



U.S. DEPARTMENT OF
ENERGY

Savannah River Site

2018 Community Leaders Forum

October 25, 2018
Newberry Hall, Aiken, S.C.



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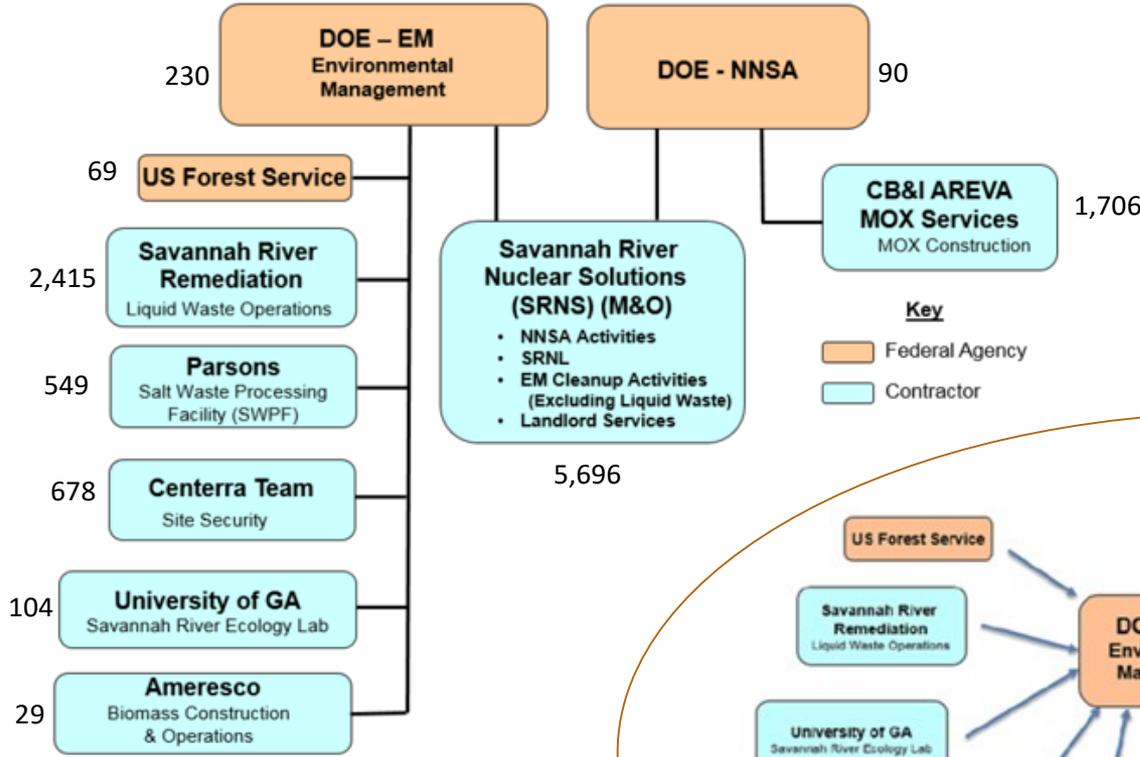
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Mike Budney

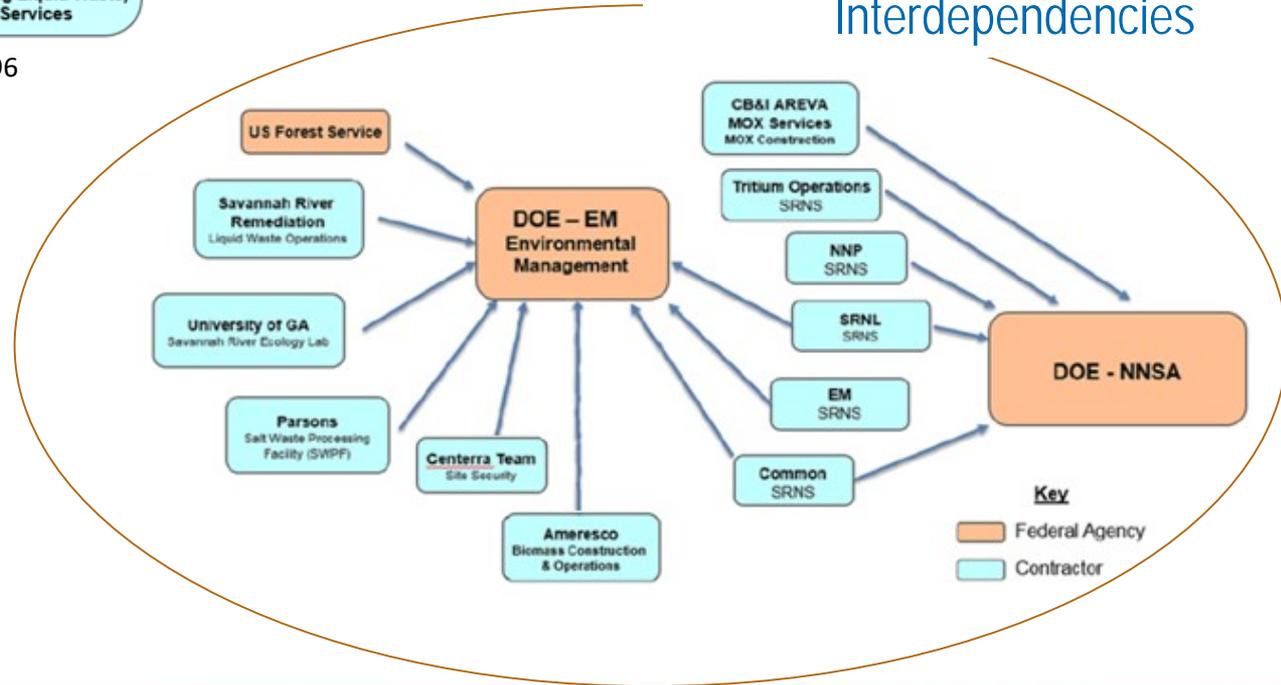
Manager

U.S. Department of Energy – Savannah River Operations Office

SRS Workforce Structure Today



SRS Contractor/Department Interdependencies



SRS Total Workforce
 (incl. Permanent, Support Service,
 Craft, Limited Service)
≈ 11,671
 (as of 9/30/18)

SRS Key Major Prime Contracts Today

- **Savannah River Nuclear Solutions (Management & Operating)**
 - Awarded FY08; Contract value = \$4B; plus options up to \$5.4B
 - Extended through 7/31/19
 - August 2018: Draft Request for Proposals (RFP) issued
 - October 2018: Actions on Draft RFP postponed pending Departmental decision on joint NNSA/EM Study • Decision expected in early calendar year 2019
- **Savannah River Remediation (Liquid Waste)**
 - Awarded FY09; Contract value = \$3.3B; plus 2-year option worth \$726M
 - Extended through 3/31/19 • Awaiting award of new Liquid Waste (LW) contract
- **Parsons (Salt Waste Processing Facility)**
 - Awarded FY02; Contract value = \$2.2B to design and build SWPF and operate for one year
 - Expires 9/30/20 • Future integration into new SRS LW contract
- **Centerra (Paramilitary Security Services)**
 - Awarded FY09; Contract value = \$989M over 10 years
 - Expires 10/7/19 • Awaiting release of Draft RFP

SRS EM Budget Profile FY14 – FY19

Savannah River Funding (\$K)	FY2014 Enacted	FY2015 Enacted	FY2016 Enacted	FY2017 Enacted	FY2018 Enacted	FY2019 Enacted
			(Re-racked)		(Re-racked)	(Re-racked)
SR-0011C NM Stabilization & Disposition	272,000	249,507	254,655	278,444	323,482	332,947
SR-0012 Spent Nuclear Fuel	44,684	42,266	41,407	41,407	0	0
SR-0013 Solid Waste	60,369	44,544	51,546	59,085	43,386	41,425
SR-0030 Soil and Water	55,438	61,659	66,044	70,044	81,199	73,612
SR-0041 Surveillance/Maint & Deactivation	N/A	N/A	N/A	N/A	20,699	28,390
SR-0042 Infrastructure/Land Mgmt	N/A	N/A	N/A	N/A	14,194	13,086
SR Security System Replacement	N/A	N/A	N/A	N/A	N/A	10,000
EOC	N/A	N/A	N/A	N/A	500	1,259
Risk Management Operations Subtotal	432,491	397,976	413,652	448,980	483,460	500,719
SR-0014C Liquid Tank Waste	565,533	547,318	554,878	600,123	637,105	696,869
SWPF Salt Waste Processing Facility	125,000	135,000	194,000	160,000	150,000	130,000
SDU #6 Saltstone Disposal Unit 6	0	30,000	34,642	7,577	0	0
SDU #7 Saltstone Disposal Unit 7	N/A	N/A	0	5,500	30,000	41,243
SDU #8/9 Saltstone Disposal Units 8/9	N/A	N/A	N/A	N/A	500	7,577
Liquid Waste Program Subtotal	690,533	712,318	783,520	773,200	817,605	875,689
SR-020 Safeguards and Security	121,196	138,235	128,145	136,000	159,124	163,357
SR-100 Community/Regulatory Support	11,210	11,013	11,249	11,249	11,249	11,249
Total SRS EM Budget	1,255,430	1,259,542	1,336,566	1,369,429	1,471,438	1,551,014
Growth		4,112	77,024	32,863	102,009	79,576

\$2.1B = TOTAL SRS FY19 Appropriations (EM = \$1.551B; NNSA = \$626M)

Progress to be Proud Of

- Recognized safety leaders across SRS Team
- Ahead-of-schedule and cost-effective **Environmental Remediation** (*D Ash Basin*)
- **Installation of Tank Closure Cesium Removal (TCCR)** demonstration project to remove cesium from high-level waste and accelerate **SRS tank closures**
- **Integration of SWPF** into SRS Liquid Waste Program
- **Strengthened Nuclear Materials Management** in H Canyon, K and L Areas (*Uranium, Plutonium and Spent Fuel Disposition missions*)
- **Growth of Savannah River National Laboratory** business portfolio to advance national programs and priorities
- Increased focus and success on **building next generation nuclear workforce**



SRS Focus Looking Ahead

- Treatment and disposition of legacy liquid waste
- Ability to maintain unique nuclear materials processing capabilities in need of substantial maintenance and upgrades
- **Common SRS infrastructure needs**
 - Over 1/3 of SRS common infrastructure > 45-60 years old
 - Competing with programmatic missions for funding
- Continued **growth of SRNL capabilities/partnerships to ensure long-term viability**
- **Rising pension liability** that may impact future work scope
- **Hiring/training of next gen workforce before retirement of experienced staff**
- SRS Team **working together for good of Site and SRS Community**



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Stuart MacVean

President & CEO

Savannah River Nuclear Solutions



Missions

5,500 employees "Making the World Safer"



Environmental
Stewardship



Supplying
Tritium



Securing
Nuclear Materials



Transforming
Nuclear Materials



Savannah River National Laboratory



M&O Support Services

Recent Accomplishments

Uranium Mission

- First time processing three uranium streams in H Canyon
- Target Residue Material project 46% complete
- Spent fuel receipts on target; increasing in FY19

Plutonium Mission

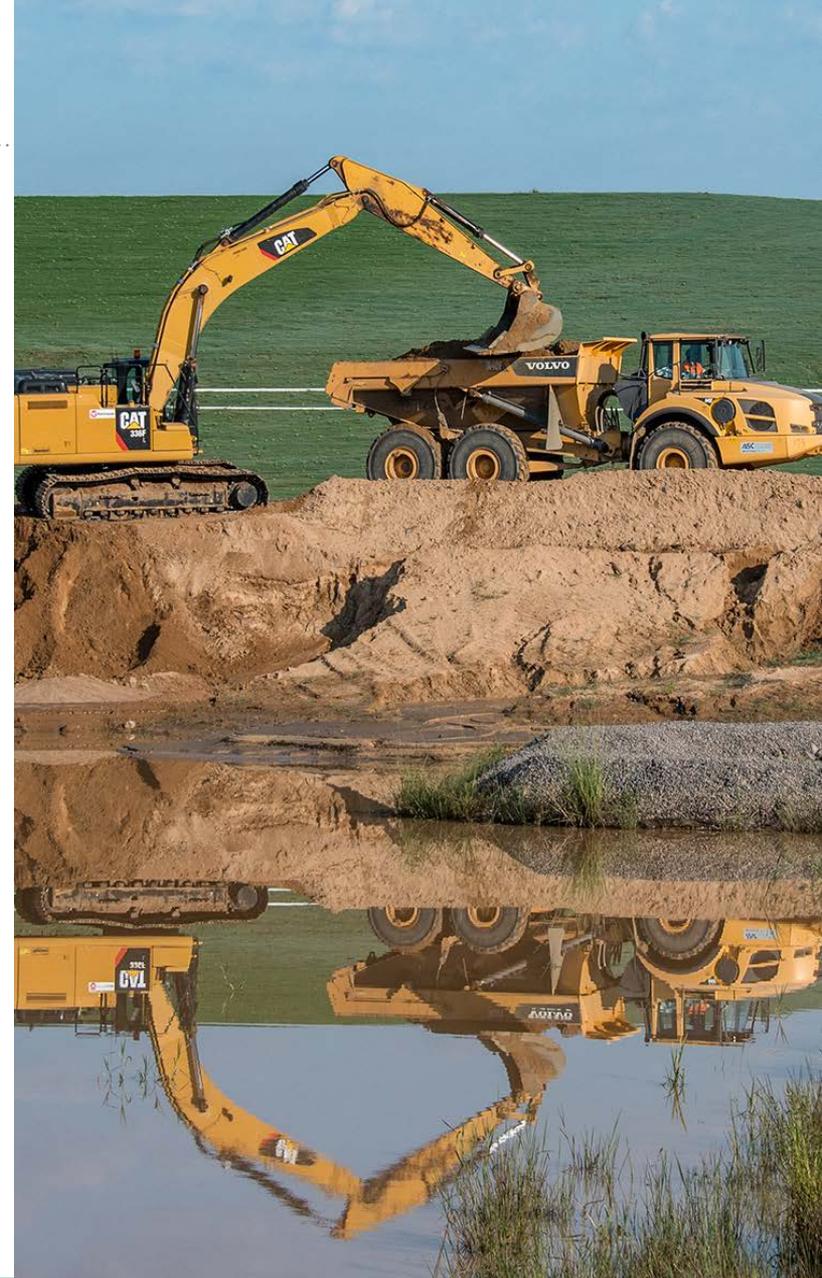
- Accelerated down-blend and repackage scope
- Delivered acceleration strategy for HB Line

Tritium Programs

- 100% national mission delivery; two tritium extractions
- Increased production plan for FY19
- Significant program growth

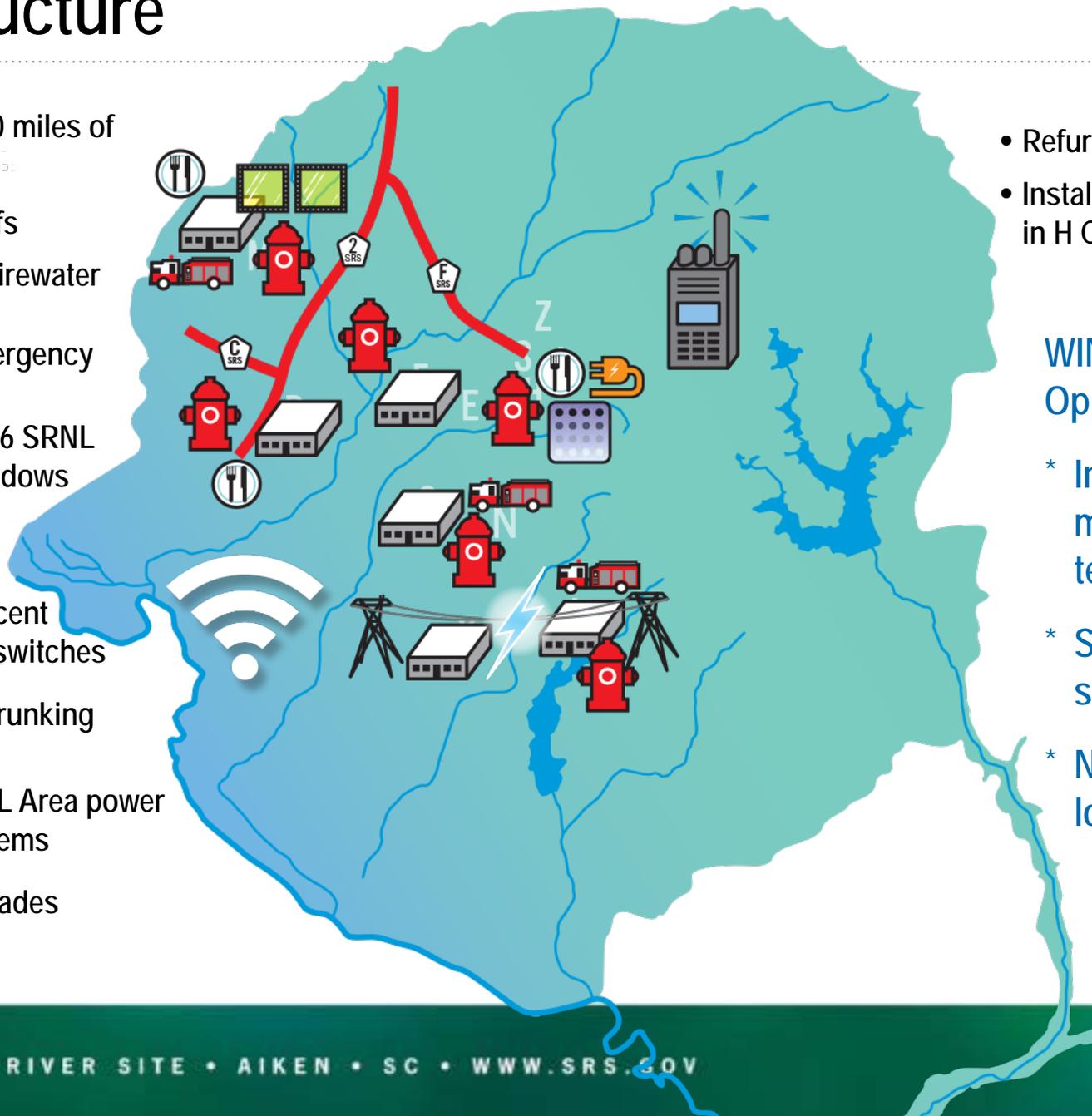
Project Execution

- 57 projects valued at \$244M; final costs for all project forecasted to be \$12M under budget
- Completed D Ash Basin remediation



Infrastructure

- Refurbished ~30 miles of paved roads
- Replaced 19 roofs
- Refurbished 15 firewater systems
- Replaced all emergency vehicles
- Replaced 13 of 16 SRNL shielded cell windows
- Reduced future cyber risks by replacing 60 percent of SRS network switches
- Replaced radio trunking systems
- Replaced K and L Area power distribution systems
- Habitability upgrades



- Refurbished generators
- Installed dissolver in H Canyon

WIN-WIN Opportunities:

- * Innovative, more efficient technologies
- * Small-business subcontracting
- * New/sustained local jobs

Workforce: Prepare the Pipeline

Provide funding, forge partnerships, create opportunities



reached through
STEM-related
Education Outreach
2016-2018



from 2014, with
~174 students in summer 2018;
28% hired since 2014



total funding provided
by SRNS to higher education
institutions since 2008

11 partnerships
with local
universities and
technical colleges

Aiken Technical College
Augusta Technical College
Claflin University (HBCU)
Clemson University
Florida Int'l University
Midlands Technical College
Orangeburg-Calhoun
Technical College
South Carolina State
University (HBCU)
University of South Carolina
University of South
Carolina-Aiken
University of South
Carolina-Salkehatchie



In 2015, SRNS established a Nuclear Operations Program at Aiken Technical College. This certificate program serves as a foundation for future employees who wish to work in nuclear facilities.

SRNS participates in the SRS Community Reuse Organization (CRO) regional nuclear workforce development initiative. The CRO has administered \$4.8 million in grants to local institutions.

Workforce Sustainment



FY14-present
Approximately 500 per year
over the next three years



during
past five years



of non-retirement
eligible employees seeking
other employment



down from
54 in 2008





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Dr. Vahid Majidi

Director

Savannah River National Laboratory

Top Ten for 2018



1. Established metal-based 3-D printing
2. Opened new classified meeting space
3. Continued mobile rapid response capabilities for denuclearization
4. Collaboration Innovation (COIN) process
5. Analysis/calculations supporting restart of DWPF and Tank Farm evaporators
6. Lead lab for Office of Legacy Management (LM)
7. Demo of underwater unmanned hydrogen powered vehicle prototype for the Navy
8. Licensed hydrogen energy storage system for solar applications
9. Packaging and transportation system for MK-18A fuel assemblies to support recovery of rare isotopes
10. On Line Monitoring System for H Canyon

Top Ten for 2019

1. New mass spectrometry methods for rapid analysis of nonproliferation signatures
2. SRS test bed for intelligence community
3. Disposition roadmap for 22,000+ nuclear material items
4. Advance electrolytic dissolution in H Canyon
5. Identify remaining technology needs for closure of additional sites
6. Strategies for small sites to transition to LM
7. Demonstrate hydrogen powered drone
8. Conceptual design for large scale test facility for electrical grid components
9. Consolidate analytical laboratory services from F Area labs
10. Develop a robotic crawler to complete video inspection of the H Canyon Tunnel



Long-Term Programs



- **German Fuel**
 - Joint project with German Government
 - Recovery and/or disposition of graphite-based fuel
 - New opportunity for H Canyon
- **Plutonium Pit Manufacturing**
 - Chemical Flow Sheets
 - Processing Expertise
 - Metallurgy / Materials
- **Cyber**
 - Ft. Gordon Partnership
 - Internet of Things
 - Electrical Grid
 - Cyber Training
- **Artificial / Augmented Intelligence**
 - Chemical process decision enhancement
 - Big data analysis
 - Environmental modeling



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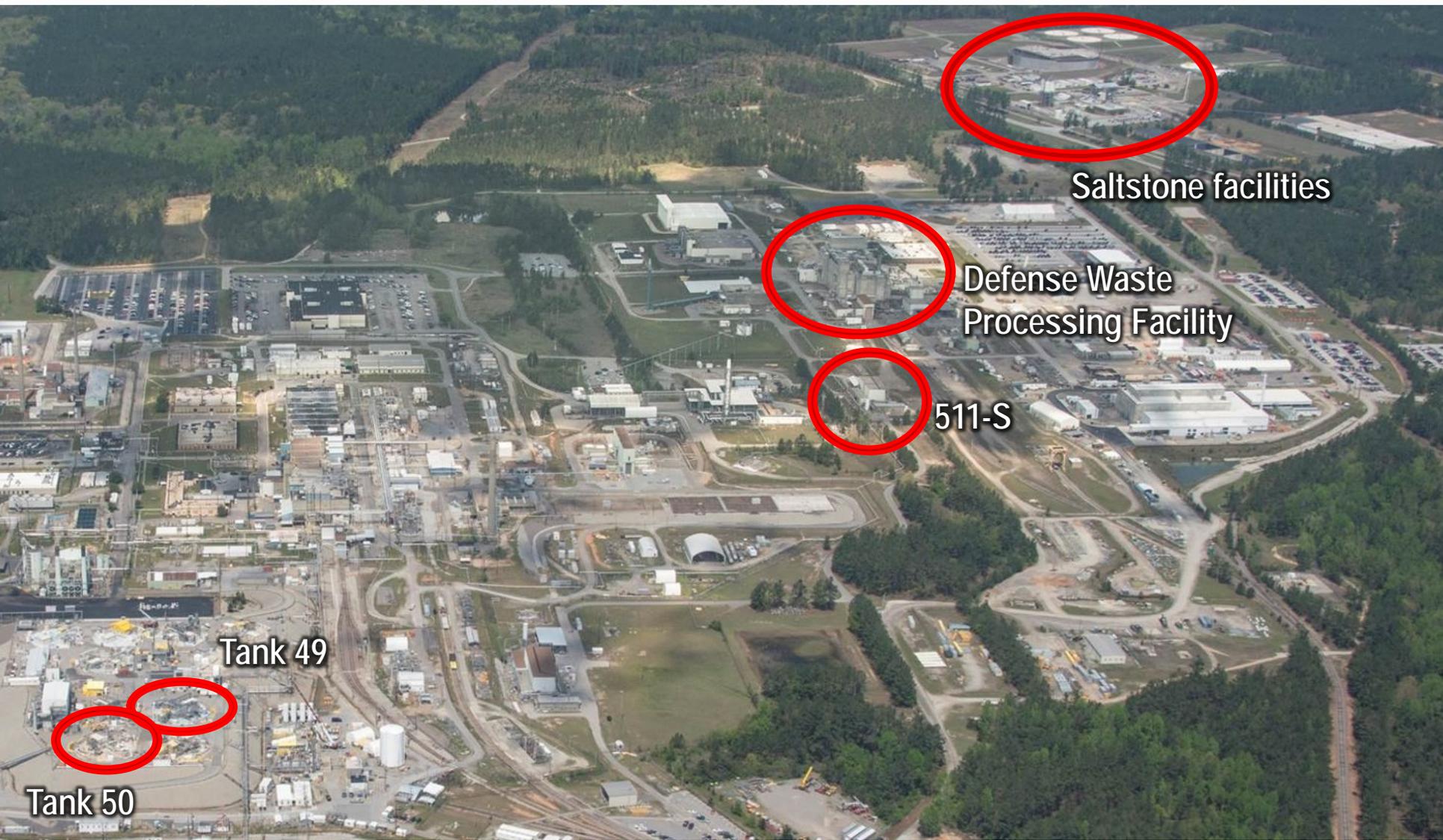
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Tom Foster

*President and Project Manager
Savannah River Remediation*

Excellence in Project Management: Salt Waste Processing Facility Integration



Saltstone facilities

Defense Waste
Processing Facility

511-S

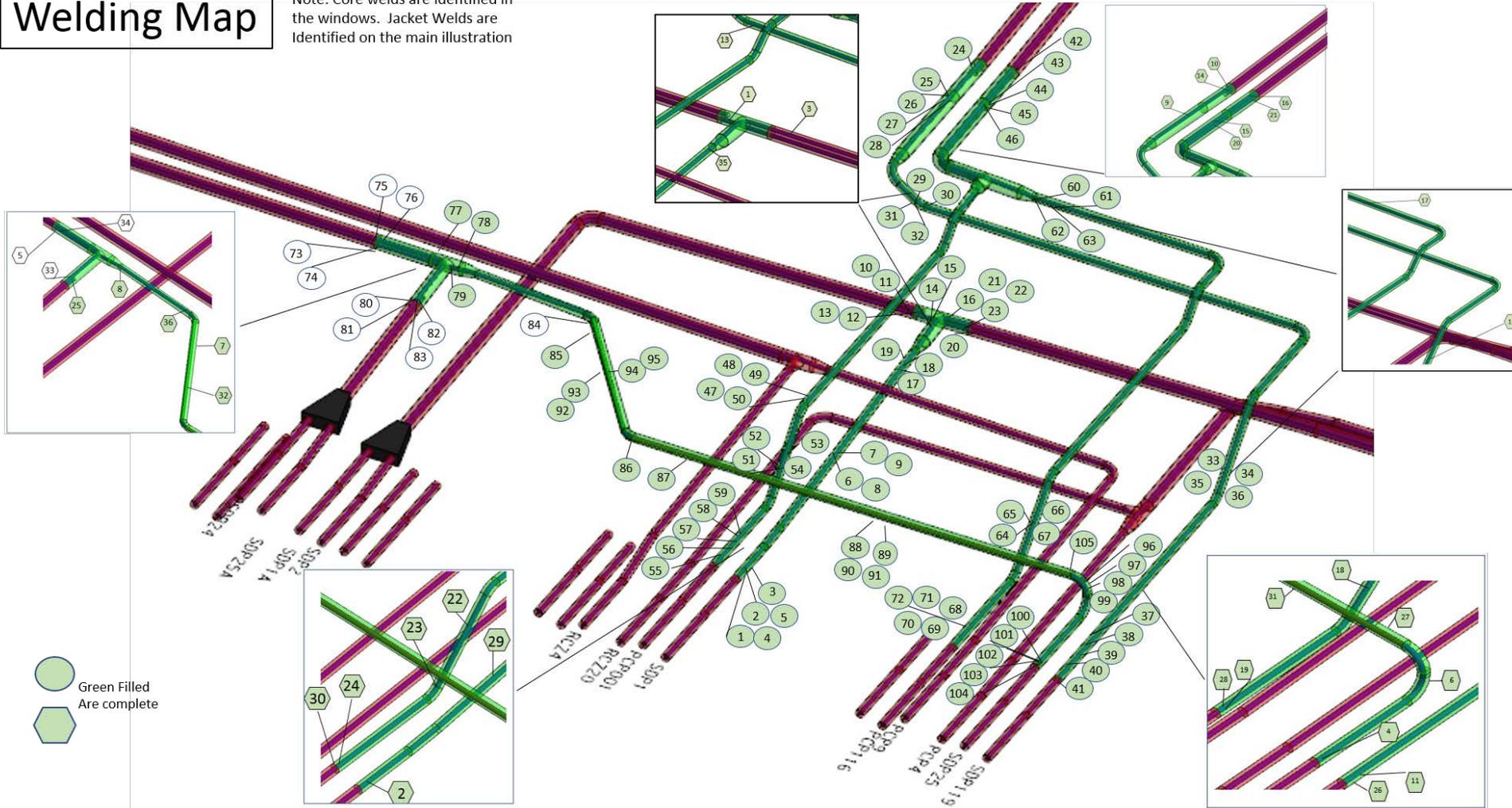
Tank 49

Tank 50

Excellence in Project Management: Salt Waste Processing Facility Integration

Welding Map

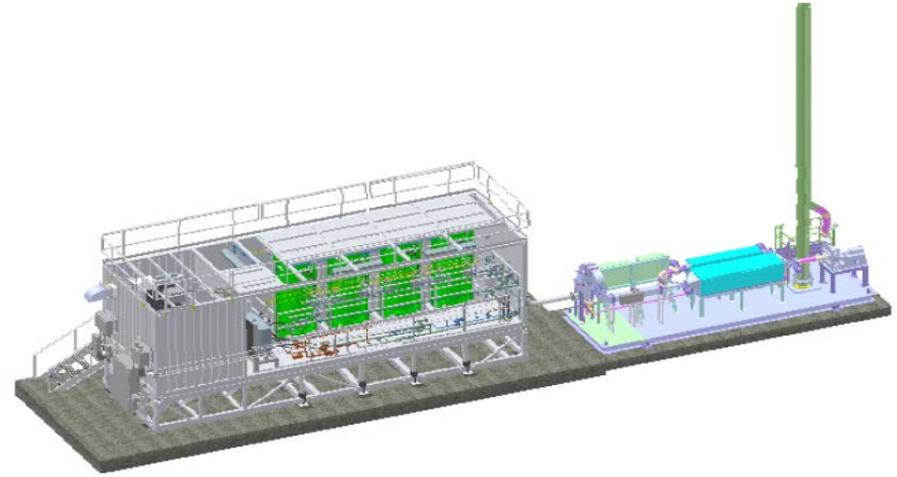
Note: Core welds are Identified in the windows. Jacket Welds are Identified on the main illustration



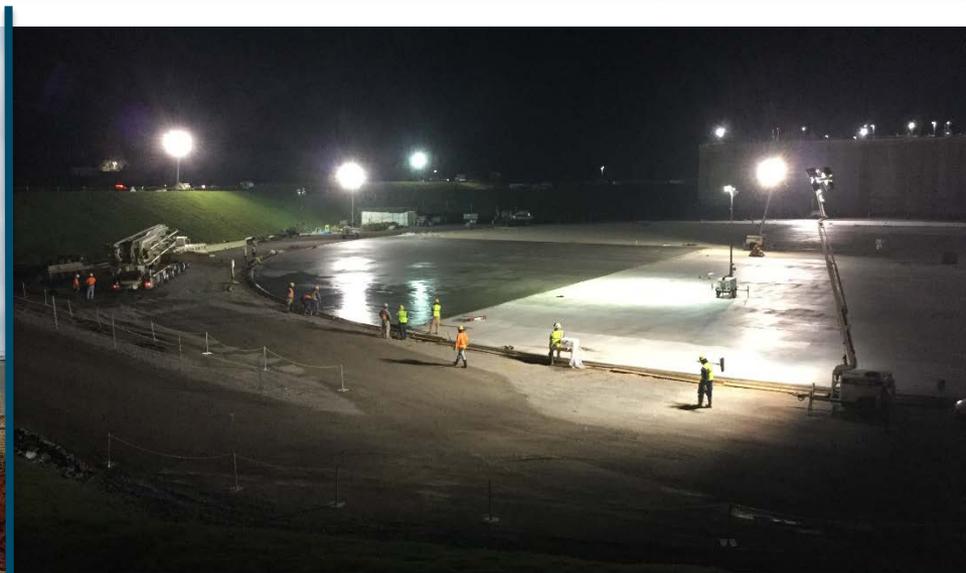
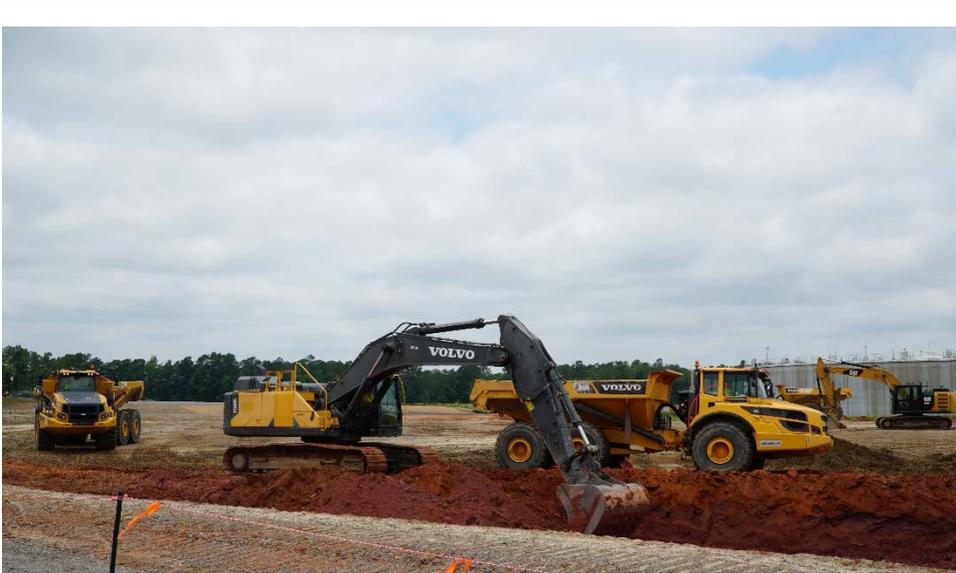
Excellence in Project Management: Salt Waste Processing Facility Integration



Excellence in Project Management: Tank Closure Cesium Removal



Excellence in Project Management: Saltstone Disposal Units



Savannah River Remediation Hiring Profile

615

Full-service employees hired in past 3 years

9%

Veterans on roll at SRR; hiring more

155

New hires expected during the next year or so

48

Average age of SRR employees; going down

Savannah River Remediation: 9 Years of Accomplishments



[Click to view video](#)



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Frank Sheppard, Jr.

*Parsons Senior Vice President and Project Manager
Salt Waste Processing Facility*

SWPF Earns Three National Safety Awards

- National Safety Council (NSC) 2018 Industry Leader Award
- NSC Occupational Excellence Achievement Award 2018
- DOE's Voluntary Protection Program (VPP) Star of Excellence



SWPF Mission

- Parsons is the contractor for the Salt Waste Processing Facility (SWPF) project [*design, construction, testing & commissioning, and operate for one year*].
- SWPF is the keystone facility for enabling SRS liquid waste cleanup and tank closure.
- *This critical facility will significantly increase processing rates over the existing interim system to more rapidly empty the site's waste tanks.*

SWPF FAST FACTS

Miles of Piping: 27

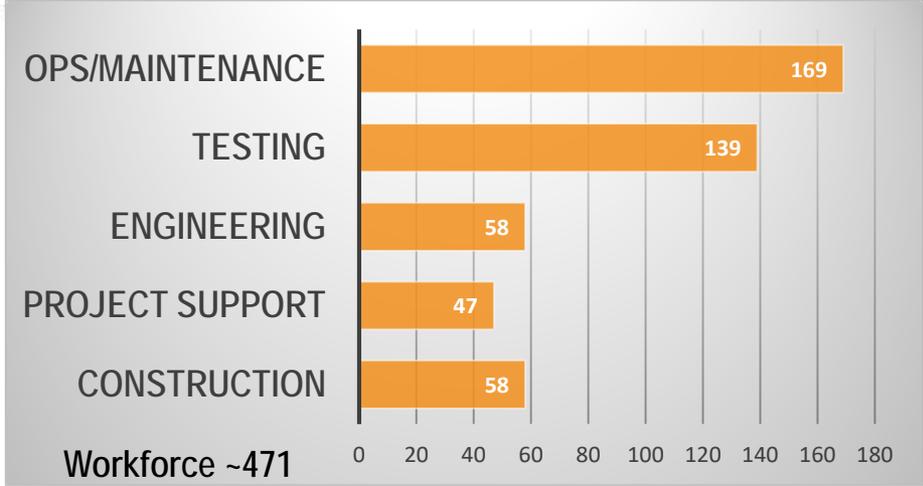
Tons of Concrete: 91,000

Tons of Rebar: 5,000

Design Capacity:
9.4 million gal/year



SWPF Workforce



SWPF Accomplishments / Challenges

- Testing Phase of 60 System Operability Tests (SOTs) and 5 Integrated SOTs (ISOTs) Completed
- Testing and Commissioning 71% Complete
- Integrated Water Runs (IWRs) Next Phase of the Project
 - On track to start by December with bulk chemical introduction in January 2019
- **Valve Controller Replacement**
 - Due to realized risk of equipment obsolescence
 - Progressing well and targeted for completion before the December 2018 schedule date
 - Taking advantage of this time to get an early start on attaining operator proficiency through the use of the simulator and various drills and field exercises
- Documented Safety Analysis (DSA) Approved by DOE
- Parsons Submitted Formal Cost Proposal to DOE



SWPF Accomplishments / Challenges

- Next Generation Solvent (NGS)
 - Throughput enhancements could significantly accelerate salt waste processing resulting in large life cycle cost savings
 - Construction progress very well – scheduled to complete construction by October 2018
 - Testing Phase to be complete by December 2018
 - Working with DOE and Liquid Waste contractor to evaluate options for timing of NGS introduction into SWPF





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D. Mark Bolton

General Manager
Centerra-SRS



Missions

- **Contracted to DOE-SR to provide security services at SRS since 1983**
 - Company Celebrating 35th Anniversary at the SRS on November 1st
 - Current Contract Period: 10/8/2009 – 10/8/2019
 - Request for Proposal is pending release by DOE
 - FY19 Annual Operating Budget: \$108.7M
 - *85% Labor*
- **Overall Mission: Provide security of our Nation's nuclear materials and other National security interests while protecting people and property in a safe and cost-effective manner**
- **Capabilities:**
 - Armed, Tactical Protective Force
 - Law Enforcement
 - K-9 Services
 - Security Alarm/Monitoring/Assessment
 - Helicopter Operations
 - Special Response Teams



Accomplishments / Challenges

- Achieved ongoing 350 days and > 1.3 million work hours without a lost work day injury
- Achieved recertification from the Commission on Accreditation for Law Enforcement Agencies as a Public Safety Training Academy
 - Only 5.5% of Law Enforcement Agencies in the U.S. have achieved this accreditation
- Increased attrition over next 3 to 5 years due to upcoming retirements in the Protective Force ranks
- Continue to perform security operations safely = #1 PRIORITY
- Contract re-bid effort



Nothing We Do In Training Or Operation Is Worth One Single Life Or Serious Injury

Workforce and Hiring

- Approximately 60% of our workforce are military veterans
- Current average age of Protective Force employees is 47.7 yrs. old
- Demographics:

- Aiken County SC: 340
- Barnwell County SC: 40
- Other SC Counties: 81

- Columbia County GA: 111
- Richmond County GA: 90
- Other GA Counties: 16



- **Current Total Staffing: 678**

- Approximately 454 Protective Force personnel
- Contract is self-supporting to include Human Resources, Accounting, Training, Logistics, Planning, Safety & Health, Information Technology, Information Security, Labor Relations and Quality Assurance
- Anticipate hiring around 60 new Protective Force personnel annually for the next several years to meet anticipated attrition levels

- **2018: Centerra and its employees actively supporting community giving**
> \$300K to over 25 charitable organizations in the CSRA





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William (Ike) White

*Chief of Staff and Associate Principal Deputy Administrator
National Nuclear Security Administration*



Discussion

- NNSA Overview
- Tritium Update
- Plutonium Activities
- MOX Path forward



Thank You for Joining Us
and Supporting SRS

* * *

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