PARSONS

Technology Opportunities SWPF Integration

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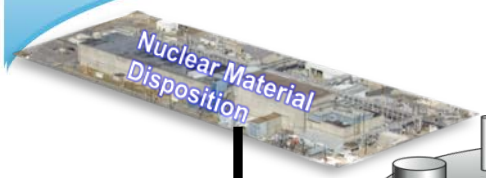
Savannah River Site

Salt Waste Processing Facility

Technology Opportunities - SWPF Integration



Tank Integrity

Salt waste

Salt Processing Performance

SWPF Integration

SWPF
(under construction)

Sludge waste

DWPF Throughput

Tanks Cleaned and Closed

Waste Storage Capacity

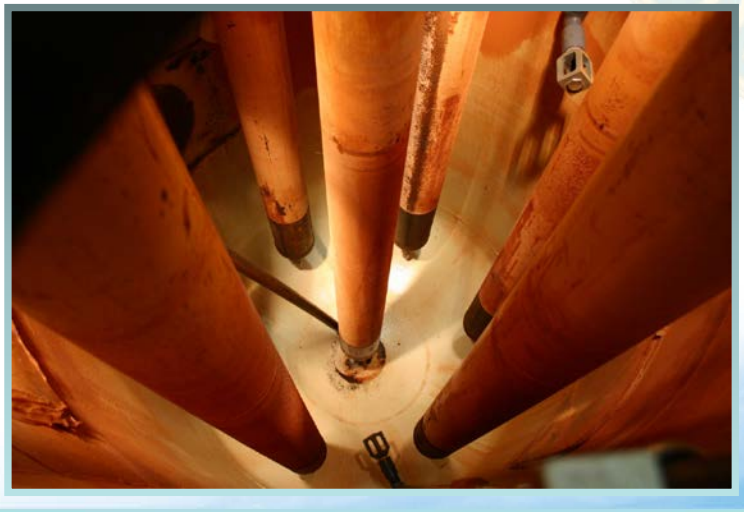
Saltstone Throughput and Storage Capacity

Technology Opportunities - SWPF Integration (cont'd)

- Proactive technology development integration between DOE, Parsons, SRR and SRNL has led to technical innovations at SWPF that
  - *Demonstrate plant safety*
  - *Enhance plant availability*
  - *Increase plant throughput*
  - *No open technical issues*

SWPF Integration: Demonstrate SWPF Safety

- Full scale/large scale Air Pulse Agitator (APA) testing demonstrated safe and effective operational performance
  - *DNFSB closed all SWPF mixing questions in December 2013 report to Congress*
  - *SRNL rheology measurements established key physical parameters supporting APA testing*



SWPF Integration: Enhance SWPF Availability

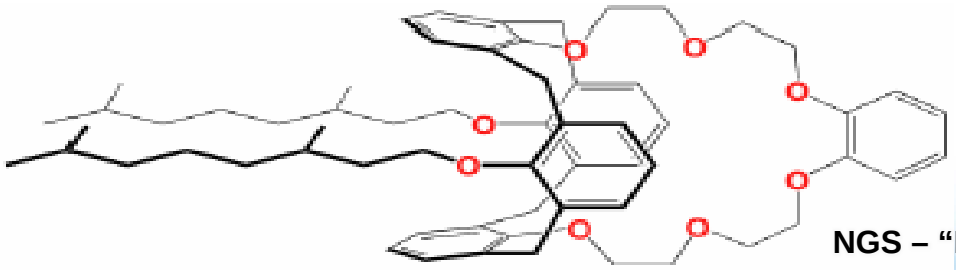
- Bi-Monthly Technology Exchange meetings between DOE, Parsons, SRR and SRNL have facilitated beneficial lessons learned
- Several lessons learned have been incorporated into the SWPF design to improve plant availability and maintainability
  - *Strip Effluent Coalescer Pumps: Enables facility to extend operations in the event of increased coalesce differential pressure to preclude unplanned maintenance down-time (MCU lesson learned)*
  - *Strip Effluent Hold Tank Recirculation Lines: Enables rapid recovery from unplanned high solvent carryover event to avoid protracted removal evolutions (MCU lesson learned)*
  - *CSSX Contactor Vent Flush Capability: Enables full flushing of cesium carryover into the CSSX vent lines to preclude protracted evolutions to install temporary shielding thereby minimizing maintenance down-time (MCU lesson learned)*

SWPF Integration: Increase SWPF Throughput
(cont'd)

- Full scale cold CSSX testing by Parsons of baseline solvent has demonstrated throughput capacity up to 9Mgal/yr vs. baseline of 6Mgal/yr
- Identified hydraulic operational parameters necessary to achieve stability at 100% of contactor rated flow

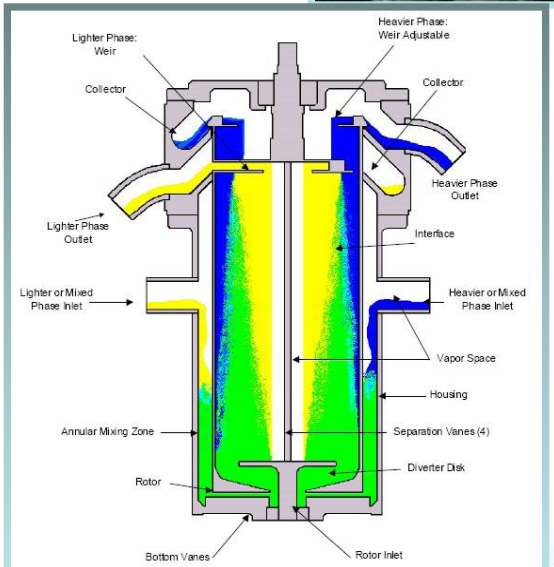
SWPF Integration: Increase SWPF Throughput
(cont'd)

- Full scale cold CSSX testing by Parsons of enhanced Next Generation Solvent (NGS) demonstrated potential throughput capacity up to 12 Mgal/yr
- Higher solubility of NGS extractant allows less solvent to achieve require decontamination, thereby facilitating more waste throughput
- ORNL and SRNL fundamental development efforts on NGS enabled this significant enhancement
- DOE currently exploring NGS deployment alternatives for SWPF



NGS – "MAX Calix" Molecule

SWPF Integration: Increase SWPF Throughput
(cont'd)



- Full scale cold CSSX testing by Parsons of High Molarity Salt Feed demonstrated potential effective throughput capacity up to 15+ Mgal/yr
- DOE-SR recommended and supported testing of salt feed at higher feed concentrations
- Higher feed concentration increases effective throughput, decreases upstream blending requirements and decreases downstream grout vault storage volumes

SWPF Integration:
Increase SWPF Throughput (cont'd)

- Hot pilot operations by SRR at MCU have demonstrated the operability and effectiveness of both the baseline solvent and NGS
- Decontamination factor performance of both baseline solvent and NGS has exceeded expectations

SWPF Integration: Keystone to Unique Success Opportunity at SRS

- *The SRS site is poised for success with a complete Liquid Waste solution path*
- DOE-SR has established a sound and integrated clean-up strategy
- SCDHEC has established a reasonable and predictable regulatory framework for executing cleanup work
- SRR has demonstrated the capability to clean and close tanks, prepare and make glass at high capacity, and safely prepare and transfer waste feeds
- SRNL has supported success through technology innovation, technology deployment, and operations optimization
- Parsons is ready to deliver the technically mature and high capacity SWPF that is the keystone to the next major DOE-EM clean-up success