We make the world safer

SAVANNAH RIVER NUCLEAR SOLUTIONS

2015 ANNUAL REPORT

A safer world begins in our workplace here at the Savannah River Site, or SRS, and with employees dedicated to the spirit of our slogan: “Safety and Security begin with me.” In May 2015, our employees racked up 10 million work hours without a lost work day case. It’s an amazing accomplishment. And in the security arena, SRNS employees continued to safeguard the nation’s nuclear materials. Through their personal commitment, our employees make the world safer.

SRNS Environmental Management, or EM, Operations safely accomplished significant high-hazard work this year. A record number of readiness assessments were completed to do important nonproliferation and remediation missions in H Canyon, L Basin, K Area and F Area. We watched proudly as the little New Horizons space probe—powered by plutonium-238 oxide produced in H Canyon and HB Line—visited the erstwhile planet Pluto. And we marked H Canyon’s 60th anniversary with employees, retirees, and federal and legislative officials in attendance. We share one goal: to make the world safer.

In September, we had a procedural non-compliance in HB Line, one of our nuclear facilities. We voluntarily took an operational pause, conducted a period of “Deliberate Operations” and implemented a rigorous sustainment plan. These steps have enhanced our employees’ knowledge of management expectations, improved our performance and reinforced our commitment to providing the finest service possible to our customer and to the nation. With these positive actions, SRNS is a stronger company. And with that strength, we make the world safer.

We continued our long-standing support of the National Nuclear Security Administration’s tritium and nuclear nonproliferation missions. We’ve faithfully met our deliverables and progressed in modernizing our SRS tritium facilities. Ensuring our nation’s defense into the future makes the world safer.

Savannah River National Laboratory, or SRNL, continued to put science to work through expanding missions, innovative technologies and global partnerships. SRNL focuses on solutions for the most significant needs of our country and our world in security, nuclear materials, advanced manufacturing, environmental stewardship and clean energy. Working in 24 states and more than 50 countries, SRNL shares its expertise in ever-expanding avenues. SRNL makes the world safer.

The past year saw our Continuous Improvement program evolve into the “Focused Improvement Transformation,” or SRNS FIT. Our company is using Lean tools to make improvements that have saved millions of taxpayer dollars. Making our company more efficient allows us to conduct our operations better than ever. And that makes our world safer.

SRNS enhanced the development of our workforce during 2015 with a new “Standard of Excellence” tool that will steer our actions toward our company’s vision of being “the standard of excellence in nuclear materials management.” We also forged partnerships with regional colleges and universities to prepare students for careers in the nuclear industry. These future employees will ensure that our missions at SRS are staffed by skilled workers for years to come. And they’ll continue to make the world safer.

The Savannah River Nuclear Solutions of today is a robust, dynamic company capable of answering the challenges of our country’s nuclear and technological needs. The Savannah River Nuclear Solutions of tomorrow will be even stronger, with a firm and unyielding resolve for excellence in our operations, our technology and our workforce.

We are Savannah River Nuclear Solutions. And we make the world safer.
SRNS’ Environmental Management (EM) Operations entered fiscal year (FY) 2015 with plans to significantly restart all H Canyon unit operations. Delivery of these objectives was done with much leaner staffing at levels approximately 30 percent below the operating levels of FY 2004 (a comparable operational year). EM Operations dissolved four batches of spent nuclear fuel in H Canyon for the year; restarted the Acid Recovery Unit; and completed Readiness Assessments for both Head End and Second Uranium Cycle. These processes are essential to the current Spent Fuel mission for H Canyon. A basin modification project was completed in L Area to allow for receipt of a new type of fuel assembly basket. Significant progress was made toward initiation of a new downblending mission in K Area. EM Operations also implemented the 235-F Deactivation Basis for Interim Operations to allow for intrusive work within the cells. All of this scope was delivered with no recordable injuries and without any contamination cases. This is especially impressive in light of the significant high hazard work conducted.

Readiness Assessments completed, a record for SRS EM

Plutonium verifications completed in K Area

Obsolete concrete culverts filled with low-level waste and disposed

In cost savings, exceeding our goal of $2 million

Since 2008, H Canyon has completed 14 spent fuel processing campaigns.

H Canyon starts Head End Cycle
SRNS resumed the Head End process to continue the spent fuel processing campaign in H Canyon. The Head End takes dissolved spent fuel and begins the purification process, removing impurities from high enriched uranium. This restart required an extensive Readiness Assessment, as this portion of the Canyon had not been used in more than a year.

Multi-year Spent Fuel Campaign
In FY 2015, SRNS began a multi-year campaign to process aluminum-clad spent nuclear fuel (SNF). Known as Material Test Reactor SNF, this spent fuel is safely stored in L Basin in wet storage and then transferred to H Canyon, where it undergoes a chemical process that separates the uranium and downblends the materials into low-enriched uranium, a form undesirable for use in nuclear weapons. The end-product will be available for use in commercial power reactors, such as those operated by the Tennessee Valley Authority to generate electricity.

SRS goes to Pluto
HB Line and H Canyon facilities processed and produced the plutonium-238 oxide used to power the NASA New Horizons space probe (pictured above), which completed a historic flyby in 2015. The probe provided NASA with the first-ever close-up views of Pluto.

Savannah River National Laboratory (SRNL), as a DOE nuclear facility, has the responsibility to dispose of any nuclear material and spent nuclear fuel from legacy cleanup, as well as foreign and domestic research reactors. On hand for the event were (from left) Department of Energy (DOE) Savanna River Manager Jack Craig, SRNS President and CEO Carol Johnson and U.S. Congressman Joe Wilson.

H Canyon turns 60
The H Canyon Facility celebrated 60 years of service to the United States in 2015. H Canyon first produced nuclear materials in support of our nation’s defense weapons programs. Now, the nation’s only operating production-scale shielded chemical separations facility dispositions and stabilizes nuclear materials and spent nuclear fuel from legacy cleanup, as well as foreign and domestic research reactors. On hand for the event were (from left) Department of Energy (DOE) Savanna River Manager Jack Craig, SRNS President and CEO Carol Johnson and U.S. Congressman Joe Wilson.

H Canyon turns 60

To see videos of our EM missions, please click on the globe, or visit www.savannahrivernuclearsolutions.com/annual
For FY 2015, SRNS continued its long, proud tradition of support for the National Nuclear Security Administration (NNSA) and its mission of enhancing the nation’s security through the application of nuclear science. SRNS serves NNSA in two major areas. The first, the Savannah River Tritium Enterprise (SRTE), provides the tritium (the radioactive form of hydrogen necessary for our nation’s nuclear defense) and related products and services. SRNS also serves NNSA’s nuclear nonproliferation work, including support for NNSA’s plutonium disposition initiatives. As has been the case throughout its history, SRTE once again met all its deliverables in service to the nation’s defense, with further improvements to the already-high level of quality, changes that streamline processing, and progress on plans that will ensure SRTE’s ability to continue effectively serving the nation for the future.

Preparing for the future
The Tritium Responsive Infrastructure Modifications initiative, SRS’ strategy to drive efficiency and revitalize the Tritium facilities for ongoing and new missions, took a major step forward when SRNS obtained NNSA Critical Decision approval. This allowed the start of the “Analysis of Alternatives” process, which will identify the best approach for relocating mission critical activities into newer, right-sized facilities.

Sealed source removal
SRTE completed the recovery and removal of 26 plutonium-238 sealed sources, resulting in significant reductions in both risk and cost. The sources were previously used for calibrating analytical equipment, but have been replaced by electrical heat standards, allowing them to be shipped off-site for disposition through the Los Alamos National Laboratory Off-Site Source Recovery Project.

New tritium
With a half-life of 12.3 years, tritium for the nation’s defense must be constantly replenished. SRTE added new tritium to the nation’s supply by extracting it from rods irradiated in a Tennessee Valley Authority reactor.

Waste Solidification Building
Construction of the Waste Solidification Building project was completed. The building now goes into a standby mode, awaiting its planned role in NNSA’s plutonium disposition strategy, handling waste from the future Mixed Oxide Fuel Fabrication Facility.
That motto continues to capture the Savannah River National Laboratory’s value as a solutions provider for clients throughout the nation and the world.

Innovation and savings in the nation’s legacy waste cleanup program with a 15-fold return on investment. One-of-a-kind tritium processing, storage and transfer system expertise. The world’s only radiological crime investigation laboratory. Intellectual leadership in nuclear materials processing. Regional partnerships to help build a clean energy future.

In FY 2015, SRNL continued its transformation from a technical support arm of SRS to a nationally recognized solutions provider, an active partner in S.C. academic and economic leadership and a successful leader providing environmental remediation and intellectual assets to global customers.

We put science to work, fulfilling the mission while continuing to set the safety performance benchmark for DOE labs.

Lab Director of the Year
SRNL’s Dr. Terry Michalske was named National Lab Director of the Year by DOE for work encouraging small businesses at SRNL. He was cited for “collaborative approaches to engage small business to help the lab perfect technology in the nuclear environment.”

Advanced Manufacturing Facility
SRNL has begun the pursuit of a new Advanced Manufacturing Collaborative Facility, a proposed public/private partnership that will build on the growing number of advanced manufacturing partnerships already under way, create new jobs in the region and develop the future workforce. Occupancy is expected in 2018.

Partnersing to commercialize technology
SRNL’s patented hydrogen isotope separation process has been licensed by SHINE Medical Technologies, an example of how SRNL’s tritium expertise is being leveraged to help solve the global problem of producing medical isotopes.

Innovative solutions
SRNL’s Dr. Aaron Washington (right) briefs Energy Secretary Ernest Moniz on research that’s led to a new radiation resistant polymer coating for containment bags—another illustration of a cost-saving, efficient innovation SRNL is bringing to DOE’s legacy waste cleanup mission.

Partnering with regional universities
The SRNS Board of Directors has pledged $400,000 towards an SRNL University Scholars program, a program that will provide scholarship aid and expose regional science and technology students to the research staff at SRNL. Signing the University Scholars Program agreement were (pictured above, from left) SRNS President and CEO Carol Johnson; USCA Chancellor Dr. Sandra Jordan; SRNS Executive Vice President and SRNL Director Dr. Terry Michalske; and SRNS Board of Directors Chairman Bruce Stanski.

Expanding missions
In a reflection of an expanding mission, in 2015 SRNL established a dedicated Office of Hanford Mission Programs. SRNL’s international work continues as well, most notably with ongoing consulting on technical issues at Japan’s damaged Fukushima Daiichi Nuclear Plant.

Since 2008, SRNL has executed 30 license agreements to transfer Lab-developed technologies for commercial use.
In FY 2015, the varied departments that make up SRNS Technical Services continued to support critical missions at SRNS, while finding ways to improve processes and save taxpayer dollars. Several of the year’s initiatives also involved benefits to the local community, such as SRNS’ work with DOE in partnership with the non-profit Savannah River Community Reuse Organization (SRCRO) to turn no longer needed equipment and material into money to benefit Aiken, Allendale and Barnwell counties in South Carolina, and Richmond and Columbia counties in Georgia.

Saving taxpayer dollars
SRNS teamed with DOE and the SRSCRO to remove more than 200 tons of excess equipment, parts, machinery and material from the Savannah River Site, including thousands of items formerly stored in a large maintenance facility. The excess material was packaged, labelled and transported offsite at no cost to DOE, creating a significant savings. A new, large-scale “assets for services” test project enabled SRSCRO to use their resources to remove and dispose of 40 aged trailers formerly used as temporary offices at SRS and, in return, to receive assets such as transformers from a closed power plant at the Site (pictured above). The continuing partnership between DOE and the SRSCRO has avoided costs to SRS approaching $2 million, to date.

Train derailment assistance
Under a mutual aid agreement with Allendale County, SRNS dispatched members of the SRS Hazardous Material team to assist after a commercial railroad locomotive left the main track and slammed into a line of railroad cars near Allendale, S.C., spilling 19,000 gallons of hydrochloric acid. Working with the Environmental Protection Agency and the S.C. Department of Health and Environmental Control, the SRNS employees protected soil, water, equipment and the people involved in the cleanup response from chemicals released in the wreck. SRNS Radiological Protection also deployed a team to provide monitoring and decontamination support during recovery and remediation on SRS property.

Alternate EOC
Safeguards, Security and Emergency Services completed the new Alternate Emergency Operations Center (EOC), which would be activated during a Site emergency if the Primary EOC were to be inaccessible.

Collaboration with Ameresco
Site Services collaborated with Ameresco Federal Solutions, which operates the Biomass Cogeneration Facility, for energy cost management and provided technical support for a new heating plant.

S.C. National Guard training
Site Services coordinated and provided technical support for an S.C. National Guard (SCNG) training exercise conducted at SRS, which provided both training for the SCNG and a low-cost alternative to complete needed work scope for SRS. The SCNG soldiers completed three projects, which included earthmoving, brush clearing and erosion control.

SRS deer hunts
Site Services conducted deer hunts for Wounded Warriors and Mobility Impaired hunters. The annual hunt benefits the hunters, and also makes SRS roadways safer by reducing the potential for animal/vehicle collisions. SRNS manages the hunt and provides sponsorship in conjunction with DOE, the USDA Forest Service-Savannah River and the Wheelin’ Sportsman National Wild Turkey Federation.
safety and security

“Safety and Security begin with me.” SRNS employees again in 2015 lived the slogan that has come to define the culture at our company.

In May, our employees reached 10 million safe hours without a lost workday case, demonstrating their commitment not only to their own safety, but also that of their co-workers and to the surrounding communities. Because of this dedication, SRNS was recertified with DOE STAR Status and recognized as a DOE Voluntary Protection Program (VPP) STAR participant for excellence in safety programs, performance and culture.

Safety culture sustainment
SRNS implements a robust safety culture program designed to integrate all employees and contractors at SRS around safety and security excellence. This program uses 24 Local Safety Improvement Teams and a spectrum of communications tools and culture building strategies to monitor and continuously improve our safety culture. The SRNS program was featured at the National Safety Council Congress and Expo in Atlanta in 2015 and at the DOE-HQ Safety Performance Culture Workshop in Washington D.C.

Radiological Assistance Program
Administered by SRNS, the DOE Radiological Assistance Program (RAP) provided training and operational support in 2015 for federal, state and local agencies. The RAP team assisted with radiological monitoring during the visit of Pope Francis to Washington, D.C., and Philadelphia. The RAP team also supported a national level exercise in Darlington, S.C., that tested local, state and federal response to a scenario that involved a radiological release from a commercial nuclear power reactor.

Security incident response
SRNS received recognition from DOE for our “excellent response” to a security event in H Area on August 17 this year.

environmental compliance and area completion projects

Environmental Compliance and Area Completion Projects (EC&ACP) continued its extensive history of reducing risks to human health and the environment at SRS. Work continued on remediating large tracts of acreage both above and below ground, and providing environmental support to SRS operations.

During FY2015, EC&ACP completed 119 Federal Facility Agreement or Resource Conservation and Recovery Act commitments on or ahead of schedule; managed 514 environmental permits without any non-compliances; and completed sampling and analysis on more than 2,000 groundwater monitoring wells. The innovative injection of silver chloride into F Area groundwater (pictured at right) was conducted to remediate iodine 129. Edible oil injection was completed in TNX Area groundwater to stimulate microbial remediation of volatile organic compounds. Also, the SRS 2014 Environmental Report was published; the report can found on the web at http://irmsrv02.srs.gov/general/pubs/ERsum/er14/index.html.

Ergonomics improvements
As a result of an employee safety observation, SRNS initiated a Continuous Improvement program to reduce ergonomic injuries, including awareness training, a “Stretch and Flex” exercise program and a 32-pound load limit for repetitive lifting.

D Area Ash Basin  EC&ACP began cleanup of the D Area ash basin and ash landfill, having removed 100 percent of the planned ash from the 100-acre project.
focused improvement

Extensively trained and experienced, SRNS employees are our company’s most valuable asset. Retaining current employees, acquiring new hires and valuing knowledge transfer keeps SRNS at the forefront of the nuclear industry.

SRNS hired a total of 662 employees in 2015, including 378 full service employees to train and prepare for an expected increase in employee retirements over the next several years. Agreements were signed with Aiken Technical College and Augusta Technical College to continue SRNS support of the regional need for nuclear production expertise. Investing in employee development provides our workforce with a wide range of tools to succeed, including an improved new hire on-boarding process and continuation of proven leadership courses. SRNS strongly encourages knowledge transfer activities including succession planning, enhancing employee feeder forums and mentoring circles, and ensuring knowledge transfer crosses multiple functional areas. To improve workforce planning, SRNS built a predictive attrition model to assist with forecasting future hiring needs created by attrition.

Standard of Excellence

The SRNS Vision states that our company will “be the standard of excellence in nuclear materials management by delivering knowledge, innovation and experience.” To achieve that vision, the SRNS Standard of Excellence was developed and implemented in 2015. This new performance review tool helps employees to understand expectations and to demonstrate this standard each day.

Benefits program

Enhancements to the SRNS Benefits programs included providing a Total Compensation Statement to promote awareness for the total value of employee compensation and benefits, and eliminating the Defined Contribution Plan’s one-year company match eligibility requirement to increase attractiveness to new hires.

Early career development

Leaders Emerging Among Professionals (LEAP) and Aspiring Mid-Career Professionals (AMP) marked their fifth and third years, respectively. The organizations promote career development, networking and outreach. During 2015, both groups provided volunteers to serve in local community projects such as food banks and United Way activities.
education outreach

SRNS Education Outreach works to enhance interest in science, mathematics, engineering and technology, and to support improvements in education in the Central Savannah River Area by using unique resources available at SRS. Educational opportunities for all students in the region are improved as SRNS works in partnership with the business, industry, government and education communities.

During the 2014-15 school year, hundreds of schools and more than 28,000 students and teachers were directly affected by SRNS education outreach programs and events. These programs, events and competitions include Traveling Science and Demonstrations Program; Innovative Teaching Mini Grants; CSRA College Night; Science Technology Enrichment Program; SRS Engineers Teach-Ins; Introduce a Girl to STEM. SRNS also provided $50,000 to the Aiken Tech College (ATC). One MOU supports development of future candidates for employment at SRNS in mechanic and inspector positions. The second MOU is the Veterans to Careers Program, which provides employment opportunities for veterans pursuing higher education degrees. SRNS also donated $50,000 to the ATC “Within Reach” scholarships, enabling 50 Aiken County residents to continue their education beyond high school.

College Night
Over 7,000 students participated in the 2015 CSRA College Night, a cooperative effort with SRNS, schools, businesses and local government. The event provides high school students and parents an opportunity to learn about accredited colleges and universities from across the country. At this year’s event, SRNS Executive Vice President and Chief Operating Officer Dave Eyler presented Tyra Johnson with an SRNS-funded scholarship.

$75,000
In Innovative Teaching Mini Grants awarded to 159 area teachers in 2015

10,000
Students impacted by scientists and engineers visiting in area schools in 2015

Since 2008, the Education Outreach program has reached more than 183,000 students and teachers in eight counties. Also since 2008, more than $450,000 in Mini Grants have been awarded to area teachers.

community outreach

SRNS continued enhancing the communities near SRS through community outreach and giving to local colleges and schools, charitable organizations and other groups. In 2015, SRNS invested $1 million in local communities through corporate sponsorships.

SRNS employees continued a tradition of community service activities and employee-led campaigns. These included United Way, Toys for Tots (15,000 toys donated), the CSRA Heart Walk ($81,000 raised), and Golden Harvest Food Bank ($11,000 and 2,800 pounds of food donated).

SRNS continued to manage the SRS Tours Program, conducting 214 tours in 2015. In addition to public tours, SRNS also managed tours for visitors including DOE Secretary Ernest J. Moniz; Deputy Secretary of Energy Dr. Elizabeth Sherwood-Randall; DOE Under Secretary for Nuclear Security and NNSA Administrator Lt. Gen. Frank Klotz; NNSA Principal Deputy Administrator Madelyn Creedon; DOE Assistant Secretary for EM Dr. Monica Regalbuto; DOE Deputy Under Secretary for Management and Performance David M. Klaus; Congressman Joe Wilson; Congressman Jody Hice; and Congressman Rick Allen.

In other community giving, SRNS donated $50,000 to Aiken Together, a capital campaign to fund three Aiken museums; $30,000 to USC Salkehatchie; and $10,000 each to the American Red Cross (Augusta Chapter), the Barnwell YMCA, the S.C. NAACP and the Aiken Branch of the NAACP.

$3,097
Visitors to SRS through the SRNS-managed Tours Program

$1.02 million
Raised by SRNS employees to lead the CSRA in benefitting nine United Way agencies

SRS Information Pods
In 2015, the SRS Information Pods brought the story of SRS missions to the public. During sessions at Augusta University and Aiken Technical College (pictured above), attendees signed up to hear presentations on environmental stewardship, nuclear materials, SRNL and waste management.

Supporting local education
SRNS signed two Memoranda of Understanding (MOU) with Aiken Technical College (ATC). One MOU supports development of future candidates for employment at SRNS in mechanic and inspector positions. The second MOU is the Veterans to Careers Program, which provides employment opportunities for veterans pursuing higher education degrees. SRNS also donated $50,000 to the ATC “Within Reach” scholarships, enabling 50 Aiken County residents to continue their education beyond high school.

SRNS signed two MOUs with USC Aiken to help students prepare for careers in science, technology, engineering and math (STEM). SRNS will provide internships for qualified STEM students where appropriate. SRNS also pledged $550,000 over three years toward USC Aiken’s new four-year degree engineering program.

Since 2008, SRNS has invested $7.3 million in local communities through corporate sponsorships.
a look ahead

In 2016, we will continue our commitment to our strategic focus areas.

We’ll deliver results safely and securely with disciplined conduct of operations.

We’ll meet DOE national mission needs with strengthened project management and workforce investment, which will prepare our company and SRS for the future.

We’ll further advance Savannah River National Laboratory, transitioning from an SRS support function to a prominent and nationally-recognized science and integrated technology solutions provider in areas such as cyber security, process intensification, robotics and smart manufacturing.

We’ll ensure SRNS is a compelling place to work, making it easier to get work done and simplifying business processes.

We want our employees to be satisfied and confident in our strategic direction, sharing ownership and responsibility in our missions and work.

We remain soundly dedicated to strengthening our capabilities, developing our people and building relationships with our customers.

Above all, we want you to know this:

We are Savannah River Nuclear Solutions.

And we make the world safer.
Savannah River Nuclear Solutions is the management and operations contractor for the U.S. Department of Energy's Savannah River Site, located in Aiken, S.C.

Please visit our websites and follow us on Facebook, Twitter, YouTube and Flickr.

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