

● AUGUST 2017

SAVANNAH RIVER NUCLEAR SOLUTIONS



# SRNS Today



## Training to save lives

SRS Fire Department practices techniques for extrication

### This month

TRU shipments complete • VPP Star of Excellence • New radio system • United Way





**Stuart MacVean**  
SRNS President and CEO

# Welcome

to the August 2017 edition of

# SRNS Today

At SRNS, safely delivering results is a central tenet of the standard of excellence that we work towards every day. We are committed to meeting our customers expectations to ensure objectives, goals, and deadlines are met while being good stewards of resources. We are also committed to ensuring that all aspects of our work are conducted in a safe manner as we deliver those results.

On August 28, our safety efforts were recognized with the award of the 16th DOE Voluntary Protection Program (VPP) Star of Excellence for demonstrating excellence in safety programs, performance and culture at the Savannah River Site. In addition, three SRNS employees were recognized at the Voluntary Protection Programs Participants Association's (VPPPS) National Conference for their individual efforts in safety. In all, SRNS has received more than 110 safety-related commendations since becoming the Site's management and operations contractor in 2008.

This month we delivered results by completing the FY17 commitment for SRS shipments to the Waste Isolation Pilot Plant in New Mexico, shipping about 55 cubic meters of TRU waste out of South Carolina. This was a significant effort to ensure all people, processes and materials were ready to resume shipments following a halt of the operation in 2014. These efforts position the Site to be ready to move nuclear waste out of South Carolina in the future.

Other significant results delivered include the installation of a new radio communication system to replace the outdated system, as well as the use of an innovative approach to use natural cleanup technology to remove legacy contamination.

I hope that you enjoy reading about some of the exciting work under way at SRS.



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 employees and other 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.

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## FY shipments complete

## SRNS ships nuclear waste out of South Carolina

SRNS completed the ninth TRUPACT II shipment to the Waste Isolation Pilot Plant, finalizing the commitment for FY17 to ship about 55 cubic meters of TRU waste out of South Carolina.

In order to be eligible to ship waste for emplacement at WIPP, SRS verified the TRU waste met all of the requirements for safe transportation and disposal. As a part of the verification, all waste was determined to meet the more stringent WIPP waste acceptance criteria (WAC), including chemical compatibility evaluations.

SRS updated (and received approval for) TRU characterization, packaging and certification programs and all waste certified under previous characterization programs was reviewed to verify it met the new waste acceptance criteria.

This was a significant effort by SRNS employees to resume shipping after a halt of the operation in 2014.

The Waste Isolation Pilot Plant (WIPP) is a critical component to EMs cleanup mission, providing a safe, long-term storage solution for transuranic waste generated over the past six decades. DOE-EM took a deliberate approach in resuming WIPP operations. The entire DOE-EM complex worked together to ensure the materials, processes and people were safe, before operations resumed.



Transuranic waste is prepared for shipment to New Mexico.



Andy Preston (EC&ACP Subcontract Technical Representative) (from left), Scott Sommers (EC&ACP Design Authority), and Dennis Jackson (SRNL Principle Investigator) review humate mixing and injection data.

# Cleaning up, naturally

## Innovation leads to low-cost technology for SRS

An innovative technology is being used to remove unwanted chemicals from groundwater found beneath a portion of SRS by using a common agricultural product known as humate.

The groundwater contamination is a result of using industrial solvents to remove grease from materials manufactured for use in the site's now closed nuclear reactors.

In the 1950s, during the Cold War with the Soviet Union, it was common practice throughout the nation to place byproducts, such as used degreasers, in nearby unlined basins.

"We have been actively remediating the groundwater plume beneath A and M Areas since the mid-1980s as it slowly moves towards the center of the site," said Mike Griffith, SRNS Manager, Area Completion Projects. "We have used a variety of technologies over the years to continually remove contaminants from this plume, which is about four square miles in size. As a result, the level of concentration has been reduced to very low levels."

Working with South Carolina DHEC and the Savannah River National Laboratory, the site is now conducting a field demonstration using

humate and other nutrients to promote an increase in the population of organisms naturally found within groundwater native to this region. These organisms excrete enzymes that attack and degrade the solvents, converting them into a benign substance.

"If we achieve the degree of success expected, we plan to expand the treatment within the M Area TCE plume and offer this environmental cleanup technology to other Department of Energy sites across the U.S.," said Griffith.

Griffith explained that the cost of this approach to cleanup of underground chemicals is inexpensive compared to other methods used in the past.

Since 1983, a significant amount of the solvent released has been recovered using conventional techniques, such as highly mechanized air strippers and soil vapor extraction units.

The use of humate as a bio-remediation technology is another example of the innovative research and development capabilities possessed at SRS, where science is put to work to address some of the world's most pressing industrial and nuclear challenges.



Capt. Tony Brown supports the driver door as Firefighter/Emergency Medical Technician (FF/EMT) Kevin Faircloth removes it with the Jaws of Life, during a training evolution.



FF/EMT Tony Smiley removes the roof by cutting the passenger front door post, while FF/Medic Heath Fisher removes the door.

## SRS Fire Department devotes time to extrication training

Automobile accidents happen every day and remain one of the highest risks for injury both on and off the job. The SRS Fire Department recently trained for a specific type of automobile accident that requires the use of equipment to remove or extricate a victim in the event that they become trapped in a vehicle. The training focused on the potential for injury for both the victim and the rescuer. Potential rescuers received training to address the various metals used in vehicles today, as well as the different types of fuel systems that the rescuers might encounter, making the extrication extremely dangerous. Due to the high risk, the fire department dedicates one month to automobile extrication training.



FF/EMT Loretta Williams, FF/EMT Darren Woo and FF/Medic Anthony Batycki practice a roof removal.



SRNS employees pose with Brad Davy (with plaque), DOE Director, Office of Worker Safety and Health Assistance. SRNS employees include (from left, front row) Bobby Hill and Curtis Crenshaw; (from left, back row) Darrell Freeman, Kliss McNeel, Brenda Legons, Loretta Williams, Brenda Kelly and Candice Williams.

## SRNS receives 16th VPP Star of Excellence for safety programs

Employee pride and personal ownership for operational safety are the foundation of SRNS' safety culture at SRS. Since becoming the management and operations contractor in 2008, SRNS has received more than 110 safety-related commendations from external organizations for exemplary safety performance, programs and culture.

On August 28, SRNS added another important external safety validation – the company's 16th DOE Voluntary Protection Program (DOE-VPP) Star of Excellence Award.

"SRNS employees take a non-negotiable stance when it comes to

workplace safety. Receiving our 16th Star of Excellence serves as continued validation that our safety programs, training and culture continue to perform to world-class standards," said Stuart MacVean, SRNS President and CEO.

Sustaining the culture that ensures the ongoing safety of employees at SRS and the surrounding communities is not a job that SRNS employees take lightly.

"We often hear from new employees that SRNS' safety culture is unlike any other they have ever experienced in previous jobs. We get a great deal of satisfaction when we hear that feedback from our newest team members.," said Barbara Guenveur, SRNS Safety and Health Program Employee Engagement Lead.

The DOE-VPP is a DOE-led organization that promotes and validates contractor safety and health excellence at all DOE sites. SRNS will undergo program recertification as a DOE-VPP participating contractor in October. This certification validates that the company's safety and health programs, training and culture are operating at best-in-class standards; ranking 75 percent better than the average of businesses in the same industry.

## Bioassay lab awarded reaccreditation from AIHA-LAP

Human health and safety, environmental cleanup and long-term stewardship are enduring missions at SRS. One of the most trusted resources brought to bear to achieve these important Site objectives is the SRS Environmental Bioassay Laboratory (EBL), which was recently granted reaccreditation from the American Industrial Hygiene Association Laboratory Accreditation Program (AIHA-LAP).

"Achieving re-accreditation from AIHA serves as external verification that SRNS' Environmental Bioassay Laboratory is operating at internationally recognized standards of excellence," said Kliss McNeel, SRNS Senior Vice President, Environmental Stewardship,

Safety and Health division. "The reaccreditation process requires a thorough evaluation of all aspects of the laboratory program."

Although the SRS EBL has been a trusted resource within the DOE Complex for decades, AIHA accreditation enables the EBL to potentially play an important role in national or international emergency response, if needed.

Moreover, the EBL's most recent evaluation proved to be the most successful review in the lab's history, completing the two-year accreditation process with a deficiency rate of less-than one percent, the lowest deficiency rate in the Site's history.



SRNS intern Caroline Schaade, a graduate of North Augusta High School, now studying mechanical engineering at Mississippi State University, and her SRNS mentor review plans completed for the work being performed on the scaffolding behind them.

## Pipeline to the future

### Education Outreach programs influence students to SRS careers

Over the years, SRNS Education Outreach programs have grown and evolved into a type of academic "job pipeline" helping to prepare many of the Savannah River Site's (SRS) student interns for a potential career working for one of the many contractors at SRS.

In a recent survey of 111 responding SRNS interns, 83 percent recall having participated in and possibly been influenced by at least one of nine primary education outreach programs managed by SRNS personnel for students throughout the region. For example, 67 percent of interns surveyed specifically recall involvement in a Science Fair, while 40 percent of interns attended CSRA College Night.

"Education programs at SRS have a proven role in the new employee workforce pipeline," said Kim Mitchell, SRNS Education Outreach. "It's really all about the continuing efforts to work with area educators and other interested stakeholders to introduce students to many important career paths. While our focus is on science, technology, engineering and math (STEM), exciting students to continue their education and become involved community citizens is also a rewarding goal."

Examples of popular and often competitive education outreach programs include Science Bowl, Engineering Teach-Ins, Mini Grants, Traveling Science presentations, Introduce a Girl to Engineering, and "STEP" (Science and Technology Enrichment Program).

"These activities helped influence my decision to pursue a career in engineering by showing me how much of a difference a career in STEM fields can benefit society," said SRNS intern Caroline Schaade, a graduate of North Augusta High School, now studying mechanical engineering at Mississippi State University. "These programs exposed me to the importance of problem solving and team work throughout middle school and high school which ultimately sparked my interest in engineering."

Amber Swygert, an SRNS Engineering intern, attended Redcliffe Elementary, Jackson Middle School and Silver Bluff High School, and is currently enrolled at the University of South Carolina Aiken pursuing a B.S. degree in their new Industrial Process Engineering program. "Ever since I can remember I have been interested in anything Math or Science related," said Swygert. "This interest, along with participation in programs such as local science fairs, field trips to SRS and Introduce a Girl to Engineering day, definitely influenced my decision to pursue engineering as a lifelong career. I've always loved hands-on learning and that is definitely what many of these programs provide for young students."

The goal of the SRNS internship program is to help bridge the gap between academic study and its application in professional practice. Participation in an internship assignment offers students a glimpse into a professional work environment, while networking with knowledgeable veteran professionals.

# New radio system enhances SRS safety and security

SRS is getting a \$7 million dollar radio communications system makeover that improves safety and security.

Radio handsets and vehicles will be equipped with GPS capabilities, allowing workers to be located quickly in the event of an emergency.

“If we need to find a remote worker who is out in the field for any reason, especially if an injury has occurred, we can get the right people to his or her exact location,” said Judson Davis, Site Communications manager with SRNS. “And, in time, some managers will be able to load an app that will allow them to use their government cell phones like a handheld radio onsite or offsite.”

The upgraded system complies with standards intended to improve communications among agencies in emergencies.

“We are also pleased that the radios will be Project 25 compliant,” Davis said. “Project 25 was developed after the 9/11 tragedy, creating a platform to improve communications between the various agencies during security- and emergency-related operations.”

The system is scheduled to be fully operational in October for onsite contractors. The new system is extensive, requiring two tractor trailers to carry its equipment to SRS. The SRNS



Barry Knoll (from left), Carlton Cook and Chris Goodwyn of SRNS install a new, state-of-the art radio system.

Site Services organization met all preliminary infrastructure requirements to enable installation.

“We had been using an 18-year-old system that we could no longer find parts for and the manufacturer was no longer supporting the system,” said Davis. “I’m pleased with the reliability and performance of the new products being installed.”

# Employees honored with VPPPA award

Three SRNS employees have been awarded Safety and Health Achievement Awards at the 33rd annual Voluntary Protection Programs Participants Association’s (VPPPA) National Conference in New Orleans on August 28.

SRNS’ Curtis Crenshaw, Darrell Freeman and Loretta Williams were selected by the VPPPA Awards Committee and the VPPPA National Board of Directors as recipients of the distinguished award.

The VPPPA bestows the Safety and Health Achievement Award annually to employees at participating companies who go above-and-beyond to stimulate safety and health initiatives on-the-job, in the community and at other DOE sites. The recipients also partake in extensive training and take initiative to implement safety and health-related best practices in their work areas.

“SRNS employees have a strong commitment to health and safety at work, and in the community. But for some, that commitment is truly noteworthy – as is the case with Curtis, Darrell and Loretta,” said Kliss McNeel, SRNS Senior Vice President, Environmental Stewardship, Safety and Health. “Their ongoing work to ensure that our employees go home to their families in the same condition that they arrived is heartwarming



Darrell Freeman

Loretta Williams

Curtis Crenshaw

and inspiring. We are very proud of them for achieving this award.”

The VPPPA is the leading organization dedicated to verification of cooperative occupational safety, health and environmental management systems.

SRNS is a certified DOE Voluntary Protection Program STAR Site, which means that the company has implemented and demonstrated a healthy comprehensive safety management system. SRNS employees are encouraged to take an active role in safety programs and carry that commitment into the community to improve the safety of their neighbors.

# Pilot program taps into Tritium employees’ knowledge

Inside the head of every SRS employee resides a treasure trove of knowledge about their work ... tricks they have taught themselves to make their jobs easier, “why” explanations passed on to them from employees who have since retired, and lessons learned from mistakes they observed. What is needed for continuity of operations is a way to preserve that knowledge, so that current and future personnel benefit from that treasure trove.

SRNS has piloted a Knowledge Management system in the Savannah River Tritium Enterprise (SRTE) that is designed to capture the critical knowledge and skills possessed by SRTE employees and make it available to colleagues now and in the future. Due to the success of that pilot, SRTE is moving forward with implementation.

“Most of the knowledge required for day-to-day plant operation is embedded in procedures and training materials,” says Eddie Hart, SRTE Knowledge Management Lead. “The pilot focused on the capture and preservation of undocumented knowledge that would be of value in augmenting the technical knowledge of future personnel.”

Two components made up the Knowledge Management pilot: a methodology for identifying and capturing critical skills and knowledge, and a technology platform for managing, preserving and delivering the content.

To capture the vital information, SRTE’s Knowledge Management team identified mission-critical topical areas and subject-matter experts for each, and then recorded video interviews with the experts. They also captured videos of experts demonstrating complex tasks. They prioritized the order that they would produce the interviews based on the factors such as the topics’ scarcity of subject matter experts and impact to the mission.

Videos produced during the pilot phase covered topics like “Production Scheduling,” “Nuclear Material Control &



Brent Douglas and Brian Tyre, SRTE Knowledge Management media specialists, and intern Sarah Alexander record a video interview with subject matter expert Phil French of SRTE Quality Engineering.

Accountability,” “Predictive Maintenance” and “Weapons Life Extension Programs.”

These interviews provide insight into the subject matter experts’ roles that would otherwise be lost after they retired or left SRS.

Making all of this captured knowledge useful requires a technology platform for managing the content and efficiently delivering it to employees when needed. Personnel at NNSA’s Y-12 plant in Oak Ridge, Tenn., had already developed and implemented their Knowledge Preservation Management System (KPM) for that very purpose.

Rather than re-inventing the wheel, an SRNS team evaluated the Y-12 system for performance, operability, and compatibility with SRS requirements. Then that team, which included SRTE’s James Davis (the design authority for the project) and representatives from the Tritium Training, Tritium Process Control & Automation, and Site Information Technology organizations worked with their Tennessee colleagues to stand up the Y-12 system for the SRTE Knowledge Management pilot.

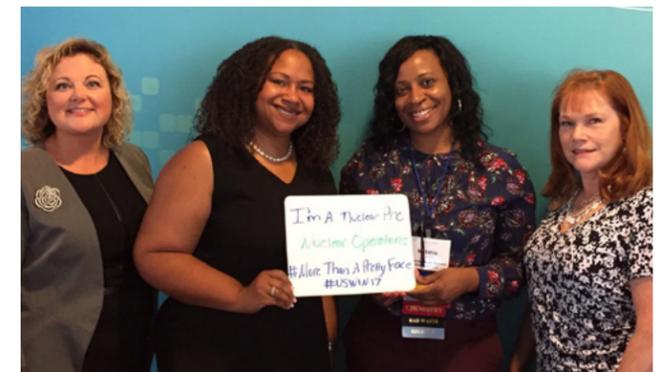
The system catalogs videos, documents and other content. Employees, at their own work stations, can access the needed info by keyword search. The system also provides maps that show linked information, helping employees find related topics.

With the success of this effort, SRTE is now preparing to transition from a pilot to a production mode.

# Women in Nuclear attend conference

Three SRNS employees and SRS-Women in Nuclear members recently attended the U.S. Women in Nuclear National (WIN) Conference in San Francisco, Ca. Themed “A Time for Action,” the conference allowed WIN members to explore ways to be a positive influence in the community to advocate for nuclear.

Pictured are (from left) SRS-WIN Secretary Marie Widener, President Kela Lofton and Networking Chair Natalia Johnson, and SRS-WIN Steering Committee member Jennifer Nelson of DOE.





Rachel Yanoschak, a Materials Science & Engineering major at Virginia Tech, discusses her work with graphene as a passivation barrier for hydrogen isotopes at the SRNL Summer Intern Poster Session.

## SRNL interns wrap up the summer with poster session

With most students heading back to college, SRNL's summer 2017 internship program came to a close in mid-August. This summer's program was SRNL's largest, most diverse, and most productive with 58 students from 26 colleges and universities in 12 U.S. states and territories performing real work with 50 SRNL scientists, engineers and technicians. SRNL mentors volunteered to take on the additional responsibility of challenging the minds and imaginations of the nation's next-generation STEM workforce for two months while accomplishing their own work.

The program culminated in a poster session where interns presented 55 posters describing the research they performed during the summer and demonstrating the contributions they made to SRNL.

The poster session included students from the Savannah River Environmental Sciences Field Station and SRNL interns participating in a variety of programs including:

- DOE-EM Minority Serving Institutions Partnership Program
- DOE Office of Science – Science Undergraduate Laboratory Internships
- Energy Efficiency and Renewable Energy Robotics Program
- DOE Fellows – Florida International University
- Nuclear Workforce Initiative – Augusta University

## PMCS takes first place in annual SRS Sports Challenge

The Savannah River Site Employee Association (SRSEA) recently hosted the SRS Sports Challenge, where good-natured rivalries between companies at SRS raised thousands of dollars for United Way agencies in the greater Aiken-Augusta area.

The one-day event took place at Citizens Park in Aiken, S.C. Employees from SRNS, Savannah River Remediation, Centerra, CB&I AREVA MOX Services, LLC, the National Nuclear Security Administration and DOE participated. Overall, the SRSEA Sports Challenge raised over \$4,350 for local United Way agencies through corporate sponsorships and concession stand sales.

SRNS Project Management and Construction Services (PMCS) "KOBRA" finished in first place with a score of 95 out of 120 points, and two SRNL teams followed with second and third place.



## SRNS employees, retirees, agencies gather for UW kickoff 'Day of Unity'

On August 1, more than 200 SRNS employees gathered for the "Day of Unity," the 2017 United Way kickoff at the SRS Curation Facility in 315-M.

The United Way kickoff program included an introduction by Norm Powell, SRNS Senior Vice President of Business Services, who reflected on how United Way has made an impact on his family's life.

Powell recalled how his first experience with United Way began in 1989 when his daughter was born with spina bifida, a neural tube defect. At the time, his family was living in California. "Children's Services met us at the hospital at her birth and told us about all the great resources they could provide to us, and as a taxpayer, I was happy to have someone who could help us."

"Our insurance couldn't help us with the therapy she needed because spina bifida is a birth defect, not a result of an accident," Powell said. "At that time, we were starting our United Way campaign at work, and I started looking through a brochure. I came across United Cerebral Palsy under the list of agencies, so I gave them a call. Even though my daughter didn't have cerebral palsy, they could provide physical therapy and occupational therapy, as well as help procure a wheelchair for her."

United Way has impacted many stages of Powell's life. At an early age, he was involved with Boy Scouts, and his daughters were Girl Scouts. Over the years, he has volunteered for United Way agencies, including the American Red Cross and the Golden Harvest Food Bank. "Whether you live in Aiken, Augusta, or the Barnwell and Allendale area, please consider the fact that making an investment in United Way allows it to be there to help when you might be the one who needs it."

After the introduction, Rich Baker, SRNS United Way Employee Campaign Chair, gave an address about upcoming campaign activities and honored SRNS retirees who had served as United Way chairs.

Following the recognition of the retirees was the unveiling of the employee campaign video, produced by Andrew Jones of SRNS Communications and Video Services. The onsite link to the video is available at [http://vod.srs.gov/play/srns/United\\_Way\\_Standing\\_United\\_65\\_Years](http://vod.srs.gov/play/srns/United_Way_Standing_United_65_Years). The kickoff event also included a United Way Agency Fair, featuring 14 different agencies from United Ways of Aiken County, CSRA and Barnwell.



Grace Halvorsen pitches the winning project, "Snap SRS," during the competition.

## LEAP pitches ideas in Shark-Tank style event

A unique program was held in August which allowed young professionals an opportunity to "pitch" their innovative ideas to members of senior management at an event based on the hit television series Shark Tank.

Members of the LEAP organization, a peer-led organization dedicated to developing emerging professionals at SRNS, had the opportunity to compete as a team or as an individual for the best innovations to improve SRS. Three projects were selected to be presented to the "sharks" at the event and each was required to address one of the established strategic goals: Deliver Results Safely and Securely; Meet DOE National Needs; Advance the National Laboratory; and Make SRS a Compelling Place to Work.

The winning project, "Snap SRS" addressed the strategic goal of making SRS a compelling place to work by engaging the workforce through a site-wide art contest to be displayed in prominent areas at SRS. The projects that were tied for second place were "Non-Contact Liquid Level Instrumentation" and "Strategic Marketing of SRNL."

All three projects were awarded monetary prizes provided by SRNS corporate funds. In addition, the audience attending the event was encouraged to submit their own ideas on how to address the strategic goals. The five top ideas selected by the audience were also awarded cash prizes by Stuart MacVean, SRNS President and CEO. This event was successful in promoting the belief that innovation and new business models are essential elements in continuous improvement efforts to meet current missions and secure future missions at SRS.



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