

FINAL MEETING SUMMARY

HANFORD ADVISORY BOARD

September 9-10, 2015

Pasco, WA

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This is only a summary of issues and actions presented at 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.

Executive Summary

Hanford Advisory Board Action

The Hanford Advisory Board (HAB or Board) adopted one piece of advice regarding the Tri-Party Agreement (TPA) Milestone (M) 091 change package.

Board Business

The Board adopted the fiscal year (FY) 2016 HAB Calendar and HAB Public Comment Guidelines, provisionally adopted the HAB FY 2016 Work Plan, approved a Plutonium Finishing Plant (PFP) workers appreciations letter, and identified preliminary November Board meeting topics.

Presentations and Updates

The Board heard presentations on:

- Agency Updates
- PFP

Public comment

One public comment was provided.

HANFORD ADVISORY BOARD
September 9-10, 2015 Pasco, WA

Steve Hudson, Hanford Watch and Board Chair, called the meeting of the HAB to order. The meeting was open to the public and offered opportunity for public comment.

The Board meeting was audio-recorded.

Welcome, Introductions, and Announcements

Joanne Grindstaff, Department of Energy – Office of River Protection (DOE-ORP), welcomed Board members and noted that the Board is meeting in accordance with the Federal Advisory Committee Act. Joanne is a co-Deputy Designated Federal Officer (co-DDFO), and she introduced DOE-Richland Operations Office's (DOE-RL) new co-DDFO Jon Peschong. Jon said he looks forward to his new role with the Board after being associated with them in other capacities over many years.

Stacey Charboneau, DOE-RL manager, introduced Monica Regalbuto, the new Assistant Secretary for DOE – Environmental Management (EM), appointed by President Obama and recently confirmed by the U.S. Senate. Monica has three decades of experience and has already visited Hanford many times in other roles. Today is her first visit as Assistant Secretary. Monica wanted to visit the Board during her visit to talk about goals for Hanford and the rest of the DOE-EM complex.

Monica thanked the Board for allowing her to visit their meeting. She said her first trip to Hanford was in 1989 as a recent graduate school graduate to work on tank waste characterization. Hanford was different in the late 1980s, with a lot more security. She said she enjoys seeing the reduction in Hanford's footprint each time she visits. Monica said she looks forward to continuing to work on the challenge of tank waste remediation in order to move into inventorying the site, noting that some things are easier to inventory than others, but all issues need to be treated at the same level, with the same amount of time and effort. Monica said DOE is looking into new technology to improve operations across the complex, and she spoke to a 100-year-old refinery that looks old from the outside, but has the newest technology inside to help modernize operations. She said Hanford is very important to the community, and it is important to her. She welcomes the opportunity to hear the community's recommendations and advice.

Susan Leckband, Washington League of Women Voters (Regional Environmental/Citizen) and Board vice chair, welcomed and congratulated Monica on her appointment, noting the Board looks forward to an open and transparent discussion on issues important to the Pacific Northwest and Hanford. Susan said the Board knows Monica is invested in open information and education between all entities, and they look forward to the continuation of that process. Monica said she has a spot in her heart for the League of Women Voters, stemming from a reference booklet on Yucca Mountain the group developed that Monica used to give out to those with questions about the waste site. She said it was the best reference for how to deal with waste, and she hopes it will come back into print. Susan said she will pass along Monica's praise.

Jean Vanni, Yakama Nation (Tribal Government), welcomed Monica and extended the opportunity to visit and meet with the Yakama Nation. Monica said she would be happy to meet with the tribes and other community organizations during her next Hanford visit. She looks forward to investing in community relationships.

Tony Brooks, Benton-Franklin Public Health (Local/Regional Public Health), thanked Monica for her efforts to continue funding for cleanup. He said he is concerned about low doses of radiation and the discontinuation of programs looking into its health effects. He said the public is worried about these low

doses and supports restoring the programs. Monica said it is important work, and she understands the concern. She said she will look into what happened to the programs.

Cathy McCague, EnviroIssues facilitator, reviewed the meeting agenda and objectives. She confirmed the provisional adoption of the June Board meeting summary after edits were received past the 45 day requirement. Steve encouraged Board members to review the meeting summaries after Board and committee meetings to understand what is being addressed by the HAB.

Cathy said in order to reduce the amount of paper used at Board meetings, there will now only be one color copy per seat, with an additional 20 black and white copies available if needed. Presentations will be posted on SharePoint, as well as the HAB website. She also noted that a presentation on transuranic waste (TRU) will be on loop during Wednesday's lunch hour. She encouraged Board members to view the presentation as a way to get up to speed on the Tri-Party Agreement (TPA) Milestone (M) 091 change package and ensuing draft advice the Board will be discussing.

Susan announced that Willie Preacher, a longtime advocate for the Bannock Tribe, has passed away. She said his voice will be missed, noting that he was a reasonable and respectful member of the tribe.

Steve introduced the new Board members, who will participate in an official orientation during the November Board meeting. Steve encouraged existing Board members to help new members become oriented throughout the meeting today.

Joanne welcomed the new Board members, adding that an outline of Board procedures will be provided in their orientation package provided in November. She reminded the Board of their responsibilities in working together, including when there is a conflict-of-interest. She asked Board members to recuse themselves from any real or perceived conflicts-of-interest by informing the chair or a co-DDFO of potential conflicts. Any conflicts-of-interest will be detailed in the meeting summary. Recusals may also be necessary in committee meetings, in which case the member should alert the committee chair or a co-DDFO. Joanne asked that anyone with questions follow up with her directly.

Tri-Party Agreement Agencies – Program Updates

Department of Energy – Richland Operations Office

Doug Shoop, DOE-RL, provided a presentation on recent activities at DOE-RL. His presentation is provided as Attachment 1. In addition to his presentation, Doug noted:

- DOE is working with contractors on safety standards across the site, including voluntary protection programs (VPP), which allow Occupational Safety and Health Administration less oversight of the site. Each contractor has been independently reviewed and has received Star status for VPP. DOE is proud of their contractors, but will continue to work with them on safety as contracts end, hazardous projects are undertaken, and routine work is completed. DOE thanks the workers who have implemented the Beryllium Corrective Action Program (CAP), which will be a focus for DOE in the near term.
- Cleanup highlights include:
 - 300 Area: DOE Office of Science is retaining facilities for the Pacific Northwest National Laboratory (PNNL) Site Office, who will continue operating on site for the next 20 years. Other remaining facilities include the Record Storage Facility for Hanford's records and the fire station, which will be more centrally located when the 300 Area is complete. Uranium sequestration for groundwater will begin in the next few years, and one of two

industrial waste sites with asbestos and other contamination is currently being remediated, with ongoing planning for the second. The next biggest cleanup task in the 300 Area will be the 324 Building.

- H Reactor Area: Minor waste sites have been remediated and revegetated. DOE-RL has been working with local tribes on a culturally sensitive area prior to cleanup.
- D Reactor Area: Big digs to remove contamination of Hexavalent Chromium and prevent it from entering the Columbia River are complete; contamination levels in the river are already starting to go down. The export water system for the Central Plateau is located in the D Area and will remain into the future; infrastructure upgrades will be required.
- N Reactor Area: Washington Closure Hanford (WCH) has made great progress in the N Area, including testing of an apatite barrier that will soon be extended. There are culturally sensitive sites in the area that will be remediated after the National Historic Preservation Act process is complete.
- 618-10 Burial Ground: Trench remediation is nearly complete, but the 94 vertical pipe units (VPUs) in the burial ground need to be remediated before trench remediation can be finalized. WCH has completed tests and mock ups of technology to remediate the VPUs, which includes augering to homogenize the materials, taking samples to determine radioactive levels, and then using a clam shell to remove the material. Any low activity waste (LAW) will be sent to the Environmental Restoration Disposal Facility (ERDF), and TRU waste will be packaged for shipment to the Waste Isolation Pilot Plant (WIPP). Augering on a select number of VPUs will begin in the next few weeks, after testing is complete. Remediation of 618-10 allows WCH to complete remediation of the adjacent 316-4 waste site.
- ERDF: DOE-RL is very proud of ERDF and its cost efficiency. ERDF will start receiving waste from the (PFP in 2016. Doug thanked the Board and the TPA regulators for their help on cell macro-encapsulation, as their advice helped DOE-RL to get a waiver so they can move forward with in-trench macro-encapsulation. This technology is less expensive and better for worker and environmental safety.
- 324 Building: Radiation leaks were found underneath the facility, and the contamination is a lethal dose for humans in proximity. Monitoring has indicated contamination has not migrated further underneath the facility and is being prevented from entering groundwater. WCH will use remote equipment to remove the contaminated material, after which the 324 Building will be demolished and soil remediated. WCH is confident their approach will work, having completed mockups. Stable funding is required to begin the work, as beginning the work without enough funding to finish will create other hazards.
- K Basin Sludge Treatment Project: Sludge needs to be removed and safely stored in the Treatment Plant (T Plant) before eventually being shipped to WIPP. The Sludge Annex is largely completed at this point, and equipment to transport sludge to the T Plant is being purchased. The equipment will be tested in a non-radiological environment to ensure it operates effectively. After testing, it will be installed in the radioactive basin, where a readiness assessment will take place prior to commencement of sludge removal. The preparation work will take a while, but actual sludge removal will move faster.
- Completion of the above near term River Corridor tasks will allow DOE-RL to move from cleanup on the River Corridor to the Central Plateau.
- Upcoming and future tasks for Central Plateau cleanup include:
 - DOE-RL anticipates canyon remediation will not occur in the near term, so canyon facilities will be stabilized in the interim. There are hundreds of waste sites and facilities

- to remediate in the future, some with cesium and TRU waste that will ultimately be shipped to WIPP.
- The 200 West Pump and Treat is a state of the art facility that continues to operate effectively. DOE-RL will be installing uranium treatment technology that will improve its capabilities even further. Piping is being installed in 200 East to be able to treat groundwater there as well.
 - Work at the PFP is very slow and difficult due to personal protection equipment (PPE), but workers are doing an extraordinary job despite the heat and slow pace. DOE-RL is focusing on retaining the PFP workers through project completion. A majority of internal demolition of PFP will be completed in the next few months. An emergency preparedness exercise will be completed before demolition begins.
 - A new ventilation system at the Waste Encapsulation Storage Facility (WESF) will help remove waste capsules into dry storage. There is concern about high concentration radiation resting on concrete and its impacts, so DOE-RL is working to move the capsules into dry storage as soon as possible.
 - DOE-RL is working on updating their antiquated infrastructure, including roads, technology, and electrical systems. Investments in infrastructure is needed to support the long term mission of the Central Plateau, including Waste Treatment and Immobilization Plant (WTP). Upgrades will begin in (FY 2016 and will be ongoing for several years.
 - DOE-RL is working on the most important projects first, so TPA milestones are being updated accordingly. The Board will hear more about the M-091, M-015, M-016, and M-085 change packages soon; DOE-RL wants their involvement in priority setting.

Department of Energy – Office of River Protection

Kevin Smith, DOE-ORP, provided a presentation on recent activities at DOE-ORP. His presentation is provided as Attachment 2. In addition to his presentation, Kevin noted:

- DOE-ORP is hiring and has received applications from candidates nationwide. They feel positive about the qualifications of those who want to work at Hanford.
- The PHOENIX Tank Farm application is increasing transparency of what kind of waste, and how much, is in Tank Farms. It became available to the public through the Hanford website earlier this year, and it provides real time data from multiple data sets.
- Single-shell tank (SST) C-112 is currently at 13,000 gallons, with retrieval certification under review by the Washington State Department of Ecology (Ecology). DOE-ORP is hoping to forgo the third retrieval technology for C-112, as well as for C-102.
- C Farm was the demonstration project to inform retrieval at all other tank farms. A and AX SST Farms will be the first to benefit from lessons learned at C Farm, including complete construction of the needed infrastructure before retrieval begins. DOE-ORP is also working to reduce the retrieval cost per tank and are currently working at a 37 percent cost efficiency.
- Progress is being made at double-shell tank (DST) AY-102 as sluicers, waste transfer lines and junction boxes are being installed to remove the leaking waste. Leaks were identified in 2012, and about 60 gallons of waste have leaked since then. The leak and dispersal pattern has not yet been identified, but the waste is contained within the inner annulus. DOE-ORP's commitment to Ecology is to start pumping AY-102 in March 2016.
- Inspections have been completed in nine DSTs and more are planned for this fall. Tanks are being prepared for Direct Feed LAW (DFLAW); any delays are caused by need to double-check the infrastructure and other challenges.

- Infrastructure upgrades have recently been made at the AP and AZ DST Tank Farms, Effluent Treatment Facility (ETF), and 222-S Facility.
- 381,000 gallons of DST excess water has been removed by the 242-A Evaporator, with more expected to be removed during the next campaign. The third campaign will start in mid-September to manage tank space.
- SST C-111 has new infrastructure, and additional workforce is being moved from AY-102 to ensure the cleanup milestone is met by the end of the calendar year.
- SST C-105 may require added water in the tank to help loosen the solids for removal as DOE-ORP could not cut through the crust of the solid material.
- Hanford Challenge and the United Association of Plumbers and Steamfitters, Local Union 598, and Washington State Attorney General, have issued complaints against DOE on Tank Farm vapor issues. DOE-ORP has doubled the industrial hygiene staff on site, and PPE improvements continue under Phase One of the Tank Vapors Assessment Team (TVAT) Implementation Plan are currently being tested. DOE-ORP is working on programs to detect chemicals at a lower level, and other companies and universities are informing DOE-ORP about new programs that could be put into effect at Hanford.
- Waste Treatment and Immobilization Plant:
 - Twenty-two support facilities at WTP are close to being complete; DOE-ORP is starting the system check in many of them.
 - The LAW Facility needs to be complete in time to accommodate DFLAW. DOE-ORP will be working on the melter refractory system over the next six months, as well as safety testing on the ventilation system and installation of the electro-precipitator.
 - Component level testing is ongoing at the Analytical Laboratory, but equipment will not be placed in the facility in the near term in case the technology is out of date by the time WTP comes online.
 - High Level Waste (HLW) Facility engineering work is ongoing, and DOE-ORP is currently fabricating the last two vessels to be placed from the top of the facility before the roof is installed and sealed. Options for the ventilation system are being reviewed; the space reserved for the system is currently big enough to house all seven of the possible solutions.
 - Safety features at the Pretreatment (PT) Facility are being preserved while DOE-ORP works through full-scale vessel testing. Some of the nine technical issues will be solved in the near term and are being tested with the support of Energy Solutions and Washington State University.
 - DFLAW was originally designed to go through the PT Facility first, but because of delays at PT, the Low Activity Waste Pretreatment System (LAWPS) will now be used to eliminate liquid waste to make more DST space. LAWPS will allow DOE-ORP to operate the LAW Facility and the rest of WTP before the HLW and PT Facilities are ready to operate. LAWPS was approved for Critical Decision (CD) 1 on May 19, 2015. DOE-ORP is currently in conceptual design to have DFLAW online by December 2022.
- DOE-ORP believes the One System Approach is a value-added program and has saved the agency millions of dollars through integration efficiencies.
- The increase in the FY 2016 DOE-ORP budget indicates the difference between retrieval in one tank farm and four full retrieval operations.

Kevin concluded by reviewing planned activities for WTP and Tank Farms under the FY 2016 budget, noting that a continuing resolution or sequestration would affect the budget and workforce needed to begin operations in Tank Farms. DOE-ORP has dramatically increased their staff over the past year, as well as their regional outreach efforts.

Washington State Department of Ecology

Jane Hedges, Ecology, provided a presentation on recent activities at Ecology and thanked the Board for their work this year. Her presentation is provided as Attachment 3. In addition to her presentation, Jane noted:

- Ecology is extremely concerned about the Consortium for Risk Evaluation with Stakeholder Participation (CRESP) Omnibus Risk Review Report, which does not consider the state, stakeholder, or tribal perspective, even though it indicates they were a key factor. The Oregon and Washington governors, along with Washington's attorney general, have submitted letters of concern to DOE, and copies are available for Board member's review. Jane noted the report mostly focused on cost reduction, not risk reduction.
- The Ecology Nuclear Waste Compliance Team has recently added staff and have conducted a record number of inspections at Hanford. DOE-RL and DOE-ORP are as committed to making sure the site is in full compliance as Ecology. Inspections have indicated that Revision 9 of the Hanford Facility Dangerous Waste Permit (Site-wide Permit) will provide both Ecology and DOE-RL and DOE-ORP the guidelines needed to ensure full compliance. Ecology's Hanford compliance program is no longer being overseen by the U.S. Environmental Protection Agency (EPA) Region 10 office because of their impressive accomplishments.
- Ecology has spent the last year taking over control of the Site-wide Permit, which was previously maintained by DOE-RL. Ecology now has the budget and capacity to control the permit and has been working with DOE-RL to compare the existing permit with the most current modifications. The Site-wide Permit, Revision 8c, is now available on their website. The permit will continue to be modified while the next update is made. Ecology is making good progress on Revision 9.
- Ecology is excited about the work going on at PFP and commends their workforce.

Jane closed her presentation by noting that Madeleine Brown, Ecology, is facing serious health issues. She encouraged Board members to send Madeleine positive thoughts.

U.S. Environmental Protection Agency

Dennis Faulk, EPA, provided an overview of recent activities at EPA. Dennis noted:

- Hanford is different from many EPA waste sites, as it is no longer effecting anything outside of the site's footprint. Other sites have a greater impact on the communities around them. Work at Hanford is now cleaning up mainly in the 300 Area for future generations, rather than just today's population. Hanford is no longer the biggest project in EPA's portfolio.
- There have been a number of violations on site recently, and EPA hopes enforcement of consequences for those violations will help site cleanup move forward safely.
- Dennis said the CRESP Hanford Risk Review Project (Interim Report) Overview obviously had a subversive mission, but the issues they targeted as negative have had a positive effect at Hanford, like additional funding for chromium cleanup. The additional chromium cleanup will reduce risk to the Columbia River and reduce overall groundwater cleanup time, but the CRESP Hanford Risk Review Project Report identifies it as a waste of funding.
- The CRESP Hanford Risk Review Project Interim Report focuses on Hanford and details upcoming projects and notes that the 618-11 Burial Ground and 324 Building should not be near term priorities. EPA feels differently and would like the Board's feedback on the 300 Area projects.

- Dennis encouraged Board members to participate in the survey on the Hanford Administrative Record and how it can best be streamlined for the future. A TPA agency team has been working through some ideas and would appreciate the Board's feedback.
- EPA issued a letter on September 8, 2015 approving the DOE-RL to Tri-City Development Council (TRIDEC) land transfer of 1,600 acres. The letter confirms no hazardous substances remain in the area.

Board discussion

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

C. Before we lose momentum from completing River Corridor cleanup, it is important to remember what was once out there and look into long term stewardship.

C. The Board needs to hear the details of how the technical issues at WTP are being resolved.

Q. What are the results of the Seismic Probabilistic Risk Assessment, and what are the implications for both DOE field offices?

R. [DOE-ORP] The analysis shows much less risk than before, so we do not expect there to be an issue.

C. The CRESP Omnibus Risk Review Report was disappointing, and I support Ecology's aggressive position. We have done great work at Hanford, and we should continue to cleanup River Corridor groundwater as best we can with the pump and treat systems. It is not right for CRESP to say the 324 Building is low risk; we need to keep it on the work plans for the near term because it poses risk to this region.

Q. Have the challenges with apatite barrier been resolved?

R. [DOE-RL] Funding has been requested to continue with the apatite barrier, but DOE-RL anticipates not being funded at the levels requested.

C. Material in the 300 Area has been proved to be phosphate starved. DOE-RL should select larger testing areas for sequestration of the 300 Area because there are two sources of coal with numeric acid to immobilize uranium. It could be immobilized in place, but it may not work because of bacteria in the soil. The expert panels evaluating leaks under AX Farm did not look at all the data, which indicates AX-103 and 104 are leaking. Additional monitoring and detection equipment should be installed while conducting sluicing activities.

C. We use targeting chromium remediation as an example of great cleanup, but the CRESP Hanford Risk Review Project Interim Report denounced it. We should demonstrate to the public how chromium contamination is declining. Hexavalent Chromium is even more toxic to fish than it is to humans, and it is extremely toxic to humans.

R. [DOE-RL] It is unquestionable that chromium contamination wells are diminishing, and we can get that monitoring data to share.

Q. What form of apatite barrier is being used in the 100 N Area?

R. [DOE-RL] Food-grade phosphate.

Q. Will vapor data be input into PHOENIX?

R. [DOE-ORP] Currently, PHOENIX is only for groundwater and tank readings. It may or may not be added at some point.

Q. Is there a table demonstrating which new treatment technologies treat which of the 108 contaminants of concern?

R. [DOE-ORP] We would be happy to provide that information once the legal case is settled.

C. I want to thank DOE-ORP for sharing information on tank vapor progress, despite the lawsuits. It demonstrates DOE-ORP wants to share what they can, rather than sharing nothing. The CRESP Hanford Risk Review Project Interim Report is unsatisfactory, and I will ensure my legislators know my personal opinion.

Q. While touring Los Alamos National Laboratory (LANL) recently, the guide indicated that pump and treat systems have been failures across the DOE-EM complex. They said Hanford pump and treat is a failure that DOE-Headquarters (HQ) will not be funding anymore. Has DOE-RL heard the same?

R. [DOE-RL] Pump and treat is a very successful program at Hanford, so much so that we are installing more. We are installing a line between 200 East and 200 West so we can treat more in 200 East.

C. I am concerned releasing Site-wide Permit modifications and TPA milestone change packages in the same timeframe toward the end of the calendar year will be problematic for the Board's and public's review. I am also concerned about the TPA agencies' responses to the Board's advice on Central Plateau Principles, as it seems we have been completely disregarded. We have not had the opportunity to review the last draft. We should strengthen our advice today to outline better guidelines for the release of public documents, including timing and duration of comment periods.

Q. LAWPS will remove suspended solids and cesium, but will it not remove other key radionuclides from the waste?

R. [DOE-ORP] LAWPS can only handle certain wastes at certain levels, so the solids not intended for those melters will need to be removed. Cesium must be removed. We will remove the radionuclides we have agreed to with Ecology, and the rest will be captured in glass.

Q. Can you clarify what canyon stabilization means?

R. [DOE-RL] Five canyons on the Central Plateau were left in varying conditions, and there are certain areas where we know contamination spread. We want to take care of some of the contamination now rather than wait for demolition in 10 years, but we need to balance that with other activities like PFP and sludge. Near-term stabilization means removing equipment from the canyons and disposing of it properly.

Q. Has there been a change in DOE-ORP's philosophy, given the changes to the mission statement? Maintaining the integrity of the tanks is important, but it is not the end of the mission.

R. [DOE-ORP] Our first job is to manage the material safely, as well as support disposition to WTP. We wanted to make the mission statement more straight forward.

Q. What is the minimum amount of time needed to put the LAW Facility into service making glass?

R. [DOE-ORP] The proposal to Ecology is to commit to having DFLAW online by December 2022. The facility is not the focus so much as being able to feed it, so we are focusing on the source of the feed. A longer testing program will ensure we meet the best safety requirements after having gone through a number of design-build changes. We are confident in DFLAW, and we do not want to put material back into the tanks. LAWPS removes cesium and performs the same basic function as the other facility was intended to.

Q. How long will waste be in dry storage at WESF, and are there any information materials to read more about how dry storage works?

R. [DOE-RL] We would be using commercial storage casks, but we require a special basket to be able to pull the casks. We need a storage pad or simple facility with casks and canisters within the casks, as identified by CD-0. We are not limiting the options for disposal elsewhere. We believe this will cost about \$120 million, and completion will take four to five years from approval to start. The CD-0 document will be released for the public.

Q. I am concerned DOE-ORP did not mention SST T-111 or monitoring of other tanks. We have not seen DOE-ORP's detailed FY 2017 budget request so we cannot ensure DOE-ORP plans to retrieve the leaking tanks or increase monitoring. What will be done to meet the legal requirement that leaking tanks be emptied as soon as practicable, and when will the Board and public be able to review the FY 2017 budget request?

R. [DOE-ORP] We wanted to include T-111 in our update but left it out because we have recently removed 1,400 gallons off the top using the dryer, and we do not have updated data. This action is part of our agreement to reduce T-111's liquid. Ecology does not require additional action for tanks that have been through interim stabilization. In terms of the budget, I am not aware of promises made as we have restrictions on how budget information flows. Due to other workloads and legal settlements, we have not been able to work with our regulators. We are currently providing all the information we are able to.

Q. What does "freeze the code of record" mean for DFLAW?

R. [DOE-ORP] The Tank Farm and WTP contracts have to match in order for the contractors and facilities to work together. When we are matching an activity, we have to ensure we are using the same requirements and laws, so we freeze the code to stop constant changes to the requirements.

C. The Public Involvement and Communications Committee (PIC) is requesting that comment periods for M-091, M-015, M-016, and M-085 overlap to ensure adequate time to review, prepare materials, and generate public interest for public meetings. One proposal is to delay the comment periods until 2016 to provide adequate time.

R. [EPA] We would like to finish the change packages as soon as possible, and there are other factors for consideration. The D and H Proposed Plans will be released in early 2016, and we would like to avoid dueling comment periods by releasing the M-015, M-016, and M-085 packages in October 2015. The packages are very simple.

Q. How will the CRESP studies be factored into the budget process?

R. [DOE-RL] The government spent a lot of money on the reports, so we cannot disregard them. There are many factors involved in the budget process. We will continue to be open with our

budget process and will let the Board know if our priorities change because of the reports. For now, the reports do not change DOE-RL priorities like PFP, 618-10/11, and the 324 Building.

[EPA] The reports may inform choices to be made, for example, if we should go after cesium and strontium or cleanup the burial grounds. The reports also say Hanford cannot wait as long as we thought to clean up the Purex Tunnels, so that might be a tangible change in the near term.

C. Halting work at 618-10 Burial Ground and the 324 Building will disrupt the trained work force we have in place. It will cost more in the long term if we have to retrain a workforce.

Q. Can the Tank Waste Committee (TWC) review CD-2 and CD-3 for DFLAW?

R. [DOE-ORP] The documents are not available yet. They will be submitted this month, and we can share them after that.

Q. Idaho National Laboratory (INL) is using a large cask to rebuild a leaking basin. Has DOE spoken with them about lessons learned? What will happen to the concrete at WESF if there is a catastrophe?

R. [DOE-RL] We are familiar with the INL project. At Hanford, the capsules have already undergone a half-life. Heat loading is less than spent nuclear fuel. We believe concrete is sufficiently strong to withstand a design-based earthquake. Dry storage is safer than where the waste is stored now.

Public Comment

Dick Smith, City of Kennewick, provided public comment on the Omnibus Risk Review Report and CRESM methodology and analysis for waste remediation processes. He said he has a different viewpoint than other Board members, because he is interested in the scientific basis that takes risk to the environment and population into account, depending on how waste is treated or not treated. He believes there should be a basis for determining what the most appropriate remediation is complex-wide, making standard tools available for decision makers. This basis would prevent remediation from being based on politics or funding. There should be a scientific basis for determining what is and what is not HLW, and the reports ask DOE to do so. A scientific basis that quantifies the actual risk with a methodology for selecting remedies provides a rational approach for dealing with contaminated material. It would provide rationale for the public. Dick said the Board needs to understand what is really in the reports, which is to ask the DOE-EM complex to approach cleanup methodically, not on a case-by-case basis. The Board should encourage DOE to proceed with that approach.

Dick provided a written statement (Attachment 4).

Draft Advice: TPA M-091 Change Package

Issue manager introduction

Shelley Cimon, Columbia Riverkeeper (Regional Environmental/Citizen), said the TPA agencies have completed negotiations for proposed updates to the TPA M-091 change package, which focuses on 12,000 waste containers still underground and 8,000 containers stored in the Central Waste Complex (CWC) waiting to be shipped to WIPP. The latest estimate is that WIPP will open to receive waste no sooner than 2018, with Hanford TRU waste in line for 2020 or beyond. The proposed updates to M-091 include repackaging some of the waste and annual requirements. The comment period for the M-091

change package has been extended past 45 days. The Board wishes to submit advice indicating the need for the change package to address the closure of WIPP and that negotiations should not take place until shipments to WIPP resume. Hanford would only have a 10-year window to ship TRU waste to WIPP before the operational permit expires in 2030. There is waste at the CWC ready to be shipped offsite now, and there are uncertainties about other TRU wastes on site.

Shelley said the Board wants to be able to understand the change packages collectively, not just one-by-one, but she acknowledged the packages need to be completed for the budget process and should not be held up for public involvement. She hopes the advice will be considered not just for M-091, but for all upcoming change packages.

Agency perspectives

John Price, Ecology, provided two slides on the change package funding cycle and coordination with other packages (Attachment 5), noting that the advice raises good issues. Activities addressed in M-091 will be a per year cost until 2030, and delaying the package will add costs. John encouraged the Board to consider the national DOE-EM budget, as well as other cleanup priorities across the complex.

John said the TPA agencies have considered the \$2 billion cost of M-091 activities in comparison with other change packages that are closer to \$10 billion worth of work. Those considerations will be shared with the Board in the future. He stressed that Ecology supports closing the M-091 negotiations in order to ensure DOE-RL is in compliance again. John encouraged the Board to continue to send comments for TPA agency consideration on M-091 if they notice discrepancies or other needed changes as the rest of the change packages are issued.

Jon agreed with John, noting that DOE-RL wants to look at a suite of capabilities for the three problem areas addressed in M-091 change package to ensure there is no need to build another facility. That study needs to be completed in 2016. Jon said he agrees the 2030 deadline is problematic, and DOE-RL will look into it. John said it will be more difficult to get recertified for shipments down the road.

Dennis said the sludge from K Basin needs to be treated, and should be considered as part of the 2016 study. EPA does not support an additional facility to treat a tiny amount of sludge. He said he is comfortable with the change package moving forward without any further delay.

Board discussion

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

- One Board member said DOE-RL is required to close the CWC containing thousands of containers of dangerous waste. Ninety-five percent of the waste can be treated by a contractor, if they were permitted to treat more than 200 grams of plutonium at one time. He asked the advice be changed to reflect that the waste can be treated quickly, onsite, with existing facilities. The Board agreed.
- John clarified that funding for PFP and the 618-10 and 11 Burial Grounds is a separate funding stream from the M-091 activities. \$20 million per year is needed for M-091.
- One Board member advised revising the inflammatory language used in the advice, acknowledging the passion behind the writing, but asking for more simplicity.
- The Board discussed whether the term “illegally stored” is appropriate for waste currently in storage at the CWC. EPA refers to the waste as “unauthorized.” A number of Board members objected to the use of “illegal” if it is not the proper terminology. Background information was

added to provide context for term, as well as a footnote to reference the EPA and Ecology documentation that the storage does not comply with site regulations.

- One Board member brought forward edits from PIC, including correcting the quote of “no further harm” in the background to “do no harm during cleanup,” and adding a footnote for the quote source. PIC also asked for change packages to be released simultaneously to allow for more informed public comment. The Board discussed whether the ladder addition would delay M-091 change package moving forward. The Board agreed to exclude the addition, noting that elsewhere in the advice the Board asks for the TPA agencies to demonstrate how the change packages are interrelated during public meetings.
- The Board discussed whether to include the request to extend the comment period after the TPA agencies had already done so. Language was added to ask the agencies to adopt the milestones needing funding in FYs 2016 and 2017, and hold in advance the bigger, more long-term milestones needing funding by 2030.
- The Board agreed to remove “resource-loaded” from a schedule request, as a resource-loaded schedule would force DOE-RL to make assumptions about future budgets. A schedule is only as good as the budget.
- One Board member suggested the timeframe for shipping to WIPP be clarified as 2020 to 2030 to show the available window.

Presentation: Plutonium Finishing Plant

Issue manager introduction

Pam Larsen, City of Richland (Local Government) said the River and Plateau Committee (RAP) follows cleanup activities at PFP and are very impressed with the workforce and their handling of hazardous waste. Today’s presentation is to share what the committee has been learning with the full Board.

Presentation

Bryan Foley, DOE-RL, provided a PFP progress update. His presentation is provided as Attachment 6. In addition to his presentation, Bryan noted:

- PFP is close to the demolition phase, which means the facility will be down to slab-on-grade by the end of 2016.
- Only five glove boxes remain, and crews recently removed the last pencil tank. Bryan noted the last of the pencil tanks were removed despite infrastructure problems, like an aging crane.
- American Recovery and Reinvestment Act funding in 2012 allowed PFP crews to remove the Vault Complex. 2014 saw another large footprint reduction in the removal of 14 ancillary facilities. The Low Level Liquid Waste Facility was removed in August 2015, and the remainder of the facilities will be demolished in 2016.
- HA-9A, a highly contaminated glove box in the 234-5Z Main Facility was recently removed after mock ups and testing. One more similar glove box remains for removal. The last of the glove boxes will be removed shortly before or during demolition.
- A significant amount of ancillary equipment is ready to be removed from the facility.
- The recently installed fencing allows DOE-RL to maintain the site during demolition, and it will remain in place when the site is turned over for long-term stewardship.

Bryan said he is proud of the PFP workforce, noting that this year saw three simultaneous hazard operations without a safety incident.

Stephanie Schleif, Ecology, said Ecology has been working closely with DOE-RL to ensure they are aware of what constitutes meeting the M-083 milestones and moving the facilities to slab-on-grade. Ecology is aware the milestone may be at risk, but DOE-RL is working safely to try to meet it.

Dennis said EPA will provide oversight for what is left after PFP. Slab-on-grade does not mean the site will be empty, but removing it will provide the opportunity to investigate the remaining waste sites in the area.

Board discussion

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

Q. Where do glove boxes go once removed?

R. [DOE-RL] LAW goes to ERDF, and some of the glove boxes are sent to Perma Fix for size reduction. Once they have been reduced and packaged, they move to staging at CWC. The TRU waste does not qualify for ERDF, so will be in storage containers until they can be shipped to WIPP.

C. The numbers being communicated are impressive, but I do not know what they mean or how to process it. How did moving the glove boxes impact risk? What would the dose have been? We need to better communicate the need and success of this remediation.

Q. When should RAP address what will be left for EPA oversight after PFP is demolished?

R. [EPA] That information is available now, but it is not timely. There will be a number of waste sites remaining.

C. Hanford Communities produced a video about PFP within the last year that should be shared. There are three generations of families who have worked at PFP, between operation and demolition, and we should be recording their stories to memorialize the site.

Q. Is there a ballpark figure for exposure levels on work completed this year?

R. [DOE-RL] We can get back to you on that.

Draft letter: PFP Workers Appreciation

Susan introduced the letter written to commend the PFP workforce for their accomplishments and safety record in 2015 (Attachment 7), noting that PFP has been one of the highest risk facilities to human health and the environment in recent cleanup. The Board has urged that cleanup of PFP be completed quickly and safely, and the workforce has done just that. She asked that DOE-RL pass the letter onto the workforce. Bryan agreed and thanked the Board for their acknowledgement of the workforce.

Jane suggested the Board also submit the letter to be published in the *Tri-City Herald* so the community can see the letter as well.

Board and Committee Reports

Health, Safety, and Environmental Protection Committee

Becky Holland, Hanford Atomic Metal Trades Council (Hanford Workforce), recognized those on the committee and asked for new volunteers. The full committee has not met since June, as their agenda items have not been timely. They will hold a call on September 29 to plan for a potential October meeting. Upcoming topics include traffic safety on site, safety culture, the TVAT Implementation Plan, and other joint topics with TWC.

Budgets and Contracts Committee

Jerry Peltier, City of West Richland (Local Government), said the Budgets and Contracts Committee (BCC) provided advice on DOE's FY 2017 budget during the June Board meeting. Ecology has responded to the advice, but DOE has yet to. DOE-ORP's FY 2017 budget will not be available for the Board's review due to their litigation. BCC does not have meetings or conference calls planned for the upcoming months, but Jerry asked committee members to alert him should any topics arise, including contract review.

River and Plateau Committee

Pam acknowledged committee members and thanked them for their work. RAP held a meeting in August to talk about the 207-A South Retention Basin, TPA M-091 change package, the commendation letter to the PFP workforce, and to update their 3-month work plan. In September, they will receive an update on waste capsules at WESF, the CRESP Hanford Risk Review Project Interim Report and legislative responses, and the Central Plateau milestone change packages. The October RAP meeting will be an on-site tour.

Public Involvement and Communications Committee

Liz Mattson, Hanford Challenge (Regional Environmental/Citizen), recognized PIC members, noting that their meeting was held prior to the Board meeting. They discussed recent outreach activities, TPA milestone changes and the M-091 advice, TPA public involvement activities, and the WTP Progress and Communications Approach, which will be further discussed with TWC on September 23. The committee is considering adding regular meeting topic placeholder for tutorials on certain aspects of Hanford, which would be beneficial to new and existing HAB members. PIC will meet before the November Board meeting.

Tank Waste Committee

Bob Suyama, Benton County (Local Government), recognized TWC members, noting that they did not hold meetings over the summer. TWC will have a full day meeting on September 23 to review CD-1 and what it means for LAWPS, as well as the path forward for the next CDs. TWC will also look at the A/AX Tank Farms, the Beryllium CAP, WTP Progress and Communications Approach with PIC, and discuss safety culture with HSEP, including the science of safety. TWC will review what to do with cesium once removed from the tanks, rather than feed it back into the tanks; TWC hopes to arrive at a recommendation for DOE-ORP.

Dirk Dunning, Oregon State Department of Energy (State of Oregon), added that safety culture is a specific phrase that people use interchangeable with other meanings. The committee is looking to formulate a definition for Hanford safety culture to bring before the full Board so there is fundamental agreement on what it means.

Executive Issues Committee

Steve said the EIC serves a number of purposes, including material review, Board organization, and overarching guidelines for the Board. This summer, the EIC supported edits to the HAB Process Manual, advice development guidelines, and public comment guidelines. Steve noted that EIC meetings are open for any Board member to attend.

National Liaison

Shelley said restrictions on the Board budget have prohibited her from traveling to national meetings, but she has been following recent developments at Yucca Mountain, which has been called into question again. More information on recent studies conducted on the potential for Yucca Mountain waste to leak into the environment will be available for the Board in the spring.

DOE-EM Site-specific Advisory Board (EM SSAB)

Steve said the chairs of the DOE-EM advisory boards meet every six months in varying locations across the complex. The September meeting was held in Sante Fe, New Mexico and included a tour of LANL. Steve said the security at Los Alamos is daunting compared to Hanford. The EM SSAB meetings are an opportunity to talk about issues complex-wide, including understanding how each site solves similar problems in completely different ways. Steve offered to share what he learned about problems at WIPP, as well as photos. He said a draft white paper on best practices for working with the public on sites' budgets is being reviewed by the EM SSAB, he hopes to share it with the Board soon. Draft advice from the Los Alamos advisory board on supplemental environmental projects will also be forthcoming in November.

Susan highlighted a number of other topics discussed at the EM SSAB meeting, including:

- Monica Regalbuto is very familiar with Hanford and will be invested in leveraging existing technology with new technology in order to complete cleanup activities more quickly. She hopes to complete a lot of work before the end of her term, which is subject to presidential elections.
- Greater than Class C waste will not be disposed of at Hanford; DOE is looking into other sites to take in the waste, including a commercial site in Texas.
- DOE is concerned medical isotopes will soon become unavailable because the Canadian company producing them will be discontinuing. DOE is determining how to produce them in the United States.
- CD-2 may require 90 percent design in order to be approved. This would provide a higher percentage likelihood that what is built will actually work.
- DOE-EM has provided guidelines for how to engage students in the Board process, including outlines for liability issues and a suggestion to involve student interns working for TPA agencies over the summer months.
- The safety analysis of WIPP is a long-term need. DOE-EM's recovery plan for WIPP is in development and will eventually be available publically. There will be room at WIPP for both remote-handled and handled TRU waste from Hanford. WIPP may be expanded length-wise within the allowable footprint, but it will not be expanded any deeper or closer to the surface.
- There have been recent staffing changes at WIPP but the Board is confident those now in place will do an excellent job.

Board Business

HAB FY 2016 draft Work Plan

Cathy provided an overview of the HAB FY 2016 draft work plan, noting that all of the committees have had to opportunity to make changes since the plan was first presented to the Board in June. The EIC and TPA agencies also made some changes in August. Reasons for any recommended changes between September and November will need to be provided before approval.

Cathy projected the draft work plan for the Board's review.

Board discussion

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

- Agency updates indicated work will begin on the 618-10 Burial Ground VPUs in 2016, so the topic should be promoted from the holding bin. RAP would also like to address the 324 Building, but it can stay in the holding bin for now. Dennis confirmed that 618-10 and 11 Burial Grounds and the 324 Building are 2016 priorities for EPA.
- One Board member noted a number of topics she would like to see reflected in the work plan that have been left off. Cathy encouraged Board members to raise any topics they believe the Board should address with their committee chairs. Committees can make recommendations for additions to the work plan, but it should be discussed within committee first.
- One Board member said any Board documents needed confirmation or adoption should be provided in hard copy, not just projected. The Board discussed version control issues with hard copies, noting that the correct copy of the draft work plan was provided in the Board packet prior to the meeting.
- The CRESF Hanford Risk Review Project Interim Report should be moved from the holding bin, considering their timeliness and potential cleanup priority implications. RAP will address the topic in October.
- DOE-ORP has asked that tank vapor issues be removed from the HAB draft work plan due to ongoing legal concerns and potential conflicts of interest with Board members. The Board discussed their ability to discuss major public issues with or without the agencies' support. One Board member said DOE is under litigation for a number of issues, but those topics are not being removed from the draft work plan. Another Board member said the Board should not abdicate their responsibilities to the public and site workers because DOE is under litigation. DOE is not prevented by law from talking about ongoing litigation, only advised against it. One Board member strongly objected to removing the topic as it is the number one safety problem at Hanford, and the Board would not be fulfilling their obligation to the workforce if they ignore it. Tank vapor issues need to be discussed and resolved before any of the WTP facilities come online, as they will be at great risk for vapor exposure. One Board member said that even if the topic is removed from the draft work plan, the committees and Board will continue to follow it. The Board advises on public policy, which means protecting workers on site; if the topic is removed from the Board's prevue, workers should know it was DOE who removed it.
- The Board discussed shortfalls of the draft work plan process and implications should the Board not approve their draft work plan in September. The draft work plan is a living document always subject to reasonable change, and the Board needs to adopt it so they can move forward into FY 2016. Emy Laija, EPA, said the TPA agencies are working on their priority letter for the Board, which will include recent changes from DOE-HQ. The TPA agencies hope to continue with the collaborative process that has been streamlined over the past year to support development of one work plan between the agencies and the Board. The Board should not consider two separate work plans.

- The Board discussed provisionally adopting the draft work plan to inform FY 2016 committee agendas, recognizing that there are some issues to work out within committees and between the EIC and TPA agency leadership. Provisional adoption would allow the EIC to review changes from DOE-HQ. Tank vapor issues may be moved to the holding bin in the interim. Some Board members objected to adopting the draft work plan provisionally until DOE-HQ's changes can be reviewed. Emy said the agencies are willing to share the changes now, but the EIC has not been able to review them yet, which is the first part of the process. Dennis supported the Board keeping tank vapor issues on their work plan.
- One Board member asked the TPA agencies to ensure the Board has a number of months to review their edits to the draft work plan, rather than providing them days before they are supposed to be approved. It is a critical factor of a collaborative process.

The Board determined to provisionally adopt the draft work plan, keeping tank vapor issues as a priority item. The issue will be revisited in November, after the Board has had the opportunity to review the TPA agencies' priorities letter, DOE-HQ edits included.

HAB FY 2016 draft Calendar

Steve said no comments were received on the HAB FY 2016 draft Calendar after it was introduced to the Board in June. Cathy reviewed changes to the draft calendar format for committee meetings and placeholders.

The draft calendar was adopted.

HAB draft Guidelines for Public Comment at Board Meetings

Steve distributed the updated HAB Guidelines for Public Comment at Board Meetings (Attachment 8), noting that it now reflects the suggestions received at the June Board meeting. The language is more concise, and additional contact information is provided on the back.

The draft guidelines were adopted.

Draft Guidelines for Process and Development of Annual HAB Work Plan

Steve distributed that draft Guidelines for Process and Development of the Annual HAB Work Plan (Attachment 9). Cathy reviewed edits received at the June Board meeting. Susan clarified the guidelines are to ensure the full Board understands how the work plan is developed.

The Board reviewed the draft guidelines, asked clarifying questions, and provided minor edits. One Board member asked that the flowchart be updated to proper flowchart format, and other Board members suggested additions to the flowchart based on the earlier draft work plan discussion.

EnviroIssues and the EIC will make the recommended changes and provide the final draft version for Board approval in November.

Preliminary November Board meeting topics

Cathy reviewed the following tentative meeting topics for the November 4-5, 2015 Board meeting:

- Agency updates
- New member orientation
- TPA change packages draft advice (tentative)
- Updated Guidelines for Process and Development of Annual HAB Work Plan
- Draft EM SSAB letter of recommendation
- Resource Conservation and Recovery Act permit modifications
- HAB SharePoint site tutorial
- HAB FY 2016 Provisional Work Plan

Closing remarks

Steve thanked Board members for their participation and encouraged them to do their homework prior to November's Board meeting.

The meeting was adjourned.

Attachments

Attachment 1: DOE-RL Agency Update presentation

Attachment 2: DOE-ORP Agency Update presentation

Attachment 3: Ecology Agency Update presentation

Attachment 4: Dick Smith, public comment

Attachment 5: TPA M-091 Change Package presentation

Attachment 6: PFP Progress Update presentation

Attachment 7: PFP Workers Appreciation letter

Attachment 8: HAB draft Guidelines for Public Comment at Board Meetings

Attachment 9: HAB draft Guidelines for Process and Development of the Annual HAB Work Plan

Attendees

HAB MEMBERS AND ALTERNATES

Don Bouchey, Member	Susan Leckband, Member	Jeff Hunter, Alternate
Tony Brooks, Member	Liz Mattson, Member	Alex Klementiev, Alternate
Janice Catrell, Member	Melanie Myers-Magnuson, Member	Mike Korenko, Alternate
Shelley Cimon, Member	Jerry Peltier, Member	Bob Legard, Alternate
Rob Davis, Member	Gerry Pollet, Member	Larry Lockrem, Alternate
Yonas Demissie, Member	Bob Suyama, Member	John Martell, Alternate
Sam Dechter, Member	Mecal Seppalainen, Member	Peggy Maze Johnson, Alternate (phone)
Tom Galioto, Member	Gene Van Liew, Member	Kristen McNall, Alternate
Gary Garnant, Member	David Bernard, Alternate	Rudy Mendoza, Alternate
Floyd Hodges, Member	Gary Busselman, Alternate	Emmett Moore, Alternate
Becky Holland, Member	Eric Clements, Alternate	Ed Revell, Alternate
John Howieson, Member	Shannon Cram, Alternate	Dan Serres, Alternate
Steve Hudson, Member	Dirk Dunning, Alternate	Richard Smith, Alternate

Pam Larsen, Member	Dale Engstrom, Alternate (phone)	Margery Swint, Alternate
		Jean Vanni, Alternate

AGENCY, CONTRACTOR, AND SUPPORT STAFF

Stacy Charboneau, DOE-RL	Dennis Faulk, EPA	Sharon Braswell, North Wind Solutions, (DOE-ORP)
Doug Shoop, DOE-RL	Emy Laija, EPA	Rich Marshall, North Wind Solutions, (DOE-ORP)
Karen Lutz, DOE-RL	Jane Hedges, Ecology	Jennifer Copeland, Mission Support Alliance (MSA)
Jon Peschong, DOE-RL	Dieter Bohrmann, Ecology	Jennifer Colborn, MSA
Kristen Skopect, DOE-RL	Nancy Ware, Ecology	Michael Turner, MSA
Al Farabee, DOE-RL	John Price, Ecology	Rob Piippo, MSA-TPA
Geoff Tyree, DOE-RL	Stephanie Schleif, Ecology	Joey Payne, MSA- Environmental Impact Statement
Kevin Smith, DOE-ORP	Tammie Gilley, EnviroIssues	Daniel Noonan, Washington River Protection Solutions
Ben Harp, DOE-ORP	Cathy McCague, EnviroIssues	Kurt Workman, CH2M HILL Plateau Remediation Company
Joanne Grindstaff, DOE-ORP	Melissa Thom, EnviroIssues	Peter Bengston, WCH (phone)
Carrie Meyer, DOE-ORP		Mark Freshley, PNNL
		Tom Rogers, Washington Department of Health

MEMBERS OF THE PUBLIC

Annette Cary, Tri-City Herald		
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