sites need to be wider, which increases the volume and the costs of excavation.

Attachment 6: RD/RA Work Plan for 200 Area Plutonium and Cesium Sites (EPA, 8/9/16)

- The ROD assumed the settling tanks will be closed in place. The RD/RA work plan assumes removal, treatment, and disposal of the settling tanks due to technical complexities.
- The ROD estimated 30-50% increase of the actual project cost. The RD/RA work plan estimated 20-30% of the actual project cost. For long-term stewardship, there is a \$309 million reduction between the ROD and the RD/RA work plan.
- The containment facilities will include six weather enclosures. The enclosures will have a contamination control center located inside the structure.
- Wells will need to be decommissioned and removed in order for soil excavation to occur. Disposal structures and associated pipelines will also be removed. Boreholes will be placed into the ground for soil characterization.
- Evapotranspiration barriers will be installed to reduce the amount of rain that infiltrates into the high-salt and low-salt sites.
- At the 200-PW-3 cesium sites, soil covers will exist at a depth of 15 feet to allow for radioactive decay of cesium-137.
- Settling tank, 241-Z-361, will be inside a weather enclosure, due to the structural integrity of the tank. Settling tank, 241-Z-8 will be removed.
- It is estimated to take twenty years to implement the proposed remedy. DOE-RL will need to obtain the appropriate approvals for these projects. Removal, treatment, and disposal are anticipated to begin in Fiscal Year (FY) 2024 and continue to FY 2034. Long-term stewardship is scheduled to begin in FY 2036.

Committee Questions and Responses²

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

Q. Have soil samples been taken from the three Z-ditches located in the 200-CW-5 area?

R. [EPA] Full characterization has occurred in the three Z-ditches. The waste in the ditches were shallower than 15 feet, which caused the EPA to decide to remove the contamination completely. Plutonium will be removed from the Z-ditches and verification samples will be taken before the ditches are backfilled.

Attachment 2: Transcribed flipchart notes

C. In the 1970s, americium waste was disposed of in the Z-ditches. The longer the waste remains in the ditch, the hotter the waste is.

R. [EPA] The material will be dug up and worked on remotely. The EPA will need to confirm with the Waste Isolation Pilot Plant about how material is packaged for disposal.

C. The Pacific National Laboratories released a summary report about the work performed on the plutonium inside the Z-ditches in the late 1990s. There may be an underestimation of the amount of americium in the 200-CW-5 area.

C. Several years ago, Z-9 was removed from service because there was contamination in the groundwater. The contamination was assumed to be plutonium. After that, each crib was analyzed for plutonium in the groundwater.

Q. Given that field monitoring instruments and minimal sampling is planned for the high-salt sites, what is the effectiveness in determining the plutonium and americium hot spots that may remain? Will the soil act as a barrier to radiation that may be present and affect the use of field instruments?

R. [EPA] The EPA is focusing on a number of samples using a gridded survey. A comment from the RAP committee about the number of samples or the sampling approach would be helpful.

C. That information is included in the letter the RAP committee created.

Q. Will there be a comment period announced after the criteria for soil excavation is determined? The RAP committee would be interested in commenting.

R. [EPA] The exact process has not been determined. The EPA can update the RAP committee once the agencies have begun discussing the new criteria.

Q. Is the EPA agreeing to a work plan that is not complete? It is surprising to hear that the agencies are still deciding the path forward.

R. [EPA] It is not the ideal position for the EPA to be in. The EPA is reinforcing with DOE-RL to not backfill until the criteria has been discussed.

Q. Would it be helpful for the HAB to comment or give advice on the criteria?

R. [EPA] The criteria is a long-term topic and advice would be useful but it is not time sensitive.

C. The EPA should not release a work plan that is incomplete. The HAB should create advice about reducing the timeline and comments on the soil excavation criteria.

R. [EPA] When the agencies released the ROD in 2011, the EPA did not know that weather enclosures would be necessary until design discussions took place. The weather enclosures require additional approvals. DOE-RL is regulated by laws that require particular processes that cost millions of dollars. The timeline for completing this work is

based on the federal budget timeline, funding requests, technology demonstrations, and other project acquisitions.

Q. Are the weather enclosures necessary? The discussion for the criteria should be happening now. The deadline is being pushed to 2042. The public probably does not understand these costs. There has to be a better way of optimizing this process.

R. [EPA] The EPA asked DOE-RL about the necessity of weather enclosures and after speaking with their contractors and achieving a better understanding of the requirements with this cleanup effort, the EPA concurs that weather enclosures are necessary.

C. The HAB should weigh in on the criteria. This is a large and expensive project. Moving forward, there should be a greater strategic movement taking place between the agencies, such as utilizing equipment that can be re-purposed for other remediation sites.

R.[DOE-RL] There are other near-term risks that the agency is funding. PW 1/3/6 is not a priority. Advice from the HAB will be helpful when the agencies are further along in the project and begin discussing the design process, which is three to five years from now.

The RAP committee thanked Emy and the agencies for their presentation and perspectives. The issue managers will convene in several weeks to discuss the PW 1/3/6 RD/RA work plan further and frame potential advice.

Central Plateau Risk Assessment/Vadose Zone

Dale Engstrom, issue manager, noted that new concerns emerged from the RAP committee upon reviewing the Central Plateau guidelines. Dale suggested that the RAP committee discuss the path forward and what type of product the RAP committee should prepare for the HAB.

Committee Questions and Responses²

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

C. There are new Board members who may not be familiar with prior products the Board has produced on the subject matter and points of compliance. Although not particularly time sensitive, the Board could hold a round-robin discussion late spring of calendar year 2017. This would serve as a chance for the Board to ask questions and for agencies to educate the Board about the Central Plateau guidelines. Perhaps the product the Board puts forth is advice or a letter.

C. The RAP committee should consider creating a tutorial for new Board members, to educate them about past products and discussions on the Central Plateau guidelines.

Attachment 2: Transcribed flipchart notes

Q. Does the vadose zone need to be included in that discussion?

R. If the vadose zone is identified in a relevant manner and explained how it connects to the other points in the discussion, then it could be included.

C. The first step is to define the scope, scale, terminology, and the individuals who need to be advocates on this topic. That would allow time for the RAP committee to come forth with an initial statement on how to best proceed in the January-February 2017 timeframe.

C. [DOE-RL] The guidelines have been refined through various discussions and have been incorporated into the work plan for the operable units on the Central Plateau.

Q. What is the near-term action for the Central Plateau? The TPA agencies do not seem to agree on the Central Plateau principles.

R. [EPA] Nothing is finalized until the EPA receives the work plan document. Discussions about compliance and the Central Plateau guidelines text are ongoing.

R. [Ecology] Ecology has had a long dispute on several points of compliance with DOE-RL. The point of compliance, regarding exposure concentrations in direct contact with humans, will hopefully be settled within the next couple of days.

R. [Ecology] Ecology remains working on issues related to points of compliance, which will be addressed through analyses presented in the work plan process.

C. The point of compliance is important, as the HAB has approved the end state criteria for the Site. It would be a mistake to choose the Central Plateau cleanup as the driver. Other driver considerations should be: future deep well drilling locations, definition of risk, depth of excavation, and the existence of contamination hot spots. How do the agencies know when cleanup is complete and the risk to human health and the environment has been eliminated?

C. The point of compliance should be defined in the product the issue managers decide to create.

C. The RAP committee should consider creating a tutorial for new Board members, to educate them about points of compliance that are under discussion for the Central Plateau guidelines.

The RAP committee agreed that the Central Plateau risk assessment topic is appropriate for further RAP committee discussion and is not time sensitive. Issue managers will resume discussion of the path forward and continue brainstorming the potential product over the next couple of months.

Committee Business

RAP 3-Month Work Plan²⁷

In the interest of time, the RAP committee did not discuss the 3-month work plan.

The RAP committee is tentatively planning to hold a phone call in September to discuss agenda topics for the October committee meeting. The date and time of the call is proposed to take place on September 6 at 2 p.m. but has yet to be confirmed. Committee members should refer to the Events-at-a-Glance email for confirmation of the call date and time.

The RAP committee is tentatively planning to hold committee meetings in October and November 2016.

Attachment 2: Transcribed flipchart notes

Attachment 7: RAP 3-month work plan

Attachments

Attachment 1: Tri-Party Agreement Changes for Demolishing Hanford's Plutonium Finishing Plant fact sheet (DOE-RL)

Attachment 2: Transcribed Flipchart Notes

Attachment 3: 100 D/H Proposed Plan (Ecology, 8/9/16)

Attachment 4: Draft Advice: Proposed Plan for Remediation of the 100 D/H (v0, 8/5/16. Issue managers: Engstrom, Mattson, Pollet, Vanni, Suyama, Cimon, Serres)

Attachment 5: 324 Building Closure Plan (DOE-RL, 8/9/16)

Attachment 6: RD/RA Work Plan for 200 Area Plutonium and Cesium Sites (EPA, 8/9/16)

Attachment 7: RAP 3-Month Work Plan

Attendees

Board members and alternates:

Jan Catrell	Mike Korenko	Vince Panesko
Shelley Cimon	Pam Larsen	Dan Serres (phone)
Shannon Cram (phone)	Susan Leckband	Gene Van Liew
Dale Engstrom	Emmett Moore	Jean Vanni
Steve Hudson	Alex Nazarali	Dawn Wellman
Emmitt Ray Jackson	Ken Niles (phone)	

Others:

Alex Teimouri, DOE-EM	Alicia Boyd, Ecology	Bruce Ford, CHPRC
Mark French, DOE-RL	Elis Eberlein, Ecology	Dale Mckenney, CHPRC
Jim Hansen, DOE-RL (phone)	Dib Goswami, Ecology	Samantha Herman, EnviroIssues
Mark Heeler, DOE-RL	Nina Menard, Ecology	Ryan Orth, EnviroIssues
Kris Holmes, DOE-RL	John Price, Ecology	Alyssa Dyck, MSA
Kyle Rankin, DOE-RL	Stephanie Schleif, Ecology	Shintaro Ito, PNNL
Steve Balone, DOE-RL	Robin Varljen, Ecology	Rod Skeen, CTUIR (phone)
	Emy Laija, EPA	Kelsey Shank, SN3
	Tom Rogers, Washington Department of Health	Chuck Johnson, Washington Physicians for Social Responsibility