



Liquid Waste Program
Prime Contractor



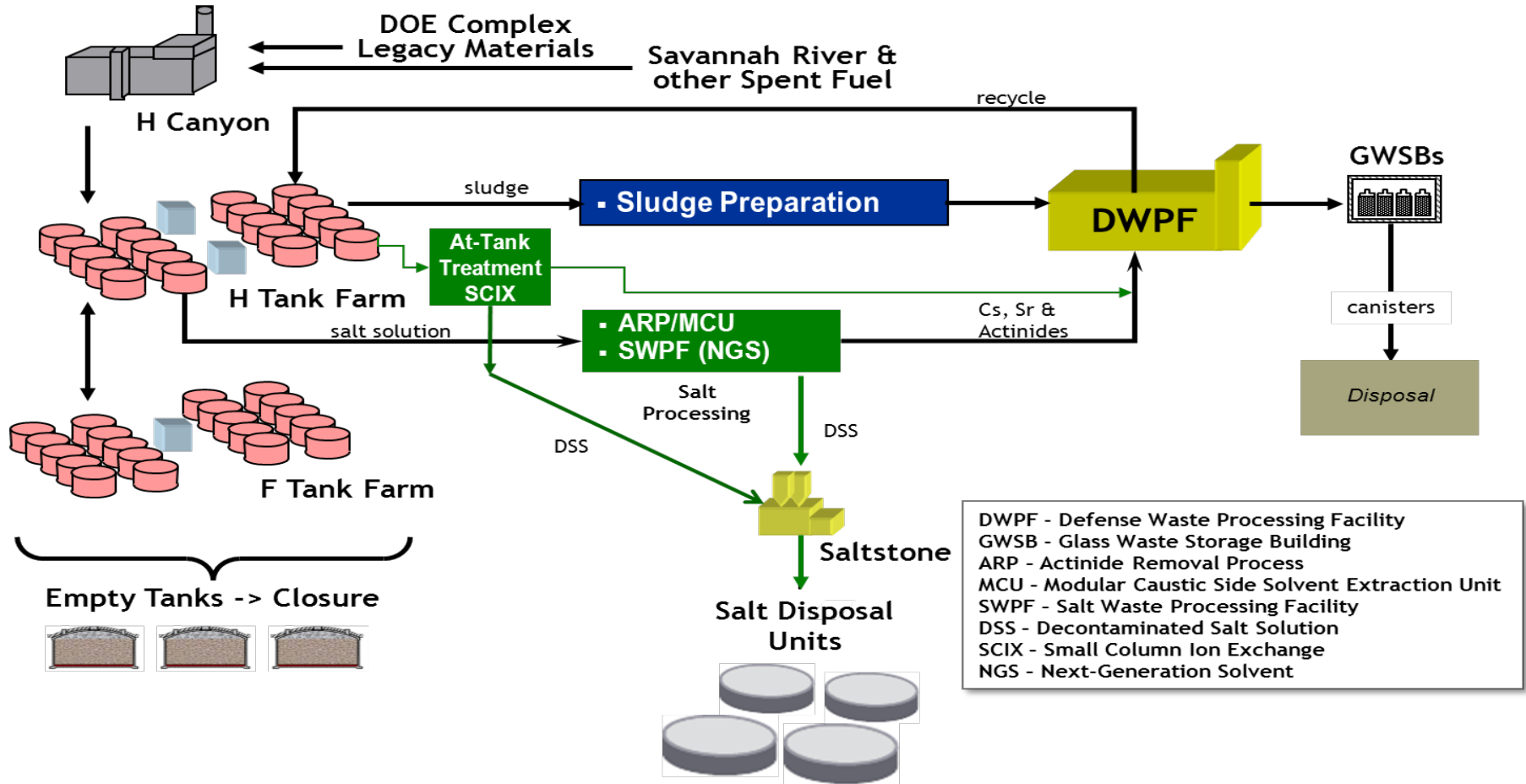
AECOM | BECHTEL | CH2M HILL | B&W | AREVA

Saltstone Disposal Unit 6

Jon Lunn
SDU 6 Project Manager

September 26, 2016

SRR Mission



The Next Generation SDU

- SDU 2, 3 & 5 consists of two reinforced concrete cells A and B
- Each cell is 150' in diameter, with a side wall height of 22' and a center height of 23.5', capable of storing ~3.0 million gallons of grout
- These cells are backfilled below grade with the cell roof at grade level
- SDU 2 was placed into service in 2011 and was filled in 2014
- SDUs 3&5 were placed into service in 2015 and plan to accept Saltstone grout through 2017



Why Change?

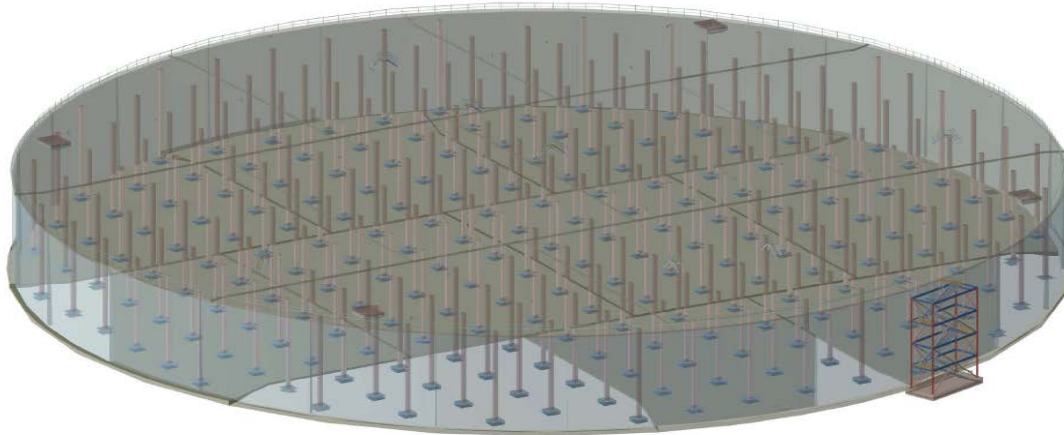
- SRR provided a Cost Savings Initiative to the DOE on future Saltstone Disposal options
- The team determined the Mega SDU is more economical
 - Life cycle cost savings estimated by DOE to be approximately \$300M based on 7 mega SDUs vs. 82 smaller SDUs



Artist Rendering



Saltstone Disposal Unit 6



Tank Feature	Quantity
Foundation (10 sections)	4,482 cubic yards
Wall Panels (25 each)	2,636 cubic yards
Columns (208 each)	1,004 cubic yards
Roof (10 sections)	4,536 cubic yards
Pre-Tension Wire Strand	289 miles
Shotcrete	294 cubic yards

Tank Construction Progress



Saltstone Disposal Unit (SDU) 6 Core Walls

- **25 core wall panels**

- Approximately 48 feet wide
- 43 feet tall
- Tapered thickness:
 - *10 inches at top to 24 inches at base*
- 6 inch waterstop between each control joint
- Each weighs approximately ½ million lbs.



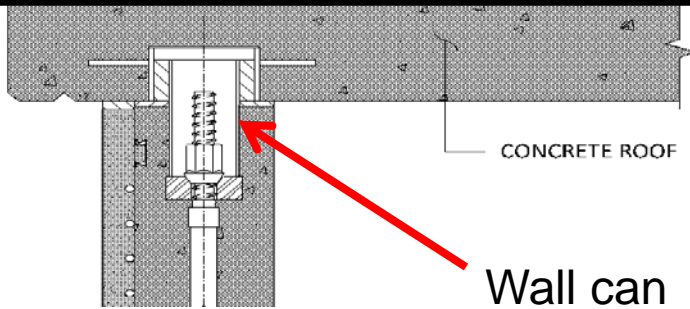
SDU 6 Circumferential Pre-stressing



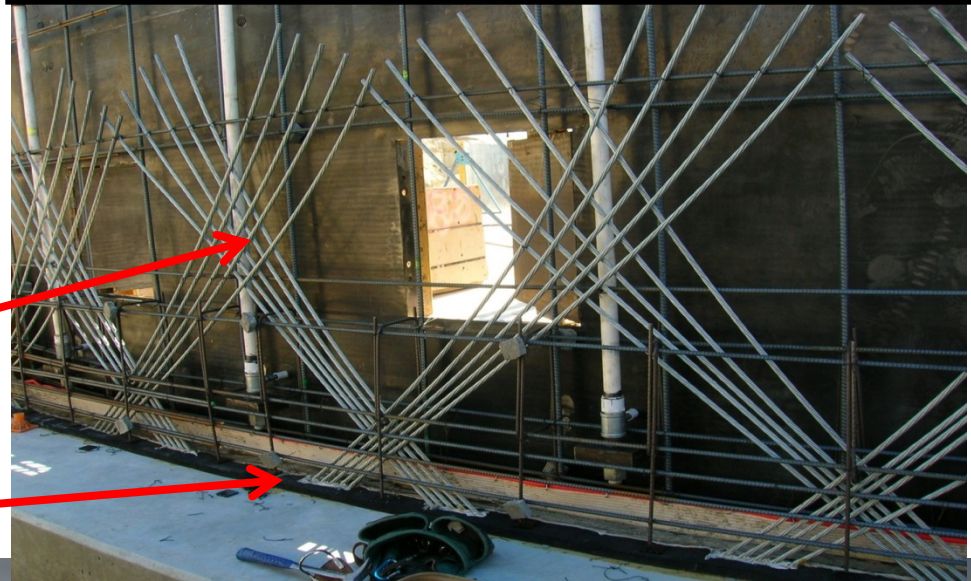
- **Pre-stressing machine**
 - Machine Performs 3 functions:
 - *Hydro-blasting, circumferential pre-stressing, and shotcreting*



Wall to roof shear connection



Wall to foundation lateral cables



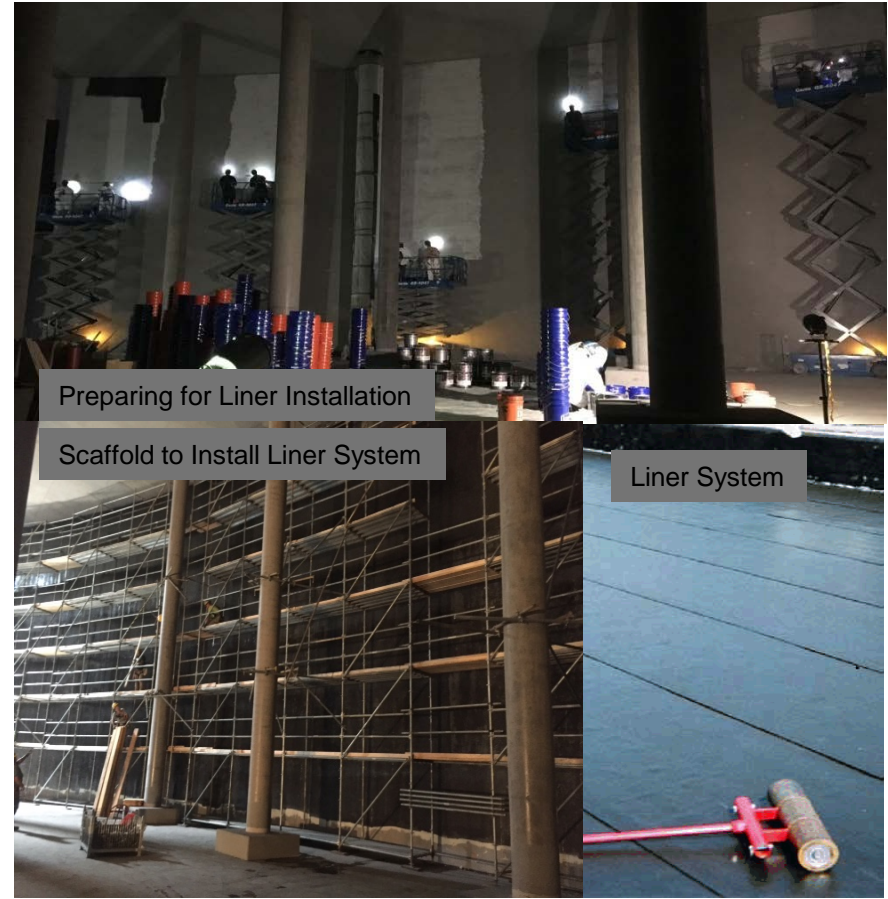
SDU 6 Baseline Scope and Opportunity

- Project baseline included installation of an interior coating system to protect the concrete from Sulfate attack per ACI code requirements.
- Water tightness test was performed prior to application of internal coating to pursue a future opportunity to eliminate coating if sulfate testing showed positive results.
- Water tightness test did not pass with the very stringent requirement of zero leaks.
- Robust coating/liner system being installed to achieve water tightness.

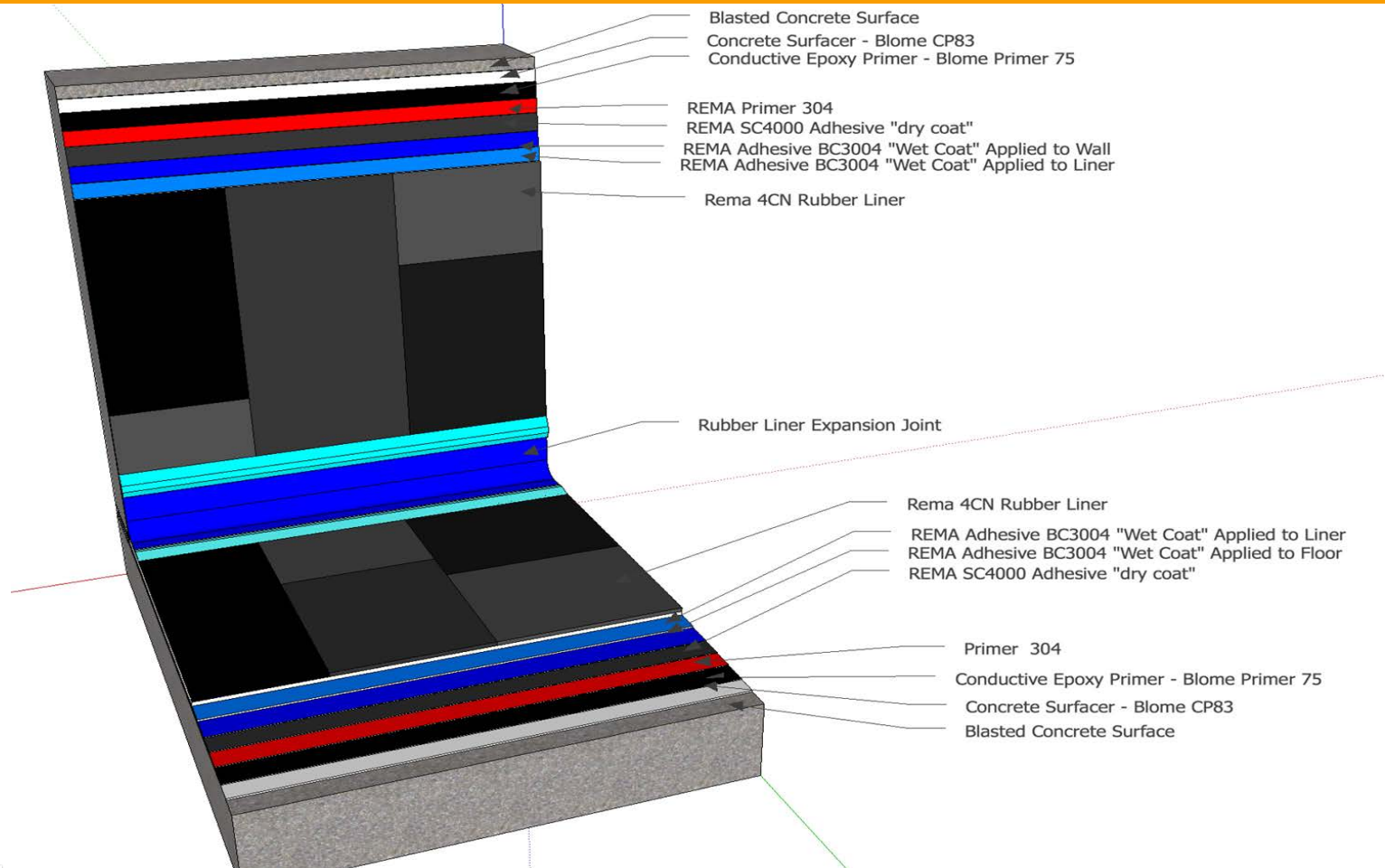


Cell Status

- Cell failed hydrotest due to leakage from floor. (November 2015)
- Attempted repair using epoxy injection. (December 2015)
- Systems Engineering Evaluation (SEE) conducted to determine path forward. (February-March 2016)
- Engineering Study Report (ESR) completed in May recommending an elastomeric liner system (REMA 4CN) to provide leak tightness.
- REMA 4CN product successfully passed 1000 hour salt solution soak test.
- REMA 4CN product procured and installation underway.



Liner System



Liner Installation in Progress



U.S. DEPARTMENT OF
ENERGY

Savannah River Operations Office

Liquid Waste Program Prime Contractor



Balance of Plant

Balance of Plant (BOP)

- Grout distribution system (complete)
- Drain water system (complete)
- Modular instrument / Electrical equipment skid (MIEES) (complete)
- Temperature monitoring (complete)
- Power, cameras, lighting (working)
- Passive Ventilation (working)
- Facility tie-ins (forecast December 2016)



Aerial with Commodities

Quantities

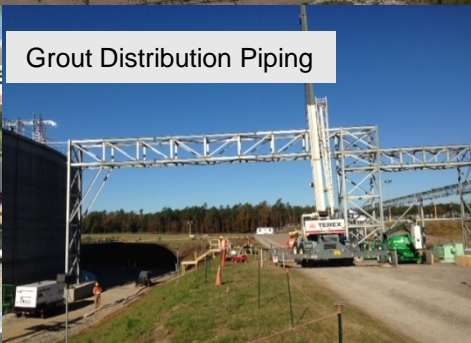
- Grout Pipe – 1200 LF
- Drain water Pipe – 1200 LF
- Conduit / Cable Tray – 6,300 LF
- Cable & Wire – 43,920 LF
- Pipe Bridge – 36K lbs



Thermocouple



MIEES Skid



Grout Distribution Piping

Conclusion

SDU 6 leak tightness assured by:

- Selection of the best synthetic liner system
- Selection of qualified and certified liner system installer
- Appropriate application of Quality Requirements
- Installation oversight by the Manufacturer's Service Representative
- Inspections performed by SRR QA
- A final hydrotest performed at 41 foot of head will validate SDU 6 meets water tightness requirements.

Overall Status:

- *Project continues with positive performance in both cost and schedule.*
- *On track to meet System Plan Need Date, which supports continuous operation of the Liquid Waste Disposal Process.*

