

## WM2017 Conference Panel Report

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

**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. **William Hamel**, *WTP Assistant Manager, DOE Office of River Protection*
2. **Joanne Grindstaff**, *WTP Deputy Assistant Manager, DOE Office of River Protection*
3. **Jason Young**, *WTP-BOF Federal Project Director, DOE Office of River Protection*
4. **Felice Presti**, *Area Project Manager, Waste Treatment Plant, Bechtel National Inc.*
5. **Scott Booth**, *WTP Commissioning and Operations Manager, AECOM*
6. **Karthik Subramanian**, *Manager of One System, Washington River Protection Solutions*
7. **Rob Gregory**, *Chief Operating Officer, Washington River Protection Solutions*

Approximately 40 people attended this three presentation panel session which focused on key topics from the Office of River Protection at the Hanford site: Technical Issue Resolution, Transition to Startup, and Tank Farm Technology and Innovation.

#### **Summary of Presentations**

##### **WTP Technical Issue Resolution, William Hamel, Joanne Grindstaff, Felici Presti**

Background, in 2012 DOE/ORP stopped construction on PT and HLW due to technical issues. Secretary Chu chartered a team to better understand the issues and provide a path forward. As a result the eight technical issues were defined.

- T1 - Hydrogen buildup in vessels
- T2 - Inadvertent criticality
- T3 – Hydrogen buildup in piping
- T4 - Pulse jet mixing
- T5 - Erosion and corrosion
- T6 - Design redundancy in black cells
- T7 - Structural integrity
- T8 - Building ventilation

ORP manages the resolution of these to the approval of the safety basis as closure of these issues. Approaches include contract incentive, action tracking, oversight and review. A rigorous process is defined for the resolution of the issues.

In terms of T4, the requirement to utilize mixing in a non-accessible area required full scale testing.

To optimize the testing, a standard high solid vessel approach was taken by the department. The test vessel was installed and testing began in December 2016. A second test will start in summer

## WM2017 Conference Panel Report

and complete in September 2017. This testing will validate the design and operation of the vessel for the duration of planned operations. Understand that this facility is one of the largest nuclear facilities in the world.

In terms of T6 the goal is to optimize safety, plant reliability, throughput, and operability. What technology will be available for inspection, maintenance or improvement that can be inserted in the future?

Three of the issues are considered resolved, with this defined as the issues having been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. T1-T3, the balance are planned for resolution by the end of 2018. The contractor will need direction as technical issues are resolved for implementation. Return to design will be required. In addition, DFHLW is being considered by the department. WTP will be amended in 3 phases by contract modifications of LAW (already complete), HLW and then PT.

### **Transition to Startup, Jason Young**

The LAW facility is nearing completion along with many of the Balance of Facilities, some of which have been construction complete for some time. Testing and transition to startup and commissioning are beginning. ORP has to transition with the contractor from construction to startup. Startup is a phased process. First are the component level tests, then flushes, then integrated system tests and lastly full facility testing and readiness. Testing requires different skill sets than construction. To assist in this ORP is reaching out to other facilities that have undergone the transition.

In addition we are implementing our own lessons learned as we transitioned our first system. We categorized these into 3 categories: equipment related (>60%), procedures or processes (26%), and delayed turnovers (12%). Actions to resolve future recurrence are now in place to minimize transition risk.

### **Transition to Startup and Tank Farm Technology and Innovation, Karthik Subramanian**

We have to have reliable tanks for years to come regardless of age or condition of tank. Tank farms started in 1943 and continued through 1986. The tank farms are not always close to each other, being spread as far as several miles apart. Additional challenges include variety of waste in sludge, supernatant and salt cake.

Retrieval of C Farm is nearing completion. Requiring recreating infrastructure. Continuing with future retrieval from A/AN/AX Farms. Eventually targeting immobilization by WTP. Challenges are high, so innovation is required daily. Three major categories of innovation areas include: direct operational support, waste retrievals and LAWPS.

Some specific improvements include integrating remote monitoring and wireless networking infrastructure; vapors monitoring and detection system; structural integrity inspection programs; waste retrievable; LAWPS technology maturation; performance assessment modeling; and technology maturation and deployment.