SRNS Today

February 2017

SAVANNAH RIVER NUCLEAR SOLUTIONS

This month

F Area risk reduction • SRNS plutonium innovation • Lab certification • SRNL shielded cell renovation

Following Joey Smiley

SRNS employee honored with newspaper’s ‘Young Professionals 2 Follow’ award

SRNS named S.C. Chamber “Workforce Innovator of the Year”
Welcome to the February 2017 edition of SRNS Today

At Savannah River Nuclear Solutions, we are committed to making the Savannah River Site a compelling place to work. Our efforts were recently recognized by the South Carolina Chamber of Commerce as the “Workforce Innovator of the Year” in the large business category. Building our workforce and keeping our workforce is one of the highest priorities for our company and we know that can only happen if our employees are engaged, enjoy challenging work and are appropriately compensated and rewarded for their contributions.

This month we feature a number of examples of why SRNS is such a compelling place to work, offering exciting opportunities to make the world safer through unique service to our nation. At SRNS, we develop innovative approaches to environmental stewardship and nuclear materials challenges. We also supply a triumphant for our country’s nuclear weapons deterrent, secure nuclear materials to prevent unwanted proliferation and transform nuclear materials into assets and stable wasteforms. Our operations are multifaceted and play a vital role in reducing risk for our nation and the world.

The SRNS workforce is highly capable, engaged and adaptable to meet existing and expanding missions. Our employees apply superior expertise and innovative and enduring solutions to complex and challenging national and global issues. And we are committed to ensuring they remain satisfied and confident in our strategic direction and share ownership and responsibility in our missions as we strive to make SRNS a compelling place to work in the years ahead.

I hope you enjoy reading about some of the exciting work under way at SRNS, and as always, thank you for your ongoing support.

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 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 with activities centered around career development, networking and community outreach, which directly impacts retention and talent acquisition.

"SRNS is committed to making our company a more compelling place to work," added MacVean. "We strive to simplify our business processes and have satisfied employees who are not only confident in our strategic direction, but also share ownership in our nation’s important missions, as we all work together to make the world safer.”
Making progress in F Area risk reduction

Several facilities in F Area at SRS have recently made significant progress in removing residual nuclear materials, which reduces risks to workers and the environment.

An important milestone was met in the Risk Reduction mission in the inactive Building 235-F, which contains residual plutonium-238.

“After survey and characterization of Cells 9, B and 7, it was determined that the amount of residual material left over was of little to no risk,” said Michael Gilles, F Area Director. “We have now begun removing residual material from Cell 6 in the Plutonium Fuel Form facility, the first cell we have entered that has enough material to do intrusive work.”

Building 235-F has been inactive for more than 25 years. The Plutonium Fuel Form facility (PuFF) is a section of the building that was used to make fuel spheres and pellets out of Pu-238 to electrically power deep space missions, such as the Galileo space probe to Jupiter, launched from the Space Shuttle Atlantis in October 1989.

“The PuFF facility is nine cells of thick concrete walls with shielded windows,” said Gilles. “Employees worked with hazardous materials, using remote manipulators, while they remained outside the cell. Material entered the PuFF in Cell 1, then traveled through the other cells to be made into spheres and pellets.”

The historic activity has left behind a conservative estimate of about 1,500 grams of Pu-238 in the cells. In order to reduce hazards, SRNS is managing a multi-year risk reduction mission in the PuFF portion of the facility.

Savannah River National Laboratory (SRNL) has worked with the 235-F Risk Reduction team to develop a better estimate of how much Pu-238 remains within the shielded cells. Additionally, SRNL is using existing technology and developing new tools to locate and remove or affix the Pu-238 to ensure it will not become mobile during decontamination activities.

Any Pu-238 that is removed, along with any contaminated tools, will be safely stored for eventual packaging and shipment to the Waste Isolation Pilot Plant in New Mexico.

“This material removal is a big step toward completion of the Risk Reduction mission,” said Gilles. “We are still on track for completion by 2021.”

Along with the work being done in 235-F, SRNL’s F/F Analytical Laboratories also recently worked toward risk reduction by lowering the amount of material in inactive lab space in this F Area facility.

“As priorities were changed by DOE or as new lab space and equipment were obtained, some older gloveboxes were abandoned. This left behind residual amounts of nuclear materials,” said Gilles. “These materials were secured and at very low risk to the workers or the public. However, out of an abundance of caution, the decision was made to do the work now to remove these materials from the lab.”

Gilles said the work was completed by highly qualified members of the 235-F Risk Reduction team and was done safely and efficiently.

The majority of the materials removed are plutonium, with some americium and transuranic waste included. All materials and waste will be dispositioned safely.

“Although risk calculations showed that release of this material in the event of an accident, such as a fire and/or an earthquake, was highly unlikely, we at SRS want to do our part to ensure the safest environment for both our workers and the environment,” Gilles. “I am proud of our work in F Area that works toward that goal every day.”

Following Joey Smiley

SRNS employee honored with newspaper’s ‘Young Professionals 2 Follow’ award

SRNS employee Joey Smiley was honored with the Aiken Standard’s “2017 Young Professionals 2 Follow” award for his leadership with Project VISION (Volunteers in Service in Our Neighborhoods), a program of the United Way of Aiken County.

“Joey lights up any room he enters,” said Sharon Rodgers, President, United Way of Aiken County. “During his tenure, he’s recruited over 1,200 volunteers from SRNS, who have provided an average of 100 repairs each year. Coordinating this event is a tremendous undertaking, and his dedication to serving our community has truly made a difference for United Way agencies as well as the living conditions for those who wouldn’t otherwise be able to afford home repairs.”

Established in 1996, Project VISION is a volunteer-driven effort to assist United Way of Aiken County partner agencies with maintenance, as well as much-needed repairs for low-income residents. Over the past 20 years, this “Day of Caring” has provided 100,000 hours of service to Aiken County.

Joey first became involved with Project VISION seven years ago when he started volunteering at the Child Advocacy Center of Aiken County. Since taking the lead for Project VISION in 2012, Smiley has recruited volunteers from the SRNS workforce and helped ensure their safety by walking down job sites with a safety engineer.

Smiley, who has worked at SRNS since 2001, balances the demands of planning Project VISION with his career at SRNS as a senior health physicist. In this role, he is responsible for leading SRS Radiological Protection’s air monitoring program, which analyzes more than 100,000 samples from across SRS facilities every year.

For the past four years, Smiley has also taken a position on the National Nuclear Security Administration’s Radiological Assistance Program (RAP) Team, a national asset that responds to emergency situations involving nuclear or radiological materials including threats from terrorist, non-terrorist or public health and safety incidents. The RAP team also works in cooperation with law enforcement partners to monitor public events, such as the recent presidential inauguration, in an effort to detect and prevent the use of nuclear materials intended to cause harm and destruction.

“My career at SRS—as well as leading Project VISION for the past four years—has taught me how time is precious. The older I get, the more I realize that I only have so many years to give back. It’s truly an honor to be recognized for this award,” added Smiley. “My career at SRS as well as leading Project VISION for the past four years has taught me time is precious, ” added Smiley. “The older I get, the more I realize that I only have so many years to give back. It’s truly an honor to be recognized for this award.”

Joey Smiley
Facility (MTF). Following extensive verification, including methods – was installed in the more modern Materials Testing system – supported by new measurement. For years, hydroburst testing was carried out in SRTE’s Reservoir components materials. Hydroburst testing is one of the ways that SRTE helps to verify the high levels of energy generated during hydroburst testing. Mike George

The move is part of SRTE’s Tritium Responsive Infrastructure Modifications (TRIM) program. The Tritium facility is now ready to begin routine use. The Shielded Cells Facility supports DOE Environmental Management missions, playing a key role in the ongoing closure of the SRNS radioactive waste storage tanks, including the Defense Waste Processing Facility, Sludge and Salt Waste Processing and Saltstone facilities. The Shielded Cell Facility also includes nonradioactive, full-scale replicas of the hot cells. These mockups cells, with the same footprint and operational capability of the radioactive cells, are used for staging equipment and developing procedures for active cell operations for testing research equipment and training laboratory technicians who operate the manipulators. SRNL continues renovation project to extend life of shielded cells facility

Sampling the tanks used to store plutonium solutions in SRNF Line is safer and more effective, thanks to employee ingenuity and a new instrument for facilitating sample acquisition. Line uses tanks called process vessels to temporarily store in-process plutonium solution. Sampling of some of the vessels is required to determine plutonium concentration and/or acid molarity to verify processing conditions are appropriate, critically controls are maintained, etc. In order to perform these samples, the process vessels are designed with a sample capillary/needle and sample box/shroud. Line operators use an evacuated sample vial to withdraw the highly contaminated solution for sampling. However, the needles in these vials would occasionally get clogged. Operators would use the equivalent of thin piano wire, called a “rodder,” to thread through the capillary and needle, using force to clear it. Because of the high potential for contamination, as well as the use of “sharps,” they had to be handled very carefully with rigorous safeguards in place. “A team of HB Line employees, including maintenance and engineering personnel, began looking at ways to improve our sampling process and reduce hazards associated with that activity,” said Nick Miller, HB Line Deputy Facility Manager. “They came up with a sampler blowdown assembly, which has turned out to be a safer and equally effective method of clearing the capillary.” The new method involves placing a filtered nipple with septa attached similar to a sample vial over the end of the sample needle. Operators then use a hand pump with gauge to clear the restriction in the capillary/needle back into the tank. The team also recognized the possibility of exchanging one hazard for another, in this case a “sharp” hazard for a pressurized radiological hazard. As a result, they rigorously vetted the use and design of the sampler blowdown assembly, including formal engineering documentation, work instructions that included a pressure test, mockups and senior management evaluations. The team even included in the design a vent to mitigate the possibility of air being trapped inside the rig itself.

This facility has been a crucial asset to high-hazard radioactive work. These improvements will allow it to continue that way for many years to come.” Babb Attaway

SRNS Tritium Enterprise enhances ability to continue vital support for U.S. defense

SRNS has taken another major step to ensure that the Savannah River Tritium Enterprise (SRTE) can continue carrying out its vital missions in support of U.S. national defense into the future. Recently, a key SRTE function was updated and relocated into a 23-century old building from its former Cold War-era home. The move is part of SRTE’s Tritium Responsive Infrastructure Modifications (TRIM) program. The Tritium facility is now ready to begin routine use. The move is part of SRTE’s Tritium Responsive Infrastructure Modifications (TRIM) program. The Tritium facility is now ready to begin routine use. The move is part of SRTE’s Tritium Responsive Infrastructure Modifications (TRIM) program. The Tritium facility is now ready to begin routine use.
Meeting international standards
SRNL appointed to IAEA network for nuclear material measurements

SRNL has been named a member of the International Atomic Energy Agency (IAEA) worldwide Network of Analytical Laboratories (NWAL) for nuclear material measurements. The lab performed strongly on proficiency exercises in 2015 and 2016, and received a favorable assessment during a visit by the IAEA in August 2016. SRNL is the national laboratory for the DOE Environmental Management Office and its sites across the DOE Complex. SRNL will be used by the IAEA to make collaborative measurements on test samples and reference materials supplied by the IAEA Nuclear Materials Laboratory. The lab can also receive official IAEA inspection and evaluation samples in the event of an outage at the IAEA's Nuclear Materials Laboratory in Seibersdorf, Austria, or to SRNL to assess the lab's quality assurance and measurement control programs. During both of these evaluations, SRNL measurements consistently exceeded stringent performance standards published by the IAEA in their 2010 report on International Target Values. These target values are endorsed by DOE, IAEA and the European Safeguards Research and Development Association as indicators that a nuclear material laboratory's performance meets the quality expectation for international safeguards measurements. The IAEA assessment visit also determined that SRNL had measurement control practices met the standards of the IAEA for performing safeguards measurements in support of their programs. SRNL has supported SRS operations for more than 60 years, performing safeguards measurements in support of their programs. SRNL has supported SRS operations for more than 60 years, providing high-quality analytical and radiometric measurement results to a wide range of customers. Since the mid-1950s, the laboratory services have provided a diverse array of scientific and technical services and expertise in support of the site's numerous missions. SRNL performs a wide range of analyses on both radiological and nonradiological samples for process control, product quality, nuclear material accountability and nuclear critically safety. SRNL maintains certifications and qualifications through a variety of governing bodies.

SRNL improves reactor decommissioning safety with Virtual reality

SRNL is improving the reactor deactivation and decommissioning process using virtual reality technology. This innovative approach is currently being used to close the dormant C Reactor at SRS for DOE. Built in 1955, C Reactor was one of five reactors built at SRS to produce basic materials used for the nation's nuclear defense during the Cold War. Scheduled for closure, C Reactor is being evaluated by SRNL experts for the safest and most efficient methods for decommissioning. To address the complexities involved with a nuclear facility of C Reactor's size and age, the SRNL Research and Development Engineering (R&DE) team is using virtual reality to identify and mitigate potential hazards. "Using virtual reality allows us to take a 'walk through' of the building anytime and anywhere," said John Bobbitt, SRNL Principal Engineer, R&DE. "It reduces worker exposure to hazards by allowing virtual walk downs versus actually entering the facility and is an efficient way to evaluate different alternatives to complete our mission." To create the virtual environments, the team uses a laser scanner mounted on a tripod to scan an area. The laser can scan to 330 meters to map the environment and apply colors, allowing personnel to read signs and equipment labels. The team takes multiple scans of the rooms and corridors of C Reactor and then assembles them into one master model. First, the scanner measures distances to create the model and then captures pictures that provide the color overlays. The scans capture pipes, electrical outlets and other details from the exterior, providing more information than a standard blueprint drawing. Not only does this information assist in work planning, but it also grants the ability to provide pre-job briefings, realtime data and situational awareness to improve safety for workers before they enter the facility. "C Reactor's facility design information is contained within thousands of drawings that date back to the original building construction in the 1950s," said Bobbitt. "These drawings were organized in a way to aid in building construction and maintenance, but they are not the best way to address the facility's closure. To rely on this method alone would require the team to cross reference many drawings just to get a good picture of what exists in one room."
Congressman Simpson visits SRS

Congressman Mike Simpson (right), Chairman of the U.S. House Appropriations Subcommittee on Energy and Water, recently visited SRS. He received briefings and tours on several facilities including K Area, Tritium, MOX, and the Sall Waste Processing Facility. Pictured with Congressman Simpson are Stuart MacVean (left), SRNS President and CEO, and Terry Spears, DOE Savannah River Operations Office Deputy Manager.

SRNS Mentoring Circles learn about SRS facilities and projects

Five SRNS mentoring circles toured the Savannah River Site on Feb. 13. The tour included stops at the Savannah River Ecology Lab and the OnDock Rail testing site. Rick Reichel (pictured above) discussed how the OnDock Rail System, developed by SRNL, scans shipping containers for radioactive materials at seaports. During the driving portion of the tour, subject matter experts presented overviews on H Canyon, L Basin, Tritium, F/H Labs, and K Area. Facilitated by SRNS Talent Management, the mentoring circle program provides employees with exposure to senior leaders in a team-based setting that promotes career development, networking, and learning across the circle.

LEAP members encouraged to turn resolutions into action

The secret to keeping your goals on track, according to Wyatt Clark, SRNS Senior Vice President for Environmental Management Operations, is emotional intelligence, which is realizing your emotions, discerning what they tell you and understanding how they impact people around you.

On Jan. 10, more than 80 LEAP members gathered for the first LEAP Leaders Emerging Among Professionals “Lunch and Learn” of the year, where Clark shared his perspective on strategies for maintaining your resolve when it comes to changing habits and improving performance year-round.

Clark cited studies that found 90 percent of effective leaders have a high emotional intelligence. “Emotional intelligence is being honest about your personality traits and how they interact with others,” said Clark.

“It’s also acknowledging what makes you uncomfortable, whether it’s public speaking or confrontation, and learning how to work through your emotional response in those situations.”

While attending the University of South Florida, Clark spent three years working in an emergency room while contemplating a career in the medical field.

“To me, it’s fascinating when biology and engineering come together,” said Clark. “The five senses enter the brain through the spinal cord, and before they get into your frontal area where we think, they go through the limbic system where we feel. In theory, before you think about a problem, you’ve already had an emotional response. If you can manage an emotional outburst from a stressful situation, you’re using your emotional intelligence.”

“Emotional intelligence is being honest about your personality traits and how they interact with others,” Clark added. “It requires introspection and understanding your personal style and how it interacts with your coworkers. For me, having an accountability partner with high standards has helped. An accountability partner also keeps you on track to change habits that need improvement.”

LEAP hosts monthly “Lunch and Learns” on topics related to SRNS missions, career development, and leadership.

A developmental program for early-career SRNS employees, LEAP focuses on business awareness specific to SRS and provides opportunities for networking, professional development, and community outreach, as well as increased visibility with management.

Lakeside wins Science Bowl

America’s next generation of scientists and engineers put their knowledge to the test Feb 25 during the DOE Savannah River Regional Science Bowl competition, held at the University of South Carolina–Aiken.

This year’s winning team was Team 1 from Lakeside High School in Evans, Ga.

Managed by SRNS, the event attracted 22 teams from across South Carolina and Georgia.

During the competition, teams from 14 schools in South Carolina and Georgia faced-off in a fast-paced question-and-answer format similar to the television show “Jeopardy,” being tested on a range of science disciplines including biology, chemistry, Earth science, physics, and math.

To reach the National DOE Science Bowl competition, teams must win one of 69 regional tournaments.

Lakeside High Team 1 included (from left) Krishan Mistry, William Marcus, Kyle Xiao, Yitao Tu, and Saurabh Wakade.
We make the world safer.

Environmental stewardship
Supplying tritium
Securing and transforming nuclear materials