SAVANNAH RIVER REMEDIATION UPDATE

South Carolina Nuclear Advisory Council Meeting

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Our Focus: 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.

Industrial Safety
Radiological Safety
Environmental Safety
Chemical Safety
High-Hazard Operations

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

1. Tank Closure
   - 9,800,000 safe hours from 2013-2015, best in SRR contract history
   - $1 BILLION identified in lifecycle savings through Mission Excellence

2. Largest Space Gain
   - 3 million gallons/year rate achieved
   - Decontamination factor increased from 100% to 300%
   - 400% increase in Saltstone production rate
   - 30% increase in Saltstone disposal rates

3. 5 in 5 Years
   - South Carolina's single greatest environmental risk
   - SRR completed five closures in five years and reduced tank closure schedules by nearly half

4. 4,000th Canister
   - 4,000th canister poured 12/31/15
   - Interim canister storage positions are being modified, scheduled to start double stacking in June

5. Radionuclide Removal
   - Next Generation Solvent
   - 99.9975% radionuclide removal with 2.6 million gallons of tank space gain (36 million gallon inventory) in FY15

6. Reduction in Disposal Costs
   - 60% reduction in decontaminated salt solution disposal costs
   - 86% construction complete on 30-million gallon capacity Saltstone Disposal Unit

7. Saltstone Disposal
   - Double stacking
   - Saltstone Disposal Unit (30 million gallons)

8. Miscellaneous
   - Decontamination: Saltstone Disposal Unit (30 million gallons)
   - Construction complete on 30-million gallon capacity Saltstone Disposal Unit

9. We do the right thing.
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
SRR Technical Issue: 3H Evaporator

- 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
SRR Technical Issue: SDU 6

- **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
A lot accomplished to lengthen the life and increase reliability of SRS Liquid Waste facilities...more to do
**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
Two Projects: No MST Demonstration / Salt Solution Receipt Tanks

- **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
**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
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?