

● JUNE 2019

SAVANNAH RIVER NUCLEAR SOLUTIONS



SRNSToday

NNSA Administrator visits SRS



This month

NA-50 Awards • Robotic crawler • L Basin • Red Cross Heroes • Small Business





Stuart MacVean
SRNS President and CEO

Welcome

to the June 2019 edition of

SRNS Today

These are exciting times at Savannah River Nuclear Solutions.

This month, we welcomed a visit by Lisa Gordon-Hagerty, DOE Under Secretary for Nuclear Security and National Nuclear Security Administration (NNSA) Administrator. During her visit, she toured the proposed Savannah River Plutonium Processing Facility and met with members of the SRNS and NNSA workforce as well as state and local officials and educators. Administrator Gordon-Hagerty praised the great work performed by our employees and noted the critical importance of our support of NNSA's national security missions. I'm pleased that she had the opportunity to observe our progress in person and to meet our dedicated employees who are the keys to our success.

Also this month, we celebrate a remarkable milestone—the accomplishment of 25 million safe work hours. It's a new SRNS record, and a huge achievement for a workforce of more than 6,000. I congratulate everyone on their attention to safely performing our important work here at SRS.

I hope you enjoy this edition of SRNS Today, and 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 employees and other stakeholders of the company's operational- and community-related activities. If you have questions or comments, please contact us at 803.952.6131 or visit our website.

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DOE Under Secretary for Nuclear Security and NNSA Administrator Lisa Gordon-Hagerty and Stuart MacVean prepare to tour the proposed SRPPF.

NNSA Administrator visits SRS, meets employees

When DOE Under Secretary for Nuclear Security and NNSA Administrator Lisa Gordon-Hagerty joined leadership from across the National Nuclear Security Administration (NNSA) for a meeting at Savannah River Site this month, she took advantage of the opportunity to see the site and its people. While here, she had some important messages for the SRS workforce.

"I am here first of all to thank you all for everything you do in contributing to our nation's security," she told an all-hands meeting with SRNS and NNSA employees. "The workforce here has achieved tremendous accomplishments to keep our nation safe since the site's inception.

"With the work that NNSA has planned for this site, we intend to be here for decades more, continuing our vitally important nuclear security missions," she continued, "And you are part of our entire enterprise."

Her two-day visit included a tour of the proposed Savannah River Plutonium Processing Facility (SRPPF). NNSA has proposed repurposing the unfinished MOX facility as the SRPPF to produce plutonium pits as part of our nation's nuclear deterrent, which Gordon-Hagerty described as "a critical role for the next fifty-plus years in support of our national defense." She commended the SRS team for the "tremendous job laying the initial groundwork" for the proposed facility.

Calling this "an exciting time to be here at SRS," she also noted the importance of other current SRS work in support of NNSA

"With the work that NNSA has planned for this site, we intend to be here for decades more, continuing our vitally important nuclear security missions. And you are part of our entire enterprise."

Lisa Gordon-Hagerty

missions, particularly related to tritium for the nation's stockpile and the disposition of surplus plutonium. In talking about the increasing demands on the site's tritium mission in coming years, she emphasized the investment in upgrading the infrastructure.

She also took time for an informal lunch with a dozen early-career personnel from SRNS and NNSA. "Being able to ask questions to such an influential member of the complex was an extreme honor," said Tritium Quality Engineer Taylor Gomillion.

Continuing the theme of preparing for the future, NNSA Administrator Gordon-Hagerty addressed a gathering of news media and invited guests to announce NNSA's investment of an additional \$5 million for the Workforce Opportunities in Regional Careers program, which funds programs at five CSRA colleges and universities aimed at developing the future SRS workforce.



Lisa Gordon-Hagerty presents NA-50 awards to team leaders Mahesh Patel (left photo) and Bill Swift.

Two SRNS teams honored by NA-50

232-1H Demolition

Team Lead: Mahesh Patel

Team Members: Ken Blankenship, Andrew Murphy, Roger White, Mark Griffith, Chuck Novak, George Cox, Michael Hawkinberry, Kenny Barrineau, Tim Richardson, Chris Garnett

Mk-18 Project Team

Team Lead: Bill Swift

Team Members: Bradley Loftin, Rich O'Donnell, Charles McKeel, Zach Weis, Kevin Hera, Michael Dalmaso, Michael Brown, Alan Busby, Kurt Peterson, Joel Jones, Chris Verst

Two teams of SRNS employees were recognized for outstanding accomplishments in support of NNSA. The teams both received Awards of Excellence from the NNSA Office of Safety, Infrastructure, and Operations (NA-50), the office responsible for ensuring that NNSA facilities are safely operated, effectively managed, and that current and new facilities are adequately maintained to meet mission needs.

The NA-50 Awards recognize personnel for outstanding accomplishments involving innovation, effectiveness, teamwork, overcoming adversity, and enabling future success in support of NA-50's efforts to achieve the NNSA mission.

One of the teams was recognized for the successful demolition of the Savannah River Tritium Enterprise's (SRTE) 232-1H building. This achievement, removing the former location of area construction employees and a fabrication shop, marked a significant step towards readying the area for the replacement of Cold War-era facilities with updated and right-sized facilities for the site's ongoing mission. SRTE assembled a diverse cross-departmental team from across the site, and within 16 months, had the building demolition completed, with no safety or security incidents. This successful completion left the site with a clean footprint and lessons learned for future demolitions.

The other was Savannah River National Laboratory's Mk-18a Target Recovery Project team, who conceptualized, designed, fabricated and procured an on-site transportation cask and target loading system to move targets from storage to SRNL while eliminating almost all worker exposure to radiation hazards. The team was recognized for integrating worker safety and project risk reduction while reducing total project cost through design, development and deployment of technical innovations in equipment and project execution. They were commended for demonstrating that enhancing worker safety is consistent with efficient project execution as well as stewardship of resources.

A new safety record

6,000 SRNS employees mark 25 million safe work hours in 834 days

On June 5, the SRNS team surpassed 25 million safe work hours without a lost day due to an on-the-job injury. The previous record was 24.8 million. The safety record represents the work of more than 6,000 employees.

"Surpassing 25 million safe hours for a company the size of SRNS is a noteworthy accomplishment. But, when we also consider the work that is performed by our team to support our nation's most pressing nuclear needs, the strength of our safety values really comes to light," said Stuart MacVean.

From training to finance, nuclear materials management to construction, each SRNS employee and subcontractor works to a common set of standards that emphasize personal accountability, employee empowerment for safety and adherence to operational controls. Combined, these standards help to ensure employee, visitor and community safety.

For Josh Montgomery, who joined the SRNS team nine years ago after serving as a U.S. Army Ranger, it is the company's safety culture that inspires him to build a strong career with SRNS.

"Transitioning from the military to a civilian job with SRNS proved to be a natural fit for me. I spent many years training to protect our

country and now, thanks to the training and culture at SRNS, I have been afforded an opportunity to continue to serve my country as a civilian. Like my experience as a Ranger, the SRNS safety culture has proven that safe and precise performance ensures mission success, every time. I look forward to a long career with this company who shares the same values for safety that I do," said Montgomery.

Prior to reaching 25 million safe work hours, the SRNS record was 24.8 million safe work hours, which was attained in 2014. The company also exceeded 17 million safe work hours in 2018.

"Although 25 million is an impressive number, it's more important to recognize that this number represents 834 days of more than 6,000 SRNS employees going home to their families every day. These same people often give back to improve their communities through outreach in our schools and non-profit organizations. This record goes beyond a number. It speaks to the heart of the people who make up the SRNS team, and the difference their work and commitment to safety, brings to the site and our communities," said MacVean.

To date, SRNS has also received more than 130 safety awards and recognitions since becoming the management and operations contractor at SRS.



Sometimes, tunnel vision is a good thing



New crawler innovations advance tunnel inspections

SRNS is once again proving its expertise in robotics, this time through improvements in robotic crawlers. These remotely-powered vehicles are being used to inspect the H Canyon exhaust tunnel, which is too hazardous for humans to enter.

Because of tunnel conditions (e.g., radiation and contamination, chemical and air flow), inspections of the tunnel's structural integrity need to be done remotely. Over the years, the methods used have evolved. Prior to the 2000s, inspections were performed with the use of a camera attached to a pole inserted along the tunnel route. In 2003, the use of crawlers with mounted video cameras was determined to be the safest inspection method.

Since that time, experts from SRNL have been fabricating, procuring or modifying crawlers for the tunnel inspections. Lessons learned from previous inspections were used to meet the specifications provided by Operations, and the crawlers and inspection equipment have improved in functionality and video capabilities with each new design.

SRNL developed the latest crawler based on requirements and input provided by H Canyon Engineering, Operations and the Radiological Protection Department. These groups, as well as H Canyon Maintenance, Rigging, Work Management, Quality Assurance and Structural Mechanics, supported the crawler's deployment and inspection. Conceptual design of the crawler began in March 2018 and was deployed in March 2019. A total of 107 site employees supported the 2019 crawler development and deployment in the exhaust tunnel.

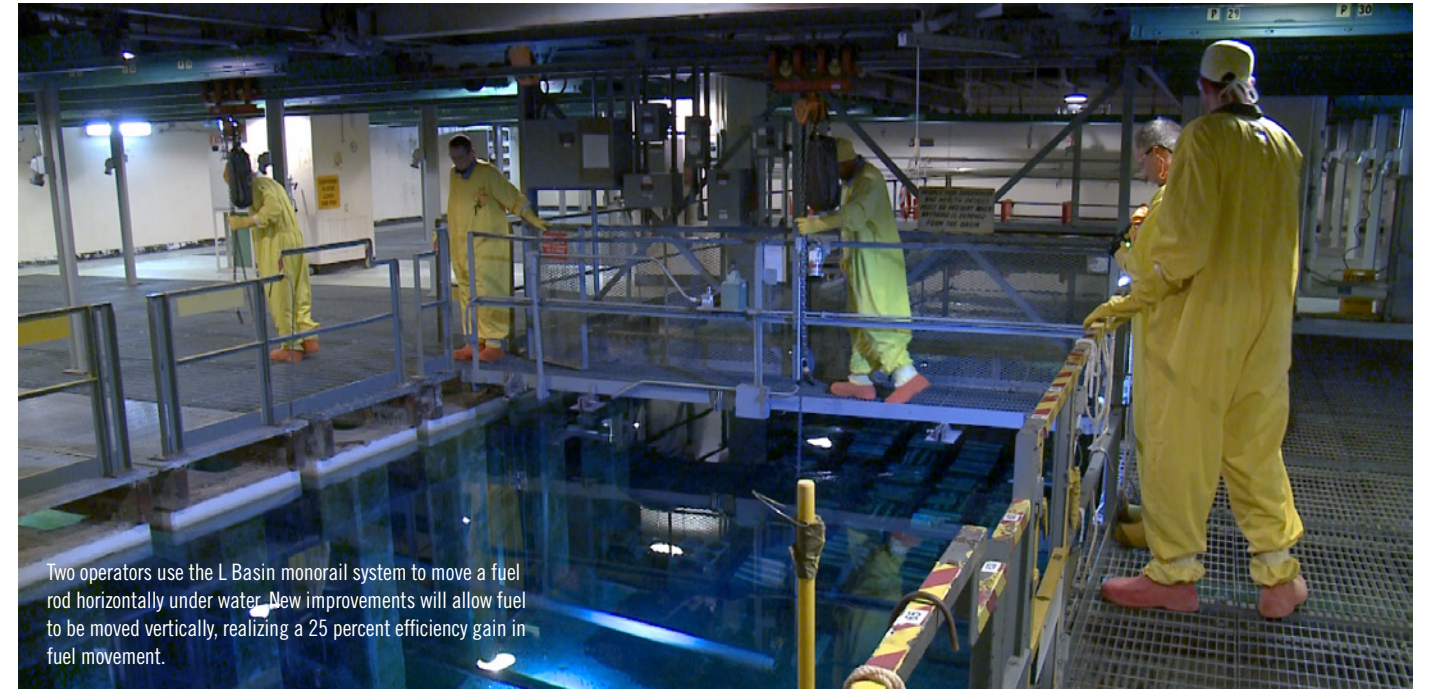
"The H Canyon tunnel inspection program has continued to develop more efficient and effective crawler systems over the last decade. The latest crawler was designed and built by SRNL and is a culmination of lessons learned from previous inspections," said Crawler Recovery Project Manager Billy Giddings.

Previous crawlers had limitations in performing a full inspection such as poor visibility and resolution of camera images, and an inability to traverse the tunnel due to obstacles. SRNL made modifications including increased camera resolution to provide better video, increased power to navigate obstacles with ease and the addition of a vertical lift to the camera, which provided the ability to view tunnel surfaces previously masked from view.

This year's inspection of the H Canyon exhaust tunnel was also the first time two crawlers were deployed simultaneously in the tunnel, allowing for a more thorough inspection.

"This year's crawlers enabled the team to view the entire tunnel—from the 221-H building to the Sandfilter inlet—for the first time ever, allowing the program to answer a number of unknowns about the tunnel that were previously evaluated without visual evidence as valid inputs for structural evaluation," Giddings said.

With continuous improvement in mind, SRNL robotic equipment experts already have plans in mind for crawler modification improvements based on lessons learned from this year's inspection. Such modifications include replacing the rear facing camera with a more robust version, and improving the mast camera to provide increased views and inspection support.



Two operators use the L Basin monorail system to move a fuel rod horizontally under water. New improvements will allow fuel to be moved vertically, realizing a 25 percent efficiency gain in fuel movement.

L Disassembly Basin travel path modifications allow faster processing of spent nuclear fuel

SRNS recently completed travel path modifications in the L Area Disassembly Basin to allow movement of spent nuclear fuel (SNF) vertically instead of horizontally, which will realize a 25 percent efficiency gain for cask processing once all safety documents are finalized.

SNF casks arrive from offsite foreign and domestic research reactors to L Basin via truck and are unloaded within the underwater transfer pit in the Transfer Bay. The fuel assemblies are then bundled and moved through the basin to the appropriate storage location. The fuel is moved back to the Transfer Bay before it is shipped to H Canyon by rail to be processed into a low enriched uranium solution, which can be used to create fuel for commercial nuclear reactors.

"All fuel loading and unloading happens in the Transfer Bay, so it really becomes a choke point for our work," SRNS L Area Facility Manager Lakela Lofton said. "We have to carefully plan when we receive incoming shipments around shipments to H Canyon for processing. To address this issue, L Area management organized a Continuous Improvement (CI) event involving some of the best minds in our organization to come up with a way to accelerate and increase availability of our Transfer Bay. We expect to be able to start moving fuel vertically early in 2020, which will allow us to process fuel more efficiently."

The CI team recognized that keeping the fuel bundle vertical while moving would save time and effort. Certain types of SNF in L Area are stored in bundles vertically in specially designed racks. Because of the length, the fuel bundles were turned horizontally to travel to the Transfer Bay for loading into the 70-ton cask to be shipped to H Canyon for processing.

"Turning the fuel bundle horizontally while keeping it under water is time consuming and precarious work," Lofton said. "Specialized tools are used to slowly lift the bottom end of the fuel bundle by operators standing on platforms above."

However, the team was faced with maintaining proper spacing from other fuel, due to criticality concerns and adequate water depth for radiation shielding to protect the workers.

"The primary concern was that if the vertical fuel bundle inadvertently fell while transferring, it would have the potential of interacting with other fuel and violating criticality isolation requirements," Lofton said.

The solution was modification of the travel path in the basin. The team started by moving some storage racks that were no longer in use into the adjacent lane of the travel path. This would ensure that if the fuel bundle fell, it would only interact with empty racks. The storage rack relocation also allowed for the repositioning of interim bucket storage closer to the Transfer Bay. Bucket storage is used to unload fuel from casks and store for later processing, allowing the casks to be removed from the basin more quickly, thus, saving time and money.

"The basin travel path modifications will allow our operators to be dressed out in their personal protection equipment for shorter durations, reducing the potential for heat stress. It also saves half a shift worth of work for each cask processed, leading to a 25 percent efficiency gain," said DOE Nuclear Materials Manager Maxcine Maxted. "This will ultimately save DOE money from more efficient operations and ensure our ability to meet our commitments."

Changing darkness to light in 717-F



SRNS Construction was tasked with installing new light fixtures in 717-F. The before (left) and after (right) photos display the changes this operation has made to the facility.



Construction completes complex and enlightening renovations

The 717-F building at SRS supports many critical missions and is known for its precise fabrications, such as remote jumpers, remote pump run-ins, tanks and the Defense Waste Processing Facility melters. Groups that occupy this building include SRNS Construction, SRNS Maintenance and Savannah River Remediation Construction.

Over the years, the building's light bulbs have burned out. Because of the challenge of safely accessing and replacing lighting, workers have been using temporary lighting for their work areas.

The building's light fixtures are approximately 60 feet in the air with many interferences that limit the use of an aerial lift to perform replacements. SRNS Construction was tasked with replacing all 30 light fixtures, 20 of which were reached by JLG lifting equipment, and the remaining 10 by building a scaffold on top of the 30-ton crane deck. When work began, only one light was operational.

This high-hazard, non-routine work took many months of extensive and detailed planning involving Construction Engineering, Construction Craft, Industrial Safety, the Facility Administrator,

a Hazardous Energy Control subject matter expert and the SRS Fire Department to ensure work was safely executed. In addition, load-testing the roof trusses was necessary to verify that they were satisfactory to support fall protection for personnel on the scaffold.

This task required Construction Craft to verify lock-outs for the crane and lighting panels, access the crane deck, load materials, build scaffolds, move the crane platform under a row of lights, install fall protection, remove the old fixtures and install new fixtures. This process was accomplished by a team of electricians, carpenters and ironworkers, along with a crane operator on the crane deck at all times.

Ground support for this project included facility personnel and electricians responsible for the numerous lockouts, in addition to laborers who provided the communication link between construction crews and the facility.

Work was safely executed over several weekends. The team performed a post-job review and identified several additional improvements that would reduce the frequency of the high-hazard work by increasing the life of the light fixtures.



SRNS Small Business Liaison Officer J. Alex Agyemang spoke on subcontracting opportunities and forecast at the ETEBA Savannah River Federal Business Opportunities Forum.

Driving supplier connections

ETEBA Forum connects subcontractors, vendors and opportunity

The Energy Technology and Environmental Business Association (ETEBA) recently held its third annual Savannah River Federal Business Opportunities Forum at the Augusta Marriott Convention Center in Augusta, Ga.

The event informs subcontractors and vendors of upcoming federal procurement and subcontracting opportunities in the region, including DOE, NNSA and the U.S. Army Corps of Engineers (USACE).

"Through this forum, ETEBA has provided a platform that brings technical and supply chain leaders and suppliers together," said SRNS Supply Chain Operations Director Jay Johnson. "It communicates the future needs of SRS to our suppliers who deliver innovations that enable our enduring and future missions. This gives our current and future suppliers the opportunity to align their corporate strategy and core skillsets with the site's needs. This level of partnering, which offers open and transparent dialogue about long-term vision, is vital."

ETEBA's one-day forum featured panel discussions on a variety of topics including an SRS update; subcontracting and procurement opportunities with DOE, NNSA and USACE; and partnering opportunities with SRNL. Panelists included speakers from DOE Headquarters; DOE Savannah River Operations Office (DOE-SR); SRNS; SRR; SRS-Centerra; SRNL; and USACE Savannah and Charleston Districts.

Following the technical sessions throughout the day, ETEBA held a networking reception and reverse tradeshow that gave local suppliers the opportunity to meet one-on-one with buyers

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Jay Johnson

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as well as technical experts from government agencies and SRS prime contractors.

"This year's forum was a great success, due in great part to the proactive support of DOE-SR and prime contractors at SRS," ETEBA Executive Director Tim Griffin said. "The caliber of speakers and presentations was exceptional. And, a favorite aspect of the forum continues to be the reverse tradeshow. We hope to continue to grow this event and help provide valuable insight and opportunities to local businesses. In fact, we are using the Savannah River event as a best practice and a model for other ETEBA events in the future including our national meeting in Knoxville, Tenn."

ETEBA is a non-profit trade association representing approximately 160 small, large and mid-sized companies and affiliate members that provide engineering, environmental, construction and other technical and administrative services to government and commercial clients. Its mission is to promote the success of their members by fostering market understanding, identifying business opportunities and advocating for common interests.



Tim Cieniewicz (above) was awarded the Outdoor Rescue Hero award by the American Red Cross of Augusta, and members of SRS Fire Station 1 were recognized as EMT Heroes, including (from left) John Kelly, Chris Foster, Franklin Stanley, Michael Schumpert and Eric Chapman.



Cieniewicz, Fire Station 1 named as Red Cross Heroes

Several SRNS employees were honored by the American Red Cross of Augusta for their heroic actions in a banquet held at the First Baptist Church of Augusta.

Honorees are chosen for their willingness to go above and beyond for the greater good in order to save lives, prevent tragedies and help those in need. The American Red Cross hosts an annual breakfast banquet to recognize these local heroes and inspire others to rise to the occasion.

SRNS employee Tim Cieniewicz was awarded the Outdoor Rescue Hero award after using the EMT training he received from SRS to save the life of a man in a car accident. He was able to stabilize the man long enough for an ambulance to arrive.

Cieniewicz has come full circle with the Red Cross, having been a recipient of their generosity in the past. While serving in the military, his father became ill. The Red Cross offered him a plane ticket, so he could return home. "I was able to go see my father and spend some time with him before he passed. So, I really appreciate the Red Cross for that," Cieniewicz says.

The EMT Heroes award went to SRNS Fire Station 1, whose quick response, calm demeanor and teamwork saved an SRS employee suffering from a severe allergic reaction. One of the crew members, Chris Foster, says the employee was minutes away from needing CPR. "Our being present at the station turned out to be perfect timing," said paramedic John Kelly. "I think we made a big difference."

Interns "meet and greet" SRNS management

Stuart MacVean talks with interns at the annual "meet and greet," which offers SRNS interns the opportunity to be introduced to the company's senior management. SRNS welcomed 118 summer and 22 year-long interns this year from all over the United States, representing 41 different colleges and universities. Thirty percent of student interns attend local colleges and universities.



New concrete compression machine upholds quality testing for SRS operations

To conduct operations safely and efficiently, routine inspection of equipment and materials is essential to ensure proper functionality.

A new Forney concrete compression machine is an example of quality inspection technology functioning as the cornerstone of the SRNS concrete testing lab.

This type of machine uses compressive force on different concrete specimens to ensure that the material meets design and structural strength requirements depending on project specifications. Fifty to 60 concrete cylinders are typically broken per week during testing, making the equipment essential in site operations.

During recent testing, the old compression machine exhibited signs of failure. Diagnostics were run, and it was discovered that the machine's hydraulics were no longer operational, making it impossible to perform concrete breaks.

Because of time sensitivities, an emergency procurement for a new machine was implemented, and the equipment was permanently mounted and calibrated within a week after the old machine failed.

The updated machine is equipped with an internally controlled servomechanism that senses errors and makes micro modifications to the machine's pressure in real-time to maintain it within a specific tolerance. With this feature, it is much easier to ensure pressure remains in the required range.

"If we hadn't received the new machine in time, work would have been shut down," said Civil Supervisor Brad Carlson. "It was also important to ensure that the compression machine is equipped with safety features like protective fragment guard doors."



Richard Reed (left) and Brad Carlson prepare the compression machine for a concrete break.



SRNS employees Kim Mitchell (left) and Francine Burroughs (left, standing) demonstrate how the Bess Beetle's uniquely-clawed feet provide a great amount of traction, capable of pulling significantly more than its own body weight (in paper clips) as fourth-grade students and teacher Danielle Dolecki at Sanders Clyde Elementary School in Charleston, S.C., look on.

SRNS, Charleston Promise program share science concepts with under-served students

SRNS Science Day was recently held in Charleston, S.C., partnering with the Charleston Promise Neighborhood non-profit organization.

Speakers from DOE, SRNS and the University of Georgia's Savannah River Ecology Laboratory spent a day with students from the Mary Ford and Sanders-Clyde elementary schools. Both are Title One schools with a high percentage of under-served children.

SRNS presenters selected experiments, projects and hands-on activities to reinforce STEM-based concepts and create a desire to pursue a related education and career.

The event featured opportunities for the students to quiz the visiting professionals about their occupations and participate in a wide variety of demonstrations and projects, including "Properties of Strange Liquids," "Solving a Mystery," "Meteorology and Weather," "Flight and Rocketry" and a presentation where animals from SRS could be seen out of a cage and sometimes touched.

"We believe in the Charleston Promise Neighborhood organization and their mission," said Kim Mitchell, SRNS Educational Outreach Program. "The SRS employees who recently traveled here see the success of this program and have the desire to step forward to help these children wherever they can, sharing their knowledge and experience."

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We make the world

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