

● AUGUST 2014

SAVANNAH RIVER NUCLEAR SOLUTIONS



SRNS Today



Moving Forward

Modifications to H Canyon support continued operations and sustainability



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Welcome

to the August 2014 edition of

SRNS Today



Carol A. Johnson
Carol Johnson
 SRNS President and CEO

Historically, August is hot, muggy and slow. At the Savannah River Site, it was hot and muggy but most definitely not slow.

In fact, SRNS achieved a number of significant accomplishments during August.

In the completion of a major milestone, SRS began converting a specific inventory of non-pit plutonium, known as Alternate Feedstock 2 (AFS-2), into an oxide form, in preparation for its final disposition. The project makes use of H Canyon and HB Line, the nation's only large-scale nuclear materials separations facilities. I'm proud of the teamwork shown across multiple Site organizations to meet this milestone so successfully. I'm also pleased that this project shows the SRNS ability to leverage Environmental Management facilities to serve National Nuclear Security Administration missions.

In order to prepare H Canyon for this activity, SRNS safely completed 16 modifications to the facility. The project consisted of facility modifications and repairs, revision to the safety analysis and reference documents, and implementation activities including procedure changes and training of personnel. These modifications were completed in a swift five months. Not only did this project enable the start up of AFS-2, it also supports the continued operation and sustainability of H Canyon.

SRNS employees were also busy in L Basin, vacuuming up "cobwebs." Sounds like housekeeping, doesn't it? But in L Basin, these "cobwebs" (a mix of bacteria and microbes) were growing on underwater used nuclear fuel bundles. Please see Page 5 for more on how our L Area employees solved this challenge.

All these accomplishments were infused with innovation, teamwork and cooperation. Most of all, they're great examples of how SRNS makes the world safer.

I hope you enjoy this edition of SRNS Today. As always, thank you for your interest in Savannah River Nuclear Solutions.

About Savannah River Nuclear Solutions

Savannah River Nuclear Solutions, LLC, is a Fluor-led company whose members are Fluor Federal Services, Newport News Nuclear and Honeywell. Since August 2008, SRNS has been the management and operating contractor for the Savannah River Site, a Department of Energy-owned site near Aiken, South Carolina, including the Savannah River National Laboratory. The SRNS corporate and community offices are located in the renovated 1912 "Old Post Office" building in Aiken, S.C. The primary initiatives of SRNS are national security, clean energy and environmental stewardship. SRNS Today is published monthly by SRNS Corporate Communications to inform our stakeholders of the company's operational and community-related activities. If you have questions or comments, please contact us at 803.952.9584 or visit our website.

www.savannahrivenuclearsolutions.com



H Canyon and HB Line are the nation's only large-scale nuclear materials separations facilities.

Plutonium oxide production starts up; milestone is key in NNSA nonproliferation mission

SRS has reached a key milestone in the National Nuclear Security Administration's (NNSA) nonproliferation mission.

Making use of H Canyon and HB Line, the nation's only large-scale nuclear materials separations facilities, SRS has begun converting a specific inventory of non-pit plutonium, known as Alternate Feedstock 2 (AFS-2), into an oxide form, which prepares it for its final disposition.

After more than two years of preparation and multiple assessments to verify the facility's readiness, SRNS initiated operations to produce the plutonium oxide.

"This is a critical campaign for H Area in preparing plutonium for final disposition, and demonstrates our ability to leverage EM facilities to serve NNSA missions," said SRNS President and CEO Carol Johnson.

"I am most proud of the employees, who have worked tirelessly to ensure the activities required to initiate the production of plutonium oxide occurred," she said. "It required a high level of collaboration with support from multiple SRNS organizations that epitomizes our commitment to success through teamwork. No individual project succeeds without the hard work and dedication of our entire workforce keeping an eye on safety, security and disciplined operations."

This milestone was made possible by an agreement between NNSA, which is a semi-autonomous agency within the U.S. Department of Energy (DOE), and DOE's Office of Environmental Management (EM), which is the owner and landlord of the SRS facilities. The use



"This is a critical campaign for H Area in preparing plutonium for final disposition, and demonstrates our ability to leverage EM facilities to serve NNSA missions."

Carol Johnson



of EM's H Canyon and HB Line allows NNSA to take advantage of the vast nuclear processing experience in these two facilities. Over the years, these facilities have been used for missions that range from recovering plutonium-238 for use in deep space exploration to blending down highly enriched uranium for conversion to fuel to supply the nation's energy needs.

A significant amount of the non-pit plutonium (a "pit" is the core of a nuclear weapon) that has been consolidated from across the DOE complex exists as AFS-2. The AFS-2 materials cannot be dispositioned—either in the planned Mixed Oxide (MOX) facility or other disposition paths—without first being converted to an oxide form.

Because the production of this particular plutonium oxide is a new mission, extensive preparations were required, including the writing of hundreds of new procedures and training more than 100 employees in the new processes.

SRNS completes facility modifications to H Canyon

In five months, SRNS safely completed 16 facility modifications that could have taken up to eight months to complete in support of the continued operation and sustainability of the H Canyon facility at SRS.

“Although H Canyon was constructed in the early 1950s, SRNS continues to upgrade the facility to ensure the Canyon is available for future missions and meets the current safety standards for nuclear facilities,” said Paul Hunt, Senior Vice President, Environmental Management Operations.

The project consisted of facility modifications and repairs, revision to the safety analysis and reference documents, and implementation activities including procedure changes and training of personnel.

“The job started with defining the scope of work in January,” said Hunt. “Next, Engineering worked 10 hours a day in January and February developing design changes. Our Construction Department started field work in March. They worked six days a week, 10 hours a day until the project was complete in July.”

Construction completed all 16 facility modifications during this time, including sealing abandoned piping, upgrading High Efficiency Particulate Air (HEPA) filters in the central exhaust system and replacing doors in the exhaust building. This work was heavy construction work involving welding, cutting of pipe, heavy lifting and pouring of concrete. Working conditions were difficult, often requiring workers to be dressed in fresh air supplied plastic suits or respirators, and was done in areas of radiological contamination or confined spaces.

Much of the work was done in the heat and humidity of the South Carolina summer, so heat stress on workers was a constant threat.



Workers prepare to enter H Canyon for recent facility modifications.

“With such a complex and hazardous project and with the number of people involved, more pre-planning, mockups and oversight were conducted to ensure the work would be performed safely and without incident,” said Fred Dohse, SRNS Executive Vice President and Chief Operations Officer. “It is a testament to the safety consciousness of our workforce that so many groups came together and safely completed the project. In this project, like many others in our company, we were truly our brother’s and sister’s keeper.”

H Canyon is the only hardened nuclear chemical separations plant still in operation in the U.S. The building resembles a canyon because the processing areas resemble a gorge in a deep valley between steeply vertical cliffs. The facility is currently dissolving, purifying and preparing for disposal a variety of nuclear materials.

End of an era: ARMS I officially retired

The transition to a new era in the management of the nation’s tritium reservoirs is officially complete. One year after SRNS brought the new Automated Reservoir Management System (ARMS II) on line, the old system, which since 1988 had tracked the complete life cycle of every tritium reservoir in the nation’s stockpile, was formally retired.

When ARMS II came on line in July 2013, bringing the advantages of modern hardware and software, the old ARMS I was removed from routine use, but it remained available for one year as an information resource if needed. As the year expired, SRNS and National Nuclear Security Administration (NNSA) personnel gathered to watch the final document being signed, verifying that ARMS I was no longer required. With that, the old system was permanently shut down.

The startup of ARMS II – followed by this year’s retirement of ARMS I – capped an effort that began in 2006. The lengthy initiative included programming nearly one million lines of current ARMS code, three separate phases of testing, and the effective migration of 25 years of historical processing data. Most significantly, it required coordination with stakeholders across the NNSA Nuclear Security Enterprise to ensure there were no mission impacts.



Joe Riddle (left) of Tritium Process Control and Bill West of SRTE Engineering sign the final checklist initiating the formal shutdown of the old ARMS I system.



Fuel bundles in L Disassembly Basin before (left, in circle) and after removal of “cobwebs”

SRS completes vacuuming of ‘cobwebs’ in L Basin

The once mysterious “cobwebs” found in the L Disassembly Basin at SRS have been removed, as part of the effort to maintain the highest safety and water quality standards in the facility.

The “cobwebs” were found in 2011 during routine surveillance of the basin, which stores spent nuclear fuel bundles under water. Samples were sent to the Savannah River National Laboratory and the University of South Carolina for testing. Scientists at both facilities determined that the “cobwebs” were made up of a broad variety of bacteria along with a few other types of microbes. The “cobwebs” were then monitored for growth patterns and changes.

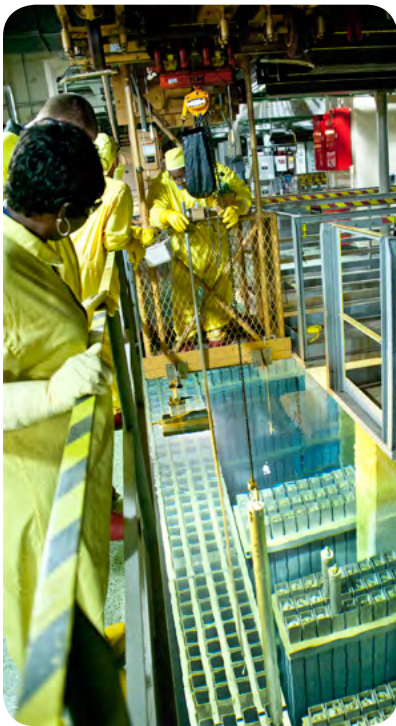
Although not found to be harmful, the “cobwebs” were thick in areas and beginning to cover the top of the fuel bundles, hiding the fuel bundle identification numbers that are regularly inspected to ensure proper inventory control.

“The floor of the basin is regularly vacuumed to remove debris,” said L Basin Operations Support Engineer Rich Deible. “Vacuuming the ‘cobwebs’ proved to be a new challenge, as we had never vacuumed the tops of fuel racks before.” Completing the project ahead of schedule ensured continued safe operations within the facility.

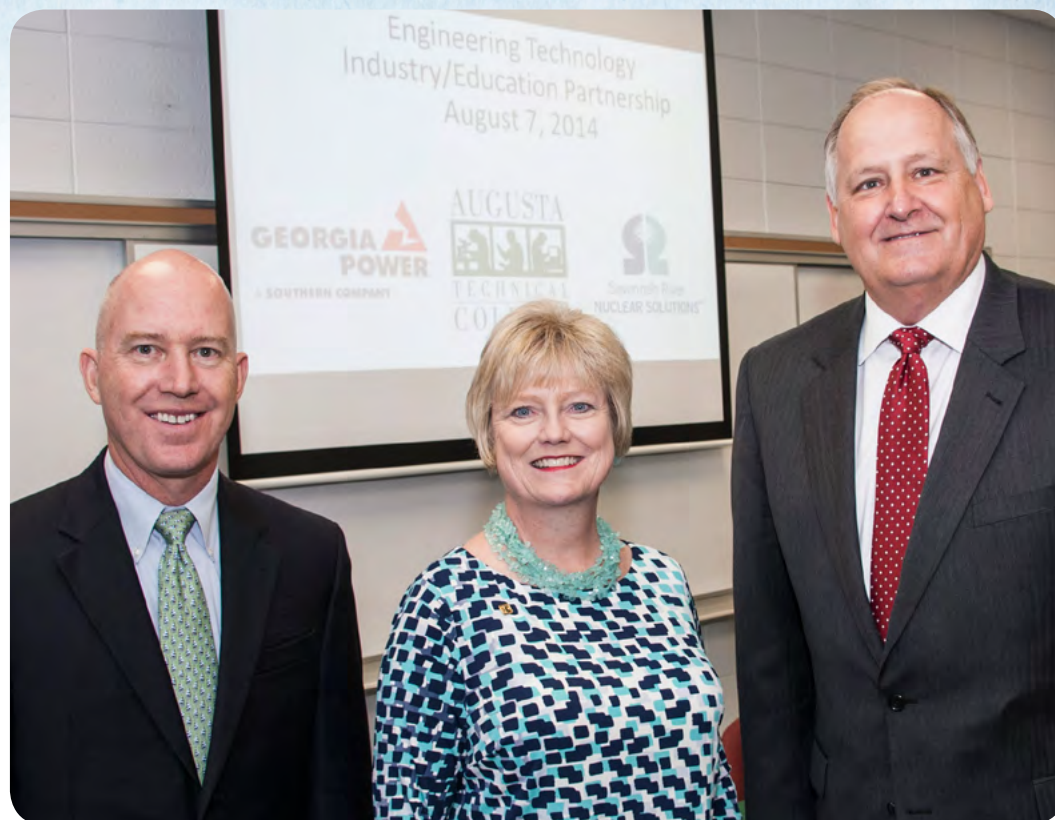
A special kind of vacuum that uses filters much like water filters found in homes was used to remove the web-like material. The filter cartridges will be sampled and characterized to determine the proper disposal path.

Underwater storage facilities, called disassembly basins, were located in all five SRS production reactor areas. To avoid the cost of operating multiple facilities, SRS decided in 1998 to consolidate all of SRS’s stored used fuel into the much larger, recently refurbished L Basin. By 2003, L Basin was SRS’s only fuel receipt and storage facility. L Basin currently stores 30 metric tons of heavy metal in used fuel.

L Basin has concrete walls two and a half to seven feet thick and holds approximately 3.4 million gallons of water with pool depths of 17 to 50 feet. All used fuel assemblies are “cool” enough to be safely stored without an active basin water cooling system. The basin water provides shielding to protect workers from radiation.



SRNS employees in L Basin



Carol Johnson, SRNS President and CEO joins Jeff Gasser, Site Manager, Plant Vogtle (left), and Dr. Rick Hall, Vice President of Academic Affairs, Augusta Technical College, to sign an Agreement of Understanding, creating a mutually beneficial partnership to support the nuclear industry throughout the region.

SRNS joins Augusta Tech, Georgia Power to support nuclear engineering programs

Augusta Technical College announced a formal Agreement of Understanding today between the College, Georgia Power and SRNS in support of the Nuclear Engineering Technology Program at Augusta Tech, recognizing SRNS as an industry partner.

"This partnership is a win-win situation for everyone," said Bob Collins, Augusta Technical College Instructor, Nuclear Engineering Technology Program. "It's a win for Savannah River Nuclear Solutions because they get high quality employees that are now exempt from the majority of their fundamental training. It's a win for Georgia Power because it balances out their workforce needs. It's a win for the college because we accomplish our mission to provide students with skills and knowledge needed by local industries. And, most importantly, it's a win for the community because local people are placed in local jobs."

Georgia Power has served as the primary utility partner with Augusta Technical College since the Nuclear Engineering Technology Program was developed in 2008. This program began admitting students in the fall of 2010. As the need to fill nuclear sector job vacancies has grown, so has interest in this area of study. SRNS recognized the value of the program and sought out an opportunity to join the partnership.

Over 75 students have graduated since the inception of the

program, and most are currently working at Georgia Power's Plant Vogtle and SRNS facilities at the Savannah River Site.

Serving as an industry partner also means SRNS will collaborate on developing curriculum, support outreach efforts to students and participate on advisory councils.

"We have a long history of working closely with and supporting Augusta Technical College," said Carol Johnson, SRNS President and CEO. "We're pleased that all involved will greatly benefit from this agreement."

The Engineering Technology programs at Augusta Technical College are high-tech, associate degree programs that prepare graduates for careers in plant maintenance and operations at commercial nuclear facilities such as Georgia Power's Plant Vogtle, DOE nuclear facilities such as those operated by SRNS, and other related nuclear support companies. These robust programs span three technical areas to include electrical, mechanical and nuclear specific courses.

"We're excited to have SRNS as a major partner in Augusta Tech's nuclear engineering technology programs," said Jeff Gasser, Southern Nuclear Executive Vice President of Operational Readiness and Site Integration for Georgia Power Vogtle 3 and 4 Project. "This partnership is another step forward to provide our future workforce the tools and the skills they need to prepare them for the challenges of tomorrow."

Paving the way

Augusta Tech Nuclear Program provides stepping stone to a career at SRNS

The knowledge that Montrice Cormier gained as a member of the first class to graduate from Augusta Technical College's Nuclear Engineering Technology program prepared her well for her career with SRNS as a production operator in the Savannah River Tritium Enterprise.



"Augusta Tech prepared me in many ways including teaching the fundamentals of nuclear energy, 'just culture,' safety and security. I was able to adapt quickly to the quality of work that is to be performed."

"The nuclear tech program was a stepping stone for me to obtain a career and allow me to grow in this industry," she said.

After seeing a flier about the college's new nuclear technology program, Cormier attended an informational meeting, where she learned about the program and the employment opportunities it could lead to. That caught her interest, and she enrolled, graduating with the program's first class in 2012.

She spent several months with a chemical company in Augusta before seeing the announcement of a job opening in SRTE, the nation's only provider of tritium for U.S. defense needs.

"Augusta Tech prepared me in many ways including teaching the fundamentals of nuclear energy, 'just culture,' safety and security," she said. "The rigorous curriculum helped me become more disciplined, and I was able to adapt quickly to the quality of work that is to be performed."



SRNS employee Ryan Cullum (left) asks about Helping Hands, the organization that Kevin Banks represented at the SRS United Way Agency Day.

United Way showcases work during Agency Day at SRS

United Way (UW) agencies from the local community recently showcased their work for UW Agency Day at SRS. This event gave SRNS employees an opportunity to learn about various UW organizations that benefit from the annual SRNS employee UW campaign, which is taking place during August.

"Today gives us a chance to explain where your generous contributions are going. I know that I want to feel comfortable with an organization before I entrust them with my charitable dollars, and this open house gives people the chance to ask questions and make sure they are giving to an agency they feel passionate about," said Sharon Rodgers, President, UW of Aiken County.

According to Kim Grimes, Resource Development Manager, UW of the CSRA, SRS employees play an active role in the Citizens Review Panel, which determines how their 23 partner agencies receive funding.

"Not only does United Way give to a multitude of causes, but it's also very accountable," said Grimes. "It's not the UW agency staff members who make the final decisions about funding; however, it's the volunteers from the Citizens Review Panel who visit the partner agencies to examine their budgets, assess the outcomes and make sure the money is spent effectively. Some of the volunteers who serve on the Citizens Review Panel are SRS employees."

Each exhibit at the event represented how UW helps people with the building blocks of life—a good education, access to healthcare and financial stability.

Augusta Training Shop (ATS), one of the UW of the CSRA's partner agencies at the event, employs mentally and physically challenged adults. Wendy Thoman, ATS Executive Assistant, described how her organization teaches their employees the skills to refinish furniture and re-cane chairs. The employees earn a salary for their craftsmanship.

Thoman explained that an ATS employee who is nonverbal taught himself how to make a snowflake out of reeds. He then shared the intricate technique with his coworkers, and now it has become a highly successful project that was featured in *Garden and Gun*, a national magazine.

SRNS employees raised over \$1 million to support the UW campaign in 2013. In addition, \$200,000 was provided by the SRNS parent companies.

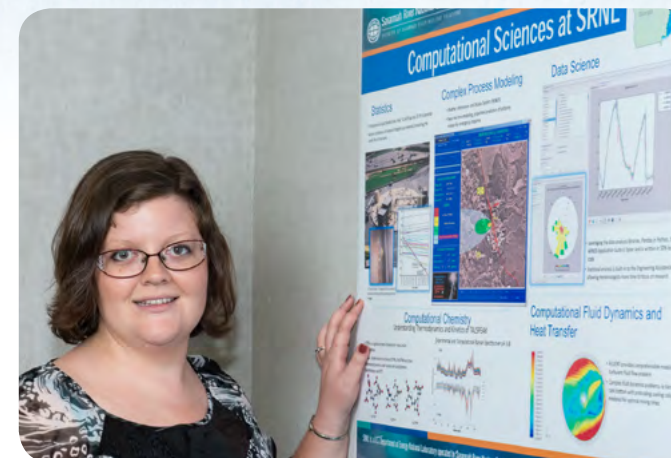


Learning more about the Savannah River Site

On Aug. 14, staffers from South Carolina and Georgia legislative offices and members of the SRS Community Reuse Organization (SRSCRO) toured the Savannah River Site. Tour participants included (from left) Yvette Rowland, Midlands Regional Director, Office of Senator Lindsey Graham; Craig Link, Legislative Assistant, Office of Congressman Jim Clyburn; Jessica Hayes, District Director, Office of Congressman Paul Broun; Nancy Bobbitt, Senior Field Representative, Office of Senator Johnny Isakson; Sarah Beaulieu, Special Assistant, Office of Congressman Joe Wilson; Will Holloway, Legislative Assistant, Office of Senator Tim Scott; Brianna Hewett, Legislative Counsel, Office of Congressman Tom Rice; John Ray, SRSCRO board member; Caleb Paxton, Legislative Assistant, Office of Congressman Jeff Duncan; and Tim Frazier, SRSCRO consultant.

Johnson addresses Aiken Chamber of Commerce

On August 1, SRNS President and CEO Carol Johnson was the keynote speaker at a meeting of the Greater Aiken Chamber of Commerce. Johnson noted that August 2014 marks the six-year anniversary of SRNS becoming the SRS management and operations contractor. She also discussed the importance of SRS to the nation, the region and the community.



Holly Watson, the SRNL practicum coordinator for the DOE CSGF Program, was one of 21 presenters at a poster session during the annual Program Review in Arlington, Va.

Holly Watson represents SRNL at Computational Science Fellowship Program Review

Wanting to entice the nation's brightest doctoral candidates to the SRNL Computational Sciences Division, Holly Watson simulated a model already put in place by DOE and proven by the success of more than 300 students.

Watson joined students, peers, academic advisors and DOE representatives at the Computational Science Graduate Fellowship (CSGF) Annual Program Review, held July 14-17 in Arlington, Va. She was one of 21 presenters from DOE laboratories at a poster session that showcased the computational science research and employment opportunities at their facilities. Her poster highlighted statistics, complex process modeling, data science, computational chemistry, computational fluid dynamics and heat transfer at the lab. Watson is the SRNL practicum coordinator for CSGF.

The CSGF Program, sponsored by DOE, has three parts, comprising an interdisciplinary program of study, a practicum at a DOE laboratory, and an annual program review to foster networking among the program fellows.

"The CSGF program is an ideal setting for DOE labs to attract the right fellowship candidate," Watson said. "The students have backgrounds in applied mathematics, theoretical chemistry, astrophysics and computational biology. The common theme in all of their research interests is utilizing the capability of modern computer systems to conduct large-scale simulations to gain insight, which aligns nicely with work we are doing at SRNL."

Because computational science is interdisciplinary by nature, CSGF's unique study program provides a collaborative platform for scientists in mathematics, engineering and computer science with a shared interest in research.



Patrick A. Westover (right) of SRNL accepts the American Glovebox Society Keystone Award.

Glovebox Society honors SRNL's Patrick Westover with Keystone Award

Patrick A. Westover of SRNL was awarded the American Glovebox Society (AGS) Keystone Award at the 2014 AGS Annual Conference held in Miami Beach, Fla.

The Keystone Award, AGS's highest service award, is presented to individuals who have demonstrated exemplary service over an extended period of time.

Westover is a longtime member of AGS and has served honorably as a member of the Board of Directors (2006–2008), Secretary (2008), Treasurer (2009), President-Elect (2010), and President (2011–2012). Additionally, Westover is an active member of the AGS Standards Development Committee where he has contributed to several published standards and has served as the lead author for "Guidelines for Gloveboxes, Third Edition."

Paul Contreras, AGS President, said, "With nearly 20 years of service to AGS and the glovebox industry, Mr. Westover was more than deserving of this award. The AGS Board of Directors took great pride in recognizing Patrick for both his dedication and professionalism."



SRNS President and CEO Carol Johnson addresses SRNS management and interns at the recent reception.

Interns celebrate their SRNS experience with reception

SRNS President and CEO Carol Johnson recently spoke at a reception held at Newberry Hall in Aiken, S.C., for the 101 interns who assisted with a variety of projects and programs this summer. Johnson thanked the students for their hard work and commitment, stating that our investment into these young minds brings a spark, a fresh set of ideas and additional enthusiasm to the company. Since 2008, when SRNS became the management and operations contractor at SRS, more than 800 interns have participated in this program.



University of South Carolina student and SRNS intern Anvi Patel

USC student experiences life as a nuclear worker during SRNS internship

SRNS continues to open windows of opportunity to expand learning experiences for college students. University of South Carolina (USC) junior Anvi Patel received much more than she expected during her summer-long internship at SRS.

Though many first-time interns believe their time will be filled with filing reports, running errands and shadowing employees, to her amazement, Patel received extensive on-the-job training and hands-on work.

Under the close supervision of seasoned engineers, Patel helped revise calculations necessary to make changes in plant design involving pipes within a large production facility currently under construction at SRS. The pipes will be used to move industrial fluids from one location to another within the new building.

Patel asserts that the practical experience gained this summer has been highly beneficial towards supporting her career plans to become a chemical engineer.

"It's this type of internship that makes the content we learn in class more realistic," said Patel.

However, the "icing on the cake" for Patel this summer was a recent visit to the site's huge H Canyon chemical separations facility. "I really enjoyed how the chemical processes are laid out. It is almost identical to what I have studied at USC. I can identify with it easily," Patel stated.

This summer, SRNS has provided more than 101 college students the opportunity to participate in internships throughout the 310 square mile DOE nuclear reservation.

The internships are important because they allow students to see firsthand where their interest lies and decide which occupations may be a part of their future through hands-on, real life work at a large company. And in the process, these talented young adults develop highly valued skills and collect helpful knowledge related to their field of study.



Information Pods coming to Beaufort

In September, the SRS Information Pods will travel to Beaufort, S.C. The free event will be held Monday, Sept. 22, at Beaufort High School, 84 Sea Island Parkway.

Participants at the Information Pods may select two of the following four presentations to attend: Nuclear Materials Management; Environmental Monitoring and Restoration; Waste Management; and the Savannah River National Laboratory.

Registration will begin at 5 p.m. on the day of the event and is on a first come, first served basis. Exhibits and poster displays will also begin at 5 p.m., with presentations starting at 6 p.m. and concluding by 8 p.m.

For directions to the Beaufort Information Pods and to see photos from the Aiken and Barnwell Information Pods, please visit www.srs.gov/general/outreach/srs_info_pods.

SRNS employees elected to top posts in Leadership Association

Lee Schifer, SRNS Director of Tritium Operations, has been elected 2014-2015 president of the Savannah River Site Leadership Association (SRSLA), and Byron Bush of SRNS Interface Management was selected as the organization's executive vice president. In all, 14 SRNS employees were tapped for positions in SRSLA.

SRSLA is the Savannah River Site chapter of the National Management Association, with membership open to all SRS employees – including all contractors and federal offices – with an interest in leadership development.

"I'm excited about the Leadership Association's plans for this year," says Schifer. "Every month, we're sponsoring opportunities for people to network with and learn from leaders from all across the site, including companies and DOE offices that they might not have contact with otherwise. And we're stepping up the number of educational opportunities we're offering, like lunchtime webinars that are open to any employee who wants to sharpen their skills."

The organization hosts monthly meetings, at which members and guests network with other leaders from across the Site and learn how the Site's various entities are applying principles of leadership. SRSLA also hosts webinars or other educational sessions, open to all SRS personnel, about leadership topics.

In the community, SRSLA sponsors an annual middle school speech contest, and is a sponsor of the regional Future City competition for middle school students.

Mark your calendars for CSRA College Night September 11 in Augusta

High school students will have an opportunity to win scholarships and meet recruiters from more than 150 colleges and universities at this year's CSRA College Night on Sept. 11 from 5-8:30 p.m. at the James Brown Arena in Augusta, Ga.

Admission is free and open to the public.

College Night provides a way for CSRA students and parents to:

- Obtain information on educational opportunities, admission requirements and tuition
- Speak with representatives from various professional societies who will be on hand to provide information in areas such as engineering, management, chemical science and nuclear science
- Attend seminars to get information about HOPE and LIFE scholarships, financial aid and essay writing for college admissions, scholarships and joint enrollment
- Visit a counseling center that will be open throughout the evening where students and parents can seek advice about the college application process from high school advisors and admissions professionals
- Visit a career exploration area where students can discover their options after college. Students will be able to participate in a quick "card sort" interest inventory to validate their career choice.

To qualify for a College Night scholarship, students must be high school juniors or seniors and graduate with a GPA equal or above 2.5 on a 4.0 scale (or equivalent). Students must attend and register in person at CSRA College Night to be eligible.

For more information, visit our web site at <http://www.srs.gov>, click on Outreach> Educational Outreach Programs> CSRA College Night: http://www.srs.gov/general/outreach/edoutrch/coll_night.htm.

We make the world **safer.**

SRNS

Developing innovative approaches
to nuclear materials challenges

Supplying tritium for our country's
nuclear weapons deterrent

Securing nuclear materials
to prevent unwanted proliferation

Transforming nuclear materials
into assets and stable wasteforms



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