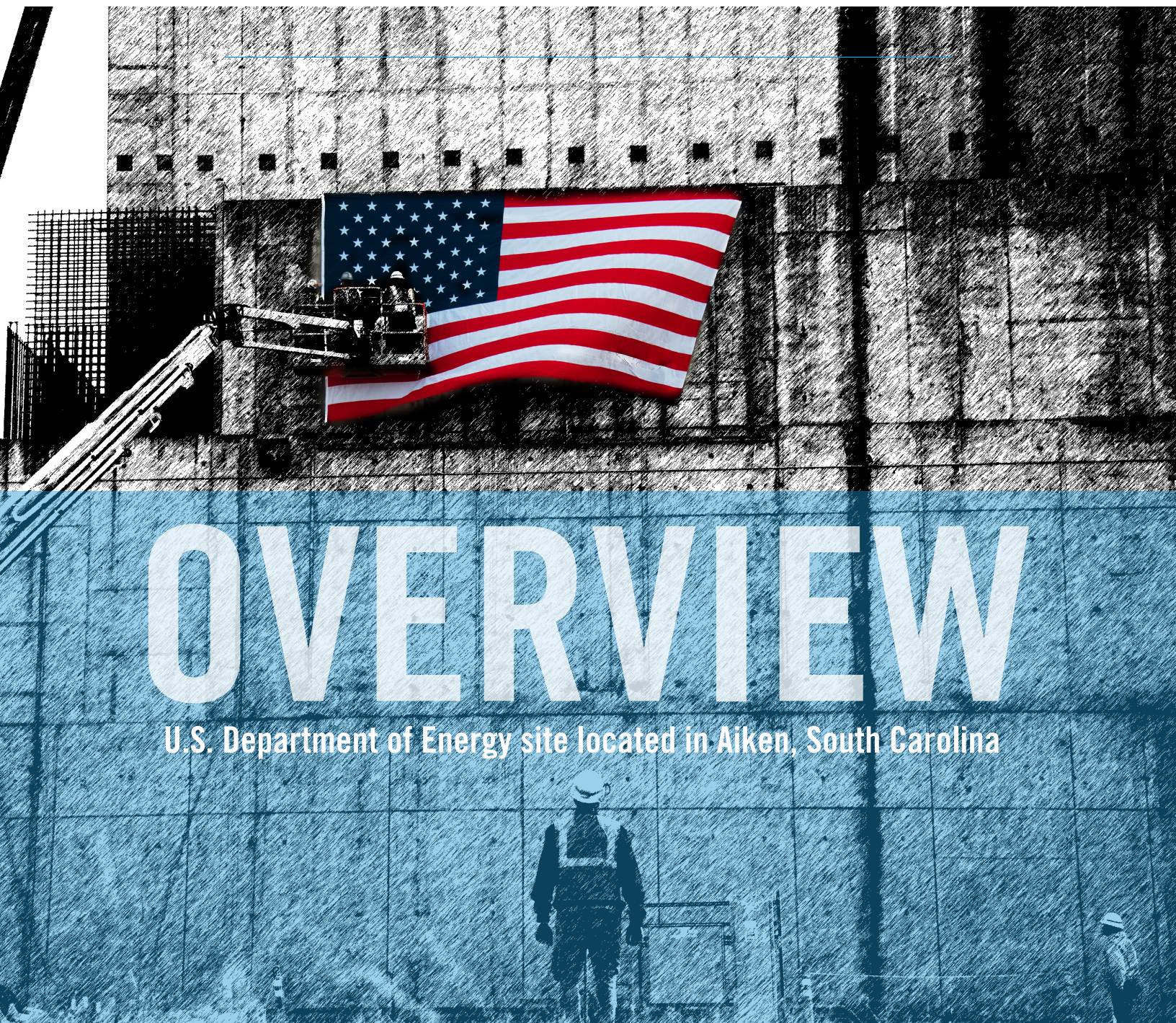


Nuclear Security • Environmental Stewardship • Science and Energy



OVERVIEW

U.S. Department of Energy site located in Aiken, South Carolina



SRS is owned by the
U.S. Department of Energy.

Federal agencies at SRS include:

**National Nuclear Security
Administration**

**Department of Energy:
Savannah River Operations Office**
U.S. Forest Service-Savannah River
U.S. Army Corps of Engineers

13,400

current employees
(contractors and federal agencies)



310

square-mile site

Located on the Savannah River,
which borders South Carolina
and Georgia. SRS covers
198,046 acres, including parts
of Aiken, Barnwell and Allendale
counties in South Carolina.

6

major contractors

Savannah River Nuclear Solutions, LLC
Management and operations of SRS

Savannah River National Laboratory
Operated and managed by Battelle
Savannah River Alliance, LLC

Savannah River Mission Completion, LLC
Liquid waste operations

Ameresco
Biomass Cogeneration Facility

Centerra Group, LLC
SRS security

University of Georgia
Savannah River Ecology Laboratory

1950

**President Harry S. Truman
authorizes construction of SRS**

Six towns were moved to make way for
the Savannah River Plant (now SRS).

5

reactors originally constructed

Also, two chemical separations plants,
a heavy water extraction plant,
a nuclear fuel and target fabrication
facility, a tritium extraction facility and
waste management facilities.

\$4.65

billion
annual budget

A Area

- Savannah River Ecology Laboratory
- Savannah River National Laboratory

M Area

- Curation Facility

B Area

- Centerra
- Analytical Labs

F Area

- F Canyon
- F Tank Farm
- Savannah River Plutonium Processing Facility

E Area

- Low-level Waste Disposal Facilities

H Area

- H Tank Farm
- H Canyon
- Tritium Facilities

S Area

- Defense Waste Processing Facility
- Glass Waste Storage Buildings

J Area

- Salt Waste Processing Facility

Z Area

- Saltstone Facility

K Area

- K Area Complex

L Area

- L Area Complex

C Area

- C Reactor Facility

P&R Areas

- P&R Reactor Facilities



Dedicated to maintaining the highest possible safety and security standards, the Savannah River Site (SRS) is a key U.S. Department of Energy (DOE) industrial complex responsible for supporting our nation's nuclear defense; preventing nuclear weapon proliferation; environmental stewardship and cleanup; waste management; and disposition of nuclear materials.

dedicated to **SAFETY**

SRS is committed to its people, missions and the future. SRS has a long track record of being one of the safest sites in the DOE complex and one of the safest major industrial sites in the world. Protecting workers, the public, the environment and national security interests are our highest goals.

MISSION focused

SRS processes and stores nuclear materials in support of national defense and U.S. nuclear nonproliferation efforts. The Site also develops and deploys technologies to improve the environment and treat solid and liquid nuclear and hazardous wastes left from the Cold War. While current missions remain the highest priority, SRS leadership places great importance on developing broader missions for SRS that use its unique capabilities in order to address critical national missions.

rooted in **HISTORY**

During the 1950s, SRS began to produce materials used in nuclear weapons, primarily tritium and plutonium-239. Five reactors and support facilities were built to produce these nuclear materials. Irradiated materials were moved from the reactors to one of the two chemical separations plants. In these facilities, known as "canyons," the irradiated fuel and target assemblies were chemically processed to separate useful products from waste. After refinement, nuclear materials were shipped to other DOE sites for final application. SRS produced about 36 metric tons of plutonium from 1953 to 1988.

safeguarding the **ENVIRONMENT**

Originally farms and swamp land, SRS now encompasses a timber and forestry research center managed by the U.S. Forest Service-Savannah River. In 1972, SRS was designated as the first National Environmental Research Park. Today, the vast forests of SRS are home to rare and endangered species including wood storks, bald eagles and red-cockaded woodpeckers, as well as wild turkeys, white-tailed deer and otters.

Our Missions

60% NNSA
National Nuclear
Security Administration

- Tritium operations and extraction
- Nonproliferation support
- Foreign fuel receipts
- Plutonium Operations and Programs
- Special Nuclear Materials storage

38% EM
Environmental
Management

- Recovery of nuclear materials
- Management, stabilization and disposition of nuclear materials
- Management and disposition of solid, liquid and transuranic waste
- Used fuel management
- Environmental remediation and cleanup

2% WFO
Work for Others

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



National Nuclear Security Administration

The purpose for establishing SRS in the 1950s was to support the nation's nuclear defense. Today, the Site continues to fulfill that purpose. SRS plays a vital role in two of the National Nuclear Security Administration's (NNSA's) core missions:

- **Stockpile Support:** Maintain the safety, security and effectiveness of the U.S. nuclear weapons stockpile through application of unparalleled science, technology, engineering and manufacturing
- **Nonproliferation:** Prevent nuclear weapon proliferation and reduce the threat of nuclear and radiological terrorism around the world

Savannah River Tritium Enterprise

Since its start, SRS carries out crucial missions related to tritium, the radioactive isotope of hydrogen necessary to the modern nuclear stockpile. SRS is the nation's only facility for extracting, recycling, purifying and reloading tritium. SRS supports five tritium and gas transfer system-related missions on behalf of the NNSA.

- Tritium supply—With a half-life of only 12.3 years, tritium must be continually replenished. SRS accomplishes this in two ways: by recycling it from existing warheads and by extracting it from target rods that have been irradiated in commercial nuclear power reactors at the Tennessee Valley Authority.
- Stockpile maintenance—SRS helps maintain the U.S. nuclear stockpile by replenishing gas transfer systems that ensure performance of nuclear weapons; reservoirs are loaded with a mixture of tritium and deuterium gases, finished, assembled, inspected, packaged and shipped.
- Stockpile evaluation—In the absence of nuclear weapons testing, designers must rely on SRS to certify the reliability of U.S. nuclear weapons; samples of gas transfer systems are taken from production, life storage and the active stockpile for testing at SRTE.
- Helium-3 recovery—Helium-3, which is a by-product of SRS tritium processing, is a precious commodity used in neutron detection equipment and other applications, and SRS is its sole U.S. source.
- Research and development—Savannah River Tritium Enterprise (SRTE) facilities provide a capability not available anywhere else to safely perform research and development (R&D) involving large quantities of tritium. SRTE works closely with Savannah River National Laboratory (SRNL)—the nation's leader in tritium science and stewardship—plus other National Laboratories and university partners to support NNSA's tritium R&D initiatives.

To ensure that SRTE remains able to carry out its important missions in support of the nation's nuclear deterrent in the decades to come, a new Tritium Finishing Facility is undergoing final design. This new facility, expected to be completed in FY37, will replace the last of SRTE's Cold War-era operating facilities.

Pit Production Mission: Enduring Capability

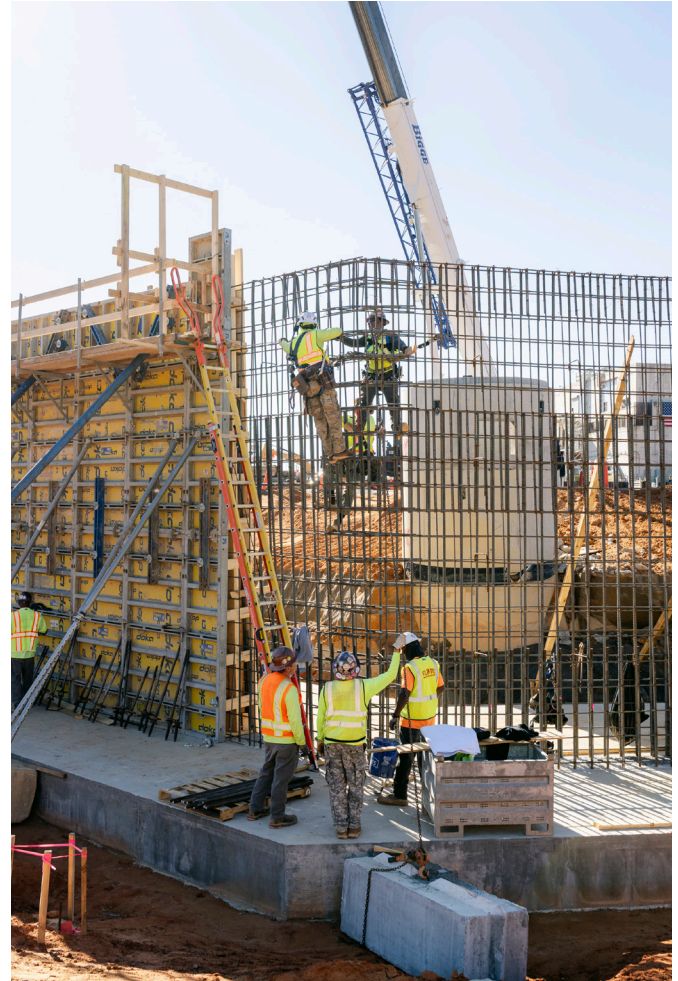
An enduring plutonium pit production mission in support of the United States' nuclear deterrent is being established at the Savannah River Plutonium Processing Facility (SRPPF) at the Savannah River Site. A plutonium pit is a critical component of every nuclear weapon. The United States' current capability to produce them is very limited. In 2018, the Nuclear Weapons Council endorsed the NNSA's approach for supplying plutonium pits to meet stockpile requirements: a two-site strategy with SRS, in strategic partnership with Los Alamos National Laboratory, producing required number of pits per year.

Under the two-site strategy, SRS is constructing the SRPPF complex through repurposing an unfinished concrete structure with more than 400,000 square feet of available Hazard Category-2 space, which will meet pit production requirements. Use of this high-hazard, high-security facility will allow NNSA to make use of an existing seismically qualified structure, with numerous supporting facilities and existing SRS services and infrastructure, such as security, fire protection and emergency response. Repurposing this facility requires modifications and installation of manufacturing and support equipment directly associated with the pit production mission.

In June 2021, the SRPPF project received Critical Decision-1 (CD-1) approval. This decision approves the conceptual design and an initial range for the cost and schedule. Additionally, it authorizes SRS to proceed in maturing the design and refining cost and schedule ranges to establish a project performance baseline.

The NNSA also has established the Pit Production Operations and Programs organization to develop and train the workforce prior to SRPPF project completion and startup to operate SRPPF once project completion and facility operations are authorized. In addition, the Program is working to establish institutional systems, manage interfaces and re-establish a secure supply chain to sustain an enduring pit production mission.

Workers build a retaining wall as part of site preparation activities for the SRPPF Sandfilter.



Large-scale plutonium pit production at SRS in support of sustainable nuclear deterrence



Nuclear Materials Management

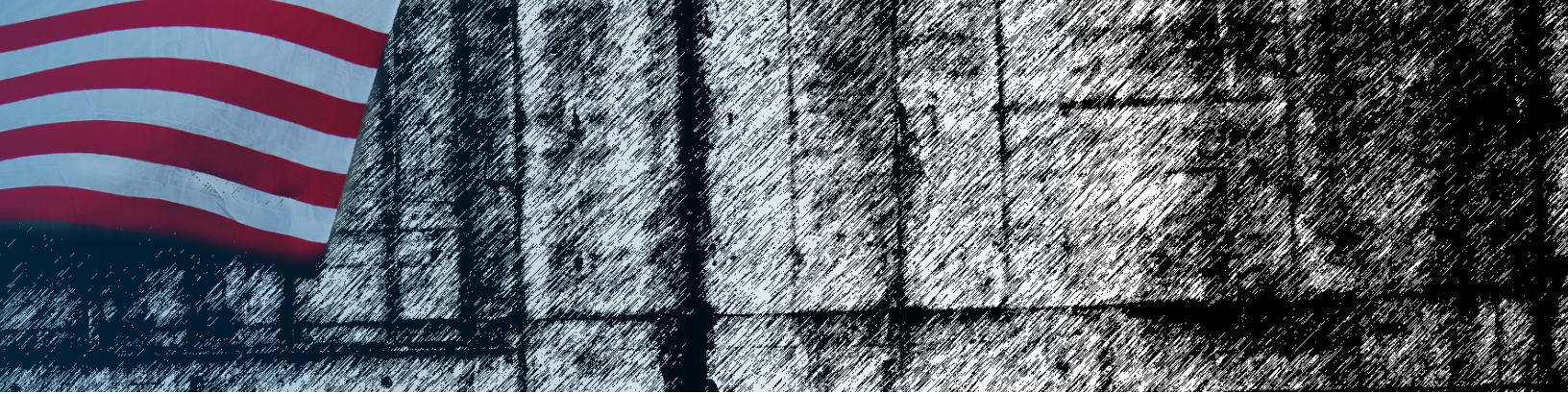
K Area Complex

The K Area Complex (KAC) is the only Category 1 storage facility at SRS and provides for the handling and interim storage of our nation's surplus plutonium (Pu) and other special nuclear materials. KAC delivers the only International Atomic Energy Agency safeguards in the Nuclear Security Enterprise() and receives international material via the Gap Program in support of global nonproliferation.

KAC is home to the K Area Interim Surveillance Glovebox, where downblend operations have been underway since 2017. Downblending is a process that mixes surplus Pu oxide with an adulterant mixture. That mixture is then packaged and shipped for permanent disposal at a federal repository in New Mexico. These efforts are a significant part of the NNSA's overall nonproliferation mission.

Material Storage Area in the K Area Complex





Used Nuclear Fuel Operations

> **2,546** used nuclear fuel
casks received

3.4 million gallons of
water in L Basin

Used nuclear fuel (UNF) is nuclear fuel that has been irradiated in a nuclear reactor. UNF from the Site's former production reactors and from foreign and domestic research reactor programs is currently safely stored in an underwater storage facility in L Area, called a disassembly basin. L Basin has concrete walls two and a half to seven feet thick and holds approximately 3.4 million gallons of water, with pool depths of 17 to 50 feet. The basin water provides shielding to protect workers from radiation. Since 1964, SRS has received more than 2,540 casks containing over 48,400 UNF assemblies.

A cask receipt in L Basin





H Canyon

1955

H Canyon began operations.
The facility is still in use

30

NASA deep-space explorations
powered by plutonium-238
recovered in H Canyon

22

hours to dissolve
a fuel bundle in
nitric acid

HALEU

High-Assay Low Enriched Uranium

66

feet tall, or about 10 stories high



820

feet long,
more than three football fields





H Canyon Facility



Remotely controlled cranes are used to perform all work inside the canyon.



High Flux Isotope Reactor Fuel being lowered into a dissolver in H Canyon with the use of a remote control crane.



H Canyon operators check readings on the wall panel control system in the H Canyon Control Room (left); An operator works at the Distributed Control System, which controls many of the canyon processes (right).



H Canyon/HB Line

H Canyon is the only operating production-scale, nuclear chemical separations facility in the U.S. In the past, the facility's operations recovered uranium and neptunium from used nuclear fuel (UNF) rods from Site production reactors and from domestic and foreign research reactor programs.

HB Line is located on top of H Canyon and worked in conjunction with H Canyon to perform plutonium and neptunium oxide production using radiologically shielded gloveboxes. The facility is currently in lay-up state but can be restored if needed for new missions.

H Canyon's current mission involves dissolving UNF in nitric acid and recovering the highly enriched uranium by removing impurities through solvent extraction and other purification processes. The uranium is mixed with natural uranium to "blend down" the material to the desired enrichment specification for high-assay low-enriched uranium (HALEU). HALEU will be used to fuel advanced nuclear reactors, supporting America's energy independence.

H Canyon is a one-of-a-kind national asset that serves the state, the nation and the world. The facility continues to remain in a high state of readiness, with associated technical staff available, to complete its designated missions and future opportunities.

Savannah River National Laboratory

Savannah River National Laboratory (SRNL) is where bold innovation meets real-world impact. Established during the Cold War, SRNL is a leading national laboratory dedicated to solving complex challenges in national security, environmental stewardship, and energy resilience. As the only lab stewarded by the Department of Energy's Office of Environmental Management, SRNL leverages its unique location within the 310-square-mile Savannah River Site to lead efforts in solving the nation's most complex challenges.

Whether revolutionizing environmental monitoring with AI, advancing fusion energy, or optimizing the nuclear fuel cycle, SRNL is at the forefront of scientific and technological innovation, delivering solutions that secure, protect, and power the nation.

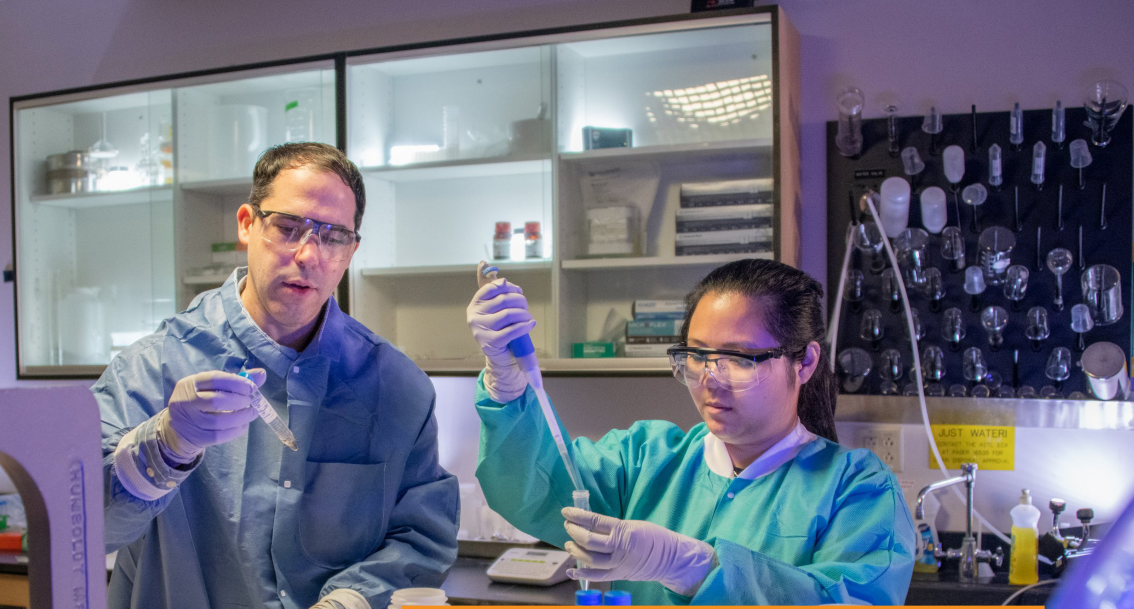
Delivering Real-world Solutions for the Nation

SRNL is prioritizing five key initiatives where its unparalleled expertise and advanced infrastructure deliver maximum impact: AI for environmental cleanup and restoration; nuclear fuel cycle and isotopes; grid resilience; nuclear deterrence and nonproliferation, and fusion fuel cycle innovation. With 330,000 square feet of radiological laboratory space and cutting-edge facilities for hydrogen isotope processing, tritium management, and fusion research, SRNL is uniquely equipped to drive groundbreaking advancements in these critical areas.

Elizabeth Tsekrekas and Rob Hausrath work with molten glass as part of SRNL's award winning research on advanced engineered cellular magmatics, a technology developed to convert land-fill-bound materials into high-value products.



Hansell Gonzalez-Raymat (left) mentors Phuong Pham (right), then a DOE Fellow from FIU. This hands-on research paved the way for a career, and today, she's a scientist at the lab.



SRNL *by the numbers*

We Put Science to Work

70⁺ years R&D laboratory excellence

2004 designated as national laboratory

1,400⁺ employees

275 S&T publications last fiscal year

330,000 Square feet of radiologically controlled lab space

\$441M business volume in FY25

150⁺ issued patents

50⁺ active partnerships with industry, academia, foundations and governments

16 shielded cells facilitating work with high-hazard nuclear



William Holbrook works on research supporting NA19's tritium modernization project in SRNL's Tritium Analytical Laboratory.

Scientist Sonia Dyer works with the Direct Mercury Analyzer measuring for mercury in collected samples.



Nuclear Waste Management

Liquid Waste Operations

Past SRS nuclear material production created unusable by-products, such as radioactive liquid waste. About 32 million gallons of radioactive liquid waste remains in 43 operational underground tanks at SRS.

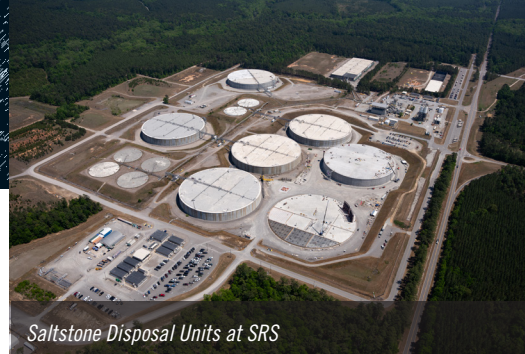
The Defense Waste Processing Facility (DWPF) is processing the high-activity waste from the tanks by immobilizing radioactive elements as a borosilicate glass form that is then put into stainless steel canisters. The glassified waste is a stable form for permanent disposal. Since DWPF began operations in March 1996, more than 16.8 million pounds of radioactive glass have been produced. The canisters are currently stored on-site in one of two Glass Waste Storage Buildings (GWSB). These buildings consist of a below-grade seismically qualified, steel-reinforced concrete vault containing support frames for vertical storage of canisters.

Originally, the first GWSB was designed to hold 2,262 single-stacked canisters. In 2015, the existing design of GWSB 1 was re-evaluated and determined through several studies that, with some minor modifications to the shielded storage plug and removal of the canister support crossbars, a second canister could be safely stored on top of the first one. This innovation, which is recognized as Canister Double-Stack Project, increased the available storage capacity in GWSB 1 to 4,524 canisters.

GWSB 2, with a similar design to GWSB 1, has 2,340 canister storage locations. Double-stack modifications like GWSB 1 are planned for GWSB 2 and will increase the capacity to 4,680 canisters, negating the need for an additional interim storage building.

Most of the liquid waste in the tanks is low-activity salt waste, and it is removed from the tanks and decontaminated at the Salt Waste Processing Facility (SWPF), which began processing waste in October 2020. SWPF is the key liquid waste facility for processing approximately 90 percent of the SRS tank waste. From May 2025 to May 2026, a record of 4.1 million gallons was processed through the facility. SWPF is separating the salt waste into a low-volume, high-activity fraction for vitrification in DWPF and a high-volume, decontaminated salt solution (DSS) for treatment at the Saltstone Production Facility (SPF) to be disposed as saltstone. SWPF continues to operate at a rate needed to meet mission requirements.

DSS from salt processing is sent through SWPF to SPF, where it is mixed with dry materials to form a grout and poured into above-ground, cylindrical concrete units called Saltstone Disposal Units (SDUs) for permanent disposal. These SDUs hold approximately 33 million gallons of grouted DSS. Filled units will eventually be capped with an engineered cover consisting of several layers of impermeable materials, isolating them from the environment. The SDUs at SRS continue to be built under budget and ahead of schedule. The construction of the final SDU needed at SRS is underway.



Saltstone Disposal Units at SRS

17.5

million pounds of radioactive glass
produced in DWPF since 1996

8

of 51 radioactive liquid waste tanks
operationally closed since 1997

14.5

million gallons of About 32 million gallons
of radioactive liquid waste remains
in 43 operational underground tanks at SRS

Empty canisters await being used in the Defense Waste Processing Facility

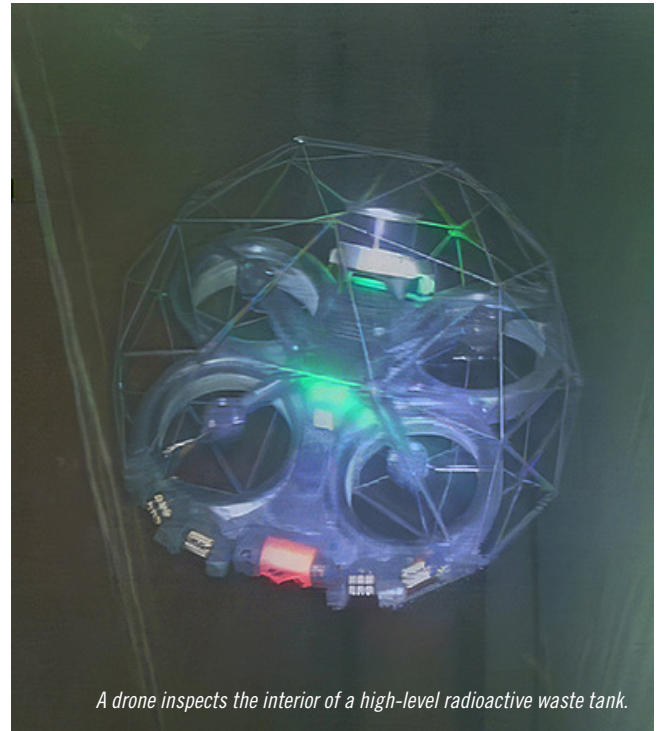


Innovations Accelerating Liquid Waste Mission

Engineering breakthroughs and innovative business strategies are advancing the radioactive liquid waste mission at an unprecedented pace at SRS. The latest [SRS Liquid Waste System Plan](#) has all the waste tanks to be cleaned and closed between 2037 and 2041. The liquid waste mission timeline, which is based on various funding scenarios, is outlined in the system plan.

New ways of doing business have helped to accelerate the waste retrieval and tank closure process.

- [Flying drones](#) into the radioactive waste tanks for sampling and inspection saves four weeks and \$700,000 per tank
- Partnering with an offsite laboratory for tank sample analysis, which saves up to six months and \$2 million per tank
- Creating and using a [3D-printed tool](#) that uses a centrifuge for tank sampling saves up to six months
- [Reconfiguring camera systems](#) in the Tank Farms, a collection of underground tanks, makes inspections of the waste tanks, diversion boxes, and pump pits available in minutes instead of days.
- Installing [larger, higher-capacity cross flow filters](#) at the Salt Waste Processing Facility (SWPF) to significantly increase facility throughput rates.



A drone inspects the interior of a high-level radioactive waste tank.



Three larger, higher-capacity cross flow filters used in the decontamination process were installed at the Salt Waste Processing Facility to achieve the facility's optimum production rates. Pictured are personnel conducting a mock-up trial of the filter changeout before executing the work in a highly radioactive area.



A TRU PACT III waste container at SRS.

Solid Waste

Solid Waste Management is responsible for the disposition of SRS solid waste, which includes hazardous, sanitary, and construction and demolition (C&D) waste, plus low-level (LLW) and transuranic (TRU) radioactive waste. Sanitary waste is household materials and items that are recycled or disposed of at the Three Rivers Landfill. C&D waste is generated by SRS construction activities and is disposed of in a SCDES permitted landfill. Hazardous waste is collected and disposed of off-site at a permitted facility. Radioactive waste is classified into two categories, the majority of which is LLW, which is contaminated with predominately short-lived isotopes and is disposed of at SRS in engineered facilities. LLW that is also hazardous waste is disposed of off-site at a permitted facility.

The second category of radioactive waste is TRU waste. This waste typically consists of protective clothing, tools, rags, equipment and miscellaneous items contaminated with small amounts of Pu. TRU waste (including mixed TRU waste) is collected, characterized and packaged for off-site disposal at WIPP in New Mexico.

When the SRS TRU Ship-to-WIPP program began, over 30,000 containers of TRU waste were stored at SRS. The Site has made over 1,700 shipments of TRU waste to WIPP through March 2023.

Environmental Compliance and Area Completion Projects

SRS Environmental Compliance and Area Completion Projects (EC&ACP) coordinates and provides environmental support and compliance-based oversight of SRS operations. EC&ACP ensures that SRS activities are conducted in accordance with state and federal environmental regulations while ensuring the safety and protection of workers, the public and the environment.

EC&ACP also manages extensive environmental and groundwater monitoring programs to determine impacts, if any, from SRS operations to the public, surrounding communities and the environment. SRS collects approximately 10,000 samples annually on and off-site in surrounding communities and analyzes them for radionuclides, metals and other chemicals.

EC&ACP investigates and remediates environmental contamination by removing, treating, capping or immobilizing the source of contamination, which prevents it from spreading to the environment. SRS performs these remedial activities in accordance with the FFA, the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act (RCRA), with public involvement and the full support of DOE-SR, the U.S. Environmental Protection Agency-Region 4 and SCDES. Since 1993, Area Completion Projects has achieved 4,285 FFA milestones and RCRA Permit commitments on or ahead of schedule.

Additionally, EC&ACP deactivates and decommissions inactive facilities across the Site and conducts closure and post-closure care and maintenance of inactive SRS waste units (e.g., seepage basins, rubble pits, rubble piles and disposal facilities).

Remediation at SRS remains a top priority. To date, more than 81% of the 515 waste units have been completed, and over 28% of the 1,126 excess facilities have been safely dispositioned.

Cleanup and decommissioning will continue until all areas at SRS are completed, returning them to the Site for repurposing or to be placed under post-closure care with institutional controls (access and land use restrictions, inspections, maintenance, long-term monitoring and reporting and ground water corrective actions and effectiveness monitoring) as appropriate.

10,000

environmental and groundwater samples collected annually both on- and off-site

4,285

environmental milestones and commitments met on or ahead of schedule since 1993

317

inactive facilities that have been deactivated, decommissioned and demolished

81%

of the 515 inactive waste units where remediation is complete

Acronyms

C&D
construction and demolition

CD-1
Critical Decision -1

DOE
Department of Energy

DSS
Decontaminated Salt Solution

DWPF
Defense Waste Processing Facility

EC&ACP
Environmental Compliance
and Area Completion Projects

FFA
Federal Facility Agreement

GWSB
Glass Waste Storage Building

HALEU
High-Assay Low Enriched Uranium

LLW
low-level waste

KAC
K Area Complex

NASA
National Aeronautics and Space Administration

NNSA
National Nuclear
Security Administration

Pu
Plutonium

R&D
research and development

RCRA
Resource Conservation and Recovery Act

SCDES
South Carolina Department
of Environmental Services

SDU
Saltstone Disposal Unit

SPF
Saltstone Production Facility

SRNL
Savannah River National Laboratory

SRPPF
Savannah River Plutonium Processing Facility

SRS
Savannah River Site

SRTE
Savannah River Site

SWPF
Salt Waste Processing Facility

TRU
transuranic waste

UNF
Used Nuclear Fuel

WIPP
Waste Isolation Pilot Plant

Public Tours

www.srs.gov/general/tour/public.htm

General Information

www.srs.gov



In an ever-changing and always-challenging world, SRS looks toward the future with anticipation. It is our priority that each employee arrives, works and goes home safely, and our nation's valuable nuclear materials are protected.

Our employees will be at the heart of a successful future. Engaging our employees in developmental opportunities and increasing our recruitment will ensure a diverse workforce with priceless expertise and enthusiasm.

As always, SRS will strive to earn the community's support, trust and respect, with reliable stewardship of the environment and the nation's assets.



Savannah River Site • Aiken, SC • 29808

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