



**Savannah River
Remediation**

AECOM | BECHTEL | CH2M | BWXT

April 14, 2016

SAVANNAH RIVER REMEDIATION UPDATE

South Carolina Nuclear Advisory Council Meeting

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Industrial Safety



Radiological Safety



Environmental Safety



Chemical Safety

Safety: Perspective/Awards

- Construction forces (legacy and current) accumulated over 28 million safe hours
- SRR operations accumulated over 1 million safe hours since the last injury requiring a day away from work
 - Reached contract-high 9.8 million safe hours in 2015
- Recipient of National and State Awards in recognition of safety performance (National Safety Council Industry Leader, S.C. Chamber of Commerce and S.C. Department of Labor, Licensing and Regulation Awards)



High-Hazard Operations

REDUCING SOUTH CAROLINA'S SINGLE GREATEST ENVIRONMENTAL RISK

TANK CLOSURE SRR completed FIVE closures in FIVE years and reduced tank closure schedules by nearly half

5 in 5 YEARS

9,800,000 safe hours from 2013-2015, best in SRR contract history

\$1 BILLION identified in lifecycle savings through Mission Excellence

LARGEST space gain since 2010 in FY15

3 million gallons/year rate achieved
Decontamination factor increased from 100 -> 50,000

DOUBLED throughput of ARP/MCU

400% increase in Saltstone production rate

60% reduction in decontaminated salt solution disposal costs

LARGEST liquid low-level waste disposal unit in the nation

30 million gallon capacity

DOUBLE STACKING DWPF canisters increases interim storage capacity 33%

3X curie stabilization through DWPF

Facility improvements allowed DWPF to produce canisters at **2 times higher rate**

15 million pounds of glass poured at 100 ft

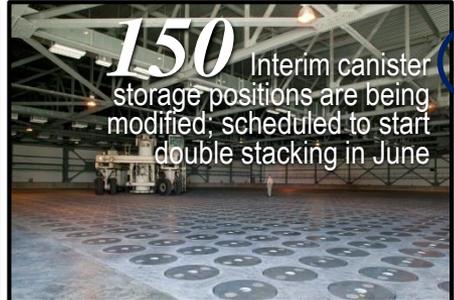
20 million gallons of waste moved in FY 15

262k gallons of water consumed in one year

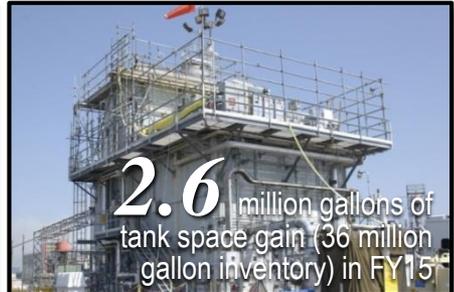
SRR CONTRACT BEGAN 1996

SRR Remediation

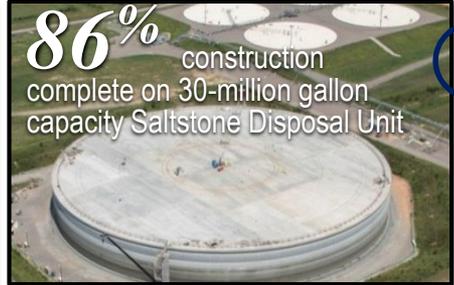
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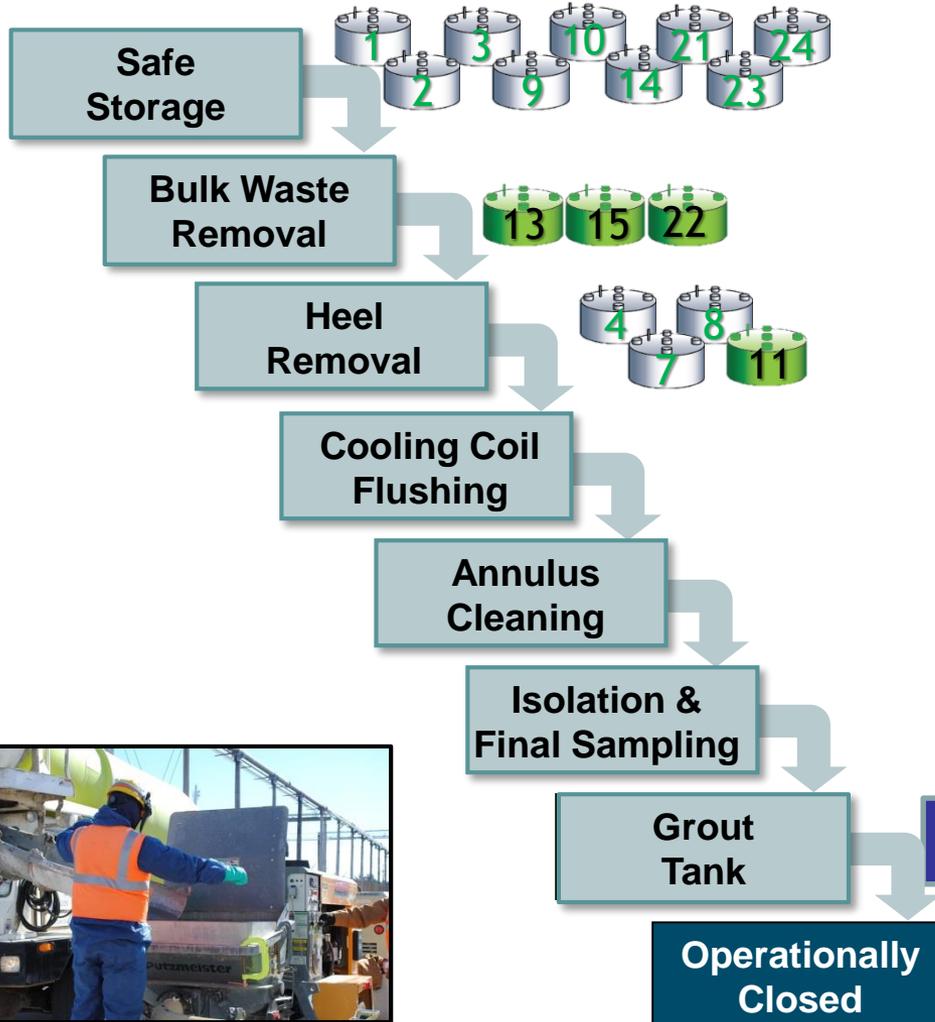
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ARP/MCU = Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit

Closing Waste Tanks

■ Tank Closures

- Five tank closures completed during the past 6 years; One in progress now



Tank 12 so far...

*Overall grouting 97% complete
Items remaining: tanks risers,
equipment and cooling coils*

908,580 gallons of grout used so far

Grouting complete by late April;
FFA Deadline: May 31, 2016



Tank 12 Grouting

- **3H Evaporator Mission: Evaporating liquids generated during:**
 - Sludge batch washing
 - Receipts from H Canyon
 - Tank waste removal and cleaning
- **Leak discovered on Feb 17, 2016, contained in stainless steel lined cell**
- **System Plan revision supports continued H Canyon, DWPF, and MCU operations for up to 3 years without 3H Evaporator operating**
- **Strategy**
 - Currently feeding Sludge Batch 8 to DWPF
 - Sludge Batch 9 has already been washed
 - Sludge Batch 10 washing was to have begun in March 2017, will be deferred
 - Insertion of a Sludge Batch 9B (Tank 22 does not require washing)
 - Decrease canister loading from 36 wt% to 32 wt% (ensures no “salt only” processing at end of campaign)
- **Estimate for evaporator replacement is 3 years and ~\$18M**
- **Recovery Teams evaluating repair vs. replacement**

■ Leak Repairs

- 30 million gallon construction
- Unable to pass water-tightness test with dye
- Install a liner
- Retest tank
- Under budget
- On track to meet system plan need date



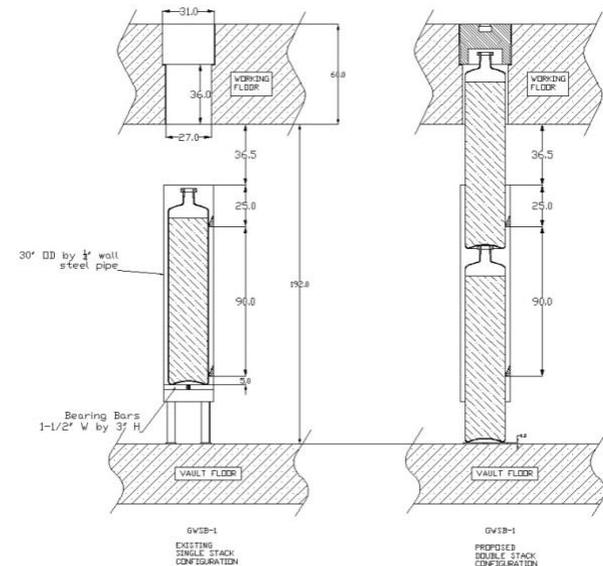
Canister Double Stack Project

- Work includes:
 - Modify existing locations to store two canisters each (from 2,254 to 4,508)
 - Remove existing crossbar canister support; lower canister supported on vault floor
 - Upper canister placed on top of lower canister
 - Upper canister Shield plug redesigned for equivalent radiological protection
 - Scheduled to begin double stacking in June

Glass Waste Storage Building 1

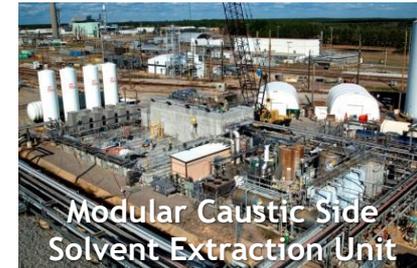


Canister Double Stack



■ No MST Demonstration

- SRR team continues to refine the system used to process salt waste
- Eliminating the addition of monosodium titanate (MST) from the salt waste processing system improves ARP filtration rate
- Successfully processed approximately 200,000 gallons of the salt waste to date
- Demonstration will continue for several more months



■ Preparing for Salt Waste Processing Facility

- In May, one of the two newly constructed Salt Solution Receipt Tanks (SSRT) will begin a Readiness Review
 - There are two 60,000-gallon SSRTs
 - Provides 4 days of space for salt operation
- Liquid waste-wide outage June-September 2017
 - Install underground transfer lines for SWPF tie-ins



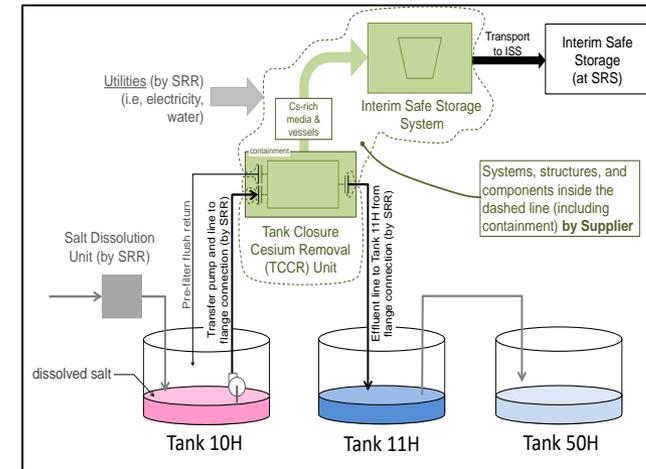
Tank Closure Cesium Removal

Objective

- Pursue ion exchange technology to enhance tank closure capabilities
- Leverage commercial ion exchange supplier expertise and Fukushima experience
- Improve flexibility by exploring alternatives for spent resin disposal
- Simple, modular, affordable

Status

- Best & Final Offer Request for Proposal sent to Suppliers
- Final Proposals received
- SRR Proposal evaluation complete - 2/18/16
- TCCR Subcontract Award



TCCR Concept



TCCR Process Area

- **Focus continues on**
 - Safe work to protect workers, public, environment
 - Close Tank 12 by May 31, 2016
 - Continue salt waste processing with ARP/MCU > 1M gallons per year
 - Prepare for Salt Waste Processing Facility startup
- **Innovative SRR Team continues to provide unique solutions to the liquid waste work**
 - No MST demonstration
 - Canister double stack
 - Tank Closure Cesium Removal
 - Many others
- **Questions?**

