

Savannah River Site

Environmental Report Summary



2022

SAVANNAH RIVER SITE

2022 Environmental Report Summary

This report highlights the Savannah River Site’s environmental performance and engagement with the local communities. Many articles in this Summary are based on the information presented in the *2022 Environmental Report* and touch on the following:

- Significant environmental accomplishments that support Site missions
- Compliance with environmental laws and regulations
- Dose to the public from onsite activities
- Monitoring that supports dose calculations and compliance requirements
- Community involvement

When applicable, text at the bottom of the page identifies the related chapters and sections in the *2022 Environmental Report* where readers may find more detailed information, along with supporting data, maps, and figures.

CONTENTS

1	Overview
2	Environmental Accomplishments Deactivating Legacy Building That Served Nation and Space Program Savannah River Site Reaches 4,000th Cleanup Milestone
4	Sustainability Project Wins Department of Energy Sustainability Award
6	Radiological Dose and Monitoring What is Radiation Dose? Assigning Dose to the Representative Person Determining the Source of Exposure 2022 Potential Radiation Dose Why is the Representative Person’s Dose Important? Monitoring Releases to the Environment
10	Technology Solid Waste Management Fashions Remote Tool to Enhance Safety PFAS at the Savannah River Site Equipment Rebuilds Create Savings Vitrification Center Receives Upgrades Innovative Well Closure Leads to \$900,000 Savings
12	Environmental Justice Today’s Environmental Justice Program at the Savannah River Site
14	Outreach to the Community Popular Tour Program Returns after Pandemic Limitations Stakeholder Involvement Citizens Advisory Board



OVERVIEW

The Savannah River Site is a 310-square-mile U.S. Department of Energy industrial site along the Savannah River in the sandhills area of three western South Carolina counties. It is 12 miles south of Aiken, South Carolina, and 15 miles southeast of Augusta, Georgia. The population within a 50-mile radius of the Site center in Aiken, Allendale, and Barnwell counties in South Carolina and in Columbia, Richmond, Burke, and Screven counties in Georgia is 803,370. The largest population concentration is in the Augusta, Georgia, metropolitan area.

The Atomic Energy Commission, the precursor for the Department of Energy, selected this area in 1950 for E. I. du Pont de Nemours Company to create materials for nuclear weapons for the nation’s defense.

In 1972, the Atomic Energy Commission designated the Site as the first National Environmental Research Park, providing it with opportunities to study environmental impacts of energy and defense-related technologies that had taken place. The Savannah River Site supports diverse natural habitats, including pine and hardwood forests, riverine environments, 48,973 acres of wetlands, along with hundreds of species of plants and animals.

Today, the Site’s mission is to protect public health and the environment, while also supporting the nation’s deterrent program. The Savannah River Site is committed to environmental cleanup, nuclear weapons stockpile stewardship, and disposing of nuclear materials to support the nation’s nonproliferation policy. Together, these actions are transforming the Site for future use.

The Department of Energy Office of Environmental Management and the National Nuclear Security Administration oversee the Site and its resources.

Facing page, from top to bottom: the Savannah River, cypress knees near Creek Plantation, and spring color

This page, from top left: an oak along a Site road, signs of spring growing wild at the Site, Southern wood fern, and daffodils



ENVIRONMENTAL ACCOMPLISHMENTS

Above: An early construction photograph of Building 235-F
Below: An aerial view of 235-F

Deactivating Legacy Building That Served Nation and Space Program

In September 2022, the Savannah River Site completed deactivation of Building 235-F, one of the legacy buildings dating to early construction in the 1950s. The facility, located in the Site’s F Area, is a blast-resistant, windowless, two-story, reinforced concrete structure that is 222 feet long, 109 feet wide, and 28 feet high.

Building 235-F has had several production missions throughout its operational life, each of which has left a stamp on the facility and impacted the Site, the nation’s defense, the Department of Energy, and even the National Aeronautics and Space Administration.

For example, the Site used one section of Building 235-F, known as the Plutonium Fuel Form Facility, from the late 1970s to the early 1980s to make fuel spheres and pellets out of plutonium-238 to provide heat to electrically power long-term, deep-space missions, such as Galileo, Ulysses, and Cassini.

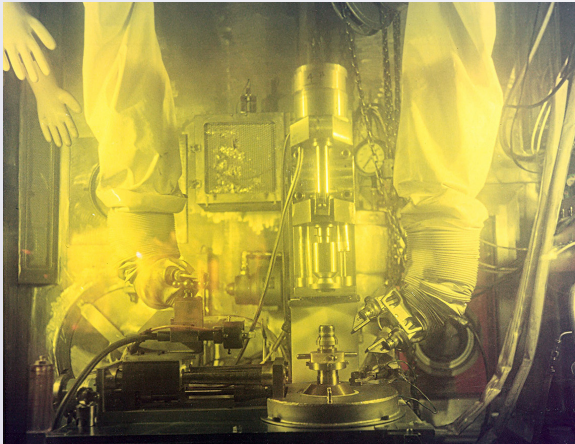
Early in the U.S. space program, scientists recognized that converting thermal energy into electricity using the heat associated with radioactive materials was the best source of energy. Coupling radioactive heat with a thermoelectric converter became the preferred power source for deep-space satellites and probes. These fuel spheres and pellets allowed the space program



to operate cameras, collect data, and relay the information to Earth.

Other process lines within Building 235-F include the Actinide Billet Line, the Plutonium Experimental Facility, and a metallography lab.

This production facility’s most recent mission was receiving and storing plutonium-bearing materials that support the Site and the Department of Energy complex. However, in 2006, the Site consolidated plutonium storage in K Area. The Site removed material at risk in 2019, and deactivation of Building 235-F began at that time to prepare the facility for “Long-term Safe Storage.” The facility is relatively free of nonradiological



The interior of a glove box formerly in Building 235-F

hazards, has mitigated radiological risks, and requires minimal continuing surveillance and maintenance.

Past actions to reduce hazards for Building 235-F included reducing the height of a ventilation stack, removing transient combustibles in the building, and decontaminating facility hot cells and gloveboxes.

As part of the deactivation project, the Site

- Reconfigured and shut down the ventilation system, isolating all utilities, such as water, steam, and power
- Removed contamination or used a permanent coating, called a fixative, which prevents contamination from spreading outside of the process enclosures
- Removed nonradiological hazardous material, such as lead, oils, and process water

These shutdown and isolation steps greatly reduced the cost of surveillance and maintenance of Building 235-F during Safe Storage.

Deactivating Building 235-F has prepared it for eventual decommissioning. The Department of Energy and Savannah River Nuclear Solutions, the Site’s management and operations contractor, have worked with the South Carolina Department of Health and Environmental Control and the U.S. Environmental Protection Agency to finalize plans for the decommissioning of Building 235-F. The end-state determination is complete and includes approval from these two regulatory agencies. Based on the risk to the workers, protection of human health, environmental impacts, and cost, it was decided that grouting the process areas and setting in place a durable sloped roof is the recommended disposition path.

Savannah River Site Reaches 4,000th Cleanup Milestone

In early 2022, the Savannah River Site achieved its 4,000th environmental cleanup milestone since the Federal Facility Agreement with state and federal regulators was enacted almost 30 years ago.

All milestones were achieved ahead of or on schedule, maintaining a standard of excellence through the decades, validating the performance and dedication of the workforce in carrying out the projects, programs, and compliance across the Site.

Clean up at the Site is governed by the Resource Conservation and Recovery Act hazardous and mixed-waste permit and the Federal Facility Agreement, which the Department of Energy, the South Carolina Department of Health and Environmental Control, and U.S. Environmental Protection Agency signed in 1993.

The 4,000 milestones involved a range of cleanup initiatives, permits, testing, and projects, and the workforce accomplished them by partnering with the regulators and subject-matter experts using a “core team process.”

Examples of milestones met over the years using the core team process include

- Grouted and permanently closed two nuclear reactor buildings.
- Prevented nearly 7,000 curies of tritium from entering the Savannah River, saving \$208 million by drawing up irrigated water containing legacy tritium through 62 acres of pine trees. This harmlessly released the isotopes into the atmosphere through photosynthesis. (See *Project Wins Department of Energy Sustainability Award*, Pages 4-5)
- Constructed a large underground water-permeable wall made of 1.5 million pounds of iron filings from reclaimed automobile engines. The wall neutralizes Cold War-era chemical solvents found in the aquifer beneath the Site and acts like a giant water filter to remove and break down degreasing solvents.
- Completed cleanup of more than 90 acres of coal ash-contaminated land a year earlier than scheduled, saving \$8 million. This large undertaking consolidated more than 400,000 cubic yards of coal ash under a protective geosynthetic material and thick earthen caps.



SUSTAINABILITY

Project Wins Department of Energy Sustainability Award

The Department of Energy awarded the Savannah River Site with its Sustainability Award in the “Innovative Approach to Sustainability” category in November 2022 for using natural resources to safely address groundwater containing the legacy contaminant tritium.

At the core of the Site’s project is phytoremediation, which uses plants to clean up a contaminated environment. Sixty-two acres of pine trees, specifically planted for this project, effectively act like a forest of tall hydraulic pumps. The trees draw up irrigated water containing tritium pumped from a nearby holding pond and harmlessly release it into the atmosphere through transpiration.

Since the project began in 2001, the Site has irrigated the forest with approximately 190 million gallons of water containing nearly 7,000 curies of tritium. The contaminated water is rerouted

to the holding pond and prevented from moving towards the Site boundary. The project safely transforms the contamination and eliminates it from the Site.

Researchers and engineers from the U.S. Department of Agriculture Forest Service-Savannah River and the Savannah River Site began designing the approach relying on pine trees in 1999 because there was not a practicable treatment technology to remove tritium from large volumes of groundwater. Traditional remediation costs associated with this level of tritium removal using “pump, treat and reinject” equipment would have cost close to \$180 million over the last 20 years. Instead, the project cost over that period has been about \$12 million, representing a significant cost savings.

The project is cost-effective because it doesn’t require round-the-clock operations. The contaminated groundwater also flows naturally to the surface, where it collects in the small holding pond.

Only limited pumping is needed in support of the irrigation system, as the trees naturally provide for water uptake and

Left: Savannah River Site personnel install irrigation as part of the phytoremediation project. The Site has irrigated the forest with approximately 190 million gallons of water containing nearly 7,000 curies of tritium. Test results validate that the level of tritium found within the irrigation area produces a radiation dose so low as to be insignificant.

Right: The Site has 62 acres of pine trees for this project.

evapotranspiration to the atmosphere. The sustainable approach is effective without creating large volumes of waste. Phytoremediation provides for carbon sequestration of 192 tons annually, which is an estimated offset equivalent to the use of 37 cars a year.

The United States Department of Agriculture-Savannah River conducts this process using 51 irrigation zones. It has been largely computerized for optimal evaporation efficiency. The University of Georgia’s Savannah River Ecology Laboratory conducts annual sampling and tests. It concluded that about 80% of the tritiated groundwater applied to the pine tree plot was efficiently evaporated. In comparison, mechanical evaporator systems are typically about 25% effective.

Test results validate that the level of tritium found within the irrigation area produces a radiation dose so low as to be insignificant. The evaporated tritium becomes virtually immeasurable beyond the irrigated section of forest and much less at the Site boundary.



RADIOLOGICAL DOSE and MONITORING

Sunrise over the Savannah River Site

What is Radiation Dose?

Radiation is Part of Life

Radiation is the transfer of energy in the form of rays, waves, or particles through space. Humans, plants, and animals receive radiation doses from both natural and man-made sources. Radiation can come from as far away as outer space and from as near as the ground on which you are standing. Because it is naturally all around us, we cannot eliminate radiation from our environment. We can, however, reduce our exposure to it.

How Are We Exposed to Radiation?

We are exposed to radiation in many different ways. Simply breathing particles that are in the air will cause some exposure. Every time we eat food or drink water, we receive radiation (figure to the right). We can be directly exposed to radiation from the sun or the ground. Contaminants in the air can deposit on grass, which can then be eaten by cows in pastures. These cows produce milk and provide beef. When we consume milk and beef we are exposed to radiation. Natural radiation can also be found in foods such as bananas, carrots, white potatoes, and Brazil

nuts. Radiation is everywhere and has been here since the earth was formed. Radiation has many uses that are helpful and are important parts of our lives.

According to the National Council on Radiation Protection and Measurements, nearly half of the exposure of radiation to the average person living in the United States comes from medical sources such as X-rays, computed tomography scans, and drugs with radioactive material known as radiopharmaceuticals.

Industries also use radiation in a variety of ways. Nuclear power plants use radioactive materials to produce electricity; industrial radiography uses X-rays to check for weak points in metal parts and welds before products are sold; and the food industry uses irradiators (machines used to kill bacteria and other pathogens in food and other items). Devices that test the density of highway and construction materials, research reactors, and security screening at airports and shipping ports also use radioactive materials.

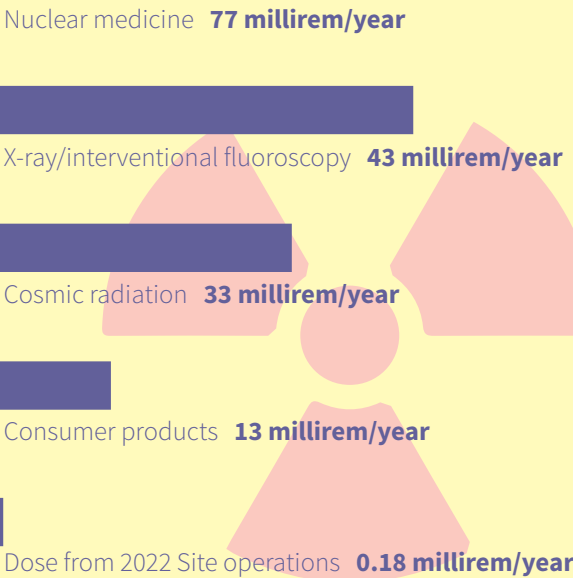
You may also have items in your homes such as antique clocks and watches that glow, ceramics such as Fiestaware, or smoke detectors that contain small amounts of radioactive material. In addition, bricks and other products used to build your home contain small amounts of radioactive materials.

Assigning Dose to the Representative Person

The representative person is not someone you’ve met or even have much in common with, but this individual has a great influence on protecting your health, your quality of life, and safeguarding the environment you live in. This person represents **YOU**, but in a very unlikely scenario.

This unnamed, unfaced person exists only in calculations and dose models as a hypothetical human who is between you and the radiation originating from Savannah River Site projects and missions. The premise is, if the dose the representative person receives is at or below the Department of Energy’s dose limit prescribed as safe for the public, then you, a resident who does not seek out exposure pathways, would be at an even safer level.

The representative person’s exposure is at the 95th percentile of national and regional data, meaning that this hypothetical person is participating in the exposure scenarios to an extent greater than 95% of the population.



Source: National Council on Radiation Protection and Measurements, Report No. 160

Determining the Source of Exposure

Radiation dose to a person is the amount of energy the human body absorbs from a radioactive source located either inside or outside of the body. Radioactive sources typically transfer energy in the form of rays (such as gamma or X-rays) or high-energy particles (such as alpha or beta particles).

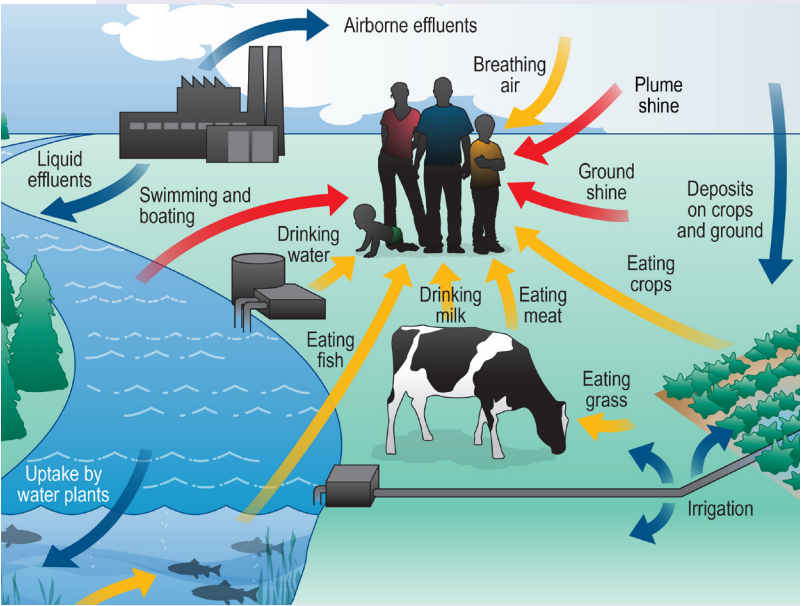
Radiation dose is typically reported in a unit of measure called a “millirem” (mrem). The average dose from naturally occurring radioactive minerals in the ground and water, and cosmic radiation from outer space is 311 mrem a year. The average annual dose for U.S. residents from both natural and man-made sources is 625 mrem. Man-made sources of background radiation include the following:

- Medical procedures (300 mrem)
- Consumer products (13 mrem)
- Industrial and occupational exposures (1 mrem)

The Department of Energy has established dose limits to the public so that Site operations will not contribute significantly to this average annual background exposure. DOE Order 458.1, “Radiation Protection of the Public and the Environment,” establishes 100 mrem/year as the annual dose limit to a member of the public that can come from Site operations.

Exposure to radiation potentially occurs by the following:

- Inhaling through the air
- Ingesting through food and water
- Absorbing through the skin
- Experiencing direct (external) exposure to radionuclides in soil, air, and water



We are exposed to radiation through the air we breathe, the foods we ingest, and through skin absorption in addition to the exposure we receive from man-made sources and the atmosphere.



2022 Potential Radiation Dose

In 2022, the Savannah River Site did not increase potential radiation exposure to the public.

The potential doses from Savannah River Site radioactive discharges to air and water were well below regulatory standards for the public and the environment.

The combined dose from air and water pathways—called the “all pathway” dose—was 0.18 mrem in 2022, which is substantially less than the Department of Energy public dose limit of 100 mrem/year. Of this 0.18 mrem/year dose, 0.17 mrem was from liquid releases, and 0.016 mrem was from releases to the air. The all-pathway total dose is less than the 2021 total dose of 0.30 mrem, which is attributed to the decrease in radioactive liquid releases.

The Department of Energy established the dose limit to protect the public and environment from the potential effects of radiation released during Site operations. The Savannah River Site continues to remain far below the 100 mrem/year public dose limit.

Why is the Representative Person’s Exposure Important?

In each scenario below, which describe liquid and air pathway exposures based on location and duration, the representative person is in a position that maximizes the amount of potential radiation that a human could be exposed to:

- Lives near the Site boundary all day, every day
- Consumes milk, meat, vegetables grown or raised at the Site boundary
- Drinks water and eats fish from the Savannah River
- Participates in recreational activities on the river or spends time near the river every day

Members of the Canoe and Kayak Club of Augusta on the Savannah River, downstream of Augusta, Georgia



SRNS-RP-2023-00274

Sampling location, Lower Three Runs

Monitoring Releases to the Environment

Environmental monitoring programs at the Savannah River Site examine both radiological and nonradiological constituents that Site activities could release into the environment. Releases to the environment of radioactive and nonradioactive materials come from past legacy contamination, and potentially from ongoing Site operations. These discharges are maintained within authorized limits established in Site operating permits and environmental regulations.

The Environmental Monitoring Program collects and analyzes air, water, sludge, sediment, and food product samples from numerous locations throughout the Site and the surrounding area. The program consists of two focus areas: 1) effluent monitoring, and 2) environmental surveillance. The objective of the effluent monitoring program is to demonstrate the Site is complying with permits, and the focus of the environmental surveillance program is to assess the environmental impacts of Site operations on the surrounding area.

As monitoring at the Savannah River Site advanced from beyond the local community to a more regional approach, stations were set up at distances up to 100 miles from the Site. Changes to the Site mission over the last 70-plus years have shaped the environmental monitoring program. As emphasis moved from weapons production to safety storing and disposing of waste, the equipment utilized for monitoring, sampling, and analysis has adapted to allow for the precise measurement of contaminants at the low levels seen in the environment. This supports the Site’s ongoing commitment to

protect public health and the environment while performing its missions and complying with federal regulations, state permits, and Department of Energy orders.

The Savannah River Site surveillance program includes the types of sampling media that the releases, as measured in the effluent monitoring program, may impact. Samples are taken at the points where materials are discharged from the facilities (air at stacks and water at outfalls), and in the environment (air, rainwater, site streams, the Savannah River, drinking water, meat, fruit, green vegetables, milk, fish, wildlife, soil sediment, grassy vegetation, and groundwater) to determine the level of exposure of the public to Savannah River Site contaminants, both at the Site and beyond its boundary.

The Site analyzes samples for radionuclides, metals, and other chemicals that could be present in the environment because of Site activities, although many of these analytes occur naturally or from unrelated human activities. Early studies provide the invaluable baseline with which the Site compares current trends. Data collected are consistent with previous years and indicate that releases (radiological and nonradiological) from operations have a minimal effect on public health and the environment.



The Savannah River Site samples foods to assess potential effects to local produce from Site operations. The area’s peach crop in Edgefield County, South Carolina, grows within the Site’s 50-mile sampling radius.



TECHNOLOGY

Solid Waste Management Fashions Remote Tool to Enhance Safety

The Savannah River Site’s Solid Waste Management Facility began using a remote release rigging hook to place low-level waste into a burial trench, saving time and reducing risks to workers.

The innovation came in the form of magnetic hooks that attach to the rigging of the low-level waste and that a crane operator can remotely release once the waste was in the trench. The distance protects the riggers from potential contamination.

In the past, heavy equipment operators had to climb on the flatbed trailer that carried the low-level waste to manually attach the hook to the rigging, and then fish the rigging off the hook once it had been lowered into the trench. With this method there was the potential for contamination when working that closely with waste.



Top: Solid Waste Management personnel inspect a new rigging hook that will aid in placing low-level waste in burial trenches. Above: The hook is controlled remotely, which saves time and enhances worker safety.

Low-level waste includes items that have become contaminated with radioactive material or have become radioactive through exposure to radiation. The Site buries this waste in engineered trenches, called slit trenches, in the Solid Waste Management Facility.

PFAS at the Savannah River Site

Per- and polyfluoroalkyl substances, commonly abbreviated as PFAS, are a broad group of human-made chemicals. PFAS are chemically very inert, resistant to high temperatures, reduce surface tension, water- and dirt-repellent, and grease proof. The very properties that made these materials into an industrial success also have led to persistency, bioaccumulation, and, in some cases, toxicity in the environment.

The Savannah River Site has responded to PFAS as an emerging contaminant. It established its own PFAS Working Group in March 2022, which serves as a Site-level conduit to the Department of Energy’s PFAS Coordinating Committee. In December 2022, the Site submitted its PFAS Implementation Plan.

The Site identified the use of PFAS-containing aqueous film-forming foam at D Area in the fire-training areas and in response to a fire-suppression event. It shared this information with the regulators, as part of the Federal Facility Agreement Core Team scoping process, and groundwater sampling began in 2020.

In 2022, the Site sampled 65 wells and 10 surface water stations in D Area for PFAS constituents as part of the Comprehensive Environmental Response, Compensation, and Liability Act remedial investigation efforts. The Savannah River Site is committed to understanding the nature and extent of PFAS contamination at the Site.

Equipment Rebuilds Create Savings

The Savannah River Site is reducing radiological exposure, reducing costs, and minimizing facility downtime at the Salt Waste Processing Facility by using existing facilities to rebuild critical equipment on Site. This facility is key to processing most of the tank waste at the Site.

Savannah River Mission Completion, the Site’s liquid waste contractor, optimized how Salt Waste Processing Facility contactors and manipulators are maintained. The Salt Waste Processing Facility uses centrifugal contactors in the solvent extraction process, and the facility’s laboratory uses manipulators to handle process samples and equipment within its radioactive cell. Both contactors and manipulators require periodic maintenance and rebuilding.

Savannah River Mission Completion has improved the repair process by packaging and transporting the used equipment to existing onsite facilities to decontaminate and rebuild them, producing functional spares.

Vitrification Center Receives Upgrade

The Defense Waste Processing Facility entered an outage in June 2022 to begin replacing formic acid with glycolic acid in the facility’s vitrification process. The old formic acid process generated hydrogen and produced ammonia as an off gas as the acid reacts at elevated temperatures. Glycolic acid significantly reduces these off-gas hazards while providing chemical stability, which allows for safer processing of high-activity radioactive waste at the facility, leading to more efficient conversion of waste into glass.

The Savannah River National Laboratory performed testing that contributed to the selection of glycolic acid as a replacement for formic acid. Extensive laboratory testing showed that glycolic acid enables the Defense Waste Processing Facility to treat more waste by removing curies from Site waste tanks at a faster rate. This alternative was studied for 10 years before it was put into use. Safely removing greater volumes of liquid waste continues to reduce the risk this waste poses. The use of glycolic acid is a significant innovation for the overall waste treatment process.

The Defense Waste Processing Facility is the only operating high-level radioactive waste glassification plant in the nation. This facility converts high-level radioactive liquid waste into a solid glass form suitable for long-term storage and disposal.

Innovative Well Closure Leads to \$900,000 Savings

Savannah River Site employed a unique solution to safely close a 70-year-old, 600-foot-deep well, saving about \$900,000.

The well was installed during construction of the Site. Eventually, the U.S. Geological Survey started using the well to collect data related to groundwater levels in the Site’s M Area. It was one of several unusually deep wells drilled across the Site in the early 1950s, and its design did not comply with current environmental protection standards.

Conventional methods would have involved drilling out the well and grouting the entire borehole, which would have been extremely expensive and could have potentially contaminated an aquifer that the well tapped deep beneath the Site. Instead, research revealed that a special tool could perforate the well’s carbon-steel casing, allowing cement-like grout to be forced through multiple openings under pressure. The tool punches vertical slots through the casing wall at a targeted depth. This is accomplished when 3,000 to 4,000 pounds of force pulls up a metal rod, driving a thick steel blade on the rod through the pipe.



ENVIRONMENTAL JUSTICE

Today’s Environmental Justice Program at the Savannah River Site

The Savannah River Site is committed to the principles of Environmental Justice and ensuring that all programs, policies, and activities support these principles, thereby facilitating meaningful involvement by affected communities and stakeholders.

Various methods and practices are in place to enhance engagement from the affected communities. The Site will continue to provide opportunities for community involvement and decision-making through information sharing and empowering the communities around the Site. The Savannah River Site continues to expand its outreach with educational opportunities and access to information on Site operations and environmental and public health risk-assessments. Environmental Justice programs at the Site include educational opportunities, workforce development, and community advocacy and outreach.

Recent Teaching Radiation, Energy and Technology Workshop attendees listening to a presentation at the University of South Carolina Aiken

Other Environmental Justice programs at the Site include community outreach meetings that focus on job training, grants, environmental monitoring, and emergency response. The Site also offers hands-on training in the form of student internships focusing on environmental contaminant analysis research projects.

Specific highlights of programs complementing the Site’s commitment to Environmental Justice include

- The Savannah River Site Citizens Advisory Board—a stakeholder group of individuals from diverse backgrounds in South Carolina and Georgia counties affected by Site operations. The Citizens Advisory Board provides the Department of Energy with advice, information, and recommendations on issues that affect environmental management at the Site.
- The Savannah River Site Community Reuse Organization—a private, nonprofit organization that develops and implements a comprehensive strategy to



Left photograph: Attendees take a break at the Minority Serving Institutions Partnership Program Achievement Workshop.

Bottom photograph: Middle and high school teachers at the Teaching Radiation, Energy and Technology Workshop in Waynesboro, Georgia, assemble with Kenneth Sajwan (standing, far left), Savannah State University Professor, Principal Investigator of the Environmental Justice grant, and member of the Savannah River Site Citizens Advisory Board; de’Lisa Carrico (standing, far right), retired Savannah River Site Environmental Justice Grant Oversight; and Melinda Downing (seated, far right), Department of Energy, Office of Legacy Management, Environmental Justice Program Manager.

diversify the economy around the Site. The Community Reuse Organization ensures that Site excess and operating resources benefit the economic well-being of the surrounding areas.

- The Savannah River Site Tour program—guests also learn about current and future Department of Energy-Environmental Management and National Nuclear Security Administration missions at the Site.
- The Teaching Radiation, Energy and Technology Workshop—an event for local educators and community leaders that has been held by the Department of Energy’s Savannah River Operations Office since 1995. Designed to educate teachers so they can in turn provide

radiation education to their students, the workshop includes experts from the Department of Energy, the Savannah River Site, the Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control.

- Management of Minority Serving Institutions Partnership Program—addresses the Department of Energy’s future workforce needs by partnering with academic, government, and contractor organizations to mentor future minority scientists and engineers in researching, developing, and deploying new technologies. The Savannah River National Laboratory runs the program at the Savannah River Site.





OUTREACH to the COMMUNITY

Popular Tour Program Returns After Pandemic Limitations

After being on hold through the COVID-19 pandemic, the Savannah River Site was able to offer 16 public and historic tours, accommodating approximately 680 visitors.

The bus tours have long been popular with residents from neighboring communities who want to see firsthand the historic and operational facilities at the Site that were responsible for producing plutonium and tritium during the Cold War. Tour participants also learn about the Site's current activities and enduring and future missions.

The public tours featured an overview presentation, safety briefing, and driving tour of key facilities at the Site.

Historic tours highlight the former town of Dunbarton, C Reactor, and the Savannah River Site Curation Facility. The Site partners with the Savannah River Archaeological Research Program and the Savannah River Site Cold War Historic Preservation Program to host these tours.

Participants for both types of tours arrive and depart from the Savannah River Site Badge Office on SRS Road 1, near New Ellenton. The public tours conclude at the University of Georgia's Savannah River Ecology Laboratory, where participants learn about the lab and see some of the animals indigenous to the Site. The historic tours conclude at the Curation Facility. Both the historic and public tours are free, and reservations are on a first-come, first-served basis. Participants must be 18 years of age or older and U.S. citizens.

Bob Bonnett (top), Savannah River Site Tour Program Coordinator, starts the tours at the Site's Badge office. Stops for the public tour include a demonstration by Amanda Hurst, Outreach Coordinator (below), or other Savannah River Ecology Laboratory personnel. The historic tour stops at the Curation Facility (bottom).



To register for a tour and obtain directions to the Badge Office, visit www.srs.gov/general/tour/public.htm. If you experience difficulty registering online, or have a large group, call (803) 952-8994.

Stakeholder Involvement

Savannah River Site management has built long-term support at all tiers of community and government and is committed to keeping the public informed about Site projects. From individuals, schools, and municipalities to a broader reach encompassing state and national officials, the Site has ensured that it has a framework from which communication and information flow purposefully between the Savannah River Site and those with a vested interest in its missions.

The foundation of the stakeholder program is the belief that the public has both the right to know what the Department of Energy is doing in the community and the right to have input in the decision-making process. Stakeholder engagement offers those who will be affected by the outcome of Site work a chance to voice their opinions. This ensures the Department of Energy has a shared vision with the public.

The Site involves stakeholders through a variety of activities that solicit input from the public, including the following:

- Assisting stakeholder groups with analyzing environmental management plans
- Increasing awareness of the impact of contaminant releases or potential releases during cleanup
- Allowing community groups to propose alternative plans that may achieve better results
- Explaining how the Site establishes priorities to promote cleanup and safety
- Involving elected officials in Site tours and discussions about technologies, project milestones, and new and ongoing missions

One organization that is a valuable conduit between the Savannah River Site and the public is the Citizens Advisory Board. The advisory board is a diverse group of citizens who make recommendations to the Department of Energy regarding Site cleanup.

Additionally, the Savannah River Site works closely with the U.S. Environmental Protection Agency Region 4 and the South Carolina Department of Health and Environmental Control to reduce risk and accelerate environmental cleanup at the Site. The Savannah River Site effectively communicates with regulators to streamline essential documentation showing compliance with the federal Resource Conservation and Recovery Act, which tracks and manages hazardous wastes from generation to disposal, and the Comprehensive Environmental Response, Compensation, and Liability Act, which addresses the protection and cleanup of the environment from known releases of hazardous substances.



National Nuclear Security Administration United States Air Force Fellows tour the Savannah River National Laboratory.



E4 Carolinas leadership visited the Savannah River Site in November 2022. The trade organization comprises area energy companies and organizations that promote energy, economy, efficient use of resources, and the environment.



Members of the Savannah River Site
Citizens Advisory Board at a meeting

Citizens Advisory Board

Since it was established in 1994, the Savannah River Site Citizens Advisory Board, known as the CAB, provides advice and recommendations from a community perspective on Department of Energy programs, policies, and projects. The board also provides an opportunity for the community to share their thoughts and opinions with Site and its regulators.

It is one of eight advisory boards the Department of Energy has in place across the complex to facilitate advice and recommendations on Site-specific issues and concerns. Since its inception, the members have issued 379 recommendations to the Department of Energy. It made five recommendations in 2022. Generally, the Citizens Advisory Board issues advice on environmental restoration, waste management, and other topics of interest to stakeholders.

The board's current 21 members, from Georgia and South Carolina, reflect diverse viewpoints in the community and region surrounding the Savannah River Site. Members are recruited from Aiken, Barnwell, Allendale, Charleston, Lexington, Richland, and Beaufort counties in South Carolina; and Burke, Chatham, Columbia, Effingham, Richmond and Screven counties in Georgia. They are all residents of communities that Savannah River Site operations and cleanup activities directly affect. A chair and vice chair represent the CAB at the Department of Energy's Environmental Management Site-Specific Advisory Board meetings and at public events. The remaining board members belong to the following four issues-based subcommittees:

- Facilities Disposition and Site Remediation
- Nuclear Materials
- Waste Management
- Administrative and Outreach

The various subcommittees within the board meet bimonthly to discuss topics such as environmental clean-up on the Site, budget management, materials handling, historic preservation, and plans for future uses of the Site.

The Citizens Advisory Board schedules public meetings at rotating locations throughout the region, extending from east central Georgia to the South Carolina Lowcountry, to enable a wide range of attendees and viewpoints. In keeping with the commitment to provide meaningful involvement in the decision-making process, the board held six meetings in 2022 in Aiken, North Augusta, and Columbia, South Carolina; and in Augusta and Savannah, Georgia. Agency liaisons from the Department of Energy, the U.S. Environmental Protection Agency Region 4, and the South Carolina Department of Health and Environmental Control also participate in the meetings.

The board streams meetings for those who can't attend, and a video archive of past meetings and newsletters exists on its website for future reference.

The advisory board is also dedicated to providing outreach to the community through Site tours; an online CAB University, which offers background information on general Site missions and quizzes to test knowledge takeaway; and a line-up of speakers that civic groups can engage for events and meetings.

Citizens interested in applying for membership do not need to have any special skills or extensive knowledge about the Savannah River Site. The general requirement is to have a willingness to attend meetings and learn about the plans and activities at the Site and provide advice and recommendations from a public perspective.



Above: The entrance to the Savannah River Site Badging Office is the starting point for employees and visitors to gain access to the Site. Right: The cloverleaf serves as a connecting hub between key areas.



SAVANNAH RIVER SITE

Department of Energy-Office of Environmental Management

To Learn More About the Focus on Environmental Safety:
Visit the SRS website: www.srs.gov/general/srs-home.html

View or download the *Savannah River Site 2022 Environmental Report*: www.srs.gov/general/pubs/ERsum/index.html



For More Information about
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The cover of the *2022 SRS Environmental Report Summary* features photographs by Ken Cheeks. Ken was the manager of the Environmental Bioassay Laboratory and the Environmental Monitoring Program at the Savannah River Site before retiring in 2022 from Savannah River Nuclear Solutions. In this role, he was responsible for the monitoring programs that this report describes. An undisputed nature enthusiast, Ken has delighted his former coworkers with his avid and undeniable talent behind a lens.

The background cover photograph is of L Lake at the Savannah River Site. The inset photograph on the front cover is of an anhinga and great egret at Pinizy Swamp Nature Park in Augusta, Georgia. The top inset photograph on the back cover is of a belted kingfisher below the dam recreation area in McCormick, South Carolina. The bottom inset photograph is of an alligator and dragonfly at Audubon's Silver Bluff Center and Sanctuary in Jackson, South Carolina.

The photograph of the Canoe and Kayak Club of Augusta on Page 8 is by George Reeves and was featured on the back cover of the *2017 SRS Environmental Report and Summary*.



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