System Plan Revision 20

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Purpose

- Fulfill Savannah River Site Citizens Advisory Board request for briefing on Revision 20 of the Liquid Waste System Plan
Agenda

- Liquid Waste System Overview/Status
- Rev 20 Inputs & Assumptions
- Rev 20 Results
- Summary
SRR Liquid Waste Program Operational Highlights

Legend:
ARP  Actinide Removal Process
DWPF  Defense Waste Processing Facility
MCU  Modular Caustic Side Solvent Extraction Unit
SWPF  Salt Waste Processing Facility

43 tanks
36 Mgal
252 MCi

Salt waste

ARP

Tanks Cleaned & Closed

>8 tanks grouted & closed

<4 tanks grouted & closed

DWPF

4,039 cans poured of projected 8,170

Glass Waste Storage

Most radionuclides to glass

<1% radionuclides remain in tanks

Saltstone Production Facility

8.8 Mgal salt waste treated

Saltstone Disposal Units

Saltstone Disposal Units (under construction)

19 Mgal grout dispositioned containing 463 kCi

Spent Columns (TBD)

Swarm: Savannah River Site • Aiken, SC • www.SRRRemediation.com

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System Planning

- Changes to System Plans are driven by:
  - Advances in Technology
  - Change in Sequencing
  - Acceleration Opportunities
  - Funding Adjustments
System Planning

- Changes from Rev 19 to Rev 20:
  - Advances in Technology
    - Tank Closure Cesium Removal
  - Change in Sequencing
    - Prioritize F-Tank Farm Isolation
  - Acceleration Opportunities
  - Funding Adjustments
    - Improved funding profile
Significant Inputs

- SWPF Start Up December 2018
- H-Canyon operates thru 2025 with flushing in 2026
- Double-Stacking of GWSB #1 increase canister storage capacity by 2,270 storage locations
- TCCR will be demonstrated on Tank 10 salt waste
Tank Closure Cesium Removal (TCCR)
Salt Processing Comparison (Cumulative)

Mgal

FY16 FY17 FY18 FY19 FY20 FY21 FY22 FY23 FY24 FY25

Rev 19

Rev20

15.3 Mgal
Timeline

FY17  FY22  FY27  FY32  FY37  FY42

- F-Area Old Style
- F-Area New Style
- H-Area Old Style
- H-Area New Style
- Waste Removal
- BWR Comp
Other dates of interest

- SDU 6 needed January 2018
- SDU 7 needed November 2020
- Additional canister storage required November 2029
- Next Generation Solvent Deployed at SWPF in FY2022
Alternative Cases

- Case 2 – SWPF startup in January 2021 – Same funding profile as Case 1

- Case 3 – SWPF startup in December 2018 with additional funding
  - Deploy 2nd TCCR
  - Accelerate FTF Isolation
  - Deploy NGS at SWPF in year earlier (FY21)
Tank Closure

Rev 20
(Case 1)

Rev 20
(Case 3)
Summary

- Improved funding profiles enables SWPF to operate at rated capacity

- Additional funding (above provided profile) could enable accelerated isolation of FTF and overall program acceleration
# Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ARP</td>
<td>Actinide Removal Process</td>
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<tr>
<td>BWRE</td>
<td>Bulk Waste Removal Efforts</td>
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<tr>
<td>DOE</td>
<td>Department of Energy</td>
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<td>DOE-EM</td>
<td>Department of Energy – Environmental Management</td>
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<tr>
<td>DWPF</td>
<td>Defense Waste Processing Facility</td>
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<td>ELAWD</td>
<td>Enhanced Low Activity Waste Disposal</td>
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<tr>
<td>FFA</td>
<td>Federal Facilities Agreement</td>
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<tr>
<td>FY</td>
<td>Fiscal Year (October 1st – September 30th)</td>
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<tr>
<td>GWSB</td>
<td>Glass Waste Storage Building</td>
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<td>Liquid Waste System Plan</td>
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<td>MCi</td>
<td>Million Curies</td>
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<td>MCU</td>
<td>Modular Caustic-side Solvent Extraction Unit</td>
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<tr>
<td>Mgal</td>
<td>Million Gallons</td>
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