



OFFICE OF
RIVER PROTECTION
United States Department of Energy

Status of Waste Treatment and Immobilization Plant Technical Issues

Waste Management Symposium 2017

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Waste Treatment and Immobilization Plant**

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- Introduction and Background on Waste Treatment and Immobilization Plant (WTP) Technical Issues (Hamel)
- Management Approach for Resolving WTP Technical Issues (Hamel)
- Full-Scale Vessel Testing and Pretreatment Optimization Study (Presti)
- Technical Issue Resolution Status and Path Forward (Grindstaff)





- In late 2012, the U.S. Department of Energy (DOE), Office of River Protection (ORP) limited engineering, procurement, and construction work at the Pretreatment (PT) and High-Level Waste (HLW) facilities due to:
 - Unresolved technical issues
 - Need for design and nuclear safety basis alignment
 - Recognition of increasing costs to implement existing design



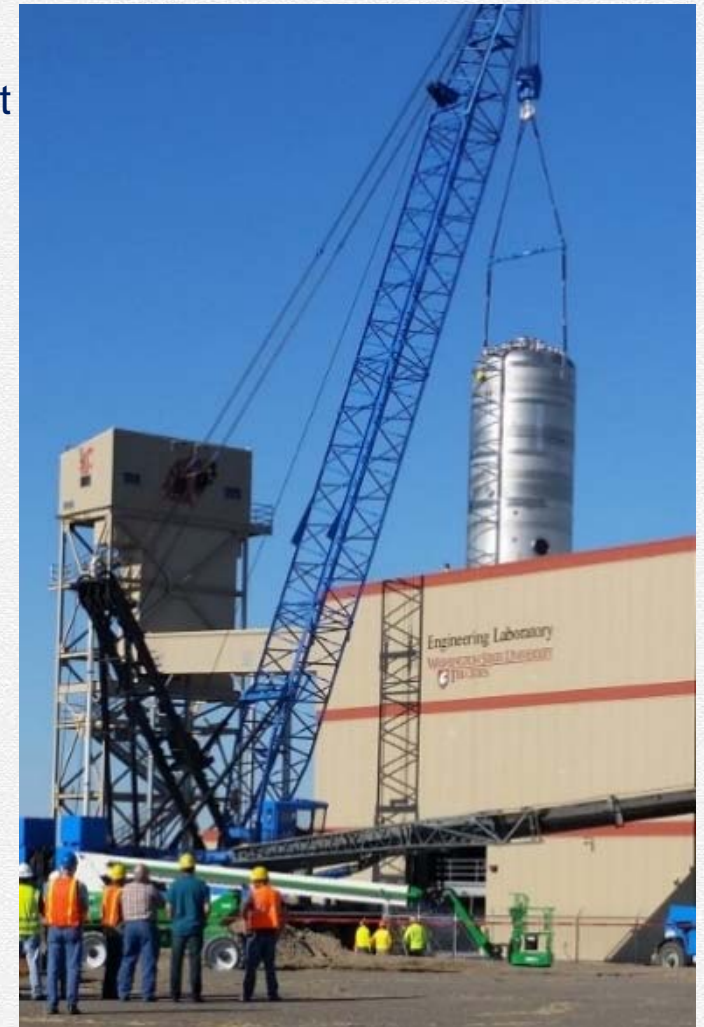


Technical Issue	PT Facility	HLW Facility
T-1 Hydrogen Gas in Vessels	X	
T-2 Inadvertent Criticality	X	
T-3 Hydrogen in Piping and Ancillary Vessels	X	X
T-4 Pulse-Jet Mixing and Control	X	X
T-5 Erosion/Corrosion in Piping and Vessels	X	X
T-6 Design Redundancy in Black Cells	X	X
T-7 Vessel Structural Integrity	X	X
T-8 Facility Ventilation	X	X





- Took ownership of S-1 team issues
- Assigned assistant manager Technical Regulatory Support and ORP senior technical authority to issue resolution
- Conducted weekly senior manager risk and progress meetings
- Developed and maintained up-to-date issues and concerns tracking system
- Established key performance goals
- Contractor performance linked to incentive fees
- Established ORP approval of safety basis as the final issue resolution threshold



**Standard High-Solids Vessel (SHSV) Prototype
Installed in Test Facility July 14, 2016**





WTP Federal Project Director to ensure effective resolution of technical issues:

- Provided clear contract direction
- Established clear roles, responsibilities, accountabilities, and authorities for each issue owner
- Approved requirements and technical basis for issue resolution

Resolution process:

- Created decision review protocols
- Focused on systems engineering principles
- Managed Improvement Plan actions (quality verification documents, strengthen engineering processes, etc.)
- Expert external peer reviews



Testing of
Standard
High-Solids
Vessel
(SHSV)
Initiated on
Dec. 22, 2016





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