

Questions? Contact us at 803.952.9584.

Welcome to the December 2010 edition of the SRNS News.

This has been an amazing year. Our accomplishments, philanthropic endeavors and a salute to the 60th anniversary of SRS seemed appropriate for our final newsletter of the year.



A message from
Garry Flowers
SRNS President and CEO

I'm very pleased to announce three significant contributions of \$50,000 per year for the next three years each to Augusta State University, Paine College and the CSRA Wounded Warrior program. I invite you to read more about these leadership gifts, which are a natural fit with our community giving philosophy.

On Page 2, read about the generosity of SRS employees and their contributions to Toys for Tots, donating more than 13,000 toys in our 20th year of supporting the Marines' program.

While this has been an exciting year of accomplishments, we end the year facing unsettling issues with workforce restructuring. More than 300 employees have chosen to voluntarily separate from SRNS. We are thankful for their years of service and wish them well in their future endeavors. We will be taking the necessary steps in January to implement an involuntary separation of 600-700 employees. I have committed to our employees that this will be a fair and dignified process. A transition center will be available to aid employees in job searches, counseling and resume preparation.

As always, thank you for your interest and my best wishes to you and yours for a safe and happy holiday.



TOYS FOR TOTS

Santa made a stop at SRS to collect toys donated by Site employees for the Marine Corps' Toys for Tots program.

See Page 2 for more photos.

SRNS news

SAVANNAH RIVER NUCLEAR SOLUTIONS

SRNS donates \$450,000 to benefit Augusta area organizations

SRNS and its parent companies—Fluor, Northrop Grumman and Honeywell—announced on Dec. 14 three significant contributions of \$50,000 each, over a three-year period, to Paine College, Augusta State Hull College of Business and the CSRA Wounded Warrior Care Project.

As the area's most successful historically black liberal arts college, Paine College is receiving funding to help generate student interest in careers such as

science and math that are critical to the success of the Savannah River Site (SRS) and local industries.

Augusta State University's Hull College of Business will receive an endowment for the SRNS Study Abroad Scholarship Fund. The funds will be used as a foundation for a first-tier study abroad program to help students expand their global outlook and exposure to other cultures worldwide.

[More on Page 2](#) ►

SRNS Open House welcomes local community

Donation to assist SRS Heritage Foundation efforts

On Dec. 8, SRNS hosted a Holiday Open House for approximately 100 community leaders and stakeholders from the Central Savannah River Area at the SRNS Corporate Office in downtown Aiken, SC.

The event is held annually to show appreciation to these individuals for their ongoing support throughout the year of SRNS and the Savannah River Site.

[Additional photo on Page 4](#) ►



Walt Joseph (right) accepts a \$10,000 check from SRNS on behalf the SRS Heritage Foundation. Clif Webb, SRNS Vice President of Public Affairs, made the presentation.



Truckloads of toys to brighten Christmas

SRS employees donated an estimated 13,000 toys and \$20,000 during the Site's 20th Annual Toys for Tots Drive, which is the largest area toy contribution. Fred Dohse, Tony Umek and Dan Armstrong of SRNS, along with representatives from Wackenhut Services Inc., Savannah River Remediation and Parsons, presented the check to the Marine Corps representatives.



Garry Flowers, SRNS President and CEO, presents Laurie Ott, Executive Director, CSRA Wounded Warrior Care Project, a check from the SRNS Community Giving Program.

SRNS donations aid Augusta organizations

► Continued from Page 1

SRNS' leadership gift will also help fund initiatives of the CSRA Wounded Warrior Care Project, including family workshops, combat transition initiatives and the first-in-the-nation Veterans Curation Project, a training and employment program for wounded soldiers.

"I am very proud of the investments we are making in our local community," said Garry Flowers, SRNS President and CEO. "These leadership gifts are a natural fit to our community giving philosophy, which focuses heavily on education and quality of life," said Flowers.

The SRNS Community Giving Program donated \$1 million in 2010 to non-profit agencies, chambers of commerce, economic development organizations, universities and colleges in local communities.



SRNS donated nearly half a million dollars to improve higher education in the greater Aiken-Augusta area and to assist wounded veterans returning from wars in Iraq and Afghanistan. (From left) Mr. Flowers; Jim Hull, Partner, Hull, Story & Gibson; Dr. Marc Miller, Dean, Hull College of Business, Augusta State University; Ms. Ott; Dr. George Bradley, President, Paine College; Deke Copenhaver, Mayor, City of Augusta.

SRNL-invented grout aids SRS reactor closure

A combination of teamwork and cutting-edge science is responsible for the unique flowable and self-leveling cement slurry that on November 22 completely filled the P Reactor vessel at SRS. This American Recovery and Reinvestment Act project utilized the technical expertise of SRNL to invent the slurry.

“The aggressive deactivation and decommissioning schedule of this project required a multidisciplinary approach involving our national laboratory’s world-class expertise and innovation,” said Dr. David Moody, DOE’s Savannah River Operations Office Manager. “This important Recovery Act closure project is providing a final end state for this Cold War production reactor that served the Nation. The in-situ, or in-place deactivation and decommissioning of the SRS P and R Reactors is precedent-setting in the nuclear industry.”

Dr. Christine Langton, SRNL’s advisory scientist on the P Reactor Closure Project, said, “the P Reactor vessel grout differs from standard Portland cement grout technology used in roads, sidewalks and cement blocks in that it is a less basic material, making it chemically compatible with the 16-foot-diameter reactor vessel’s hundreds of 20-foot-tall aluminum sleeve housings that were previously used to house reactor fuel rods.”

“Traditional grout with a higher pH would cause the housings to corrode. The grout for the P Reactor vessel was developed with a pH of 9 ½, and utilizes a calcium sulfo-aluminate cement designed at SRNL,” Langton added.

“Equally important was that the grout flow fluidly through the constrictive vessel configuration dictated by the former fuel sleeve housings. We addressed the unique challenges of grouting a reactor vessel by designing the grout to be flowable, self-leveling, nonsegregating and compatible with the reactor vessel materials of construction,” Langton said.

One hundred and twenty cubic yards of the cement slurry, the approximate volume of large at-home swimming pool, was poured into the reactor vessel over two days. The next step in the reactor closure will be to place a concrete cap over the vessel, while also grouting the below-grade portions of the reactor building, sealing all openings and installing multiple sloped roofs.

R Reactor, which is identical to P Reactor in size and appearance, has stainless steel fuel housings and will be filled with a special Portland cement-based grout designed by SRNL.

EM Waste Processing Tech Exchange attracts record crowd



SRNL organizers of the DOE-EM Waste Processing Technical Exchange are (first row, left to right) Dan McCabe, Sheryl Bush, Genovia Aaron, Drew Fellingner, Bill Wilmarth, and back row (left to right) Mike Cercy, Jeff Griffin, Roz Blocker and DOE-EM Office of Waste Processing Director Steven P. Schneider

The DOE-EM Waste Processing Technical Exchange, hosted by SRNL in Atlanta Nov. 16-18, attracted a record 275+ participants to discuss efforts to accelerate cleanup operations at Savannah River, Hanford and Idaho sites. In addition to those attending in person, others participated via live video feed. Assistant Secretary for EM Ines Triay kicked off the proceedings.

This was the eighth such tech exchange, allowing personnel from the three sites, along with others receiving funding from the Environmental Management Office of Waste Processing, to meet and exchange recent results of on-going field operations and technology development.



INPO Seminar The Institute of Nuclear Power Operations, or INPO, conducted a “First-Line Leadership” seminar at the Center for Hydrogen Research. The seminar was attended by 42 first-line managers (FLMs) from SRNS. The leadership seminar focuses on helping FLMs become better overall tactical leaders. Key themes of the seminar include leadership, safety culture, coaching, observation and feedback, integrity, communication, and setting standards.



NNSA Meeting On November 23, the National Nuclear Security Administration (NNSA) and SRNS hosted a meeting with Claire Dunne, NNSA Director of Intergovernmental Affairs, and several members of the Aiken County Legislative Delegation and Aiken County Council. Ms. Dunne and Doug Dearolph, Manager of NNSA-Savannah River Site Office, discussed NNSA missions at SRS. Attending the meeting with Ms. Dunne and Mr. Dearolph were S.C. State Senator Shane Massey, S.C. Representative Tom Young, Aiken County Council member Sandy Haskell and representatives from DOE-SR and SRNS.



Open House Garry Flowers, SRNS President and CEO (left), greets S.C. Representative Tom Young at the SRNS Holiday Open House, held Dec. 8 at the SRNS Corporate Office in Aiken.

SRNS's Analytical Laboratories goes online

SRNS's Analytical Laboratories launched its new external website on November 30. This new website offers prospective external customers the ability to explore Analytical Laboratories' capabilities, accreditations and certifications.

“We have been working towards this goal for about a year,” Darlene Murdoch, Director of Analytical Laboratories and F Area Operations said. “This will allow people off site to see our capabilities. We will have a link on the Analytical Laboratory Managers Association (ALMA) site, which will give other Analytical Lab managers around the world a link to our web site.”

Approval has been given to place Analytical Laboratories website on the ALMA site, which is an association of laboratory managers that provides a forum for improving laboratory management skills worldwide through conferences, short courses, networks, discussion groups, and other means of sharing ideas and knowledge. ALMA consists of members from commercial, international, and government entities.

SRNS helps Golden Harvest provide holiday turkeys to 2,000 families

SRNS responded to an urgent request from the Golden Harvest Food Bank for holiday turkeys for local families in the CSRA.

As a result of SRNS' \$20,000 contribution, Golden Harvest will be able to provide turkeys to 2000 families within 30-county service area in Georgia and South Carolina, with priority distribution to Augusta, Ga., and Allendale, Bamberg, Barnwell and McCormick counties in South Carolina.

"During an economic downturn as significant as the one we are living through, we know the holidays can be especially difficult for many families. I hope our contribution will enable these families to have a brighter holiday season," said Garry Flowers, SRNS President and CEO.

Michael Firmin, Golden Harvest's Executive Director explains, "The Food Bank has been strained to the limits of its capacity by the increased orders for groceries flowing in from the hundreds of church food pantries and other charitable agencies."

Firmin continued, "SRNS stepped into the breach just in time so that now, no needy family will have to skip the centerpiece of our beautiful



Clif Webb (left), Vice President of SRNS Public Affairs, presents Michael Firmin, Golden Harvest Executive Director, with a check funding the purchase of 2,000 turkeys for needy local families.

American holiday tradition, the roast turkey. May God continue to bless the Company and all their wonderful employees during the Christmas season!"



Big Delivery Two contactors skids on oversized trucks were delivered to SRS on December 3 in support of the Salt Waste Processing Facility. To ensure a smooth process, the SRNS Interface Management Office worked with Parsons, the SWPF contractor, and SRR to coordinate traffic, communications, field preparation and documentation. The 215-foot-long and 15-foot-high loads reached their destination safely.



SRNS President and CEO Garry Flowers (right) recently met with participants in the School-to-Work program.

Learning from the leader

SRNS president offers career advice to School-to-Work students

Students in the SRNS School-to-Work program recently took part in a “meet and greet” with SRNS President and CEO Garry Flowers. The Site’s current school-to-work population is composed of 10 high school seniors from schools within the CSRA, and 12 technical school students from Aiken and Augusta Technical colleges.

The event was scheduled at the request of Flowers, who has a keen interest in the student programs at SRS. He asked students to introduce themselves and share with him where they worked, which gave him a better sense of each student’s contribution to SRS.

The meeting initially centered on the students’ work assignments and their future collegiate and career goals; however, some students expressed curiosity about his work.

Carly Barron, a senior at Fox Creek High School, was the first to quiz Flowers, inquiring about his work days and how he became a CEO.

Taking the students on a journey of his more than 30-year career with Fluor Corporation, Flowers shared how he came to be assigned to the top post at SRNS. He jokingly added that, for him, “There is no such thing as a typical work day.”

Flowers concluded the meeting by offering some sage career advice for the students. He assured them a successful career awaits them as long as they “display a good attitude, receive a good education and are willing to make sacrifices,” especially as those sacrifices relate to business travel and relocation.

He also applauded their initiative to become School-to-Work participants, which he said was no easy feat, and strongly encouraged them to develop the much-needed soft skills required of workforce entrants.

The School-to-Work program was started at SRS in 1995. “Since then, nearly 700 students from local high school and technical colleges have participated in the program,” said Angela Martin, Program Coordinator.

60 and counting...

Sixty years ago, on November 28, 1950, the Savannah River Plant was announced by the United States Atomic Energy Commission as a new facility to be built and operated by the E.I. Du Pont de Nemours Company. Today, the Savannah River Site is part of the DOE complex and is managed and operated by SRNS. Through the years, certain people, places and events have come to stand out in the minds of the many who have worked on Site. Below, 60 of those are included - 30 old and 30 new. Take a moment to reminisce or learn something new.

1. Press Releases

At noon on Tuesday, November 28, 1950, the United States Atomic Energy Commission announced that the Savannah River Plant would be located in Aiken and Barnwell counties in South Carolina. Still today, announcements are made through press releases concerning advancements at the Site.



2. The Cloverleaf

The intersection of B and C roads was the first cloverleaf design to be used in the state of South Carolina. There are 230 miles of paved roads and many additional miles of dirt and gravel roads throughout the Site. When SRS' road system was built, it handled even more traffic than it does today, and the cloverleaf was designed to keep the traffic moving at the intersection.

3. Flagpoles

The 703-A flagpole is the only one on Site with a brass finial at the top. While most people agree that it was inspired by the Du Pont oval logo, some suggest that it represents a mushroom cloud. This little piece is one of the few remainders of the circular drive that welcomed visitors to the front of 703-A.

4. The Discovery of Neutrinos

In 1956, Dr. Clyde Cowan and Dr. Frederick Reines came from Los Alamos to perform an experiment in which they proved the existence of the neutrino and plugged some theoretical holes in the First Law of Thermodynamics. This work later received a Nobel Prize. Dr. Reines called the SRP reactors "the finest in the world" for their purposes. Today, all reactor operations have been permanently shut down and P reactor, where the scientists did their experiments, is undergoing complete deactivation and decommissioning.

5. R Reactor

On December 28, 1953, R Reactor became the first production-scale heavy water reactor in the world when it first reached criticality. It was also the first to be shut down.



6. Safety and Security Signs

From the old models to the new, the security and safety signs on Site are an important part of Site culture and serve to highlight achievements and to instill a dedication to both of those key themes.

SRS: 60 and counting...

7. Californium

Cf 252 was the heaviest element to be produced in commercial quantities at SRS. Although a market never developed, californium has many uses and is still being used on Site today in the K Area Californium shuffler.



8. The M Area Tree

The oak tree in M Area is one of few that have been on Site since before the construction of the Savannah River Plant in 1950. Most areas were stripped of vegetation when they were graded for buildings, but this tree survived construction and even outlasted M Area, which closed in October.

9. Gun Sites

The Gun Sites are some of the few remaining indications of a military presence on Site. Anti-aircraft personnel manned the Savannah River Plant from 1955 until 1960, although there is no record of any threat of air attack. There were two rings of gun sites. The guns at the outermost ring pivoted 360 degrees and the guns nearer to the facilities only pivoted 180 degrees, so they couldn't fire and hit the buildings. By 1958 these gun sites were abandoned.

10. Barricades

Originally, DuPont hired and trained individuals to serve on their own security force instead of contracting a security firm. Today, the WSI-SRS Team guards the gates. Similar structures were used for "clock alleys," where construction workers punched their time cards as they entered and left their areas each day.



11. The Woods at SRS

SRS is surrounded by a working pine plantation, planted with long leaf, loblolly and slash pines. The U.S. Forest Service was asked to plant trees on the thousands of acres that farmers had used for generations to plant their crops. When the planting process began in 1953, it was the largest mechanized planting program in the United States, with 400,000 trees planted per day during the first two years. The 100 millionth pine seedling was planted in 1968 and roughly one million seedlings have been planted every year since.

12. Project Crested Ice

The Savannah River Plant provided assistance to the Department of Defense when a bomber crashed in Thule, Greenland, in the 1960s and a large patch of icy ground was contaminated. Cleaning the area before the ice melted and contamination spread, Site employees provided planning assistance, radiological control and safe disposal of the aftermath. Today, only some detritus in the Old Burial Ground and a commemorative rigging clevis, given to AEC Plant Manager Nathaniel Stetson as a token of gratitude, remains from Project Crested Ice.

13. HWCTR

The Heavy Water Components Test Reactor, HWCTR, pronounced "Hector," has become a classic image on Site. It was built in the early 1960s to prove that heavy water technology, which is what SRS reactors used, could be used to produce electricity. It was proven, but the technology was scrapped in this country, although it is the basis for Canada's CANDU reactors. HWCTR was permanently sealed and is being decommissioned today.

SRS: 60 and counting...



14. Ellenton

Ellenton, S.C., was created as a train stop for the Port Royal Railroad. A section of the railroad line ran through the farmlands of Robert Jefferson Dunbar who gave acreage to the railroad company for their right-of-way. He also gave land for the streets when Ellenton was laid out in 1870. The superintendent of the railroad construction, Mr. Millet, was a boarder at Dunbar's home and there became fascinated with an attractive nineteen-year-old named Ellen. He named the railroad crossing "Ellen's Town" in her honor and the name evolved into Ellenton in 1873. Ellenton was one of six towns and several small communities that had to be relocated for the construction of the Savannah River Plant. About 6,000 people (600 from Ellenton) were moved.

15. Cemeteries

When the Savannah River Plant was announced, the inhabitants had the option to leave their buried family members and friends or to transport them to their new locations. Many cemeteries remain on Site today, some even containing graves dating back to the American Revolution, as a reminder of the towns and people who lived on the land before SRS.

16. Cafeterias

Instead of leaving each day to get lunch off Site, many SRS employees have eaten at cafeterias on Site since the 1950s and continue to do so. Although the biggest cafeteria in A Area was removed, a large cafeteria in H Area and smaller ones around the Site are still in use.

17. Plutonium 238 and Neptunium

Manufactured in various quantities from 1958 through the 1980s,

plutonium 238 was used in space missions, satellites, remote weather stations in the Arctic and under the sea and in human heart pacemakers. Apollo 12 astronauts placed SRP Pu-238 on the moon in 1969. SRS is still involved with the material today. Recently, SRS stabilized and shipped the last of its neptunium inventory to provide a source of power to satisfy the nation's space program needs for the next 20-30 years. It will be loaded into reactors to produce plutonium 238 for NASA's deep space probes.

18. Shielded Cells

Shielded cells allow a user to safely work with a variety of highly radioactive samples and items in support of various research and development initiatives. Skilled operators, standing safely outside the cells, use manipulator arms to perform work with great dexterity inside the cells.



19. Fire Stations

Key components of safety and security, fire stations have long been a part of SRS.

20. Savannah River Ecology Lab

In 1951, Dr. Eugene Odum of the University of Georgia, a pioneer of modern ecology, and other University of Georgia researchers were asked to conduct censuses of plants and animals before the nuclear production facilities began operations. Research continued, and a permanent ecology laboratory was established at SRS in 1961. Today, it is still operated by the University of Georgia and supported by federal, state, industry and foundation funding.

SRS: 60 and counting...



21. The Glass Apparatus Lab

The Glass Apparatus Laboratory (GAL) has been a part of the Savannah River Site and has supported research since 1953. In the early days, it was called the “glass shop” and was part of the Savannah River Lab, today known as the Savannah River National Laboratory. Today, the GAL continues its tradition of creating custom glassware, as well as offering other services, including, but not limited to, the design, construction, modification, repair and preassembly of test apparatus used for research and development

22. Carpooling

There was a time at SRS when carpools were more common. A shuttle service supported the effort and shelters were built, and still remain, at which carpoolers could wait for their rides.



23. Railroads

The SRS rail system began construction in 1951 and became the largest non-public rail system in South Carolina. Today, only 36 miles of track are managed.

24. Roads

Most of the roads on Site are identified by an alphanumeric designation, such as Road 2 or Road C. Unnumbered secondary roads are named for nearby places, like Hog Barn Road. An exception is Burma Road, which does not lead to Myanmar. Located between Ellenton and F Area, it is a notably rough dirt track that was jokingly named for the exceptionally rough Burma Road used to transport Allied soldiers and supplies into China during World War II.

25. H Canyon

H Canyon is the only hardened nuclear chemical separations plant still in operation in the United States. Constructed in the early 1950s and beginning operations in 1955, the facility historically recovered uranium-235 and neptunium-237 from aluminum-clad, enriched-uranium fuel tubes from Site nuclear reactors and other domestic and foreign research reactors using a chemical separations process.

H Canyon facilities currently disposition a large inventory of used nuclear fuel from foreign and domestic research reactors and excess enriched uranium and plutonium bearing materials across the DOE complex. This supports both the DOE environmental cleanup and nuclear nonproliferation goals, reduces the footprint and costs associated with maintaining the various DOE sites and allows for the recovery of enriched uranium for blending down into low enriched uranium fuel.

26. M Area

M Area was where the nuclear production process started at SRS. The facilities made the reactor fuel rods, target rods and safety rods that began and controlled the nuclear reaction in the reactor vessels. Through a co-extrusion process, workers took uranium and lithium from Tennessee and cast it in aluminum formed in tubes. Today, all the production buildings have now been decontaminated and demolished.

SRS: 60 and counting...



27. Glove Boxes

Glove boxes are sealed containers that are designed to allow manipulation of objects where a separate atmosphere is desired. Gloves built into the sides of the glove boxes are arranged so that the user can place his or her hands into them and perform tasks inside the box without breaking containment so the user can work with hazardous substances, such as radioactive materials. Part, or all, of the box is usually transparent to allow the user to see the material he or she is working with.



28. Tritium

Tritium continues to be important to the Savannah River Site. The shifting requirements for plutonium versus tritium were one of the reasons the reactors were designed as they are. However, when the reactors were first loaded, tritium was only produced in the control rods.

29. Shipments

On December 28, 1954, SRP successfully shipped its first nuclear product, Plutonium 239 to the AEC complex, which was so momentous that the top ranking construction, operations and AEC managers posed for a celebratory photograph. The subject matter was secret, and the photograph was not published in the Savannah River Plant News until the 20th anniversary of operations in February 1972. When the first shipment of tritium went off Site in November of the following year, the event was even more guarded. Today however, SRS ships and receives many forms of radioactive materials without such secrecy.



30. Contractors of the Site

SRS was first constructed by Du Pont, who was the single contractor for the Site until 1989. Afterwards, the process of organization changed to include many contractors and subcontractors who have various responsibilities on Site. Today, along with other contractors and subcontractors, Savannah River Nuclear Solutions is the managing and operating contractor for SRS, Savannah River Remediation is responsible for the management and disposition of liquid radioactive waste and the WSI-Savannah River Site Team provides security services.