



**FINAL MEETING SUMMARY**

**HANFORD ADVISORY BOARD**

*March 1-2, 2017*

*Richland, WA*

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

## **Executive Summary**

### **Hanford Advisory Board Action**

There were no pieces of advice adopted during the March Hanford Advisory Board meeting.

### **Hanford Board Business**

The Board will hold three committee calls in March. The Board discussed the following:

- Scheduling for upcoming committee meetings and phone calls
- Agenda topics for the Leadership Workshop (May 2-3)
- Revisions to the FY17 HAB Calendar
- Preliminary June Board Meeting Topics

### **Presentations & Updates**

The Board received the following presentations:

- Tri-Party Agreement (TPA) Agency Updates
- HAB Committee Reports
- Rebaselining of Waste Treatment & Immobilization Plan (WTP) Contract
- TPA M-045 Series Change Package (C Farm Closure Schedule)
- Tank AY102- Retrieval Update
- Tank Vapors Management Update

### **Public Comment**

There was one public comment received at the March meeting.

## **HANFORD ADVISORY BOARD**

*March 1-2, 2017*

*Richland, WA*

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

The Board meeting was audio-recorded.

### **Welcome, Introductions & Announcements**

Dawn MacDonald, DOE Office of River Protection (ORP) and Co-Deputy Designated Federal Officer for the HAB, noted that the Board was meeting in accordance with the Federal Advisory Committee Act (FACA).

Dawn provided a special thank you to Steve Hudson for his support to the Hanford Advisory Board as Board Chair as his term has officially ended. Per FACA regulations, Dawn welcomed Incoming Board Chair, Susan Leckband.

Susan provided members with an overview of the meeting agenda and objectives. She noted that this meeting would be very educational. Susan also communicated there was no draft advice for review.

The December 2016 Board meeting summary will be adopted pending confirmation that all items are no longer in draft status.

### **New Facilitation Team**

ProSidian Consulting introduced their credentials as a team with approximately 30 years of experience in Energy and Sustainability. Adrian Woolcock, Managing Principal thanked the Board for the opportunity to serve. Lindsay Strasser is our point of focus for the ProSidian Team. She has roots in the community with her husband being a math teacher in the community. She has extensive experience with Hanford working through PNNL and HPM Corporation who is a Prime Contractor on Site. Lindsay is housed in our Richland office located at 713 Jadwin, Suite 3, Richland, Washington 99352. She can be reached directly at 509-588-7010.

Our Lead Facilitator, Freddie Barrett, has over 15 years of Executive Coaching and Facilitation experience. She has worked with agencies such as Environmental Protection Agency (EPA) and the King County Local Hazardous Waste Management Program (LHWMP) in various capacities.

ProSidian Facilitator, Paula Fitzgerald Boos was also in attendance at the March Board meeting. Paula has delivered excellence in client service through deep industry expertise, a healthy balance of business and technology solutions, and a collaborative, teaming style that distinguishes her from her peers.

A roundtable of introductions was had by the Board in which information was provided on who each member is, how they got involved and what role he or she plays on the board. Each member reflected on their passion and engagement of the Hanford cleanup.

Comments from Board members included the following:

*“I have watched and worked with the board for many years. The consensus board is crucial to the schedule of the cleanup. I am curious to see how we all evolve.”*

*“I have concerns regarding returning the land to a point where the people can exercise their treaty rights.”*

*“We believe if our concerns were met, we would all be a lot safer.”*

*“I have an interest in the big picture issues.”*

*“I am very passionate about the cleanup. I want to ensure my coworkers are able to go home safe daily.”*

*“I believe this is one of the safest places you can work but a lot of improvements can be made.”*

*“We have a very diverse group on the board. This includes technical folks, non-technical folks, current and past workforce.”*

*“My interest is on how Hanford focuses on the health of the Columbia River.”*

*“I am here to speak for those who cannot speak for themselves.”*

*“I want those to see past the technical side of the cleanup. To look at the land, water, animals, and earth. We need to ensure that they are here for future generations.”*

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

**Q:** In the past, there has been a note taker. Are notes being taken?

**R:** *Yes, notes are being taken. Lindsay is taking notes and will be responsible for the meeting summaries.*

**Q:** I was hoping to see a list of new phone numbers for the HAB to use going forward. Is this coming?

**R:** *ProSidian is in the process of securing a number for the use of all HAB conference calls. This information will be provided to the HAB when available.*

**Q:** Is there a status on SharePoint? Will we continue to use this moving forward?

**R:** *There was very little use of the HAB SharePoint site. ProSidian is looking into options for providing this service to the members.*

**C:** I feel like it would be beneficial to form a subcommittee to help with the temporary IT issues. I would like to propose a small group on the board to help Lindsay with the transition. It would be nice to have an expanded committee call process and have the meeting without risking the life and limb of our members. Only about 12 out of 65 of our members were using SharePoint. I think a small group of us who are more computer literate might be able to help Lindsay with a proposal.

**C:** I think that's a great idea and will take it to the EIC.

C: Thank you Bob for outlining some possibilities going forward. I am sure there are plenty of avenues available online. I would like to look into the possibility of flash alerts for cancellations of meetings. People continue to arrive well past the start time and it would be nice if they could receive those immediate messages.”

### **Tri-Party Agreement (TPA) Agency Updates**

*U.S. Department of Energy- Richland Operations Office*

Doug Shoop, DOE Richland Operations (RL) Manager, provided Board members with a presentation highlighting recent RL activities and the 2020 vision moving forward. Doug noted the following in his presentation:

#### ***324 Facility***

We continue to make excellent progress on our vision and have great advocacy for our vision. People fail to realize the great deal of progress that has been made. In December of 2019, we will be completing several projects that together we have been working on for over 20 years.

The 296 waste site was discovered prior to demolishing the 324 facility. We were ready to demolish the facility and found there was a breach in one of the hot cell liners. We appropriately investigated and identified that there were 12,000 RAD/hour which is immediately lethal to human health. The facility is serving as a cap over the waste site. Therefore, we do not want to demolish the facility. We have to figure out how to clean up the contamination with the building on top of it. The approach will include cleaning out some of the hot cells that already had grout put into them. We will be using remote control equipment to excavate some of the most contaminated material that is under the facility. The contamination is in most part right under the foundation of the building causing a further layer of complexity to the project. While remediating, we must ensure the structural integrity of the facility. Once the major component of contamination is remediated, then we will demolish the building and cleanup any residual contamination under the building. When we bring the contaminated soils from underneath the building, we will put them in a hot cell within the building and add some cement material and grout them. Eventually, those will be transported to the Environmental Restoration Disposal Facility and disposed of.

Where are we at in this process? CHPRC has done an excellent job putting together a very comprehensive plan to address the contamination under the building. They have hired and trained employees to start doing that work. This year we are completing a mockup facility. This mockup facility is a clean facility that immolates the 324 facility. We will largely be done purchasing and training employees how to use the equipment this year. We will have the crews start working on the airlock of the facility and do some of the cleanout of the airlock.

TPA milestone for work to be complete is September, 2019. Doug feels this is a very aggressive milestone but they key is to get started. Getting the workforce trained and the mockup facility up and operating is priority. They will be working very aggressively and safely toward achieving the TPA milestone.

#### ***River Corridor Cleanup***

618-10 is the burial ground where very radioactive materials that were produced in the 300 area that needed to be disposed of were disposed here. There were a series of pits and trenches and debris that were disposed of along with a multitude of drums. There were also 94 vertical pipe units. Many years ago, several people thought that it was impossible to remediate. Doug is happy to say that 80 of the VPU's have been totally remediated. There are 14 vertical pipe units left to go. Those VPUs are ones that didn't

have a drum composition. These VPUs had more of a steel pipe composition which lead to a different approach to remediate. There are 56 lifts that need to be completed to complete those vertical pipe units. As of today, 7 of those have been completed leaving us about 12% done with the steel VPUs.

There is a waste site proximal to the 618-10 burial ground called 316-4. Remediation has started on this site. By removing the overburden, this will allow for the crews to get to the true remediation that needs to be done. There is also a very small facility nearby underground that needs to be demolished called the Lysimeter facility. 618 and “associated” refers to 316-4 and the Lysimeter facility.

The TPA Milestone for 618-10 is September, 2018. It is anticipated that if all goes as planned, this work could be completed this year. This would have us about one year ahead of the TPA milestone. The completion of this work marks the last component of the River Corridor Capital Asset project. The River Corridor Capital Asset project cleans up the vast majority of the 220 square mile of the River Corridor. The CD4 date for this project is January, 2020 with a total project cost was \$1.85 billion. Weather permitting, the desire to have this project complete this year, ahead of schedule and under budget.

### ***K Area Sludge Removal***

There has been a struggle over the years with the sludge in the K area. A great effort has been made to design, fabricate and test the equipment to be used in the K Basins. This equipment has been installed and testing is being conducted.

The K Area Sludge Removal project is a Capital Asset project which has a scheduled completion date of November, 2019. An operational readiness review is scheduled to be completed at the end of this year/beginning of next year. This review will show that the facility is operational, the crews are trained and the sludge removal is ready to begin. Once this is complete, this will be the end of this Capital Asset project. Once again, this project is anticipated to be ahead of schedule.

Modifications are being completed at the T-Plant in preparation to accept the sludge. Those modifications are all going well. If all goes as anticipated, the sludge will be removed off the river up to the Central Plateau ahead of the TPA milestone. If all goes as planned, sludge transfer will begin at the beginning of the next calendar year.

### ***Plutonium Finishing Plant (PFP)***

There have been over 20 days of weather related delays. These delays were caused by either snow, road closures or temperatures. If the weather is too cold, crews are unable to work on demolition.

Crews are currently cleaning up the rubble from demolition. Within the next week or so, crews will cut all electricity to PFP. Cutting electricity is the first step of going cold and dark. This is a very important step in worker safety and getting the facility down.

The TPA milestone for this project is September, 2017. The Capital Asset Project date is August, 2018. It is understood that a safe, methodical demolition of the highly contaminated plutonium facility is what needs to be done. There is a high probability that completion could happen by the end of this calendar year.

*U.S. Department of Energy- Office of River Protection*

Kevin Smith, ORP Manager provided Board members with a presentation highlighting recent ORP activities. Kevin highlighted the following in his presentation:

The Office of River Protection (ORP) is responsible for planning, integrating, and managing the River Protection Program executed by contractors performing work under ORP management. ORP has 225 employees, both federal and contractor. Contractors include the following:

- Washington River Protection Solutions (WRPS) is the prime contractor responsible for safely managing and operating the Tank Farms. WRPS has 2,094 employees.
- Bechtel National, Inc. (BNI) is responsible for the engineering, construction, startup and commissioning of the Waste Treatment and Immobilization Plant. BNI has 3,044 employees.
- Wastren Advantage, Inc. (WAI) is the prime contractor responsible for managing the 222-S Laboratory. WAI has 56 employees.

Within these contractors there is an integrated function called onesystem. Onesystem is used to tie the different contractor's contracts, standards, procedures, phone systems, email addresses, and corporate standards. It is a driving function used to really put everything together.

### ***C Farm Retrieval Status***

C-105 is the last retrieval in progress. Kevin communicated that this tank has had significant difficulties. Due to an unexpected substance on the top of the tank, it took a lot of energy and effort to start the retrieval process. The tank is currently 75% retrieved with 35,000 gallons remaining. The target for completion is the end of 2017 or early 2018. Upon completion of C-105, this will bring to the conclusion the first full tank farm for Hanford under retrieval and recovery.

### ***A-AX single-Shell Tank Farms***

- ***AX Infrastructure***
  - Installed and cold tested two 3000 cfm exhausters and their support systems in AX farm
  - Installed the air/water service building that will support retrievals in A/AX (A-285)
- ***AX-102/AX-104***
  - Completed 6 of 8 pit cleaning and equipment removals
  - Performed demolition of four buildings that needed to be removed to support equipment installations
- ***A Farm***
  - Completed exhauster system and skid design
  - Installed new ingress/egress trailers
- ***242-A Evaporator & Effluent Treatment Facility***
  - More than 5.5 million gallons of waste treated by the Effluent Treatment Facility since restart last May
  - Next Evaporator campaigns planned for June 2017 timeframe
  - Since 1995, the Effluent Treatment Facility has treated water contaminated with low levels of radioactive and chemical waste primarily from the 242-A Evaporator groundwater treatment systems, waste disposal operations and Hanford's K Basins. In Fiscal Year 2016, the facility processed 4 million gallons of waste water.

### **Waste Treatment and Immobilization Plant (WTP)**

The Waste Treatment Plant is moving along very well transforming from a construction site into an operating facility.

### ***DFLAW Critical Path Analysis***

The DFLAW Critical Path Schedule was provided for review adhering to the commitment of full transparency.

- The DFLAW Program critical path flows through the LAWPS Project and the preparation of the LAWPS RCRA TSD Permit application (dependent upon input from preliminary design data), followed by the approval of the Permit. This will allow the project to commence construction.
- Upon completion of construction, the LAWPS Project critical path flows through commencement of Start-up and Operational Acceptance Testing, followed by a Management Self-Assessment leading into Operational Readiness Review (ORR). Following the ORR, LAWPS will prepare the first radioactive waste feed to support commencement of LAW Facility Hot Commissioning Testing.
- The critical path to the completion of Law Hot Commissioning is currently showing 14 days positive float to complete on January 15, 2022.

### ***ORP Budget Profile***

The Office of River Protection is operating under a continuing resolution until April 28, 2017. Due to the continuing resolution, they are having to make adjustments in work at Tank farms. It was communicated that impacts could impact the entire year.

### ***WRPS Wins National Safety Award***

Washington River Protection Solutions received the 2017 Campbell Innovation Challenge award for developing a physiological monitoring program that has eliminated heat stress cases the past two years at the tank farms.

### ***Building Our Future through STEM***

DOE is focused on educating and inspiring future generations about meaningful careers in Science, Technology, Engineering and Mathematics (STEM) careers in DOE's Hanford workforce.

### ***Washington Department of Ecology***

Alex Smith, Ecology's Nuclear Waste Program Manager, provided Board members with an update on recent Ecology efforts. Alex highlighted the following in her presentation:

### ***AY-102***

DOE notified the State that retrieval of AY-102 has met the settlement agreement terms of March 4, 2017.

### ***Tri-Party Agreement***

The TPA provides for a review every 5 years. The purpose of the review is to see if there has been substantial compliance and to review the need to modify the agreement.

- Current TPA (Revision 8) is more than 5 years old
- 92 approved TPA changes since Revision 8
- Parties Have Agreed on update Priorities:
  - Project Manager Role (Section 4.1)
  - IAMIT (Section 4.2)
  - ORP Critical Path process (Section 11.8)
  - Cost, Schedule, Scope, Integration, Planning, Reporting (Article XLVII, Paragraphs 148 & 149)
  - Treatment, Storage and Disposal Listings (Appendix B)
  - Single-Shell Tank Waste Retrieval Criteria (Appendix H)

- Single-Shell Tank waste Retrieval & Closure (Appendix I)

***New Manager for Waste Project Management***

Kelly Elsethagen is a new manager for the Waste Management Project. Kelly’s experience includes serving as the previous Revision 9 Permit Lead. She is a WSU Graduate in Environmental Science with 20 years of experience at Ecology and Hanford.

***Joint Working Principles to Accelerate Revision 9***

DOE, EPA, Ecology got together to develop an improved process for completing the update to the site-wide permit. The improved process include a focused Permit Project Management Team. This will provide a limit on the time issues can languish at the project management level. This will also include an accelerated process for elevating issues for management level resolution.

***Permitting DFLAW Facilities***

The state is working closely with ORP on the permitting of construction of DFLAW Facilities First Up will be the Effluent Management Facility (EMF.) The following activities have been completed:

- DOE submitted a permit application for the construction of EMF on November 21, 2016
- Public Comment period went from November 28, 2016 through January 27, 2017
- The first public meeting was scheduled for December 14 and rescheduled to January 9, 2017 due to weather.
- DOE requested a Temporary Authorization to begin construction of EMF on February 14, 2017.
- Ecology sent DOE a Temporary Authorization approval letter on February 27 that authorizes work to start on March 9, 2017.

The Temporary Authorization allows DOE to place the foundation and walls of the EMF Process Building (building 25), the EMF Drain Tank Building (Building 25A), and EMF Utility Building (Building 26.) It also allows DOE to place the foundation for the EMF Stack.

*U.S. Environmental Protection Agency*

Emy Laija, U.S. Environmental Protection Agency (EPA) Hanford Project Office, updated HAB members on recent EPA activities.

- EPA recently moved to their final space in the Federal Building on the second floor. This location has open access and no badge is required. EPA will host an open house in a few weeks.
- EPA is always happy to hear that resources are being put forth to begin working and trying to meet commitments. They hope the same level of commitment and effort will continue to be put forth anytime there is a TPA commitment.
- EPA is hosting an intern from WSU-Tri-Cities.

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

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

**Q:** Is there a plan to test the integrity of the secondary tanks for leaks? Is there a plan in place to retrieve the leaked waste from AY-102? Is there a pumping capability in place in case we have a second tank leak at some point and can we retrieve that?

**R:** *We are currently working on how to analyze secondary liners and how many capabilities we have. As you know, there are limits in technology in what we can do unless we excavate. We are getting a lot of data because of the new devices.*

*AY-102 – We are running parallel planning efforts. I will refer to Glynn to answer during his presentation a little later.*

*Emergency Pump- We don't have an adequate amount of critical spares. With budget cuts, critical spares are the first things to go. We will be having a table top drill addressing all things that could go wrong with the tanks that we have not thought about in the next few weeks.*

Q: Do we put any water into the tanks for sluicing or cooling purposes? What happens to the sludge in the T Plant?

*R: We do put some water in the tank. In general, we try not to add more water but to recycle the supernate.*

Q: I didn't hear anything about implementation of a third technology to get additional gallons out of AY-102? Have you done three?

*R: We don't think a third technology will make a difference. We have done two and feel that we have reached the limits of technology.*

Q: How much effort and money will it take to put this tank back into use? Also, what would it take for Ecology to permit?

*R: I think it's yet to be determined if there is an appropriate way to put the tank back into service. We need to look at whether or not the leaks can be repaired. My guess is "iffy" whether it will be put back into service. There would have to be a cost benefit there too.*

*From Ecology's perspective, we share Kevin's skepticism that it could be put back into use.*

Q: Is there a timeframe?

*R: I don't think we have reached the point where we can give a legitimate timeframe. Due to funding, this could fall on the priority list.*

Q: When this process comes out and the public gets to comment on changes to TPA, how does that process work? It's a Federal Agreement so I am not sure how things will be incorporated.

*R: If you are amending certain sections, the process is laid out on a schedule. We would usually sign a tentative agreement and put those out for public comment. Based upon feedback, we would incorporate those changes then sign the agreement.*

Q: DFLAW will remove the liquid process of the waste and free up more double shell tank space. So what? Why is that important to have that extra space?

*R: If the tanks are fairly full, I will have to go back and analyze the chemistry of all the tanks. If I have enough space to move material to certain tanks, it dramatically reduces cost, improves efficiency and gives operational flexibility.*

Q: When you are doing all this transferring, are you still evaluating the chemistry?

*R: We are always doing chemical analysis. I may not be able to put one particular waste in another tank. I may have to split it amongst two. There are an infinite number of considerations during these interoperable activities.*

C: WESF facility seems to me that it is keeping to schedule on that disposition. Moving those capsules out of the insecure and suspect concrete pools they are in should be priority. You didn't mention this as part of this presentation as you have in the past. If funding becomes restricted, I would urge you not to let anything slip in terms of getting this problem taken care of.

Q: Given the 618-10 success story, has it caused you to reconsider the 618-11 burial site? What are the issues that prevent proceeding with cleanup?

*R: I believe the TPA milestone is 2021/2022. The complexity is we have caissons. The biggest challenge is the proximity to Energy Northwest. We are continuing to think about that. We aren't working on that as aggressively due to funding and other priorities.*

Q: Last year we were doing our work plan, I had brought up the heat stress mitigation for the HSEP committee. I think with the innovation award, this seems very timely for the committee to discuss. We would like a presentation on the award. We would like to hear what kind of things they did to prevent heat stress.

*R: I will have our folks take a look to see where that fits for you. We have already submitted to DOE for an EMS best practice to be distributed through the Department of Energy.*

Q: When I speak to people in the community they don't realize that most of the waste is staying onsite. For me, if I were a member of the public I wouldn't know it's gone. Where does the waste go? I would like to have a better sense of everyday language. What happens when we mean remediated?

*R: Very simply, low activity waste can be disposed of onsite. Transuranic waste at the Waste Isolation Pilot Plant. High level waste is taken to a determined repository in the future.*

- *618-10 Waste was disposed of at the Environmental Restoration Disposal facility.*

C: I wanted to give Kevin the opportunity to comment on the article that was in the paper this morning about WTP Procurements.

*R: The turbulent time between 2011/2012 when construction stopped really choked the pipeline. There was a period of time before we really understood what this would mean. What would have to do to solve these technical issues? How long would it take? A lot of the vendors had work in various stages. They ended up paying a premium and having to have storage space. They have relooked at what they had in the pipeline and carrying costs. They went back and made a smart decision. There were \$177 million dollars procurements canceled. \$1.9 Million dollars was considered they could have done better. My opinion is that they really did work hard to mitigate the impact and are well on their way to find a purpose for those \$1.9 Million dollars of tankage. I am not as concerned as the report lined out.*

C: Bechtel & DOE were also asked to comment on the story.

### **Public Comment**

ShinTaro Ito:

*Wants to say thank you. I work for the Japanese government and came over to work on a project. When I first came here, it was hard to keep up with the discussion because there were so many acronyms. Thank*

*to your help, I am now able to keep up. My next job is to tell Japan what I learned here. I am very excited for the opportunity and wanted to say thank you for having me.*

## **HAB Committee Reports**

Board and committee leadership provided report on ongoing efforts and anticipated work and products.

### ***Tank Waste***

Bob Suyama, Tank Waste chair shared that weather had a huge impact on the January and February meetings. TWC held a very successful abbreviated meeting on January 18. They had a briefing on the AY-102 retrieval.

We also had a Waste Management Area C Performance Assessment discussion. This led to a number of items in our workplan and will continue the discussion at the next TWC meeting.

John Price briefed us on a proposed TPA change regarding deadlines for the submittal of plans to close the C Tank Farm. He is going to brief us today on what that all means.

The next Tank Waste meeting will be April 19, 2017.

### ***River & Plateau***

Jan Catrell, River & Plateau chair shared that the River & Plateau committee received a number of briefings including the following:

- Regular, reoccurring briefings from Tom Teynor regarding PFP
- Briefing on K Basin Sludge from Mark French.
- Beginning discussions on WA-1.
- Briefing from Julie Reddick on WESF.
- Briefing from Phil Burke on SW-2 Burial Grounds

### ***Health, Safety, Environmental Protection***

Rebecca Holland, HSEP Chair shared that there are no updates for the HSEP Committee. Rebecca is requesting a committee call for March and a meeting in April.

### ***Public Involvement & Communications***

Shannon Cram, PIC Vice-Chair provided an update on recent PIC activities to include the following:

- Have been having very lively discussions. Meetings are always the day before the full Board meeting.
- Started discussions around Hanford Live
- Looking at advertising material for Hanford Live
- Talking about the Public Involvement Survey with Helen Wheatley. Talk about each question and the utility of the process.
- Discussions around Interrelated Public Comment Periods
- Discussions on suggested changes to the Public Involvement Plan
- Asked the question regarding how we can evaluate more effectively

- The next meeting will debrief the Hanford Live event. Will continue to have discussion on how we evaluate and improve public involvement.

### ***Budget & Contracts***

Jerry Peltier, BCC Chair provided an update from the Budget & Contracts Committee.

Jerry indicated that the last advice was on recommendations for developing RFP's. It looks like the RFP's might not be out till August. Until we see them, we will not know if any of our advice was adopted.

The next update is on the budget report that usually comes out in March. DOE is unsure how long they will be operation under continuing resolution. The Federal Budget we are currently working on runs out in Late April. DOE plans on putting together a budget presentation together in mid/late April. Once we have that, we can compare our advice. Until then, there is nothing needed to be done.

### ***Executive Issues***

Steve Hudson, Former EIC Chair provided an update on EIC activities.

The EIC has met to discuss time sensitive items including the following:

- The transition to the new facilitation team. Michael Lane was present to provide further detail into the new contract and how much money is available to the HAB. We also looked at potential impacts the new contract may have.
- We produced the Board Agenda for the meeting. We were very fortunate to not have any advice. As a consensus board, you cannot say this discussion is only going to take 45 minutes. These types of issues were discussed.
- The potential for an out of town meeting was discussed. Where should we go? We often raised questions that we wouldn't have personally thought about.
- New Member Orientation was on the table for discussion. Can we do better? How can we do better? What should be doing better?
- The new facilitation contract provides 5 board meetings and 18 committee meetings. Steve is concerned this will not be enough. We would like to express our concern for this.

### ***National Liaison***

Pam Larsen, National Liaison provided an update to include the following:

- Pam just returned from Washington D.C. attending a meeting with the Energy Community Alliance. The EM Program has 50 years to go with a liability of \$372 billion dollars.
- Due to the slow confirmation of the new Energy Secretary and only a few Trump employees assigned to DOE all DOE employees said they were only "commenting on background." Their comments are not to reflect the new administration.
- EM's reorganization last year as focused on empowering the site managers. Success stories include the completion of PFP this year, great progress with WTP and this week ID celebrates the completion of packaging their TRU waste for shipment to WIPP.
- The general focus is on safety culture, employee morale, improved project management and cost reduction.
- The plan is to increase the synergy between the labs and field operations to identify technology that can be deployed to reduce life cycle costs. They plan to identify efficiencies and increase project performance.

- EM plans to address infrastructure needs, maintain utilities, address waste storage requirements and advance the D & D of facilities.
- Last year each filed office was asked to cut costs by 5% so that funds could be redirected to priority issues. It would be interesting to know what those funds were used for at Hanford.
- They are encouraged by the ongoing dialogue between EPA and state regulators that are examining fiscal constraints, best practices and tangible priorities.
- Strategic priorities are being examined in 5 year plans that will address advanced planning, procurements, the need for more skilled workers and engagement of the younger generation. They are exploring opportunities for cross cutting progress. They want to do early analysis of high risk projects to reduce life cycle costs.
- EM is working to reach out and provide more information about their program. You can join the 60,000 people who are already getting 2 Facebook posts a day.
- With upcoming, there will be performance based incentives with terms up to 10 years including extensions. DOE will have a field centric approach. Small business contracting will be supported. Contract performance must be predictable and repeatable.

### **Industry Perspective**

- Presidential campaign staffs usually include 1,000 to 1,500 people. The Trump campaign only had 300. So there is not the usual pool of people to appoint to federal positions. DOE has 12 positions that require Senate confirmation and 80 “Schedule C” positions. The average life of a political appointee is 18 to 24 months.
- Industry leaders expect that procurements will stay on track. Contractors expect to be directed to reduce life cycle costs. Infrastructure upgrades will have a higher priority than in the past. EM has 13 Tier 1 contracts and 9 of them are up for recompetes in the next 3-4 years.
- Contractors expect to see alternate approaches explored for high level waste. A GAO report is expected in the next month that will have a strong focus on grout. The report is highly anticipated and speakers at the conference specifically mentioned that new grout formulas will make it useful for Hanford waste.
- An industry official who has worked in the EM program advised, be patient, confident advocates. DOE has 16 sites in 11 states. Governor Perry knows and has worked with many of those governors. He said EM scope of work is defined and will span 40 to 50 years.
- Unfortunately congressional interest had declined because in 1989 there were twice the number of states with EM sites.
- Concern was expressed by several about the aging DOE workforce. They stressed the need to support STEM education and partnerships with universities and training programs.
- One speaker discussed the focus on consistent contractor performance and work and world class risk reduction.
- Congressional staffers stressed that while the administration changed, congress is consistent. Defense is the highest priority but EM reflects legal and moral obligations between the federal government and states.
- Very few members of congress are in the middle of the political spectrum – very polarized. Sequestration will be back in play.
- Good news is Oregon Congressman Greg Walden is the new chair of the House Energy and Commerce committee. There will be a lot of focus on the Yucca Mountain license review by NRC. They discussed the billions of dollars that have been spent by Yucca.
- A Bechtel representative told us about a new film called Dream Big that began showing on giant screens last week. You can see the film at OMSI in Portland and the Pacific Science Center in Seattle or the Air and Space Museum in D.C. You also can watch a YouTube trailer from your home.

## **Rebaselining of Waste Treatment & Immobilization Plant (WTP) Contract**

Bill Hamel, Department of Energy, Office of River Protection (DOE-ORP) provided a presentation on rebaselining of waste treatment and immobilization plant (WTP). The following items are highlights from the presentation:

### ***WTP 2016 Performance Baseline Change Proposal (BCP)***

The WTP 2016 BCP was approved by Chief Executive for Project Management (S2) on December 15, 2016. This change adds the DFLAW work scope specific to WTP. It also completes the Low-Activity Waste (LAW) Facility, Balance of Facilities and Analytical Laboratory startup and cold commissioning. The change removes hot commissioning from the WTP Project's Performance Baseline.

### ***Key Types of Incentives***

Key incentives are offered to contractors to ensure the engineering, procurement & construction (EPC) milestones are being met. Milestones include progress milestones, commissioning milestones & risk sharing milestones.

- Progress Milestones that culminated in the completion of LBL Construction
  - Provides a large risk reduction milestone
  - \$50 Million Dollars
- Commissioning Milestones
  - Completion of Hot Commissioning
  - Meant to make progress along the way
  - \$120 Million Dollars
- Risk Sharing
  - If Bechtel does not meet the dates, they could face penalties.
  - If they are done early and there is a savings to the government, they also take part in that cost savings

### ***Contract/BCP Dates to Meet Amended Consent Decree for LAW***

- Project Schedule is the date they are working to right now
- Contract Date is the Milestone
- Amended Consent Decree: The Project is working to beat the Contract. The Contract to beat the Consent Decree. It is carefully constructed to have contingency in the dates to allow for the ability to hit the Consent Decree.

### ***Key WTP Risks include the following:***

- Budgeting/Funding
- Permitting
- LAW feed availability
- Meeting the Documented Safety Analysis Approval Schedule
- Component obsolescence and aging equipment

### ***HLW & PT Baseline Change Plans***

DOE will update the WTP Performance Baseline in three phases. Phase 1, The LBL/DFLAW has already been completed. Production engineering is ongoing for Phase 2, the HLW Facility. The facility completion plan will outline the path to full production and rebaseline. Phase 3, PT Facility will complete the technical issue resolution completing conceptual design with standard high-solids vessel.

### ***WTCC Subcontract Established to Support DFLAW Completion***

Bechtel/AECOM created Waste Treatment Completion Company (WTCC) to focus on starting LAW treatment. This approach was developed to achieve DOE's vision for sequenced approach to completion of WTP. The Waste Treatment Completion Company will continue to manage facility construction, startup, and commissioning. It should be noted that WTCC is a subcontractor. Bechtel will remain the prime contractor for WTP.

### ***Board Member Questions (Q), Responses (R), and Comments (C):***

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

**Q:** In rearranging the work to meet DFLAW, nothing is transparent and I am having a lot of heartburn about it. I am worried about the providence of materials. There is not the documentation or permitting. I feel like it would very helpful to the whole community if we could see a strawman time that lays out the thought.

**R:** *In some of the things that we are doing, there have been a number of management initiatives. Quality verification for review. We go through checklists to make sure everything is there. Do we have the right documentation? Do we have the right justification? We look at the vessels to make sure they have weld maps. When we look at the map, does it have all the welds? Lots of initiatives that go backwards. Then we look at the process. If we were missing stuff in the past, we can go back and look. We also have to fix the process to ensure we don't make the same mistakes. There is a whole series of initiatives.*

**C:** I know we have seen in fieldwork or design, we don't see them end up in permit at Ecology. I have concerns about that and wonder about the process.

**R:** *We have a resident professional engineer at Ecology. We work with numerous engineers to find things. Our folks have been involved in teamwork to know the discrepancy in the welds. To make sure certification and signs off were done as needed. We are on site and in the building when things are being done.*

*Ecology has a process where they do a pre check. That pre check looks at those discrepancies. Then there is a milk run. STDR's and other things. They come up on a regular basis. We can do our own analysis to fact check these kinds of things. As far as things not getting in the permit, we can't speak to those.*

*RCR (Response Comment Record) goes back to permit requestors and response is required.*

*When formal responses comes over, there is another review done.*

**Q:** There are 3 categories no longer supported. Does any of this include Analytical Building Blocks Control equipment? If we have equipment past its prime, what do we do with it?

**R:** *Not that I am aware of. I can look into that and follow up. If you identify equipment that is obsolete in the fact that it's working but you don't have another spare piece; the good news is that it's working. You now have to make the decision to continue down that path and work in parallel. Can you get a plug and play? If you can't, then can you modify the equipment? Are your people trained for the issues? Look at the decision tree. You must be strategic and thoughtful when making decisions.*

**Q:** Did you purchase spare equipment that you knew would in this situation?

**R:** *There are a few cases where we bought extras knowing we would be in this situation. There are pieces that we are looking at knowing they are obsolete. You have to make sure you line it up right there.*

Q: You mentioned there were changes to the nuclear safety standards. What are the changes and will need to be done?

*R: DOE is taking a more conservative stance. In these standards, there is an additional level of conservatism and engineering controls.*

Q: Do the incentives flow down to the subcontractors?

*R: They flow down the scope of work.*

Q: Every common person who has worked in the nuclear industry knows that the construction and completion of design takes about 10-15 years. There are spare part programs. They also have preventative maintenance programs. I assuming this is happening.

*R: Yes this is happening. Trying to see the flexibility moving forward. Different standards apply to different systems.*

### **TPA M-045 Series Change Package**

John Price, Washington State Department of Ecology provided the HAB an overview and presentation on the TPA M-045 Series Change Package. Some of the key points from the presentation are listed below.

M-45 milestones are schedules to complete the closure of all single shell tank (SST) farms. What is being proposed are the changes to the dates for steps toward closure of the 16 tanks in C Tank Farm.

Steps toward closure include investigating soil contamination, retrieving waste from tanks, closure plans (public comment), and closure per the approved plan.

John Price provided the board with a thorough definition of closure plans. John communicated that Ecology regulations require a “closure plan” for each unit that manages (treats, stores or disposes of) dangerous waste (or mixed radioactive/dangerous waste.) These closure plans describe detailed steps to remove or decontaminate all dangerous waste residues and contaminated containment system components, equipment, structures and soils.

There are 16 tanks in WMA C. In addition, there is also contaminated soil and equipment located in this area. There are two options for closing these tanks. The options include Clean Closure and Landfill Closure. Clean Closure refers to rules that apply if a tank and associated pipes, pumps, and so forth can be removed completely from the ground or cleaned to a protective level. The other option is Landfill Closure. Landfill Closure refers to rules that apply if the tank, piping, and associated equipment are left in place and will require post-closure care, such as ongoing monitoring, maintenance, or institutional controls.

The SST System includes 149 Tanks. Due to the number of tanks, the closure plan has been divided into three tiers.

- Tier 1 Closure Plan- The plan to close the SST system of 149 tanks, associated piping and equipment, contaminated soil and contaminated groundwater.
- Tier 2 Closure Plan – A plan to close an individual Waste Management Area.
- Tier 3 Closure Plan – A plan to close an individual tank (or group of tanks) within a WMA. Contaminated soil around the tank would also have a closure plan.

Many factors have contributed to the change in dates for C Tank farm Closure Steps. The Office of River Protection would like to use a phased approach. Phasing allows lessons learned from one exposure to be applied to the next.

#### TPA Changes Add Expectations for Schedule in WMA C Tier 2 Plan

- Dates to submit Tier 3 closure plans for larger C-100 tanks
- Date to submit Tier 3 closure plans for contaminated soil
  - C-200 tanks: Tier 3 plans will include schedules for closure activities
- Target dates to start Tier 3 closure activities
- Dates to complete the entire WMA C closure (replaces M-45-83, date 6/30/2019)

#### How Do Dates Change for Closure Plans?

- ORP will submit the Tier 2 to WMA C by 3/31/2017
- ORP will submit the first four Tier 3 plans for smaller C-200 tanks by 3/31/2017
- Ecology will review the Tier 2 and Tier 3 plans

#### Schedule for Review & Approval of the Change Package

- 45 day public comment period runs from January mid-June to August, but could be later.
- Ecology and ORP will also discuss the changes with tribal governments if requested
- Ecology and ORP will review the public comments

#### **Board Member Questions (Q), Responses (R), and Comments (C):**

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

Q: How does the C Farm performance assessment guide this process?

*R: C Farm PA is a tool for closure. 10 of these 16 tanks have been received under the consent decree. The other 6 retrieved prior to the consent decree. There is a requirement in the TPA, Appendix A that requires the agency to create a performance assessment for all needs. It is used as a Risk Decision tool. It's a tool for decisions of closure. Right now that tool is going to be very important on how we lay out and what we are doing for that closure.*

C: I just want to say, the end goal is get this site cleaned up. Reflecting back to 1994 when we were sluicing C-106 into AY-102. A lot of time has been put in there. Nobody is happier in this room than me that the C Farm is being closed. Hopefully I won't have to go out there every day shortly.

Q: I know that you looked at Savannah River in regard to closure of tanks. Would you use the same stuff?

*R: There are 3 distinct layers used at Savannah River. There are distinct mixes of grout. We haven't gone to that detail but it is very similar. There were some lessons learned at both Idaho and Savannah. It's not as simple as it sounds.*

#### **Double Shell Tank AY-102 Retrieval Update**

Glyn Trenchard, Department of Energy, Office of River Protection (DOE-ORP) provided an update and presentation to the HAB Board members on AY-102. Below is an overview from Glyn's presentation.

March 3, 2016 began the retrieval of sludge and supernate. At the time, the tank had 744,000 gallons of waste. Beginning waste consisted of 593,000 gallons of Supernate and 151,000 gallons of sludge. Currently, there are 19,000 gallons or 2.5% of waste remaining.

### ***Retrieval & Transfer Process***

There were two types of retrieval and transfer processes selected. The first technology used was sluicing. Sluicing mobilizes solids with sprayed liquid, pump slurry to a receiver tank. Decant solids and recycle supernatant for further sluicing. The second technology used high pressure water. High pressure water (extended reach sluicers) breakdown residual hard heel in a slurry, pump slurry to receiver tank.

### ***Retrieval & Transfer System Installation***

A lot of construction work was completed in order to get these tanks ready. Crews removed 5 obsolete pumps from AY-102 and AP-102. They upgraded 7 pits to receive new equipment. They also designed, fabricated, installed and tested 3 new pumps, 2 sluicers, and 2000ft of hose-in-hose transfer line.

### ***Retrieval Operations with Standard Sluicers***

With retrievals you get some diminishing returns. In other words, we are getting to the limit of technology. As time goes on, we are working just as hard but not being as productive. In 2 months, we got 95% of the waste. At that point, we have reached the limit of that technology and had to move onto the next technology.

### ***Response to Increased Leak to Annulus***

As we are doing this, we are disturbing waste in a tank that we know has a hole in the bottom of the tank. It took a thorough investigation to determine that yes the tank is leaking and what do we do about it?

- On 4/17/16 the leak increased and filled the annulus with up to 8 inches of liquids.
- Annulus pump was operated to return the liquid to primary tank
- Annulus pump is available for continued pumping, if needed

### ***Replacing Sluicers***

The retrieval system was reconfigured with four extended reach sluicers after first phase of retrieval. A full-scale mockup of AY-102 primary tank was built at Cold Test Facility with prototype ERSS to ensure operators had proper training.

### ***Project Safety Record***

A highlight for the team is the project safety record. There has been over 3 years and 500,000 hours of work. This includes 24 months of field work, 30,000 farm entries and 5 months of retrieval operations. Within this time, there has only been 5 first cases.

### ***Retrieval Operations with Extended Reach Sluicers***

The use of extended reach sluicers has resulted in 97.5% of waste removed. 587,000 gallons of supernate and 138,000 gallons of sludge has been removed. This is an estimated 19,000 gallons remaining

### ***Next Steps***

Next steps include providing Ecology with status report on waste remaining and determination of whether conditions allow for a video inspection of the leak site(s). If conditions allow, complete video inspection of tank to determine cause of the leak. Finally to provide Ecology with inspection results, which will include recommendations for repairing or closing the tank.

### ***Board Member Questions (Q), Responses (R), and Comments (C):***

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

Q: Do you have an estimate yet of how much we have spent doing this retrieval?

*R: To date, we have probably spent over \$100 million dollars just on this tank. A bulk of this was in 2015/2016. This number is not inconsequential. There have been 500,000 man hours. That's a lot of effort from a lot of people.*

Q: Is there a plan in place for how to retrieve as much waste as possible that is in the air channels underneath the primary tank as well as in the annular space?

*R: There has not been a path forward determined for that. We are getting to the point where we are at repair vs. close the tank. You still have the annulus material if you repair the tank. At a certain point we need to ask, are we going to reuse this tank? We would go through a very thorough process. Is it safe?*

Q: I have a hard time seeing how you could do a repair of the tank and then roast it out at 1000 degrees?

*R: They have had trouble. There is a lot of liquid in the annulus. It would definitely be a challenge.*

Q: This is the oldest of the double shell tanks. Do you think it's worthwhile to make the investment to do a hypoxy all the way down?

*R: We have to balance. The tank still has a job to contain 14,000 gallons of material. We will do as much investigation as we can. Our goal is to learn as much as we can. That is something that we will work with our tank integrity expert. There will be some changes as far as tank closure.*

Q: You always talk about how many gallons you removed. I wonder if the amount of sludge and supernate are as active per mass?

*R: The sludge is much worse than the supernate. Supernate will go to low activity waste. Sludge will be high level waste.*

Q: Looking at the pictures of people, they are dressed in full gear. How much exposure are they getting? Is it better to leave it alone? I am concerned about the people wandering around and parking on top of it.

*R: Dose rate in tank farms is not that bad. 1-2 mR (millirem) per hour. We do have hot spots. As you go into pits, this dramatically more. I don't have a good feel for the overall dose. However, there are strong controls during waste transfers.*

C: I would like to express my appreciation for the people who have accomplished this work. A couple people here have worked on it and it's truly awesome.

Q: We have invested \$100 million dollars. How much does a new tank cost? Is it going to influence department decisions on the value of new tanks? Is it influencing our philosophy of operation?

*R: A double shell tank were our savings. The thought of a double shell tank having a leak is not something that we thought could happen. As they age, it's going to happen. The mentality has changed. As far as new tanks, this is something we need to continually be evaluating. We manage our retrieval by how much DST we have. It doesn't make sense to build 10 new tanks at a trillion dollars and then shortcut the right path of getting the waste to a proper form. It's a balance.*

Q: There was talk about completing a video spectrum. What's the date expected for completion?

*R: No date. This will take a little bit of planning to get the camera in. It has to go to a few different areas. We are hoping by the end of the calendar year, we will see results. This is driven by the liquid left in the tank.*

Q: Are there commitments with Ecology?

*R: Within the settlement agreement, there are distinct dates. 60 days after we determine whether or not we repair or close.*

Q: Can you give us a really good description of what is left?

*R: The sludge material is like peanut butter. Very hard to move around. Almost like sand & gravel.*

### **Vapors Management Update**

Rob Gregory, Chemical Protection Manager with Washington River Protection Solutions provided an update on Tank Vapors Management to the HAB Board members.

Rob shared there are currently 149 Single-Shell Tanks (SST's) and 28 Double-Shell Tanks (DST's) at Hanford Tank Farms. The DSTs are actively ventilated which is a primary engineering control to ensure vapors are directed away from the breathing space.

#### ***Washington River Protection Project Mission***

- Protect the public and the environment from the risk posed by 56 million gallons of radioactive and chemical waste stored in 177 underground tanks
- Safely manage and retrieve waste from tanks and prepare the delivery system for the Waste Treatment Plant
- Immobilize the waste at the Waste Treatment Plant

#### ***Vision for Hanford Central Plateau Vapors Management***

To create a comprehensive vapors management strategy that protects and is actively embraced by workers in the Hanford Tank Farms so that workers are safe and feel safe.

Rob shared that under WRPS, vapors have not gone away. WRPS is really putting together a comprehensive plan to manage this effort. In 2014, there were elevated vapor readings/odor responses that kicked off a wave of improvements associated with those vapors. Vapors are bigger than Tank Farms. It really needs a comprehensive strategy that is embraced by the workers and protective of all those on the plateau.

#### ***Chemical Vapors Strategic plan***

The Chemical Vapors Strategic plan includes creating an institutionalized plan that transitions from reactive to predictive, improve stakeholder/worker confidence, and the realization of vision/strategy and tactical objects

Rob communicated that the plan goal is to realize these strategies and visions. They are committed to ensure the boundaries of the farms are safe and have the processes and controls to do so.

#### ***Hanford Vapors Strategic Objectives***

Rob shared the strategic objectives of Hanford Vapors. These objectives include:

- Programs/process that ensure protective work practices and safe boundaries
- Multiple layers of safety controls to add to safety margin
- Continuous improvement in IH Technical Basis and program discipline/rigor
- Continued investment in infrastructure and engineered control improvements
- Centralized Control Room/command and control that monitors farms and takes preemptive actions
- Transparent communication and engagement with workforce and stakeholders builds trust and credibility
- Effective and reliable medical programs and systems

Rob encouraged the group to visit their webpage. The webpage has a lot of information and provides this information at a very high level. You can also see all of the IH data they are recording. It's a continued work in progress but they are very proud of this effort.

### ***Implementation of Hanford Vapors Strategy***

The implementation of the Hanford Vapors Strategy has resulted in the following:

- Centralized Command and Control monitors farms and takes preemptive actions
- Fence lines are safe
- Protective work practices with defense-in-depth safety controls
- Infrastructure improvements; engineered controls and abatement technologies
- Continuous improvement in IH Technical Basis qualifications/prior rigor
- Worker involvement
- Transparent workforce and stakeholders communications build trust/credibility
- Reliable medical programs and systems with medical results documented

### ***Characterization Accomplishments***

There has been a significant amount of characterization done on the tanks. Comprehensive characterization to include everything from the core and sludge to the supernate and the head space. Highlights include:

- Completed 33 head-space samples – Multiple depths using both sample media and summa canisters
  - 14,229 data results with 843 chemical constituents analyzed
  - No new COPCs identified
  - Data consistent with historical characterization
- Respirator filter cartridge testing
  - Successful completion of eight locations
  - Lab analysis is complete for first four locations and delivered to PNNL
  - Insurance of final reports will include:
    - Recommendation on the length of time selected cartridges will be used
    - Conditions in which cartridges will be used and their locations
  - Transition from SCBA to respirator filter cartridge in AP Farm

### ***Next Generation Tank Farm Overview***

The goal is to maximize utilization of existing and new automation capabilities to monitor and control farms remotely.

WRPS really challenged industry to see what's possible for state of the art chemical monitoring equipment. AP Farm, the newest of the double shell tanks was selected for pilot scale tests. AP will be the waste feed delivery to WTP so it made sense to start here.

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

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

Q: Have you identified any specific chemicals that have gotten into the worker bodies?

*R: This is more appropriate for the medical professionals to answer. They monitor for specific chemicals of concern. There is a significant amount of data that shows they are safe within those limits.*

Q: So you don't know what has gotten to or through those filters?

*R: I know what our data has been providing. All IH data collected is out on the website. Our program would monitor at the source. The sampling data would be broken out from source to area and to personnel. To clarify, the workers are on a self-contained breathing apparatus and there are no filters on the masks. It's supplied air goes up through a regulator and positive air flow through the mask.*

Q: You have 843 different compounds. Do you have any idea of what the compounds are that are causing the problem? My perception is that there has not been any serious lung damage induced in any of the workers. They have the exam and nothing is wrong. Maybe there were exposures high enough to cause biological damage? How many people were injured vs. actually smelled something?

*R: The IH program has a lot of expertise and involvement. National labs, academia, some of the best and brightest have come together to help the Hanford site create a technical basis. That team has identified chemicals of potential concerns in which the program is anchored around. The program is always evolving. We ensure our monitoring systems and controls are protective around the chemicals of potential concerns.*

*Our process is a very conservative process when it comes to vapor related or odor related incidents. If someone smells something, our process has them go to the onsite medical provider, HPMC. We truly rely on that medical provider to evaluate those employees. If appropriate, return the employee to work.*

C: I think that is really a critical thing. Are we really smelling things or are we being injured? The medical providers as I read the newspaper say we are not being injured. We are only smelling things. I do appreciate the difficulty because vapors disperse very quickly. If you don't have your monitor right there when the vapor is inhaled, you never know the maximum concentration. Concentration is the big driver of any biological damage.

*R: To close, the medical monitoring piece of that has been recognized. There has been a lot of input from those outside assessment teams. You noticed it is one of our strategic objectives. It goes beyond a simple contractor. It will require the involvement of several organizations including the medical provider.*

C: I know you are being very cautious but before we started moving vapors and waste, we didn't have these kind of exposures because people didn't stick their heads down in the tank. Now as we move it around that the more we move it, the more potential health hazard we generate. I am a biologist and I always thought we were trying to protect humans. As I listened yesterday, that's not what we are doing. We are trying to protect mother earth. In trying to protect mother earth, I think sometimes we are not helping the local workers. We are transferring risk from a future generation to this generation. We are transferring hazard from a future generation to this generation. We really are not cleaning anything up. We are environmentally isolating. We are keeping it out of the biome. I am really impressed that we have done a good job in isolating radioactive materials. If we can continue to environmentally isolate, we can be better off.

*R: We have been transferring waste in and around the tank farms since 1945. For clarification, we do not put our workers in the tank head space.*

*Jim Lynch: What you speak of is our overall mission. Part of that is better manage the hazard. We do that through the great conduct of operations. We really want to fully support the workforce. Overall, this is the goal of the entire effort.*

Q: You talked about going to the respirator cartridge. Is this going to be a full face respirator that replaces the scuba gear?

*R: Yes, initially this would be a full face respirator.*

Q: So when I see workers, they will be wearing the anti-c's and a full face respirator?

*R: This will depend on the farm. Some of the farms are contaminated and require the anti-c's and the respirator. Some farms are below limits and you may see those workers in industrial type clothing.*

Q: This should reduce a lot of heat stress in the future and maybe the need to work at night?

*R: For sure. Eliminating the sheer weight and bulkiness will help. The air-purifying respirator (APR) is a good step but not the final end of this journey. We are passionate about the right engineering controls and monitoring. It's a balanced risk. My opinion yes, the APR provides another option that the workforce will appreciate.*

Q: You mentioned a website several times. Do you have the address?

*R: <https://hanfordvapors.com/>*

Q: I have not heard if WRPS & DOE have identified the specific sources of the releases that occurred? Have you done anything to stop these releases? What were the causes of the actual releases that we have seen?

*R: In our actively ventilated DST's and recently actively ventilated SST and AX Farm, we have high confidence as long as that ventilation is going, it's manipulating those vapors inward and then out through the stack. We have a program in place that ensures any of those penetrations are covered and mitigated. We also have had improvements to the IH program. IH techs are out on a surveillance program looking at those. If they find anything, mitigate those. There is still some improvement to be made to that program. In the meantime, those farms will stay on respiratory controls.*

Q: Sounds like a mitigation approach. Do you have the top 5 sources of vapor releases? Have they been identified and therefore resolved by correcting the problem?

*R: To put it in perspective, there is no question that the highest concentration of emissions is coming from the stacks. By design, we are pulling all the head space and funneling them into a stack and dispersing them at a level that's protective. In our SST's we have breather filters that are obviously a potential source to the head space of the tank. Those are our two primary sources of potential vapors. What you described is all the other areas that could potentially be a fugitive type of emission source. There is a surveillance program in place to help mitigate those.*

Q: If and when are you going to go to active vapor abatement for SSTs and DSTs?

*R: Abatement is a challenge. We did a similar process to bring in industry experts to look at all of those abatement technologies. This is part of the comprehensive plan going forward. Some are technically*

*immature. Plan is to have us start with a pilot scale demo of those. The primary engineering control is ventilation. We are continuing to improve the primary engineering controls. We do have plans going forward to improve existing controls with taller stacks. The evaporator will have a stack twice as high going forward.*

Q: I don't recall you mentioning that with all of this equipment that you haven't detected anything near NIOSH limits. Is that the case?

*R: Yes that is accurate. In the breathing zone and the area at the ground where workers are working, levels have been consistently below the limits.*

Q: Have you previously detected levels above and how long ago was that?

*R: Yes, there have been some specific jobs that approached or exceeded occupational exposure limit. This was a while ago. Maybe in the summertime? This is very few and far between.*

Q: There certainly have been exposures. It's been awhile since there has been a significant exposure. My concern is perception. I just want to encourage you to think about how we can be sure the workplace is safe. The negative press makes it harder for us to sustain funding a path forward if they don't think it's safe.

*R: Work safe, feel safe. We are putting the systems in place to really understand. All efforts will help us get a better understanding. We ask the workers, do you feel safe?*

## **Board Business**

### ***Scheduling of Upcoming Committee Meetings/Phone Calls***

Committee members provided input on required committee phone calls and meetings in March & April.

### ***Agenda Topics for Leadership Retreat***

The following preliminary topics were discussed:

- How are materials distributed?
- Internal quality control
- More detailed note taker? Cost vs. benefit analysis
- Which organizations are not attending board meetings?
- Debrief on ProSidian performance
- Next annual report
- How to move toward a digital world

### ***Paducah EM SSAB Meeting (May 9-11)***

Susan Leckband & Shelley Cimon will be attending the EM SSAB meeting in Paducah, Kentucky. The following items will be discussed:

- Help provide a set of metrics to determine how they are successful. The goal is to create more transparency.
- Discuss Budget
- Discuss Waste Transportation
- Discuss Waste Disposition

### ***Out of Town Board Meeting***

Due to continuing resolution, the out-of-town Board meeting has been postponed.

***Preliminary June 2017 Board Meeting Topics***

Susan reviewed the following meeting topics for the June 2017 Board meeting:

- Acquisition Strategy & Budget Priorities
- Briefing on 618-10 & Successes
- Debrief Hanford Live
- Heat Stress Mitigation
- TPA Discussions
- Addition of MP3 Recordings

***Closing Remarks:***

Susan Leckband, Chair thanked Board Members for their attendance, thoughts and decisions. The meeting was adjourned.

**Attachments**

**Attachment 1:** Richland Operations Office Agency Update

**Attachment 2:** Office of River Protection Agency Update

**Attachment 3:** Nuclear Waste Program – Washington State Dept. of Ecology

**Attachment 4:** Waste Treatment and Immobilization Plant Rebaseline Update

**Attachment 5:** Double-Shell Tank AY-102 Retrieval Update

**Attachment 6:** TPA M-045 Series Change Package – Waste Management Area C (WMA C)

**Attachment 7:** Vapors Management Update

**Attendees**

**HAB Board Members and Alternates:**

Gene Van Liew, Member	Shelley Cimon, Member	Helen Wheatley, Alternate
Susan Leckband, Member	Amoret Bunn, Alternate	Steve Hudson, Member
Shannon Cram, Alternate	Alex Klementiev, Member	Charles Johnson, Alternate
Antone Brooks, Member	Margery Swint, Alternate	Stephen Metzger, Alternate
Pam Larsen, Member	Jerry Peltier, Member	Richard Bloom, Alternate
Bob Suyama, Member	Gary Garnant,, Member	Mike Korenko, Alternate

Dawn Wellman, Member	Phil Lemley, Alternate	Rebecca Holland, Member
Liz Mattson, Member	Emmitt Jackson, Member	Gabe Bohnee, Member
David Bernard, Alternate	Casey Mitchell, Alternate	Jean Vanni, Alternate
Dave Rowland, Alternate	Earl Fordham, Member	Mike Priddy, Alternate
John Martell, Alternate	Dan Solitz, Alternate	Don Bouchey, Member
Dirk Dunning, Alternate	Jan Catrell, Member	Steve Wiegman, Alternate
Sam Dechter, Member	Tom Galioto, Member	Gary Busselman, Alternate
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David Gutowski	J.A. Smith	Annette Care, Tri-City Herald
Brian Mathis	Lindsay Strasser, ProSidian	Freddie Barrett, ProSidian
Paula Fitzgerald-Boos, ProSidian		

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