

SRNS Fall 2022 Update

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Governor's Nuclear Advisory Council

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6,018 Employees *“Making the world safer.”*



Savannah River Site Aiken, S.C.

310 square-mile site
11,500 employees

\$2.2 billion

SRNS Budget

MISSION AREAS



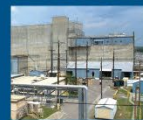
Environmental Stewardship
for soil, water and facilities



Nuclear Materials for National Security
for nuclear weapons deterrent



Securing Nuclear Materials
to prevent unwanted proliferation



Transforming Nuclear Materials
into assets and stable wasteforms



M&O Support Services

SRNS Missions

EM



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



National Nuclear Security Administration

- Tritium operations
- Nonproliferation support
- Foreign fuel receipts
- Surplus Pu Disposition
- Pu Modernization
- SRPPF Project
- Tritium Finishing Facility

WFO



Work for Others

- Service Level Agreements (SRMC and BSRA)
- Other DOE Programs

21CC0008

SRNS Recent Key Accomplishments

- SRNS received its 4th consecutive Voluntary Protection Program (VPP) Star of Excellence since being awarded the SRS M&O contract in 2008.

The VPP Star of Excellence is the HIGHEST SAFETY HONOR a DOE contractor can receive.

Awardees must have a recordable incident injury rate that is 75% better than the average of other U.S. businesses in the same industry.

Award comes despite introducing nearly 5000 new employees since the last certification effort in 2017.

- SRNS has awarded \$3.2 Billion in subcontracts to small businesses, committing nearly 80% of all procurement dollars.
- SRNS and its corporate parents have contributed more than \$13 Million throughout the Central Savannah River Area through philanthropic contributions, education outreach investments, and community partnerships.
- SRNS is executing 60 ongoing small projects totaling over \$451M.
- SRNS contract extended in FY22 for additional 4 years plus another 1 year option.



More than
\$13M
contributed

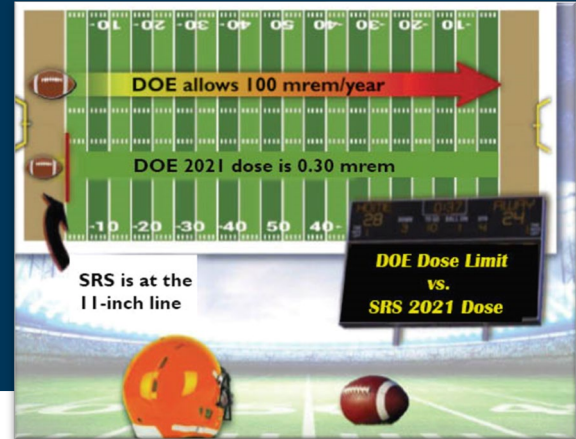
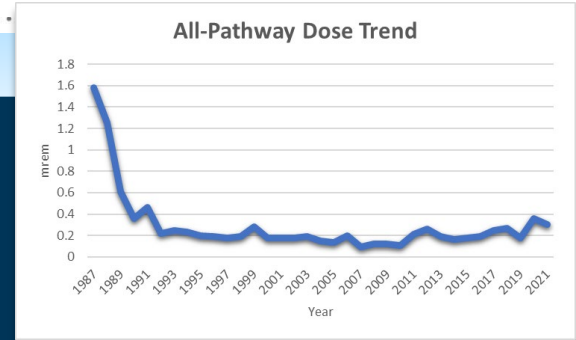
SRS 2021 Annual Environmental Report Highlights

SRS maintained full environmental regulatory compliance for 2021 and did not receive any Notices of Violation for the year.

- SRS received recognition as part of the DOE agency-wide Sustainability Awards under the Innovative Approach to Sustainability Category.
- SRS passed all external audits and inspections with no issues identified.
 - A third-party audit of the Environmental Management System performed in April of 2021 declared the program conformant to the ISO 14001:2015 Standard

Chemical and radiological results for 2021 confirm SRS operations remained protective of the environment and human health.

The SRS 2021 all pathway dose is 0.30 mrem which is significantly lower than the DOE dose limit of 100 mrem per year. If the DOE Dose Limit were the length of a football field, SRS would be at the 11-inch line.



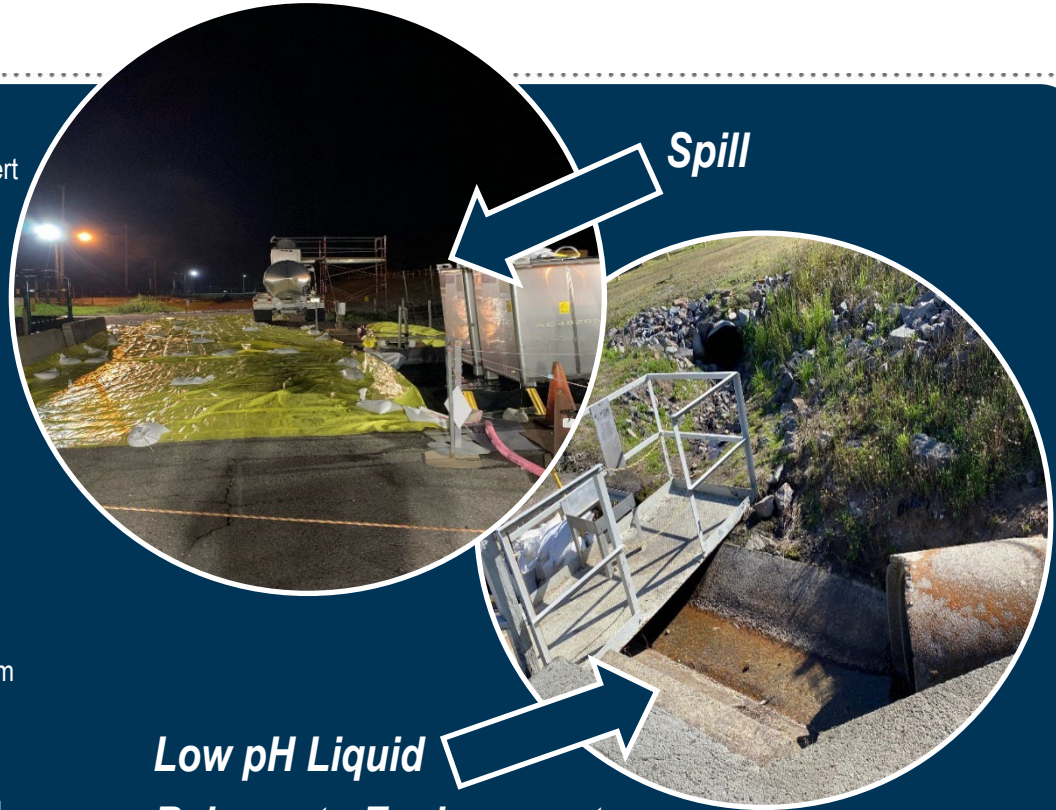
H Area Challenges Resolved

March 2022

- During routine sampling, detected low pH liquid material in culvert upstream of outfall.
- Immediately installed temporary system to stop release
- Conducted extensive investigation involving multiple facilities involving:
 - Investigatory excavations
 - Camera inspections
 - Flow testing
- Discovered a pathway from active processing systems at H Canyon through an abandoned process drain system.
- Corrected the legacy issue from failed plugs installed in 1980's when system was deactivated.

July 2022

- Spill of contaminated water occurred from temporary tank system during routine pumping of sump.
- Contaminated water contained low activity level and was contained.
- Precautionary samples of nearby sample points were performed.
- No release to waters of the state.



Spill

**Low pH Liquid
Release to Environment**

Delivering on EM Commitments

- ✓ Received approval for Accelerated Basin De-inventory (ABD) mission, which results in a life cycle cost reduction of over \$4 billion and represents a more than 20-year acceleration over the previous mission.
- ✓ Performed four dissolutions of High Flux Isotope Reactor core SNF batches and four dissolutions of Material Test Reactor SNF batches in H-Canyon.
- ✓ Continued preparation for the Fast Critical Assembly spent fuel dissolution campaign in H Canyon; electrolytic dissolver installation complete.
- ✓ 235-F transitioned to Cold and Dark status and transitioned to days-only operations in F Area.
- ✓ Shipped final TRUPACT-III; last of 239 SLB2 shipments to WIPP; 15 total shipments in FY22.
- ✓ Achieved over 4,000 Federal Facility Agreement milestones since 1993 (never missed an FFA milestone); 660 milestones were achieved in FY22
- ✓ Demolished 15 facilities in D area, resulting in 30,000 square feet of footprint reduction and over 100,000 cubic feet of waste removed.
- ✓ Agreement reached with federal environmental regulators on final cleanup of 25-mile-long stream.



U.S. DEPARTMENT OF
ENERGY



Plutonium Mission and K Area Accomplishments

FY22

- ✓ Accomplished 97 plutonium down blends (8 more than target) and moved 814 drums to staging area for shipment.
- ✓ Completed readiness activities and received Startup Authorization Authority approval to proceed with loading and shipping of TRUPACT-II containers from the Criticality Control Over Pack Pad (CCO), a significant milestone to ship directly to WIPP from K Area.
- ✓ Completed processing of nine Swiss Material 3013 containers, a first-of-a-kind effort that included mockups in the K Area Interim Surveillance (KIS) Mock-up Facility, mobilization of hut/HEPA filtration, and issuance of procedures.
- ✓ Prefabricated ECF-3 installed on finished pad in K Area.
- ✓ First long-lead procurement received for the Surplus Plutonium Disposition Project.



FY22 SRNS Workforce Profile

6,018 SRNS Headcount

1,194 onboarded in FY22 (4,300 since FY19) • **1,000** forecasted new hires

FY22 SRNS
Apprenticeships
Registered

209

Active MOU
Partners
in Education

21

Participated in
38
Recruiting
Events

Partnered
With
Hiring Our Heroes
to expand local
veteran hiring



NNSA Capital Projects

Tritium Finishing Facility

- Replaces Cold-War era H Area Old Manufacturing facility

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



All financial values in Millions	FY22	FY23
Tritium Finishing Facility	\$27	\$73.3
SR Plutonium Processing Facility	\$475	\$700-\$1,200
Surplus Pu Disposition Project	\$156	\$71.7
TOTALS	\$658	\$845-\$1,345

Surplus Pu Disposition Project Update

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
- ✓ CD-3A Phase 2 (long lead procurements) approved
- ✓ Area isolated with exterior access
- ✓ Early Site Prep (CD-3A Phase 1) complete

FY22

- ✓ 92 percent design complete
- ✓ CD-3A Phase 3 (Additional Early Site Prep) approved and construction started
- ✓ HEPA filter housing received

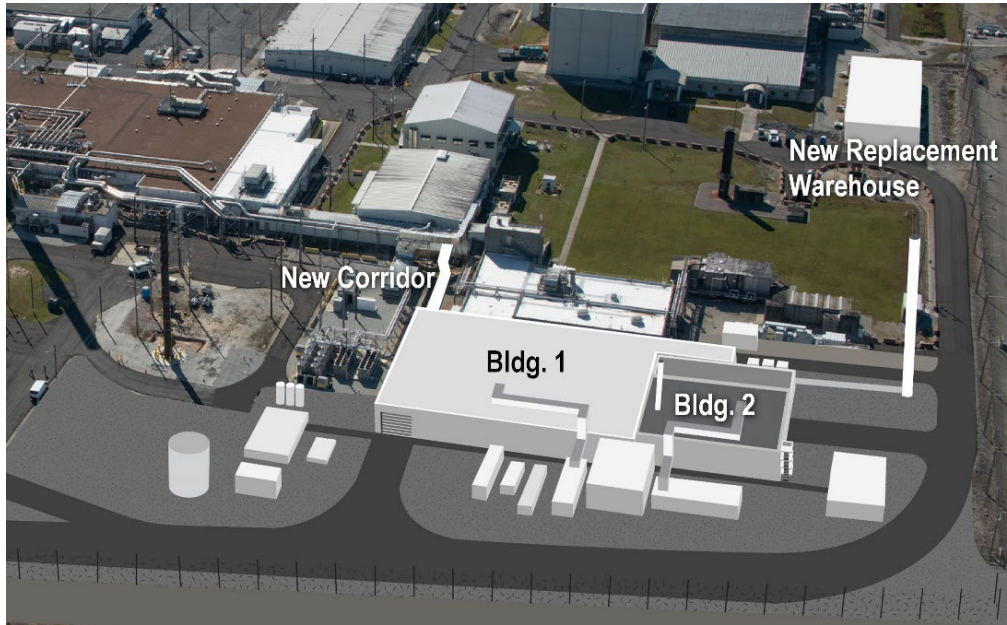
FY23 – FY24

- Final Design complete
- Backup diesel power generator received
- Glovebox installation begins
- Additional Early Site prep (CD-3A Phase 3) complete

FY28

- SPD project complete
- Dilute operations transition

Tritium Finishing Facility (TFF) Project Update



- The Tritium Finishing Facility (TFF) Project currently ahead of schedule and under budget.
- Accelerated plans for site preparation to begin in FY23 and developed design improvements that allow for cost savings and an early start on construction.

Replaces 1950s vintage H-Area Old Manufacturing (HAOM) facility - oldest and largest Tritium process facility

– Assembly, final inspection, and packaging processes

Savannah River Plutonium Processing Facility Update

SRPPF Project

- **Completed the integrated SRPPF project schedule** to “CD-2/3 Package Approval” and submitted the Design Performance BCP on May 24, as planned.
- **CD-2/3 scheduled for completion in 2025** (Design currently at 40 percent complete)
- Construction mobilizing in November D&R, Temp Ventilation, radio repeaters

Plutonium Modernization

- **Development of a Pu Program Staffing Plan** began in earnest during FY22 and identified the need to hire and train almost 2,000 employees between FY22 and post-2030, when steady-state production will be underway.
- **The SRPPF University Engagement Plan was approved and issued.** Thus far, 13 colleges and universities have signed on. This includes establishing contracts with eight Historically Black Colleges and Universities (HBCUs) to initiate workforce development programs.

SRPPF Advantages

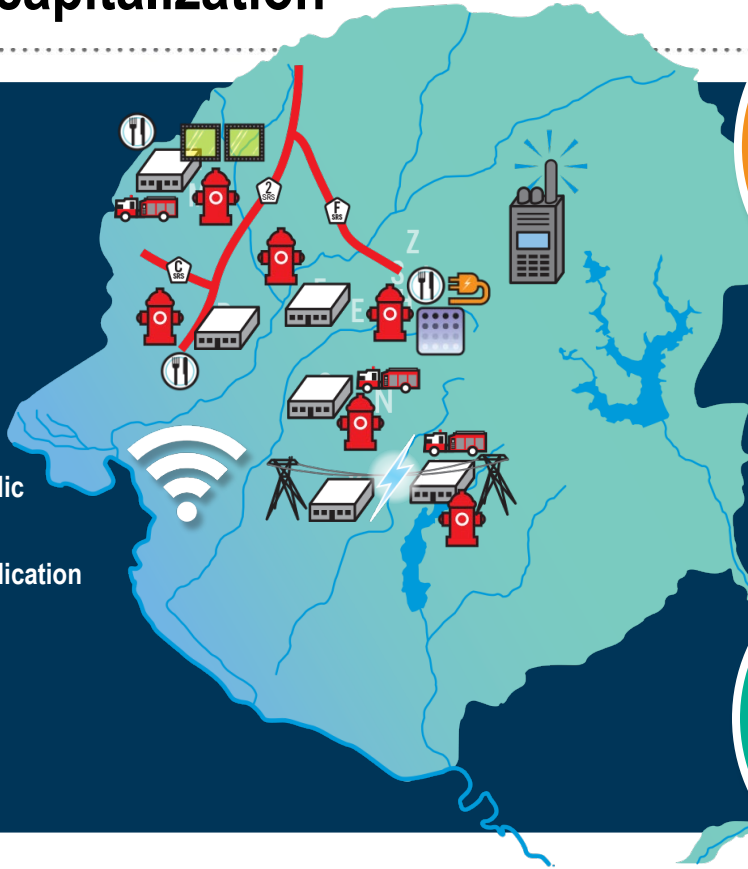


- **Repurposing a seismically-qualified structure**
 - 400,000 square feet of Hazard Category-2 space
 - Interior walls of reinforced concrete for personnel shielding and durability for 50-year facility design life
- **Supporting facilities, including office, assembly, and fabrication space**
- **Existing 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**

Site Infrastructure Recapitalization

Examples

- Road refurbishments (Road 4)
- Roof replacements
- Habitability upgrades
- Spillway and intake rehabilitation
- Replacement of underground metallic piping systems
- IT network upgrades and aging application replacement
- Tornado shelters



\$644M

spent on
infrastructure
improvements in
FY17 - FY22

\$1.4B

In current total
deferred
maintenance and
repair needs

\$200M

Needed annually for
infrastructure
improvements