

● FEBRUARY 2015

SAVANNAH RIVER NUCLEAR SOLUTIONS



# SRNS Today



## Safety Stars

Savannah River Nuclear Solutions, Savannah River National Laboratory  
earn safety program recognition from Department of Energy

### Also this month

Nuclear particle detectors • Atmospheric modeling • Train derailment response • Science Bowl





**Carol Johnson**  
SRNS President and CEO

# Welcome

to the February 2015 edition of

# SRNS Today



### Video: Safety at SRS

To see a video about the safety program at SRS, please [click here](#) or visit [www.savannahriver.nuclearsolutions.com/annual/Journey-To-Safety-Empowerment.mp4](http://www.savannahriver.nuclearsolutions.com/annual/Journey-To-Safety-Empowerment.mp4)

A safety culture is, by definition, a way of life. And it's always a work in progress.

In my January letter, I spoke of Savannah River Nuclear Solutions receiving the Department of Energy's Voluntary Protection Program recertification and their STAR designation. This month, you can read about this prestigious certification in more detail (see next page). The SRNS safety culture is a living, evolving effort, a work in progress that is carefully nurtured and encouraged. The payoff is priceless: Employees coming to the Site safely, working safely and going home safely. That's what it's all about.

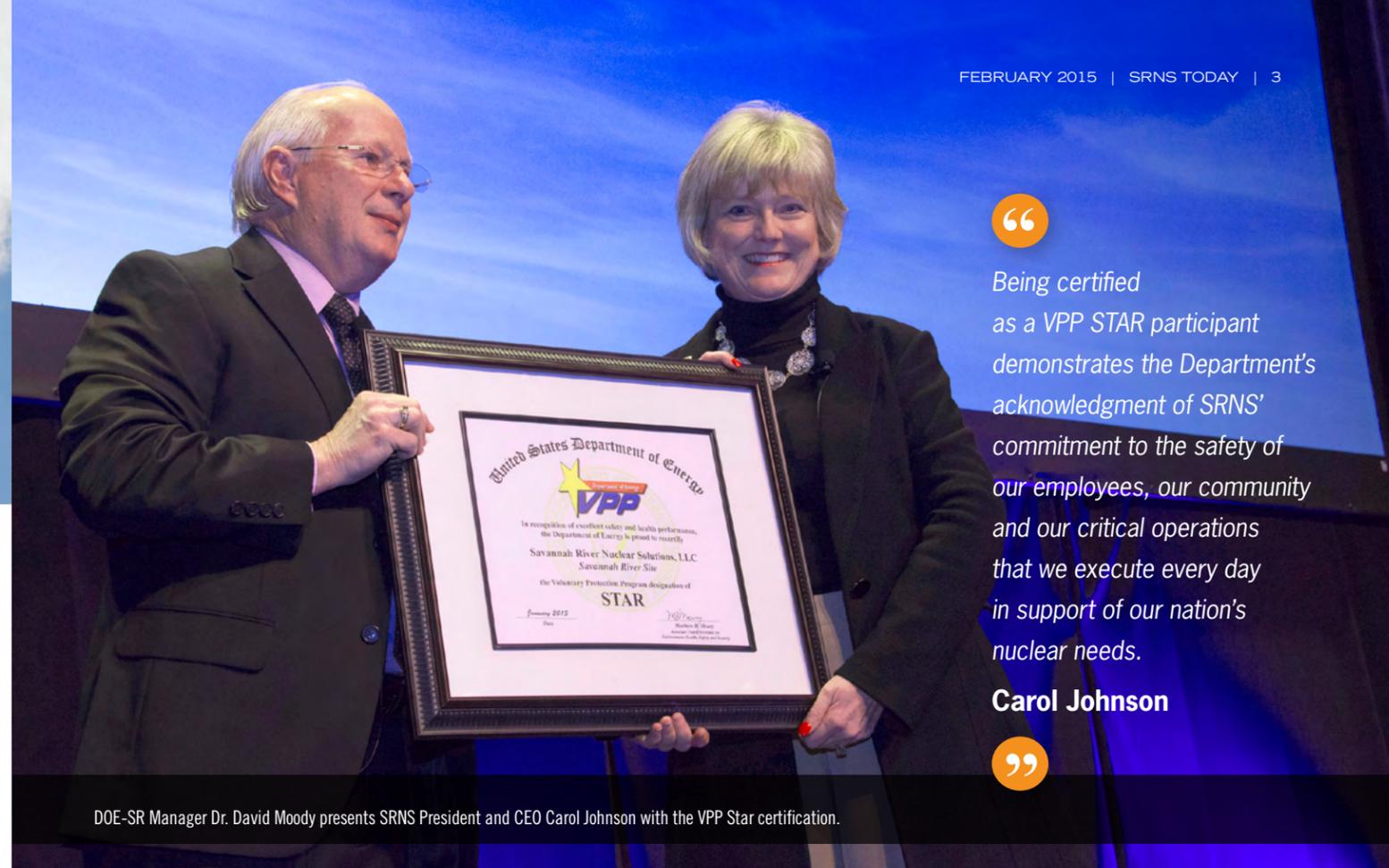
As part of that culture, the Savannah River National Laboratory has once again earned the top safety spot among national laboratories in the DOE complex. In fact, SRNL has been the safest lab in 10 of the past 11 years (tying with other labs in three of those years). Because of the conditions and materials inherent in laboratories, the risk of an accident or injury is also present. For SRNL to be the safest lab in the complex for so many years speaks volumes about the extreme dedication to safety of the SRNL employees. I congratulate them on this designation, and to all our employees on our continuing STAR status.

In operational news, innovative devices continue to provide ways of making the workplace and the world safer. Wireless monitoring devices in the Tritium Facilities are breaking new ground for these devices in secure facilities (see page 4) and a device that can sense and collect radioactive particles will add a new tool in the nuclear detection arsenal. SRNS and SRNL are working each day toward creative approaches to meet the challenges of a rapidly-changing world.

I hope you enjoy this edition of "SRNS Today." As always, thank you for your interest in 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.

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DOE-SR Manager Dr. David Moody presents SRNS President and CEO Carol Johnson with the VPP Star certification.

“Being certified as a VPP STAR participant demonstrates the Department's acknowledgment of SRNS' commitment to the safety of our employees, our community and our critical operations that we execute every day in support of our nation's nuclear needs.”

**Carol Johnson**

## Star performance

### DOE honors SRNS safety with VPP recertification

The Department of Energy (DOE) Voluntary Protection Program (VPP) recently recognized SRNS as a STAR participant for continued excellence in safety programs, performance and culture at the Savannah River Site.

The recertification process for DOE's highest safety honor takes place every three years and analyzes DOE contractor safety performance, work activities, employee engagement and overall safety culture.

“To receive recognition as a DOE VPP STAR participant means a great deal to SRNS,” said Carol Johnson, SRNS President and CEO. “Being certified as a VPP STAR participant demonstrates DOE's acknowledgment of SRNS' commitment to the safety of our employees, our community and our critical operations that we execute every day in support of our nation's nuclear needs.”

Savannah River Operations Office Manager Dr. David Moody presented Johnson with a VPP STAR certificate in February, where he commended SRNS for their ongoing contributions to the safety legacy established at SRS more than a half-century ago.

In 2013, SRNS received its 13th consecutive Star of Excellence Award. In 2014, SRNS received its fourth Legacy of Stars Award at the VPP National Conference.

The DOE VPP program measures the ongoing safety performance of its participants through an annual Star Award program. Star of Excellence Awards are bestowed upon DOE contractors whose safety performance is 75 percent better than the average of businesses in the same industry. Those contractors who earn three consecutive Star of Excellence Awards qualify for a VPP Legacy of Stars Award in their fourth year.



### SRNL named safest DOE national lab in 2014

SRNL has continued its impressive record for safety. SRNL's safety record for 2014 once again places the laboratory as the safety leader in DOE's network of national laboratories.

The lab, which regularly handles a variety of nuclear materials and hazardous chemicals, has been the safest laboratory in the DOE laboratory complex for 10 of the past 11 years.

“This outstanding record speaks to our dedication to safety at SRNL. It also speaks to the hundreds of men and woman at the lab who recognize that safety comes first,” said Dr. Terry Michalske, SRNS Executive Vice President and SRNL Director. “Our people are the ones who make this lab a success.”

# More than Weather

Atmospheric modeling assists decision-makers during crises

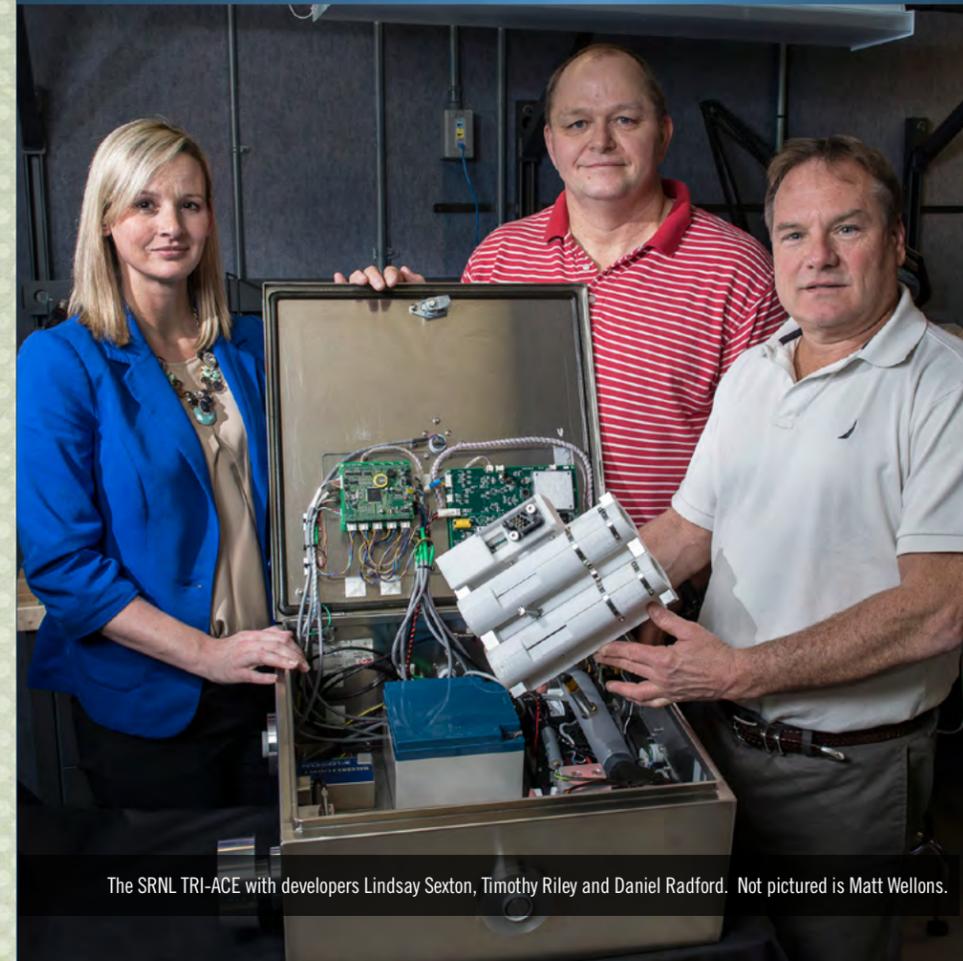
In the middle of laboratories filled with nuclear chemicals and specialized equipment for radioactive materials sits a little-known but highly respected group of experts. The Savannah River National Laboratory's Atmospheric Technology Group (ATG) does much more than predict the wind and rain. These highly specialized meteorologists use atmospheric modeling so sophisticated, they can determine everything from the potential fallout from nuclear testing to contaminant predictions from industrial accidents.

"The Atmospheric Technologies Group develops and applies computer models that forecast how contaminants spread in the atmosphere," explained ATG Manager Chuck Hunter. "The results of this work are used to help guide emergency response organizations and health organizations, as well as help keep an eye on international activities."

According to Hunter, work performed by ATG is vital in interpreting atmospheric activity downwind of suspected nuclear sources. "In many applications, ATG's model predictions are used to confirm how much radioactivity is released from a known nuclear facility, or determine the origin of radioactivity if the characteristics are not consistent with known sources. Unknown sources could be anything from a new facility to activities associated with a nuclear device."

The ATG's modeling and assessment capabilities aren't just limited to radiochemicals. SRNL has been called in to assist in a variety of major national and international events including a 2005 chlorine release from a ruptured railcar in South Carolina, modeling of radioactivity released from the Fukushima nuclear power plant event in 2011, and modeling of an ash cloud from an Icelandic volcano eruption which crippled European air travel. If the right equipment is in place, the ATG's modeling system is also able to pinpoint if methamphetamine is being manufactured in a particular neighborhood.

"It's our goal to make sure people are informed so that the best decisions can be made during a time of crisis," said Hunter.



The SRNL TRI-ACE with developers Lindsay Sexton, Timothy Riley and Daniel Radford. Not pictured is Matt Wellons.

## Looking for the Invisible

Nuclear detection arsenal gains a new tool with TRI-ACE particle detector

A new device created by researchers at Savannah River National Laboratory and Oak Ridge National Laboratory is able to immediately collect airborne particles to help determine if radioactive isotopes are present.

This device could prove to be a valuable asset to organizations responsible for monitoring nuclear activities worldwide.

The Tamper Resistant/Tamper Indicating Aerosol Containment Extractor (TRI-ACE) is about the size of a small cooler and can collect particles such as plutonium, uranium and other nuclear material in the air before it is able to settle on a surface. It's also able to clearly demonstrate if anyone tries to interfere with the sampling. The TRI-ACE offers constant, unattended collection, flags abnormalities and collects material that may be used to indicate if illegal nuclear activities have taken place at a facility.

"The TRI-ACE automated particle collector will help gather airborne particles of importance to nuclear safeguards and nonproliferation," said SRNL Senior Scientist Lindsay Sexton. "The instrument has the potential to indicate undeclared production of nuclear material, which would be of great benefit to the safeguards community."

The collection tube is surrounded by multiple layers of tamper-resistant and tamper-indicating features, allowing it to be left unattended and still do the job. This is a significant improvement over current international methods used for detection. One way the International Atomic Energy Agency collects environmental samples is by manually swiping surfaces with a cotton cloth. Since the TRI-ACE collects samples automatically, this means inspectors will spend less time in the field, saving time, money and risk of exposure. Continuous collection would also improve the probability of detecting undeclared activities.

With more countries expressing interest in nuclear power, the monitoring workload is expected to increase. Technologies are needed to help inspectors work more efficiently to maintain or even improve the high quality of safeguards inspections. Funding for this project was possible through the National Nuclear Security Administration's Office of Nonproliferation Research and Development, and Office of Nonproliferation and Arms Control.

# Science Bowl

## Area students 'show what they know'

America's next generation of scientists and engineers put their knowledge to the test Feb. 28 during DOE Science Bowl Regional Competition. The event attracts teams from across South Carolina and the greater Augusta area, and uses a fast-paced verbal forum to solve technical problems and answered questions related to math and science, similar in format to the show "Jeopardy."

This year's winner was Dorman High School from Spartanburg, S.C. Greenbrier High School Team 1 (Evans, Ga.) placed second, with Lakeside High School Team 1 (also of Evans) coming in third.

Managed by SRNS, the 2015 Science Bowl hosted 120 students from 18 high schools. It is the only educational event and academic competition of its kind that tests students' knowledge in all areas of science and is sponsored by a federal agency. SRS is one of only four DOE sites to have participated each year at the regional level since the start of the Science Bowl competition.

"The Department of Energy continues to invest in area school systems through the use of academic competition," said David Moody, Manager, DOE-Savannah River Operations Office. "For years, the Science Bowl has been an excellent way to focus

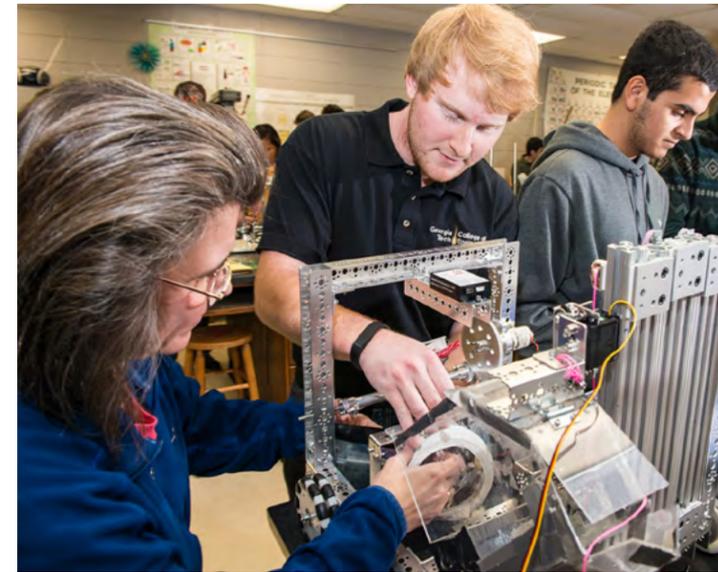


The South Aiken (S.C.) team in competition at the 2015 Science Bowl.

attention on the importance of science and to spotlight the capabilities of our brightest students."

The primary goals of these outreach programs are to enhance interest in science, mathematics, engineering and technology and to support improvements in education in the Central Savannah River Area by using the unique resources available at the SRS.

The winning team will be rewarded with an all-expense paid trip to the DOE National Science Bowl Competition to be held in Washington, D.C., April 30-May 4.



SRNS engineer Annamarie MacMurray provides guidance to North Augusta High School Robotics Team members Jonathan Grimm (left) and Ajay Heera.

## North Augusta team wins robotics event

The small "battle bot" races across the floor, snatching up the closest ball. It whirls around and speeds towards the closest goal for the first of many points during a fast-paced and exciting robotic competition developed for students from over 70 countries. For each team, this high tech contest follows months of preparation where the reward is not only successfully competing, but also learning many skills and life lessons.

Several employees, part of the SRNS Traveling Science and Math Demonstrations Program, have stepped forward to assist North Augusta High School (NAHS) teachers form the NAHS Robotics organization consisting of three teams, each with about 15 students.

NAHS Robotics teams recently tested their new-found talent and experience at the South Carolina State Tournament, sponsored by "FIRST" (For Inspiration and Recognition of Science and Technology).

The result of the battle bot competition found one of the NAHS teams taking the title, qualifying them for the super-regional competition, to be held in San Antonio, Texas.

The annual FIRST robotics competition is a not-for-profit organization devoted to helping young people, ages 6-18, discover and develop a passion for science, engineering, technology and math.

## Spangler leads Heart Walk executive team

Wallis Spangler, SRNS Senior Vice President for NNSA Operations and Programs, has been named the chair of the CSRA Heart Walk's Executive Leadership Team (ELT). The ELT consists of 20 representatives from companies across the CSRA, and members of the ELT assist companies that are new to the campaign by setting up Heart Walk websites and brainstorming fundraiser ideas.

Spangler is also the executive sponsor for the SRNS Heart Walk campaign. The CSRA Heart Walk will be on March 7 at the North Augusta Greenway. Activities begin at 8 a.m., and the walk begins at 9 a.m.

## SRNS Scholars Program



Each year, SRNS donates \$50,000 to USC Aiken through the SRNS Scholars Program. Students in STEM-related studies (science, technology, engineering and math) receive a \$2,000 scholarship based on scholastic achievement. SRNS President and CEO Carol Johnson; SRNS Executive Vice President and Chief Operations Officer Fred Dohse; and SRNS Executive Vice President and SRNL Director Dr. Terry Michalske met the students and their parents during a reception held in February at the Ruth Patrick Science Center.

## SRNS assists Allendale, S.C., after train derailment, acid spill

In the early morning hours of Jan. 27, approximately 19,000 gallons of hydrochloric acid spilled onto the ground after a commercial railroad locomotive left the main track and slammed into a line of six railroad cars sitting on a short railroad spur near Allendale, S.C.

Soon, more than 10 different agencies, companies and organizations, including the FBI, descended on the scene near an industrial plant where the two engines and 15 cars had left the main track.

Per a mutual aid agreement with Allendale County, SRNS dispatched several SRS personnel to the incident to begin assessing and controlling immediate and secondary hazards associated with the release of hydrochloric acid and diesel fuel.

In addition to SRS Fire Department, the SRNL Atmospheric Technologies Group (ATG) assisted by identifying potential environmental hazards caused by weather conditions forecasted for the area.

While hazardous conditions may have been present shortly after the accident, the ATG model showed that the cold morning temperatures and rapid evaporation of the released material minimized airborne hazards.

SRNS hazardous materials technicians made several entries into the swampy scene, completing the task of turning off the still-running locomotive engine.

Once the area was deemed safe for entry, rapid cleanup began under the supervision of the Environmental Protection Agency and the S.C. Department of Health and Environmental Control. A team of SRNS employees worked to protect soil, water, equipment and the people involved in the cleanup response from chemicals released at the scene of the wreckage.

"From the standpoint of all the senior leadership at SRS, we're very proud of the outstanding job SRNS employees did to respond swiftly, address immediate hazards and implement containment controls," said Alice Doswell, SRNS Senior Vice President for Environmental Services and Safety and Health.



SRNS firemen decontaminate fellow hazmat technicians at the derailment.

We make the world **safer.**

# SRNS



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