

# Liquid Waste Mission at the Savannah River Site

Dave Olson, President and Program Manager

*April 12, 2023*



# Savannah River Mission Completion



Teaming Partners

*Proudly led by*



Integrated subcontractors



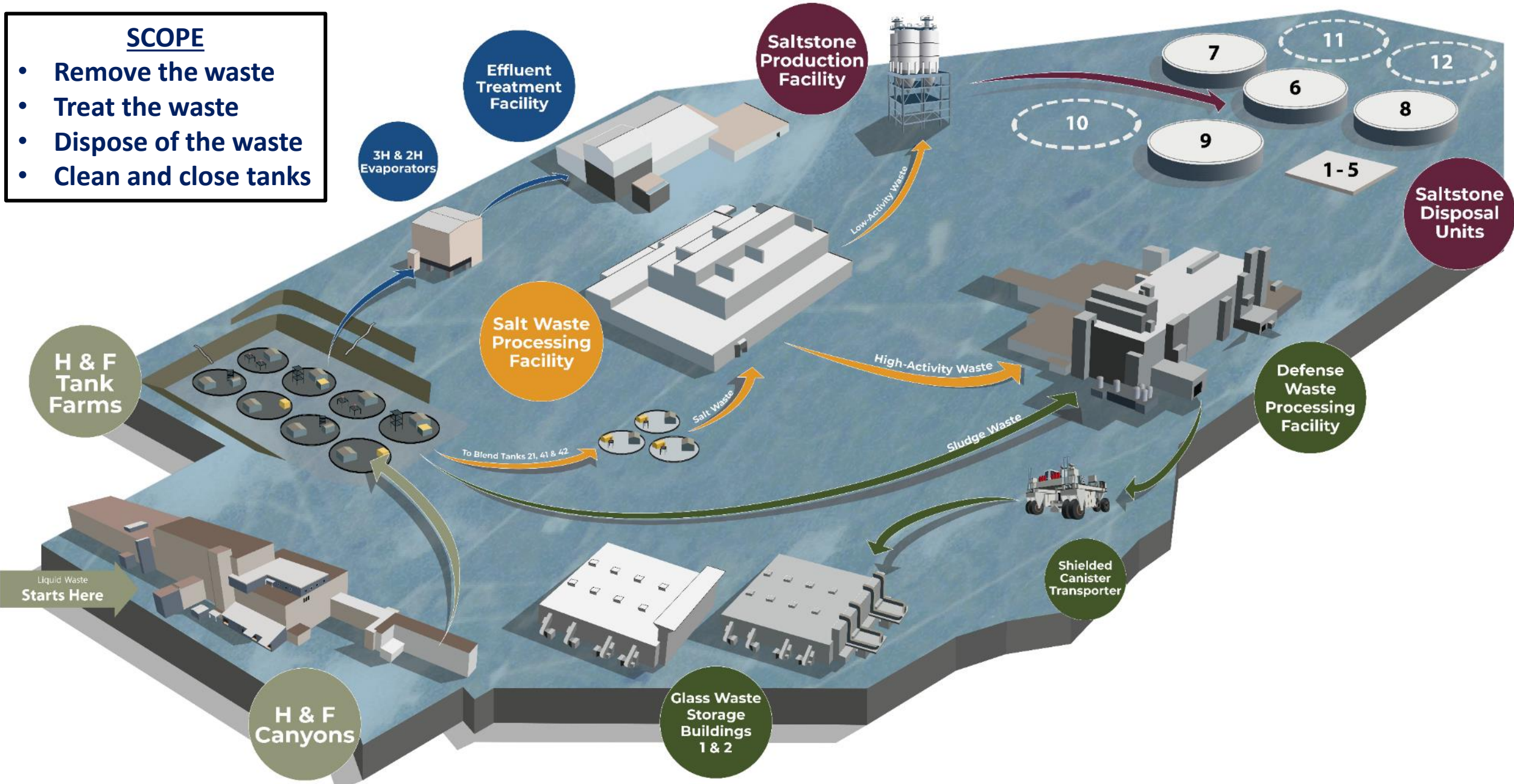
*Responsible for eliminating radioactive liquid waste produced from Cold War era nuclear weapons production*

- SRMC's 10-year contract began on **February 27, 2022**
- Current workforce of **~3,200 employees** (including subcontractors)

# SRS Liquid Waste Facilities

## SCOPE

- Remove the waste
- Treat the waste
- Dispose of the waste
- Clean and close tanks



# Accomplishments Over Last Year



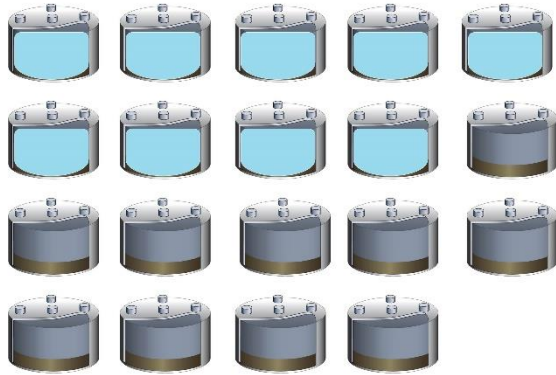
- **Successful transition**
- **5 million gallons processed milestone**
- **Improving vitrification process at DWPF**
- **Improving throughput at SWPF**
- **Closure of first ancillary systems – F Tank Farm Diversion Boxes 5 & 6**
- **Successful Task Order 3 model**
- **Reached regulatory agreement to focus on risk reduction**
- **Streamlined laboratory operations, consolidating three labs into one organization**
- **Implementation of first-of-a-kind modeling tool for system planning**
- **SRMC & employees contributed more than \$286,000 to the United Way**



# SRS Liquid Waste Progress to Date



**Sludge batches processed:**  
**9 of 19 projected**



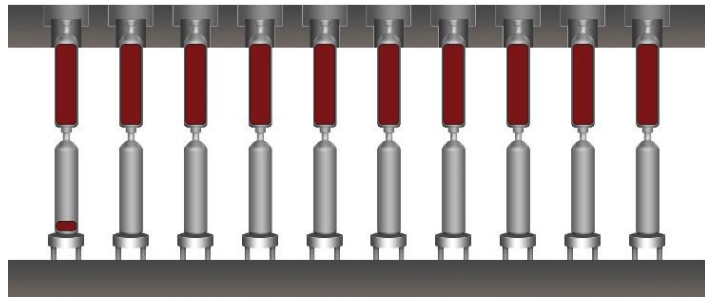
**Salt batches processed:**  
**7 of 102 projected**



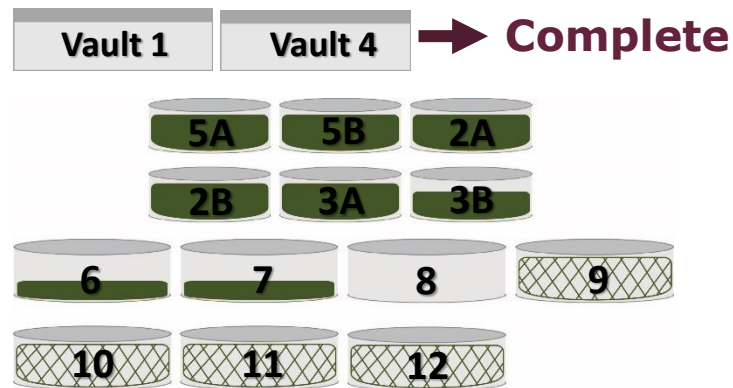
**Tanks closed: 8 of 51**



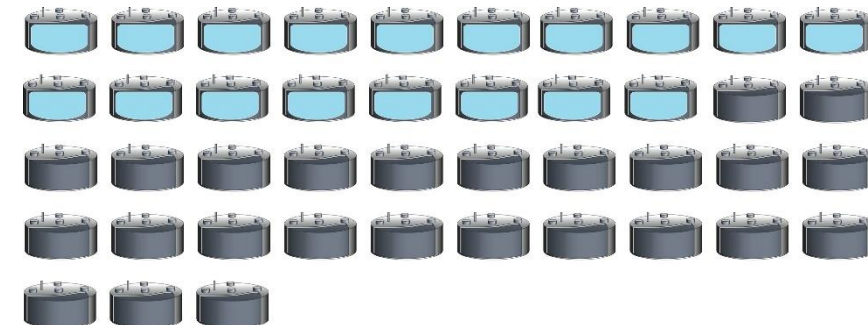
**Canisters: 4,353 total**  
**of 8,113 projected**



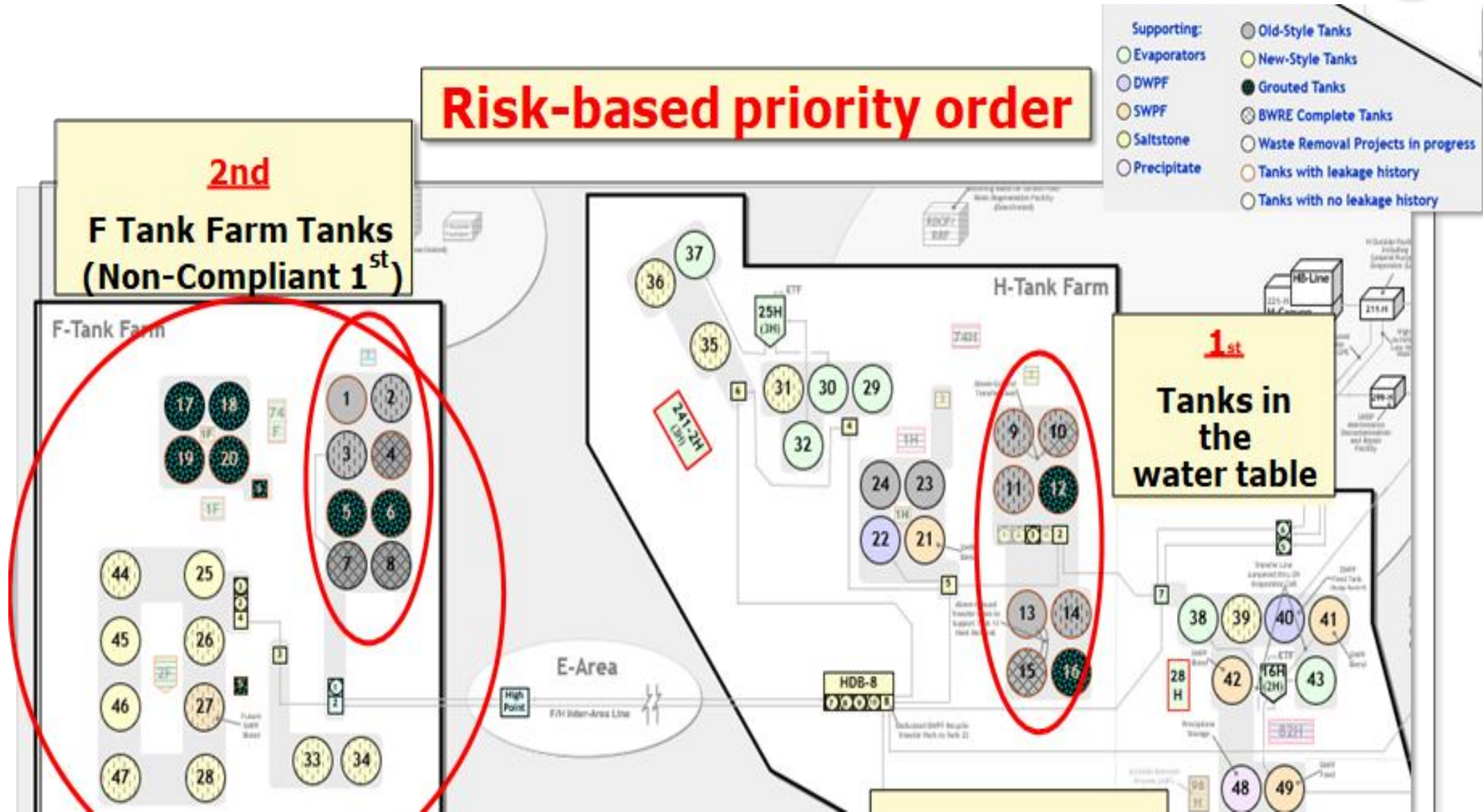
## Saltstone Disposal Units



**Tanks retrieved: Waste removal complete on 15 of 51 tanks**



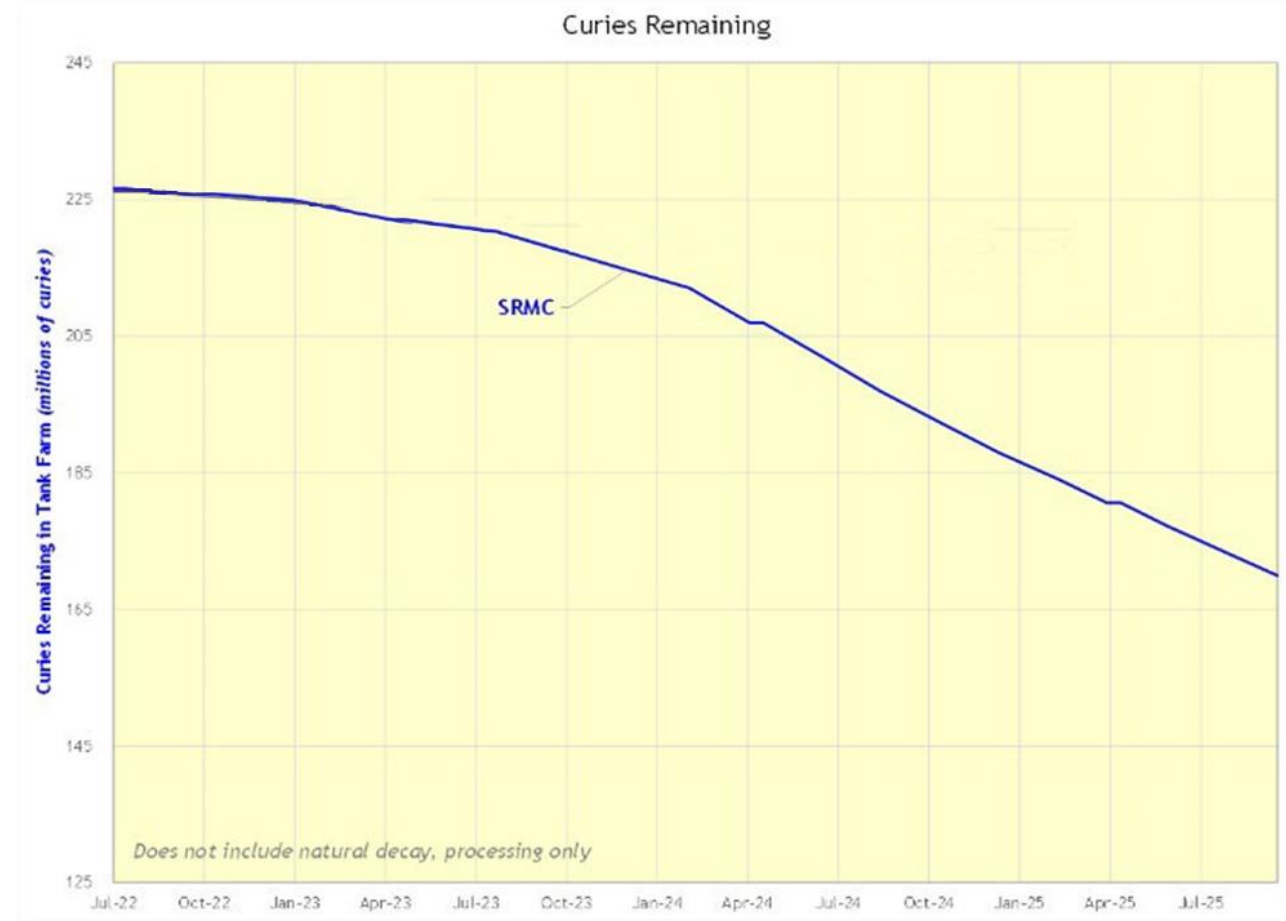
# How SRMC is Doing Its Work



# Removing Curies



- **Previous System Plan showed curies removed at a steady pace**
- **New System Plan changes that strategy**
  - Curies removed on an accelerated pace
  - Operational closure on tanks with the greatest risk



# FFA Agreement Process



- **Agreement signed December 2022**
- **Results in alignment between regulators, DOE, and contractor**
- **Subsequently defines the scope for Task Orders 6 (all waste processing) and 7 (waste retrieval and tank closure) through October 2031**
- **Supported by Enhanced System Modeling (DBD), which also provides input for our System Plan**

**Schedule for Remaining Non-Compliant Tanks**

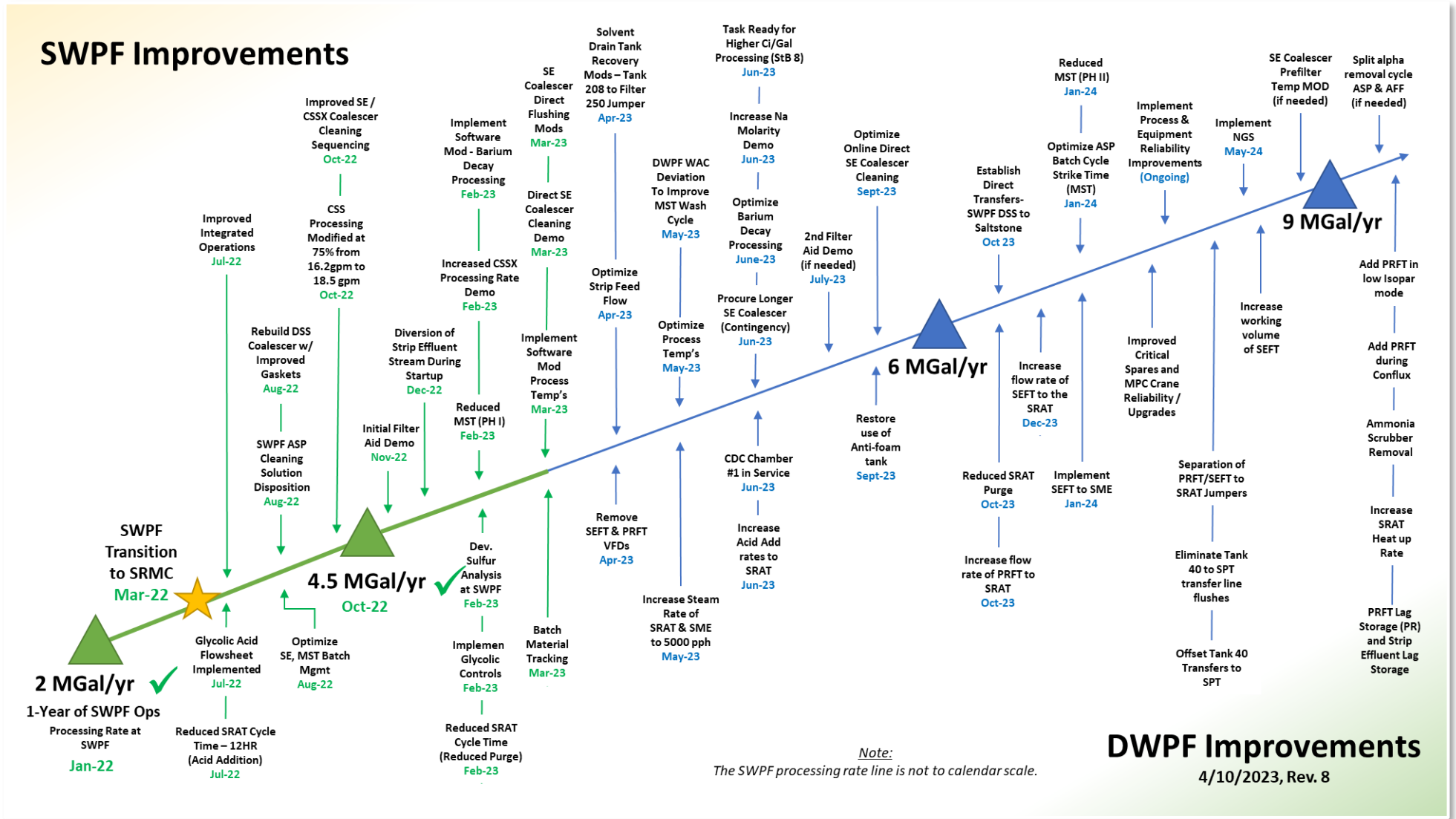
Milestone Date	Preliminary Cease Waste Removal (# of Tanks)	Operational Closure (# of Tanks)
12/31/2023	0	0
12/31/2024	1	0
12/31/2025	3	0
12/31/2026	2	0
12/31/2027	2	0
12/31/2028	0	3
12/31/2029	2	0
12/31/2030	1	2
12/31/2031	0	3
12/31/2032	0	1
12/31/2033	0	2
12/31/2034	1	0
12/31/2035	1	0
12/31/2036	1	1
12/31/2037	2	4
Total	16	16



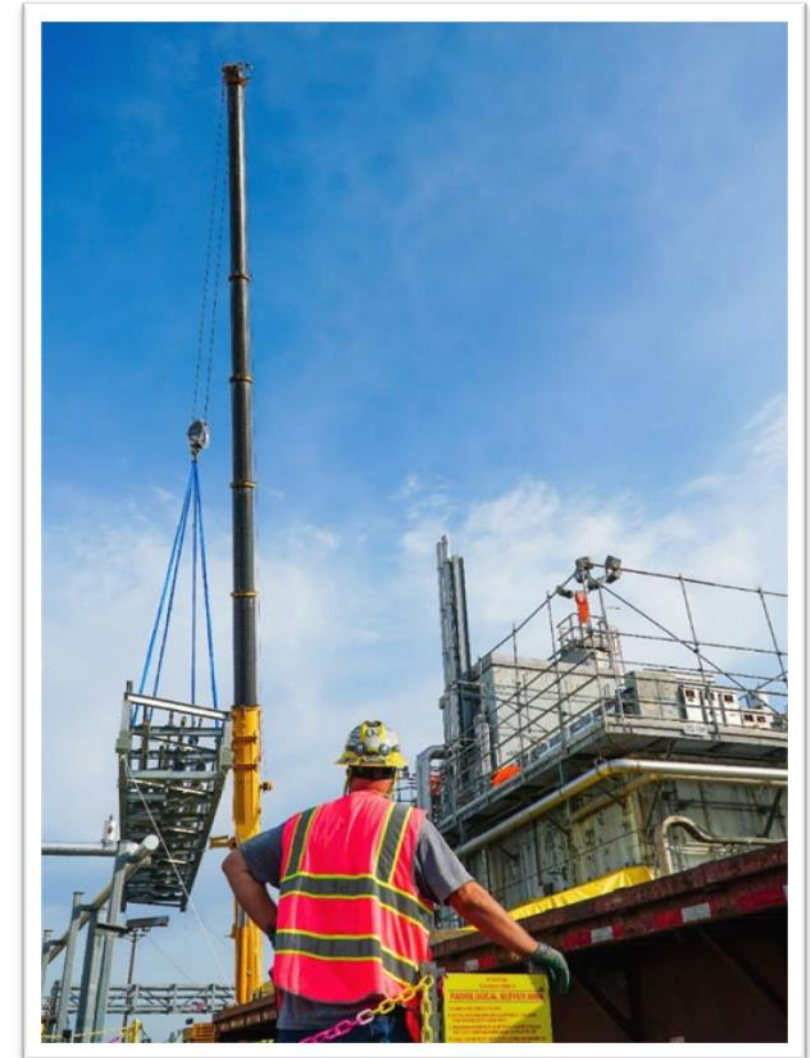
# Implementing Technical Optimizations at DWPF/SWPF



- ASP – Alpha Strike Process
- Ci - Curies
- CSS – Clarified Salt Solution
- CSSX – Cesium Side Solvent Extraction
- DSS – Decontaminated Salt Solution
- MST – Monosodium Titanate
- NGS – Next Gen Solution
- PRFT – Precipitate Reactor Feed Tank
- SE – Strip Effluent Tank
- SEFT – Strip Effluent Feed Tank
- SRAT – Sludge Receipt and Adjustment
- SME – Slurry Mix Evaporator
- SWPF – Salt Waste Processing Facility
- VFD – Variable Frequency Drive

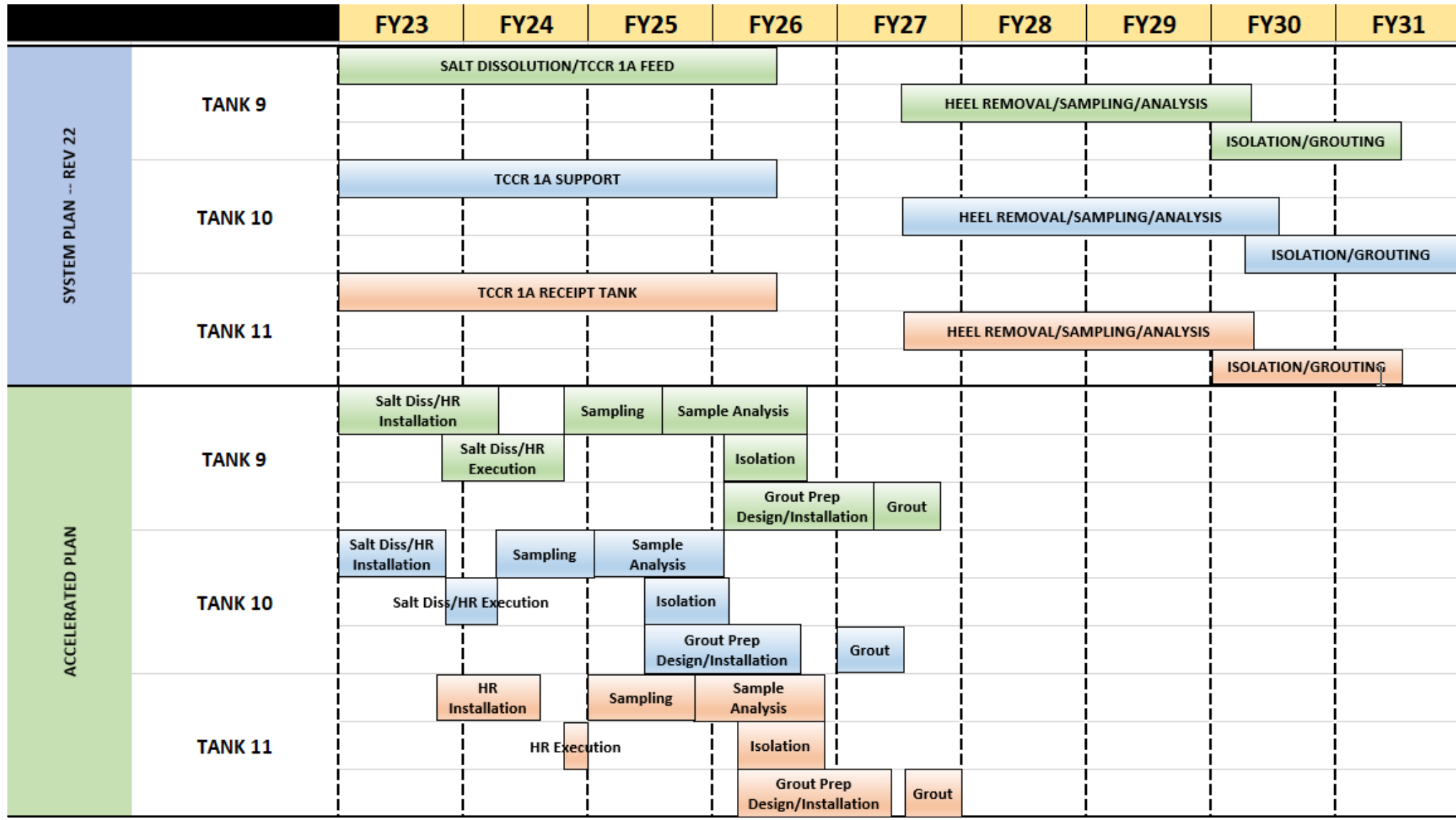


- **Acceleration without the actual or perception of compromising safety**
- **Aging infrastructure requiring high attainment but with many potential single point failures**
- **Highly integrated flowsheet with minimal surge capacity**
- **Execution in a first-time task order environment**



Installing Upgraded East Hill Utilities in H Tank Farm

# Retrieval and Closure Schedule Acceleration



- **Effluent Treatment Facility and Saltstone Production Facility organizational combined into End-Stream Delivery and a consolidated control room**



# Internalizing Out-Sourced Scope



- **SWPF Lab performing salt feed qualification**
- **Cost for Salt Batch Qualification (6 samples/year) and Process Troubleshooting Samples (5-7 samples/year)**
  - One time equipment cost of \$365,000
  - No net increase for labor. Savannah River National Laboratory estimated cost per salt batch sample: \$155,000
  - Break even in less than a year



- Educate the entire organization to emphasize closure Indefinite delivery, indefinite quantity (IDIQ) contract, Task Order management, and Return on investment

## Task Orders 3, 4, & 5 - FY23 Quarterly Review

SRMC SAVANNAH RIVER MISSION COMPLETION

### Task Order 3

June 27, 2022 - September 30, 2023

SRMC is required to perform the following scope during the 15 month period of performance:

Waste Retrieval & Tank Closure	Salt Processing	Sludge Processing
<ul style="list-style-type: none"> <li>✓ Complete FDB 5/6 Entombment</li> <li>✓ Complete Tank 15 Waste Removal Modifications</li> <li>✓ Complete Tank 35 Waste Removal Modifications</li> <li>● Complete Tank 3 Waste Removal Modifications</li> <li>● Complete Tank 9 &amp; 10 Waste Removal Modifications</li> <li>● Complete Tank 31 Waste Removal Modifications</li> <li>● Complete Tank 27 Waste Removal Modifications</li> </ul>	<ul style="list-style-type: none"> <li>✓ Layup TCCR Process</li> <li>✓ Improve SWPF Filtration Rate</li> <li>● Double SWPF Feed Cesium Concentration</li> <li>● Complete Filling SDU 3</li> <li>● Double SWPF Throughput from 1st Year of Operations (Process 4 Million Gallons of Dissolved Salt Solution)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Complete Sludge Batch 10 Qualification</li> <li>✓ Complete DWPF Flowsheet Transition to Glycolic Acid</li> <li>✓ Complete Processing of Sludge Batch 9</li> <li>✓ Initiate Receipt of ABD Discards</li> <li>● Complete Sludge Batch 11 Low Temperature Discards</li> <li>● Complete compilation of Sludge Batch 11</li> <li>● Initiate Sludge Batch 11 Qualification</li> </ul>

Task Order 3 Scope	Task Order 3 Progress	Task Order 3 Forecast
Curies Processed	4,438,813 Curies	9,648,349 Curies
DWPF Canisters Produced	41 Canisters	95 Canisters
Tank 49 to SWPF	2,174,403 Gallons	3,600,000 Gallons
Tank 50 to SPF	2,677,964 Gallons	5,000,000 Gallons

### Task Orders 4 & 5

The list below only includes Task Order requirements to be completed within FY23.

#### Task Order 4

June 27, 2022 - September 30, 2024

**SDU 8**

- ✓ Site Preparation
- ✓ Cell Construction
- ✓ Balance of Plant Construction/Operation
- Readiness for Operations

**SDU 9**

- ✓ Site Preparation
- ✓ Cell Construction
- Initiate Balance of Plant Construction

#### Task Order 5

June 27, 2022 - August 31, 2030

**SDU 10**

- ✓ Site Preparation
- Initiate Cell Construction

**SDU 11**

- Site Preparation

**SDU 12**

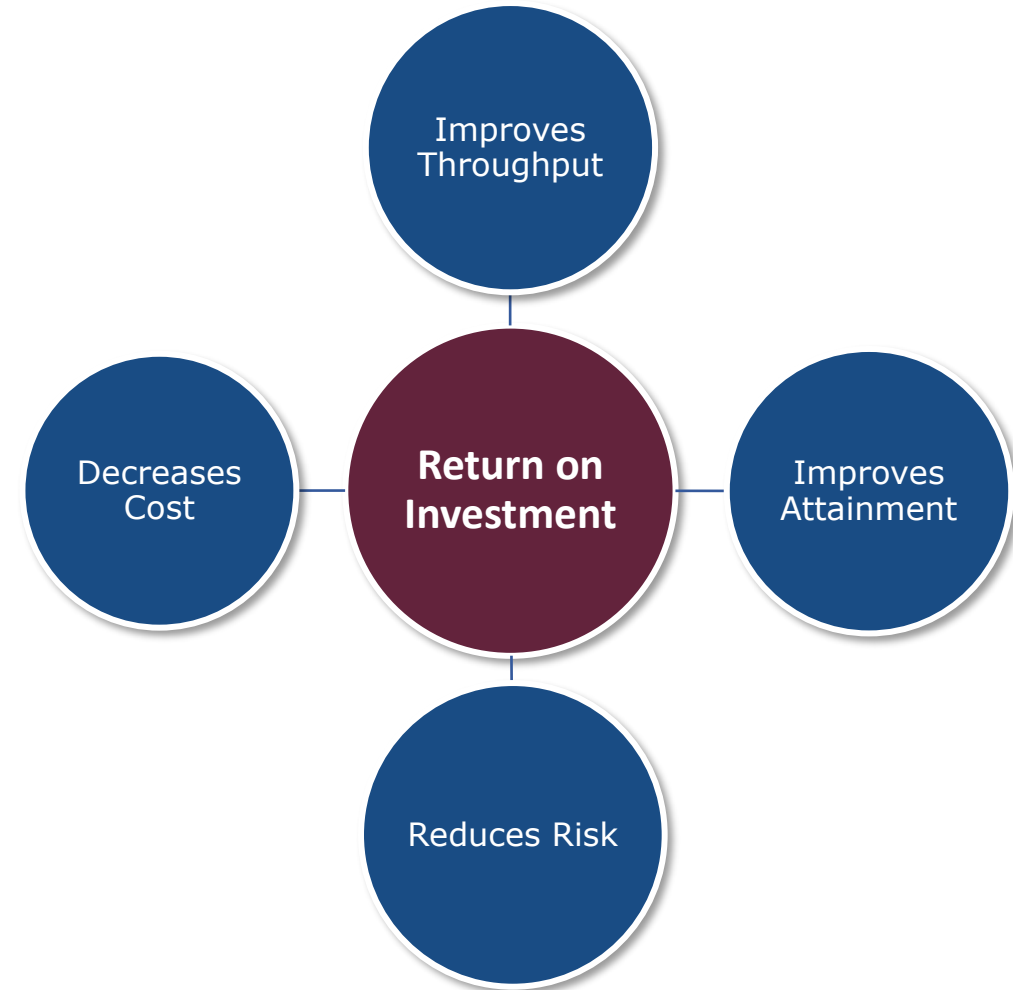
- Site Preparation

*Task Order requirements include more than what is listed in this document.*

*All numbers current through March 17, 2023.*

**Legend:**  
 ABD - Accelerated Basin Deinventory    FDB - F Tank Farm Diversion Box    GWSB - Glass Waste Storage Building    SWPF - Salt Waste Processing Facility  
 DWPF - Defense Waste Processing Facility    HTF - H Tank Farm    TCCR - Tank Closure Cesium Removal  
 FY - Fiscal Year    SDU - Saltstone Disposal Unit

**Key:** ● In Progress    ✓ Complete



# Invested Leadership

- Presidential recognition of “Good Catches” in safety and CONOPS
- Young Professionals Leaders’ Forums
- First Line Managers Leadership workshops
- Diversity, Equity, & Inclusion Working Group



# Focused Assessment and Oversight



- **IIEs and SQO subcommittee reviews as part of Management Assessment Plan**
- **Corporate subject matter experts as rotational CONOPS coaches**
- **Daily management emphasis on BBS observations/LSITs**
- **CAS Manager as direct report to Program Manager**



Legend:  
BBS – Behavior Based Safety  
CAS – Contractor Assurance System  
CONOPS – Conduct of Operations  
IIE – Integrated Independent Evaluation  
LSIT – Local Safety Improvement Teams  
SQO – Safety, Quality, & Operations



- **CONOPS & safety performance are stable**
- **We are managing a significant amount of change**
- **DBD Model is a game changer**
- **As a result of our modeling**
  - FFA Milestones have confidence & the early tanks are 1 year ahead of commitments
  - Produced an aggressive system plan that finishes in 15 years (2037) that incorporates ABD & back-end loads closures (challenge is to successfully managing that risk)
- **Optimization focus on increasing plant availability and throughput**

# 1 POWER AS ONE™

MISSION • VISION • CONTRACT • COMPANY • VALUE SET • SAFETY CULTURE