



MEETING SUMMARY

HANFORD ADVISORY BOARD (HAB)

Tank Waste Committee (TWC) Meeting

January 8, 2020

Richland, Washington

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

Opening

Bob Suyama, Benton County, and TWC chair opened the meeting and invited people in the meeting room and on the conference phone to introduce themselves.

Approval of May, October, and November 2019 Meeting Summaries

The committee discussed the status of the three meeting summaries. The October draft meeting summary is still being reviewed by the U.S. Department of Energy (DOE) subject matter experts. ProSidian is currently incorporating comments from multiple DOE staff that were received in December on the November draft summary. Members of the committee discussed the pros and cons of recording committee meetings and whether or not meeting summaries should be verbatim or summary. The HAB Process Manual calls for summaries, not transcripts, of meetings. It was suggested that the HAB Executive Issues Committee (EIC) take up the issue of meeting summaries, including who is using the summaries and for what purpose.

The committee adopted the May TWC meeting summary. It will consider adopting the October and November meeting summaries at its next meeting.

System and Facility-wide Critical Path for Direct- Feed Low-Activity Waste (DFLAW) and Supporting Facilities Update

Erik Olds, DOE, and Tom Fletcher, DOE, provided an extensive update¹ and discussion of the DFLAW critical path. ORP is actually putting in place a new integrated DFLAW schedule. The new schedule enables people to see activities together and understand their interdependencies. The DFLAW schedule shared with the committee does not represent the entirety of all the projects in the program but does show the ones of critical focus from a performance standpoint. They are also working to integrate the permitting schedule.

The schedule is updated on a monthly basis, although it is always one month behind due to the time needed to assemble the information and when data is available from the various activities and projects. This current/older critical path schedule is actually a visual representation of four different schedules. The new schedule integrates the four schedules at detailed levels, including loss or gain in float, and is logic tied. The recent project peer review is a requirement, and there were no surprises in terms of issues raised. There were less than 19 actions identified. It is now undergoing DOE Headquarters review. The testing for the steam plant is anticipated to be done by the first week in February. All laboratory systems should be in the hands of plant management by the end of February.

A question was raised about negative float times on the schedule, specifically, did that mean that the program schedule was behind with respect to the Consent Decree or contract date requirements. DOE clarified that the times on the critical path schedule are with respect to contract dates.

¹ [Direct-Feed Low-Activity Waste](#)

There is an interesting aspect to the current Bechtel contract as it only has a 15-day window to show that the plant is working. DOE has the ability to extend the contract, if necessary. Committee members expressed concern that it can take almost a year to train operators. Tom Fletcher explained that the people will go with the new contract that replaces the current Bechtel contract (except for management). The techs are being hired and trained right now, and they will be the ones to operate the plant when the contract transfers.

With regards to the Operational Readiness Review (ORR), it will begin with the contractor ORR that goes through the staff processes and machines to ensure they are functioning correctly. Some of the pieces of the ORR will occur in pieces as activities are completed in the critical path schedule, such as emergency planning. So when the time for the official ORR comes, it will be smaller and mostly focused on the final pieces of radiological operations and waste.

Regulatory Perspectives

Dan McDonald, Washington State Department of Ecology (Ecology), clarified that when DOE needs a permit, temporary authorizations are not the preferred course of action when it comes to meeting Tri-Party Agreement (TPA) milestones.

He further explained that the critical paths are becoming complex, and it is important to understand the relationships in the schedule. It is also important to look at trends and have management oversight to ensure we stay on schedule. If permit submissions come from DOE to Ecology clean the first time, the permitting process is smooth. However, the permitting piece can become a critical path if not done correctly.

Tom Fletcher explained one of the issues concerning iodine in the waste. DOE is working to determine if it is a problem for disposal and at what point that potential problem should be addressed and solved. For the first time, DOE has been given funding for contingency which is a big deal. Dan McDonald emphasized that risk and contingency is a part of doing business.

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

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

Q: "What recourse does DOE have if Bechtel delivers a WTP [Waste Treatment Plant] that doesn't work/has components that don't work?"

A: "It requires them to deliver an operational machine. We're making decisions for the long term and not the short term. If it doesn't meet standards, we can hold them accountable for that."

C: "We are a Tri-Party board so if we need to know if there is an issue it would be nice for us to help."

C: "Do we always need more people? Yes, we have disagreements, it goes back to DOE, and then it comes back to us but that's something we have to do."

C: "We have to work as a team if there is a disconnect let us know about it. There should be nothing that sits and churns. And don't become emotional about it because then it becomes personal, we're all wanting the same thing, and that's to clean up the waste."

C: “Based on what we’ve seen we have some pretty good interest and team arrangements; I think there’s improvement.”

C: “I think there is a risk in contracting with WTP (Waste Treatment Plant).”

Q: “Every project had a certain amount of money and Management Reserve (MR), did you say that had gone away but now it’s back?”

R: “No, some have MR in the contract base. They bid on the scope of work, and it allows them to say okay, I’m going to do this amount of work.”

C: “It would be valuable to me and the committee to have someone from your team come and brief us so we can track what’s changing and what your issues are. What can we do to help you? I’d like to see a version of this chart every Tank Waste meeting.”

R: “Let me say it this way, we will never have enough people. We can take a look at the options we have and deal with those universes. It’s within those constructs, that’s part of what we actually have to do.”

C: “From IDIQ (Indefinite Delivery Indefinite Quantity) perspective, based on what we’ve seen as our bidders, we’ve seen some pretty good interest and teaming arrangements. From WTP perspectives, we will be highly surprised if ends up in the IDIQ world. There has been a lot of push.”

Q: “Is there concern or risk for contracting in WTP?”

R: “Of course there is.”

Tank-Side Cesium Removal (TSCR)

Steve Pfaff, DOE, provided an update² on TSCR explaining that the project started at the end of 2013 under the name of the Low-Activity Waste Pretreatment System (LAWPS) project. The original LAWPS effort centered on a 40-year design life, permanent facility to use filtration and elutable ion exchange to remove most of the radioactivity from tank waste liquids, and then feed the low-activity waste (LAW) to the WTP LAW vitrification facility. We completed 75% of the design and resolved many technical issues, but the estimated total project cost was rising well beyond prior estimates, and it appeared we could not deliver the LAWPS project in time to help the WTP LAW facility meet its hot commissioning completion milestone of December 2023 per the Amended Consent Decree.

Late in 2017, DOE convened an external expert review, staffed by people from several EM contractors and the national laboratories, to consider alternatives. The team recommended using a modular, non-elutable ion exchange approach to provide the first few years of LAW feed. This modular approach is called the Tank-Side Cesium Removal (TSCR) Demonstration project. It is Subproject 1 of the LAWPS project. Any design activities on the more permanent facility were put on hold in 2018.

² [Tank-Side Cesium Removal Demonstration Project Update](#)

The TSCR enclosures are located at the southeast corner of the AP tank farm. The AP tank farm was the last tank farm built and was completed in 1986. Each of the AP farm tanks can hold up to 1.2 million gallons of waste. TSCR will take tank waste from tank AP-107, pretreat it, and deliver the pretreated LAW feed to tank AP-106. Any TSCR system flushes and air blowdowns will go to tank AP-108. TSCR is going after liquid waste only, not tank waste solids, as part of the DFLAW program.

The TSCR modules have already been delivered from South Carolina to the AVANTech facility at the north end of Richland. Initial testing of the TSCR enclosures will be completed in March 2020. The TSCR Process Enclosure has three doors leading to the iodine exchange columns in which the granular pieces of ionic exchange media grab the cesium out of the waste as it flows through the system at a rate of 5 gallons per minute. The columns can be disconnected and replaced as needed. Because of the radiation inside the Process Enclosure during TSCR operations, workers are not allowed into the Process Enclosure. During TSCR outages, and after the system is flushed, workers can safely enter the Process Enclosure to connect or disconnect ion exchange columns or filters, and to perform maintenance.

The control module is now connected to the Process Enclosure and the Ancillary Enclosure to do testing which should be completed in March. It is a pretty simple and safe system that is easy for workers to operate and maintain. Normally, there would be 1-2 people in the control room during the 24-7 operations.

When each ion exchange column is loaded up with the expected amount of radioactive cesium, the columns are flushed and air-dried. Upon removal from the Process Enclosure, the columns are moved with a dedicated forklift with a special yoke on a forklift that lifts it from the top and keeps it no higher than three feet off the ground. The nearby ion exchange storage pad is used to store the spent ion exchange columns. The storage pad design includes special anchoring of the columns to make sure that in the event of an earthquake, they cannot tip over.

The permanent, buried pipe-in-pipe transfer lines to deliver LAW feed from tank AP-106 to the WTP LAW facility have a three-inch diameter stainless steel pipe inside another six-inch carbon steel with insulation and coatings to prevent corrosion. Inside the AP tank farm, we will use temporary hose-in-hose transfer lines (proven through years of use in the tank farms) to connect TSCR to the necessary tanks for those first five years of operation. Once we have operating experience from TSCR, DOE will re-evaluate all pretreatment options to determine if more than TSCR is needed for long term LAW feed of the WTP LAW facility.

DOE expects to have full TSCR construction authorization from headquarters by March 2020. We expect to be operating TSCR by the end of 2021.

Regulatory Perspectives

Dan McDonald pointed out that the tank farms area is already crowded, and long-term, there is high-level waste retrieval to consider as well. The alternative analysis for high-level waste will need double-shell tank space. It is not just one waste form that needs to be considered. As for use of non-elutable ion exchange media, technical papers that Ecology has seen indicate that media clumping could occur, making it more difficult later to retrieve and treat the spent media. If that happened, extracting resin and

feeding into the high-level waste stream are both problematic. Ecology has not yet seen a full lifecycle view of how all the pieces come together.

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

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

Q: “What do you have on these designs for these filters because they’re going to be plugged up. You’re going to have to change them.”

R: “We routinely backflush the filters to keep system flow rates at an acceptable level. These filters are removable when past their service life, and they are lead -shielded to make it safe for the removal by the operators.”

Q: “Is the detector an automatic system? An issue is tank vapors if you hit that.”

R: “(The question refers to the radiation detectors that monitor whether we have removed enough radioactivity from the waste, and whether they can automatically shutdown the system if the readings become too high.) Yes, the radiation detection system functions automatically to minimize any radioactivity from going to tank AP-106. In the event of a system shutdown, our ventilation systems allow any waste vapors to go back to tank AP-108.”

Q: “Are these sealed containers?”

R: “Yes they are.”

Q: “What is your strategy for monitoring tank vapors?”

R: “We have the active ventilation. We have several ways we are trying to understand the vapors and gases, all done within the tank farms involved so we end up with a work processes that meet expectations along with safety.”

Q: “Do you expect the columns to grab cesium 135? If so, how much?”

R: “It can trap non-radioactive cesium. What I don’t know is how much cesium-135 there is.”

C: “I would like for you to come back when your testing is finished to let us know where you stand.”

R: “Sure, plan for that in the TWC March time frame.”

Hanford Double-Shell Tank (DST) Program Update

Dusty Stewart, DOE, and Karthik Subramanian, Washington River Protection Solutions (WRPS), provided an update³ on the DST program.

³ [Hanford Double-Shell Tank, Tank Integrity Program](#)

Karthik Subramanian explained that the program is very proactive and is driven to maintain structural integrity to support waste processing. The primary elements are corrosion control and chemistry control. The Tank Integrity Expert Panel guides the program, and when there are results, the Panel also provides feedback on the program. Core sampling on DSTs has begun as have under tank visual inspections and under tank volumetric inspections will begin soon. Six tanks have been examined under the tank visual program. There is no single repair technology. Rather, it is a tailored repair approach.

DOE has a standard 10-year inspection frequency that has been moved to a 5-year cycle for DST AP-102. If the technology available today had been available in 2010, we would have seen the problem before it had leaked in tank AY-102 then. We do both visual inspections and will do volumetric inspections on the tank bottom soon.

With regards to tank repair, there is a feasibility study currently underway to look at how to do repairs if there is degradation and what technology can help with that. The key thing to remember is the importance of being proactive, figuring out how to control corrosion and repair approaches that were not there before.

Regulatory Perspectives

Nina Menard, Ecology, said she was impressed with what is being done with this program. Dan McDonald added that the tanks will need to come into and under the permit.

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

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

Q: "I had concerns about AP-102, now that I had time to look at it and think some more, what's the story on high corrosion there, and how much of that tank have we surveyed?"

R: "With analysis, there is not 100% accessibility. We have scanned the annulus floor in maybe a dozen tanks, and we have found nothing like what we found in AP-102. The most thinning on the other tanks is roughly 30%, and that was only on one of the tanks, the rest we found the max thinning was about 10%. We've been doing the inspections since about 2014, every year we're getting a little more of the annulus floor scanned."

R: "We have frequency inspections. We want to see if it's an active corrosion mechanism. It could be an insulation challenge. We want to see if it's active and found thus far it's not."

R: "We will scan AP-102 with the same or better technology."

R: "Most important part of this is to look at core sampling."

Q: "To do ultrasonic inspection, how long does that last?"

R: "Not an easy process. Getting in tank farms is not easy. We normally will be in the tank about a month and could be longer once we get in the tank."

Q: “AP-102 where the thinning is occurring, where it went from a three-inch wall to a quarter-inch wall. Would that be the first one you send a camera down to see if we have significant thinning in quarter inch plate?”

R: “It won’t touch secondary lining it looks upward. As of right now, we don’t have the technology to do that.”

Q: “My concern is handling the waste, what does that mean for the chemistry?”

R: “Adding mixture pumps, we do have a loading program. We would have to look at the structure analysis. We don’t enter those regimes without knowing the outcome.”

C: “Getting into these tank farms is not easy we will be in the tank farm maybe a month but it could be longer.”

Lateral Flow White Paper

Bob Suyama introduces this discussion and explained that Vince Panesko, City of Richland and author of the white paper, had rewritten some of the white paper. The purpose of this discussion is to come to a committee decision about what to do next with the white paper. Vince Panesko added that the white paper raises questions but does not provide solutions.

Dib Goswami, Ecology, explained that Ecology is trying to address the five key elements in the white paper. The deep vadose zone is a big concern, and we need funding to characterize it.

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

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

C: “Impermeable has one meaning, and if it’s not totally impermeable then, yes, water can get to it but the question is how fast? It’s hard to endorse some of these things the part where you list all the names and say they are ancient lake beds. I think there needs to be some work done on this paper.”

C: “Vince mentioned he’s more worried about some of the stuff that has already leaked into the environment. If you bring it to the full Board, we could at least document it that way in the future it’s documented so you can look back on it. It’s not the top of our priority list to look at these things.”

C: “We need to deal and get a better understanding of perched lakes. We don’t want to lose it. And if this can work, and this white paper can be for further exploration and finding money to do that characterization, we should do that. Why not optimize that?”

C: “We really need awareness that we have perched radioactivity, and we need to manage it. We’re spending millions of dollars cleaning up tank waste. We have high-level waste sitting out in the environment and it seems like we should be protecting that before we are in the tanks.”

The committee created an Issue Manager team of Jeff Burright, Oregon Department of Energy; Tom Sicilia, Oregon Department of Energy; Bob Suyama; and Vince Panesko for the purposes of working on the next steps for the white paper.

Workforce Planning and Development Draft Advice

Tom Galioto, Public-at-large and Budgets and Contracts Committee (BCC) chair, explained that the draft advice was being brought to TWC for information and to obtain comments in advance of the Issue Manager Team revising it. This is the first HAB advice that directly addresses workforce issues. It first came up as part of the discussion at the Committee of the Whole (COTW) and the subsequent BCC meeting. It is important given upcoming contract changes at Hanford, including the Indefinite Delivery/Indefinite Quantity (IDIQ) approach. This creates issues for the workforce. We need to focus on bringing in the best talent. Members of the River and Plateau (RAP) Committee commented at their meeting that this draft advice is longer than normal HAB advice. It may need to be shortened.

During the committee discussion of the advice, it was noted that the advice would be improved if we could find data on income as it related to other demographics such as across age and disciplines. The contractor Affirmative Action Plans may have information regarding wages, positions, and diversity.

Tom Galioto explained that BCC wants to bring the draft advice to the February full Board meeting because of the two major Hanford contracts that are being replaced.

Dan McDonald shared his observation that the workforce is a fluid asset and considered a liability. Unless the culture changes to view the workforce as an asset, how can you offer the workforce more stability?

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

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

Q: "How does that trickle down to the contractors?"

R: "Right now, it's not in the contracts."

C: "They are structured and have been for 40 years. So, it's the culture of how business is done that results in different outputs. You have to take a look at how work needs to be done."

C: "To be honest, all that everyone is asking for is that contractor HR [Human Resources] departments actually do their jobs."

C: "My sense is IDIQ is the least sensitive to human beings."

C: "We talked a little about IDIQ. It does put DOE in the driver seat a little bit more. Back in December, we talked a better way to seek out these tasks. I think DOE has had more of a hands-off on the contractors. I think there's some leveraging that can be done. Think of how we're going to be doing the planning. I do think senior management is thinking about all these things."

Q: "Who does this letter go to?"

R: "It should go to DOE instead of others is what he's asking."

C: "Every time you rehire, you're wasting more money."

C: "Essentially having DOE take a look on how they are spending their money."

Q: “Is the process to track changes then have IM [Issue Manager] call?”

R: “No, we want to consolidate comments into the new version and get sent out by Friday this week to IM team.”

C: “I don’t feel this is time sensitive.”

C: “Still good to have the discussion.”

C: “I do feel the urgency, hit it while the iron is hot.”

C: “We recognize in this new contracting system these issues are exacerbated.”

Fiscal Year (FY) 2022 Cleanup Priorities Draft Advice

Tom Galioto, Issue Manager Team Lead for the FY2022 Cleanup Priorities Draft Advice, introduced the advice. He explained that this advice was developed in response to DOE’s request for the HAB to focus on cleanup priorities rather than budget. He reviewed the draft advice document, including the background and the three components of the advice.

Dan McDonald clarified that Hanford cleanup has two legal agreements, the Tri-Party Agreement (TPA) and the Consent Decree. We are bound by those agreements which cause us to prioritize our work.

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

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

C: “On the cleanup advice we were asked by DOE to address two changes in the prior budget priorities, change the focus to budget priorities to clean up priorities. Minimize the discussion of the budget, they asked to have us prioritize the cleanup activities. We don’t want to number the priorities. We listed the four bulleted items we used as a resource, Advice #300 was last year’s budget advice, three items in the advice. I would like DOE to respond directly to #302. They haven’t responded to that one yet.”

Q: “What’s the impact you want when you hand this off to agencies?”

R: “We want those items we identified to be part of the cleanup priorities.”

Q: “What’s the result you want out of this?”

C: “All the important things that still need funding. We’re not done.”

C: “If this is for the [Congressional] delegation, it seems like a good opportunity to highlight those important things that aren’t already in the 2022 plan as a way to show how extra money could be well spent.”

Committee Business, Open Forum, and Wrap Up

The committee indicated that it wanted a TWC committee call in February to gather input on topics for a March committee meeting. Topics identified during the discussion included:

- Nuclear Regulatory Commission (NRC) comments on Waste Incidental to Reprocessing (WIR)

- DFLAW critical path update
- Revisions to the Lateral Flow White Paper
- Iodine, its potential impacts on waste disposal, and options for addressing the issue.

Several people will be out of the office at the waste management conference during the currently scheduled March HAB committee week. The committee discussed and agreed to recommend to the EIC and the TPA agencies that the March committee week be moved from the week of March 9th to the week of March 16th.

Attachments

Attachment 1: Direct-Feed Low-Activity Waste

Attachment 2: Tank-Side Cesium Removal Demonstration Project Update

Attachment 3: Hanford Double-Shell Tank, Tank Integrity Program

Attendees

Board Members and Alternates:

Bob Suyama, Member	Tom Galioto, Member	Tom Carpenter, Alternate (Phone)
Chuck Torelli, Member	Jeff Burrigh, Alternate (Phone)	Robert Davis, Member
Susan Leckband, Member	Dan Solitz, Alternate (Phone)	Pam Brown-Larsen, Member
Shelley Cimon, Member	Vince Panesko, Alternate (Phone)	Jacob Reynolds, Alternate
Margery Swint, Alternate	Ken Niles, Alternate (Phone)	Alex Klementiev, Alternate
Helen Wheatley, Member (Phone)	Liz Mattson, Member (Phone)	

Others:

David Boothroyd, Public	Erik Olds, DOE	Andrew Pomak, Ecology
Dan McDonald, Ecology	Peter Bengston, WRPS	Nina Menard, Ecology
Ryan Miller, Ecology	Steve Pfaff, DOE	Ruben Mendoza, WRPS
James Lynch, DOE	Lindsay Strasser, North Wind	Jason Gunter, WRPS
JoLynn Garcia, DOE	Mark Beck, Public	Steve Lowe, Ecology
Kelsey Shank, The Edge	Karthik Subramanian, WRPS	Ginger Wireman, Ecology
Ruth Nicholson, Facilitator	Jasmine Martinez, Facilitation Team	Ashley Herring, Facilitation Team
Wayne Barber, Public (Phone)	Dana Gribble, MSA (Phone)	Abi Zilar, Northwind (Phone)

Yvonne Levardi, DOE (Phone)	Tim Proctor, Value Added Solutions (Phone)	Robert Wilson, Public (Phone)
Annette Cary, Tri-City Herald (Phone)	D. Silva, Public (Phone)	Geoff Tyree ,DOE (Phone)
Gary Younger, DOE	Fred Yapuncich, Public	Dib Goswami, Ecology
Jim Alzheimer, Ecology		

DRAFT