5,500 Employees  “Making the world safer.”

**Savannah River Site**
Aiken, S.C.
310 square-mile site
11,500 employees
$3 billion budget
$2.6 billion annual regional economic impact
$400 million annual local procurements

**Environmental Stewardship**
for soil, water and facilities

**Supplying Tritium**
for nuclear weapons deterrent

**Securing Nuclear Materials**
to prevent unwanted proliferation

**Transforming Nuclear Materials**
into assets and stable wasteforms

**M&O Support Services**

**$1.7 billion** SRNS Budget
SRNS Customers

Our Missions

EM

FY22–27

45%

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

NNSA

55%

National Nuclear Security Administration
Tritium operations
Nonproliferation support
Foreign fuel receipts
Surplus Pu Disposition
Pu Modernization
SRPPF Project
Other NNSA capital line items
NNSA FY21/22 Accomplishments

- Delivered SRPPF CD-1 and Life Cycle Cost Estimate
- Established knowledge transfer program with LANL for SRPPF; 15 participants placed in FY21; total of 20 by end of FY22
- Exceeded FY21 goal for Pu diluted to be removed from SC; constructed pad for material storage and characterization; developed designs and procured equipment for one new and one expanded entry control facility
- Completed a major upgrade to the existing K Area Interim Surveillance Glovebox and ramped up to four shift operations
- Completed government property disposition for MOX Termination Project early with 9.7M of 10.8M units reallocated for use
- Completed project to dramatically increase Tritium processing and achieved record number of extractions (7) in 12-month period
- Delivered B61-12 First Production Unit, kicking off the three-year Increased Production Period for the B61-12 campaign. (Of note, in January we loaded the most Tritium by gram in any month since August 2011.)
### NNSA Capital Projects

**Tritium Finishing Facility**
- Replaces Cold-War era H Area Old Manufacturing facility

**Proposed SR Plutonium Processing Facility**
- Sister facility to UPF for plutonium
- Utilizes existing LANL (PF-4) flowsheet and equipment
- Optimized facility focused on one mission

**Surplus Pu Disposition Project**
- Expand capacity for plutonium downblending
- New 3-glovebox line in K Area

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<table>
<thead>
<tr>
<th>Project</th>
<th>Total Spend FY21</th>
<th>Projected Total Spend FY22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surplus Plutonium Disposition</td>
<td>81</td>
<td>135</td>
</tr>
<tr>
<td>Tritium Finishing Facility</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>SR Plutonium Processing Facility</td>
<td>232</td>
<td>375-450</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>341</strong></td>
<td><strong>540-615</strong></td>
</tr>
</tbody>
</table>

*Dependent on appropriations funding and final number*
Surplus Pu Disposition

Expand SRS downblending capability

- Three new gloveboxes
- Support systems including security and safety systems, electrical, piping, active confinement ventilation, fire protection systems, etc.
- HEPA/Electrical Building and ventilation stacks

Dilute and Dispose Operations

- Blend Pu oxide with adulterant
- Store and characterize
- Package and ship to WIPP in New Mexico for disposal

SPD Capital Project Timeline

FY20
- SPD CD-1 approved
- CD-3A Phase 1 (early site preparation) approved

FY21
- Acceleration study identifies opportunities
- Long lead procurements
- Area isolated with exterior access
- Early Site Preparation (CD-3A Phase 1)

FY22
- 60 percent design complete
- Additional Site Preparation (CD-3A Phase 3), along with associated field work, approval forecast FY22

FY23
- Final Design complete
- Construction begins

FY28
- SPD project complete
- Dilute operations transition
Tritium Finishing Facility (TFF) Project

- Received CD-1 approval in December 2019
  - Demolition of three warehouses
  - New construction for Bldg 1, Bldg 2 and replacement warehouse
- Site prep subproject design complete
- Design at 30 percent for process buildings
- Expected to come on-line FY31

Replaces 1950s vintage H-Area Old Manufacturing (HAOM) facility - oldest and largest Tritium process facility
  - Assembly, final inspection, and packaging processes
Major Mission Areas: Pit Production

SRPPF Project

- Execute a line item project for the new SRPPF
- Repurposes unfinished facility
  - Dismantlement and removal of unneeded components
  - Internal facility modifications
  - Process equipment and infrastructure systems installation
- CD-2 scheduled for completion FY2024
  (Design currently at 30 percent complete)

Plutonium Modernization

- Standing Up Enduring Production Organization
  (~100 today / 1,800 in 2028)
- Nationally, deliver 80 pits per year
  - 50 ppy produced at SRS (using SRPPF)
  - 30 ppy produced at LANL
- High-Fidelity Training & Operations Center to expedite preparation for production
- Subproject delivery dependent on timing and funding of FY 22/23 budgets

SRPPF Advantages

- Repurposing a seismically-qualified structure
  - 400,000 square feet of Hazard Category-2 space
  - Interior walls of reinforced concrete for personnel shielding and durability for 50-year facility design life
- Supporting facilities, including office, assembly, and fabrication space
- Existing SRS services and infrastructure
- SRS world-class safety and security culture
- SRS experience, including
  - Plutonium processing
  - Meeting Department of Defense schedules and requirements
  - 24/7 operations
- SRNS’ experienced project and operations team and disciplined Conduct of Operations
Delivering on EM Commitments

- 17 domestic fuel receipts in L Area in both FY20-21; plus 13 foreign reactor fuel receipts and 16 domestic fuel receipts expected in FY22
- Accelerating spent fuel dissolution; from 5 in FY20 to 14 in FY22; to peak at 18 in FY26
- Completion of material storage characterization building in K Area allows direct plutonium removal from South Carolina
- Continued preparation for the Fast Critical Assembly spent fuel dissolution campaign in H Canyon; electrolytic dissolver installation complete
- 235-F Deactivation
- F/H Lab Layup/Deactivation; multi year program saving $20M annually
- Accelerated deactivation and decommissioning of D Area
- Collect/analyze more than 10,000 environmental and groundwater samples per year
- Deploying 10 innovative groundwater remediation technologies
- Agreement reached with federal environmental regulators on final cleanup of 25-mile long stream; first ever Record of Decision outlining final closure for a large parcel of streams
Workforce for the Future

• Apprenticeship initiative for SRS and CSRA
  – 13 Current SRNS Apprenticeships (134 participants)
    Software Engineer, Process Software Engineer, Maintenance Mechanic, Systems Engineer,
    Facility/Production Operator, Records Management Clerk, Radiation Protection Inspector,
    Process Control Technologist, Fire Protection Engineer, Telecommunications Engineer,
    Supply Chain Mgmt, Network Operations Engineer, Cybersecurity Engineer
  – Future SRNS Apprenticeships in process
    E&I Maintenance Mechanics; Computer Systems Support; QA Inspector;
    Environmental Compliance; Industrial Process Engineer

• 19 active MOU partners in education
  – Now including all eight SC Historically Black Colleges & Universities

• Robust internship program

• Targeting WORC grant recipients
  – Scholarships funded by DOE/NNSA

• Focused succession planning and mentoring programs
Site Infrastructure Recapitalization

Examples

• Road refurbishments
  (Rd C - 2 miles, Rd 4 - 2.91 miles, Rd E - 2.58 miles)

• Roof replacements

• Habitability upgrades [HVAC, Fire Alarm Systems, Interior/Exterior Improvements]

• Replace 681-3G River Water Switchgear

• Replacement of underground metallic piping systems

• S&S/ Emergency Services Items: PA System, NG911, K/L PIDAS

• IT: Continued Network Infrastructure Upgrades

• SRNL: IGPP, Roofs, DSA mods, Chillers, PLCs

Examples

>$450M
spent on infrastructure improvements in FY16 – FY20

>$120M
spent on infrastructure improvements in FY21

>$200M
Needed annually for infrastructure improvements

$200M
Needed annually for infrastructure improvements