

WM2017 Conference Panel Report

PANEL SESSION 36A: US DOE Featured Site: Hanford Washington, Office of River Protection (1/2)

Co-Chairs: **Ricky Bang**, *DOE Office of River Protection*
Jason Vitali, *Washington River Protection Solutions*

Panel Reporter: **Kaylin Burnett**, *DOE Office of River Protection*

Panelists:

1. **Kevin Smith**, *Manager, DOE Office of River Protection*
2. **William Hamel**, *WTP Assistant Manager, DOE Office of River Protection*
3. **Glyn Trenchard**, *Acting Tank Farms Assistant Manager, DOE Office of River Protection*
4. **Delmar Noyes**, *Acting WTP Startup and Commissioning Assistant Manager, DOE Office of River Protection*
5. **Mark Lindholm**, *President, Washington River Protection Solutions*
6. **Margaret (Peggy) McCullough**, *Project Director, Waste Treatment Plant, Bechtel National Inc.*
7. **Karthik Subramanian**, *Manager of One System, Washington River Protection Solutions*

Approximately 100 people attended this panel session which focused on key topics from the Office of River Protection at the Hanford Site ending with a presentation by **Delmar Noyes** on Direct Feed Low Activity Waste (DFLAW) progress.

Summary of Discussion

Kevin Smith Hanford is located in South Eastern Washington. The Office of River Protection (ORP) is one of the three Department of Energy (DOE) organizations at Hanford whose mission is to safely store and immobilize the waste left there from weapons processing.

Glyn Trenchard Tank Farms has only one C Farm tank to go, with completion planned in CY18. This includes the time it has taken to address tank AY-102 remediation. AY-102 started on-time according to our consent order. Challenges including weather and labor issues were overcome and the settlement agreement date to empty AY-102 was accomplished ahead of schedule.

William Hamel The modification to incorporate DFLAW into the BNI contract was approved this year. This structured the contract to align with the site's DFLAW mission. In addition, it incentivized the end of construction and commissioning activities to meet the hot commissioning date of January 2022. Under DFLAW the Waste Treatment and Immobilization Plant is being started in a sequenced approach. To support this, BNI and AECOM evaluated the risks of multiple contractors being co-located and increased their organization's relations under Waste Treatment Completion Company (WTCC) where they jointly address the risks. This company is subcontracted by BNI to optimize resources, provide common safety protocols, and manage combined construction and operations.

WM2017 Conference Panel Report

Delmar Noyes ORP had the opportunity to inject a key staff member into the salt waste processing readiness process at Savannah River. This confirmed the challenges faced during the transition from construction to operation. ORP continues to monitor the activities to assist in our preparations.

Karthik Subramanian Worker vapor concerns have impacted field activities and additional monitoring technologies were developed over the past few months to fill a gap. New monitors are installed at the new exhaust stacks, on the fence line, and around the AP farm. ORP is testing sensors throughout the seasonal variations. The data will be used to support IH decisions. This data is captured nominally every two seconds across many instruments. The data and infrastructure to manage this effort was new to the site and posed a substantial challenge to address. Once the data collection challenges were overcome, trending began and is ongoing. WRPS has developed a website for this effort at www.hanfordvapors.com for those interested.

Glyn Trenchard The 242-A Evaporator has been in maintenance for the entire year. It is a single point failure source and the site is quite sensitive to that fact so maintenance is critical. In addition, the stack has been extended to accommodate vapor concerns. Last year 2 million gallons of waste were reduced, this year more than 4 million gallons of reduction is the planned goal once the evaporator resumes operation.

Mark Lindholm Vapor concerns have resulted in a conservative approach to work practices including the use of SCBA until adequate testing could be performed on other technologies. Testing with APRs has been ongoing in individual tank farms to evaluate safe performance levels. Pacific Northwest National Laboratory and an independent third party are involved in the evaluation.

William Hamel Hydrogen accumulation (T1), accumulation of solids capable of creating criticality (T2) and hydrogen in piping (T3) issues related to the Pretreatment Facility have been “resolved” by DOE. This provides the ability to resume some of the key engineering, planning and design activities. The Defense Nuclear Safety Board and other stakeholders were involved and DOE continues to be transparent through the process.

Peggy McCullough DFLAW is 97% through the design of the transition to the sequenced start. The last of the LAW Facility’s major components was received last summer and the revised contract and efforts are focused on the start date set by the department. Currently BNI schedule plans early completion.

Delmar Noyes Startup has begun at WTP. The government is actively building and coordinating the readiness actions and oversight plans. This transition is compounded as the delays at WTP have resulted in changed technology and interfaces going forward.

William Hamel WTP is now contracted with a group of experts to assist in the oversight of the WTP known as the Owners Representatives. In addition to oversight, they provide mentoring and have expert reach-back capability. They have participated in the melter QA pedigree assessment, 30-60-90 reviews, and future scope is targeted for equipment degradation evaluations.

WM2017 Conference Panel Report

Peggy McCullough A prior Secretary of Energy required all vessels to be tested at full scale. The department optimized to a standard vessel to reduce testing scope and the vessel was procured and installed. Testing is planned to be complete this summer.

Delmar Noyes One System was identified as a best practice by DOE. The focus in the future is to identify the gaps and risks to mitigate in order to ensure DFLAW in 2022. Looking for opportunities to improve the system across the contractors and improving metrics for the integration.

The panel was asked to highlight the risks and opportunities going forward. Generally, Funding uncertainty was the key risk with impacts that could reach into force reductions, schedule delays, and inability to keep the contracts aligned. One System challenges in keeping the contractors aligned is expected to increase. New hazards are expected to be introduced during the transition to operations that will require careful planning to avoid injuries.

In terms of opportunities, Tank Farms is able to hire younger, more energetic government staff that are bringing new ideas to the office; vapors issues can be resolved, desire to manage and limit change as transition to operations will be dynamic enough, and strengthening relations with regulators as processing starts.

DFLAW update provided by **Delmar Noyes**.

DFLAW is a revised startup approach from integrated startup to a sequenced startup with LAW first. This leverages LAW Facility completion and avoids HLW and PT delays. It requires two new facilities, Low Activity Waste Pretreatment System (LAWPS) and an Effluent Management Facility (EMF). LAWPS consists of a cross flow filter and ion exchange process to remove solids and cesium. The EMF is a capability relocated from PT, which is designed to manage the off-gas coming from the LAW facility. One System is an integrated team that helps manage the interfaces between the contracts to assist aligning completion.

DFLAW focuses on the supernatant (liquids) to start making glass sooner than waiting for complete WTP. The glass will be disposed of on site. During DFLAW we'll create 6.3 million gallons of tank space, make 1200 law containers and feed 20 batches of feed.

The Integrated Disposal Facility (IDF) is built and ready to receive waste once the permits are updated. This facility is managed under the Richland Office. All infrastructure is also provided by the Richland Office. The WTP support facilities, known as Balance of Facilities, are transitioning into operations. Turnover of the electrical distribution system has begun. The LAW facility is nearing completion with turnover to startup in November of 2018. Tank farms will integrate the sampling laboratory, liquid waste disposal, and the evaporator to concentrate and manage space.

Everything is currently on track for a January 2022 start of DFLAW.

WM2017 Conference Panel Report

QUESTIONS

Question on DFLAW system timing and impacts that budget cuts may have. Seems like the dates are tight and carry risk. – Deferred to private response.

Question on sensor sensitivity for vapors. – Deferred to private response.

Question on DFLAW timing and path forward post startup given planned funding. – Answered with legal obligation to meet Consent Decree milestone for start of LAW in 2023.

Question follow-on, what if other actions fail and you get stuck in DFLAW. – Answered by identifying that DFLAW will not deplete the feed stream already existing in Tank Farms so it will just extend further than planned.