



FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
TANK WASTE COMMITTEE**

April 19, 2017

Richland, WA

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

Opening

Bob Suyama, Tank Waste Committee (TWC) chair, welcomed committee members and introductions were made. There were no changes to the January Committee Meeting Summary. By consensus, committee members approved the January 18, 2017 Tank Waste Committee meeting summary.

Announcements

There were no announcements.

Leadership Workshop

The Tank Waste Committee Members had a roundtable discussion to discuss the upcoming Leadership Workshop. The May Leadership Workshop will be May 2-3, 2017 in Richland.

FY18 HAB Work Plan

Proposed additions to the FY18 HAB Work Plan include:

- Performance Metrics
- Tank Vapors
- Beryllium Program Update

Proposed updates to the FY18 HAB Work Plan include:

- Tank Waste Retrieval
 - WMA-C Performance Assessment added
- Tank Integrity Program
 - Update of AY-102 added
- Grand Challenge
 - Revisit system planning added
 - Briefing on past years added

WTP Technical Issues Resolution Update

Agency Presentation

Dirk Dunning, HAB Issue Manager provided the Tank Waste Committee (TWC) Members an introduction to the topic of WTP Technical Issues Resolution and Langdon Holton.

Langdon Holton, U.S. Department of Energy-Office of River Protection (DOE-ORP), provided an update on the resolution of the technical issues associated with the Waste Treatment and Immobilization Plant (WTP) Pretreatment Facility (PT). The presentation provided insight on the function of the PT Facility, technical issues, resolution impacts, strategic elements, and the focus of the technical issues.

Key points from Langdon's presentation include:

- The focus was high level waste and pretreatment.
- Restrictions were imposed on engineering, procurement, and construction at PT in late 2012 due to unresolved technical, management, and quality issues.
- S1 team identified eight major technical issues, in which three have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.
 - Testing is underway on a full-scale mixing vessel design. Resolution of four other technical issues is ongoing.
- DOE is evaluating changes to some vessel designs at PT. The design changes included the Standard high-solids vessel (SHSV) and PJM vessel designs.
 - The new vessel was installed in July 2016 with PJM testing beginning in December 2016. Testing completion to be expected end of 2017.
- DOE is evaluating replacing up to eight vessels with smaller vessels.

Agency perspective

Dan McDonald, Washington State Department of Ecology (Ecology) shared his view on the difference between “resolved” and “closure.” He stated that “resolved” means that the technical issue is sufficiently well worked through to be able to move to the next step in the process, whether this means more technical requirements to be solved. His view on “closure” means they have finished all of the technical requirements necessary to close the issue completely and move forward with updates and changes necessary to successfully complete the design, construction, and operations.

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

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

Q: “What is the testing of PJM going to provide?”

R: “The outcome of testing will provide a couple of things meant to resolve PJM control. The contractor will submit a certificate to proceed.”

C: “Resolve means the department is confident in the issue.”

The TWC committee thanked Langdon for the update on the WTP technical issues resolution. The TWC committee should expect an update in the fall of 2017. DOE-ORP is striving to have all remaining technical issues resolved in 2018 and return WTP Pretreatment to design.

Tank Farm Critical Infrastructure

Agency Presentation

Bob Suyama, TWC Chair provided the TWC members an introduction to the topic of Tank Farm Critical Infrastructure and Jeremy Johnson.

Jeremy Johnson, U.S. Department of Energy-Office of River Protection (DOE-ORP), provided an update on the critical infrastructure related to the management, retrieval and transfer of tank waste. The presentation outlined FY2016 accomplishments and FY2017 planned activities.

Key points from his presentation include:

- **Tank Farms Projects**

FY2016 Accomplishments:

- Completed installation of new primary ventilation system at AP Farm.
- Completed installation and testing of wireless components to support infrastructure upgrades to leak detection sensors and temperature monitoring thermocouples in AY/AZ, AP and AW farms.
- Completed installation and testing of ventilation airflow instrumentation in SY Farm.
- Designed and fabricated new spare transfer pumps to be used in pump replacement projects during FY 2017 and beyond.

Planned FY2017 Activities:

- Design, procure and fabricate new SY Farm primary ventilation system.
- Replace AP-106 and AW-106 waste transfer pumps.
- Install wireless network upgrades in AN and AP Farms.
- Install wireless waste transfer leak detectors in the double-shell farms.
- Continue installation of ventilation air flow monitoring in DST farms.
- Upgrade safety showers.

- **242-A Evaporator**

FY2016 Accomplishments:

- Fabricated and installed two upgraded condensers drain lines.
- Replaced two half-ton crane hoists in the 242-A Evaporator canyon.
- Completed upgrades to the control room.

Planned FY2017 Activities:

- Design a spare reboiler.
- Extend the vessel vent stack.
- Replace the steam condensate, process condensate and used raw water radiological monitoring systems.

- **Effluent Treatment Facility**

FY2016 Accomplishment:

- Completed special protective coating upgrades at the load-in station, verification berm, catch basins and bulk chemical storage berm, allowing for the facility to process 4 million gallons of waste water.

Planned FY2017 Activity:

- Replace one of three Liquid Effluent Retention Facility basin covers to allow for processing waste in the basin.

- **222-S Laboratory**

FY2016 Accomplishments:

- Installed a new replacement diesel motor for emergency fan #4.
- Completed an upgrade to the freight elevator.
- Installed new analytical instruments, including a new gas chromatograph/mass spectrometer that doubles the capacity for organic vapor analyses.

Planned FY2017 Activities:

- Complete design and begin construction for upgraded HVAC system.
- Replace five analytical instruments.
- Begin design work for renovation of two laboratory rooms.

- **Critical Spare Parts Program**

FY2016 Accomplishments:

- Established GPS tracking for portable equipment such as light plants, generators, compressors, aerial lifts and utility vehicles to improve the tracking of portable equipment.

Planned FY2017 Activities:

- Procure spare transfer pumps and other critical transfer system components needed for safe storage, SST retrievals and DST transfers.
- Procure sufficient quantities of safety-significant valves to ensure fabrication of jumpers for new pump installations and valve pit modifications.
- Procure spare hose-in-hose transfer line and fittings to support A/AX retrieval and completion of C-Farm.

- **Chemical Vapors Management**

FY2016 Accomplishments:

- Completed bench-scale testing of vapor monitoring and detection equipment.
- Initiated pilot-scale testing of vapor monitoring and detection equipment in A and AP Farms.
- Deployed a specialized mobile laboratory.
- Completed ventilation upgrades in AP Farm; continued ventilation work in AX Farm.
- Completed installation and testing of wireless infrastructure upgrades in AY/AZ, AP and AW Farms.
- Deployed and successfully tested a pilot public address system in AP Farm.
- Identified and eliminated fugitive vapor emission sites.
- Completed central control room for monitoring tanks.

Planned FY2017 Activities:

- Demonstrate and test a new engineered vapors control technology.
- Install an enhanced communications system in the 200 East Area.
- Install additional pilot-scale test monitoring and detection equipment in additional tank farms.
- Continue use of the mobile laboratory.

Tank Farm Upgrades for DFLAW

Upgrades to support DFLAW will be made in the AP and AW Tank Farms, with the design/build scope spanning from FY2016 through FY2021.

- Pump replacements/installations.
- Enraf replacements.
- Jumper replacements/installations.

- Upgrade valve pit for waste routing.
- Design/build 4 underground transfer lines (AP Farm).

Agency Perspective

Dan McDonald, Ecology stated that he appreciated Jeremy’s presentation. His primary concern is that “we as a community, not lose sight of the importance of these infrastructure activities.” In his view, they are critical to the success of the larger program and need to be funded and scheduled right along with everything else.

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

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

Q: Is DOE doing an independent review to what is a “critical spare part?”

R: “No.”

Q: “Are the transfer pumps designed specific to a tank farm? Or to be moved from tank farm to tank farm?”

R: “Yes and yes. They designed them to be installed in tanks not just particular tanks.”

Q: “Are they managed in a way to be turned?”

R: “They manually rotate the shaft periodically.”

Q: “Are the pumps wireless? Does this mean a significant increase in range?”

R: “I believe its wireless local within the tank farm.”

Q: “Why is there a reason to change from the current technology to wireless?”

R: “A big part of the initiative is to keep folks from having to enter the area/field and controlled from a control center.”

Q: “How much is spent on tank farm projects?”

R: “\$40-50 million a year is spent on tank farm upgrades.”

Q: “Are you still able to proceed on these items in 2017 with the continuing resolution?”

R: “Yes, we are currently able to proceed with these projects for those outlined currently.”

Q: “What is the permitting process to making mods to existing working facilities?”

R: “Still in discussion as to what is needed to be modified to the existing evaporator.”

Q: “Are we passed the ammonia, brass, etc.?”

R: “Yes. As far as I know.”

Q: “Is the plan today the equivalent of the 2015 Infrastructure Plan?”

R: “Yes.”

The TWC committee thanked Jeremy for his presentation. Jeremy stated that it may be beneficial for the HAB to revisit infrastructure in August or September of 2017.

Heat Stress Mitigation/Monitoring Equipment Briefing (Joint Topic with HSEP)

Agency Presentation

Rebecca Holland, HSEP Committee Chair provided the TWC members an introduction to the topic of Heat Stress Mitigation/Monitoring Equipment and Edward Sinclair.

Edward Sinclair, Washington River Protection Solutions (WRPS) provided an update on the Physiological Monitoring (PM) for Heat Stress Management.

Mr. Sinclair emphasized that PM is not a medical procedure. PM is a basic way to measure the level of an individual’s heat strain in response to heat stress conditions. This includes heart rate monitoring and body temperature measurement. PM does not include parameters that may be considered medical monitoring, such as measuring blood pressure, oxygen saturation, urine testing, or cardiac rhythm.

Key points from his presentation include:

- WRPS first implemented a PM program in the field late in the 2014 heat stress season and conducted full-season monitoring in 2015 and 2016. The heat stress season runs from early May through end of September. The PM program is part of a robust WRPS heat stress program.
- Physiological Monitoring is conducted using industrial hygiene (IH) approved devices. A variety of instruments were evaluated and the technical literature was reviewed to make informed selections. IH personnel and the Occupational Medical Provider (HPMC OMS) approved the selected instruments.
- In FY2015, employees were monitored nearly 2300 times. Three employees were removed from work. No employees developed heat-related issues.
- In FY2016, employees were monitored more than 2700 times. No employees were removed from work. No employees developed heat-related issues.
- WRPS earned national recognition with receiving the 2017 Campbell Innovation Challenge award for the PM program for creative thinking, and strategic implementation of innovation. The PM program was also determined a best practice in the DOE complex at the 2015 Energy Facility Contractors Group Symposium.
- WRPS has shared PM training materials with many contractors, including Hanford’s Mission Support Alliance (MSA).

The goals of the PM program are to:

- Eliminate heat stress disorders.
- Remove workers from heat stress related tasks before they developed heat stress disorder symptoms.
- Provide management with a quantitative measurement of each worker's response to heat strain.
- Help build worker confidence in the heat stress control program.

The TWC committee thanked Edward for the update on the Heat Stress Mitigation/Monitoring Equipment. The TWC committee should expect to see another update in August or September of 2017.

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

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

Q: *"Have you looked at other options?"*

R: *"Yes we have looked at many options, such as the Polar H360 watch, Fitbit, and a baby monitor that reads skin temperature. These devices have not been implemented. We are looking into purchasing and testing the "Conis" heart rate device in-ear monitor that reads heart rate and temperature."*

Committee Business

Committee Leadership Selection

The Tank Waste Committee held their annual selection of committee leadership.

2017/2018 Nominee for Tank Waste Chair was:

- Bob Suyama, Benton County

By consensus, Bob Suyama was voted to represent the Tank Waste Committee as Committee Chair.

2017/2018 Nominees for Tank Waste Vice Chair were:

- Steve Wiegman, Public at Large
- Melanie Meyers-Magnuson, Non-Union, Non-Management

A ballot vote resulted in the selection of Steve Wiegman as Vice Chair of the Tank Waste Committee.

3-Month Work Plan

There were no updates made to the Tank Waste Committee 3-month work plan.

Other Items of Discussion

There will be no Tank Waste Committee meeting held in May.

Members of committee leadership will provide the committee with a debrief from the May leadership workshop at the June board meeting.

Open Forum

Members of the Tank Waste Committee took time to discuss their thoughts on Hanford related issues.

A TPA 5-year review discussion was suggested for the May Leadership Workshop with a briefing possibility in September.

Attachments

Attachment 1: WTP Technical Issues Resolution Update

Attachment 2: Hanford Tank Farms Infrastructure Update

Attachment 3: Physiological Monitoring for Heat Stress

Attendees

Board Members and Alternates:

David Bernhard	Pam Larsen	Rebecca Holland
Shelley Cimon	Susan Leckband	Phillip Lemley
Dirk Dunning	Don Bouchey	Vince Panesko (phone)
Alex Klementiev	Kristen McNall	Bob Suyama
Jerry Peltier	David Bernard	Richard Bloom
Amoret Bunn	Casey Mitchell	Steve Wiegman
Dan Solitz (phone)	Tony Umek	

Others:

Dieter Bohrmann, North Wind/DOE-ORP	Jim Alzheimer, Ecology	Dan McDonald, Ecology
Edward Sinclair, WRPS	Steven Lowe, Ecology	Kris Holmes, DOE-RL
Staci West, Bechtel	George Rangel, Bechtel	Langdon Holton, DOE-ORP
Jeremy Johnson, DOE-ORP	Richard Valle, DOE-ORP	Dustin Stewart, DOE-ORP
Mark McKenna, WRPS	Freddie Barrett, ProSidian	Lindsay Strasser, ProSidian
Melissa Orona, ProSidian		