



U.S. DEPARTMENT OF  
**ENERGY**



# Savannah River Site Overview

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# Major SRS missions and programs

- Liquid and Solid Nuclear and Hazardous Waste Management
- Nuclear Materials Management
- Environmental Compliance and Area Closure
- Savannah River National Laboratory
- National Nuclear Security Administration (NNSA) Programs



# SRS Early Production Years



## Early Years

- Five reactors
  - Two chemical separations plants
  - Heavy water extraction plant
  - Nuclear fuel and target fabrication facility
  - Waste management facilities
  - Laboratory/Analytical facilities
- Produced 36 metric tons of Plutonium (Pu) from 1953-1988

## Produce and recover nuclear materials

Tritium

Pu-238

Pu-239

Special  
Isotopes

Uranium  
Recovery

End of Cold War  
meant a completely  
different philosophy  
and approach to the  
nuclear arsenal

# SRS Snapshot Today

11,294

current employee workforce

\$3B

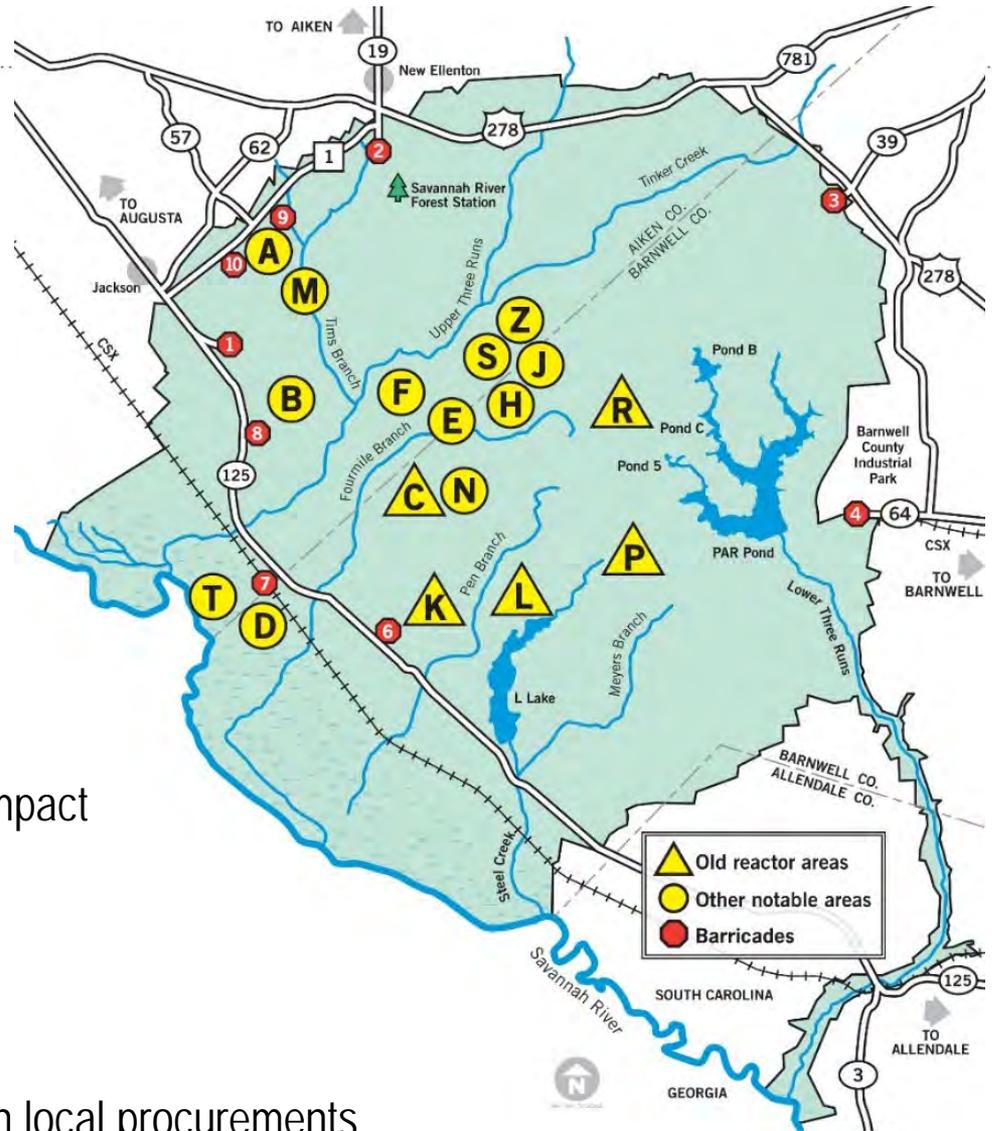
FY22 enacted budget

\$2.2B

annual regional economic impact  
across SC/GA area

\$200M

spent annually in local procurements



# Partners and Missions

## SRS Missions



- Management, stabilization and disposition of nuclear materials
- Management and disposition of solid, liquid and transuranic wastes
- Spent fuel management
- Environmental remediation and cleanup



- Tritium operations and extraction
- Nonproliferation support
- Uranium blending and shipping
- Foreign fuel receipts
- Planning for pit production mission



- Other federal agencies
- Other DOE sites
- Private industry
- Other minor entities

## Who's at SRS

### Savannah River Nuclear Solutions

Management and Operations

### Battelle Savannah River Alliance

Management and Operations of the Savannah River National Laboratory

### Savannah River Mission Completion, LLC

Liquid Waste Operations

### Parsons

Salt Waste Processing Facility

### Centerra

SRS security

### University of Georgia

Savannah River Ecology Laboratory

### U.S. Forest Service–Savannah River

Federal entity

21CC00008

# Liquid Waste & Nuclear Materials Management





# Liquid Waste Management

35 million gallons of radioactive liquid waste

- 43 H and F area underground tanks
- 8 other tanks closed/grouted since 2012

Operational closure achieved through safe dispositioning of the liquid waste using:

- Salt Waste Processing Facility
- Defense Waste Processing Facility
- Saltstone Facility

Tank closure:

- Remove radioactive waste to the extent practical
- Fill the tank with cement-like grout
- Tank top penetrations are sealed
- Area is capped by Environmental Stewardship program

This process reduces risks to human health and the environment by impeding waste migration and minimizing potential for groundwater contamination.

# Liquid Waste Management

- **SWPF** will separate 90% inventory of tank salt waste into high-radioactive waste and decontaminated salt solution
  - *SWPF began operations in Oct 2020 as a major step toward emptying and closing the Site's remaining 43 high-level waste tanks*
- **Defense Waste Processing Facility (DWPF):**
  - *Vitrifies radioactive sludge within 10-ft tall stainless steel canisters*
  - *Nation's only operating vitrification plant*
  - *Has produced over 4,200 canisters in 23 years of operations*
- **Glass Waste Storage Buildings** provide safe storage of vitrified waste canisters until a future federal repository designation.
- **Saltstone Facility**
  - *Decontaminated salt solution is mixed with cement, fly ash and slag and poured into above-ground concrete vaults for long-term storage.*
  - *New 32M gal Saltstone Disposal Units (SDUs) are under construction*



# Solid & Hazardous Waste Management

Disposition of SRS solid waste includes hazardous, sanitary, construction and demolition waste, plus low-level waste (LLW) and transuranic (TRU) radioactive waste.

- Hazardous waste is collected and disposed of offsite at a permitted facility.
- Sanitary waste is disposed of at nearby Three Rivers Landfill.
- Construction and demolition waste is disposed of in a regulatory- permitted landfill.
- LLW, contaminated with short-lived isotopes, is disposed of at SRS in engineered vaults.
- TRU waste is collected, characterized and packaged for offsite disposal at the Waste Isolation Pilot Plant IPP
  - SRS has made over 1,605 shipments of packaged SRS TRU waste to WIPP (*over 90% of legacy TRU inventory completed*)



*TRUPACT III  
shipping  
container at SRS*

# Environmental Compliance and Area Completion

## D Area Ash Basin Cleanup Project

*March 2015 (90 acres)*

*Fall 2018 Completed (ahead of schedule and under budget)*

Manages environmental and groundwater monitoring programs per government environmental regulations

Over 9,000 environmental and groundwater samples are collected annually and analyzed for radionuclides, metals or chemicals

Innovative groundwater remediation technologies have been shared across the DOE Complex.

Achieved 85% SRS industrial footprint reduction using an area completion approach that addresses diverse cleanup needs across large areas and provides long-term monitoring.

- *Over 25% of 1,127 excess facilities safely disposed*
- *2 production reactors (R and P) decommissioned in place*
- *Remediation continues with >79% of 515 waste units completed*