

● SEPTEMBER 2021

SAVANNAH RIVER NUCLEAR SOLUTIONS



# SRNS Today



## Record-breaking year

TEF exceeds number of all previous operations



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### This month

D Area cooling tower demolished • Snap SRS now on exhibit • Red Cross Heroes



**Stuart MacVean**  
SRNS President and CEO

**On the cover**

Tritium Extraction Facility personnel receive Tritium-Producing Burnable Absorber Rods shipped from the Tennessee Valley Authority in preparation for extracting tritium for the nation's nuclear deterrent.

# Welcome

to the September 2021 edition of

# SRNS Today

This month, the Savannah River Site (SRS) Tritium Extraction Facility (TEF) more than doubled the number of extractions in a single fiscal year at SRS. This record level of performance is the result of several years of hard work and planning. TEF employees also executed an innovative idea that significantly reduced workers' radiation exposure.

We continue to make progress in the footprint reduction of SRS legacy sites, with the removal of the D Area complex large industrial cooling tower. The demolition was completed below cost, ahead of schedule and without a safety incident.

For the third year in a row, the "Snap SRS" site-wide art contest provided an opportunity for employees across the Site to show off their artistic talents. "Snap SRS" is just one of many successful projects supported by Compelling Place to Work programs at SRS.

Once again, heroes from the SRS Fire Department were honored by the Red Cross of Augusta for their lifesaving actions, bravery and service to the community. Also, the SRS United Way campaign kicked off a joint fundraising effort for a sitewide campaign, announcing a goal of \$1.4 million to provide support to local United Way agencies.

Savannah River Nuclear Solutions (SRNS) continues to deliver on important missions both on the Site and in the community, through the efforts of dedicated employees. As we come to the end of FY 2021, I am particularly proud of the integrity and teamwork of SRNS employees, as they address complex and difficult situations but continue to work to make the world safer.

I hope you enjoy the September issue of SRNS Today.



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. The SRNS corporate and community offices are located in the renovated 1912 "Old Post Office" building in Aiken. 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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**COMMON ACRONYMS**

Savannah River Nuclear Solutions (SRNS) • Savannah River Site (SRS)  
Department of Energy (DOE) • National Nuclear Security Administration (NNSA)



**Savannah River  
NUCLEAR SOLUTIONS<sup>SM</sup>**

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Photos in this issue include prior COVID-19 guidelines, regarding no mask requirements for vaccinated employees.



Operators use manipulators and basic hand tools to conduct initial disassembly of the cutter head inside the TRP module. Lead-plated glass provides radiation shielding.

## Reducing worker radiation exposure during TEF equipment maintenance

Operators from SRNS successfully executed an innovative idea that reduced radiation exposure to workers performing cutter head maintenance in the SRS Tritium Extraction Facility (TEF). SRS is committed to safely executing its missions in support of the nation's nuclear deterrent and utilizes radiological safety practices designed to incorporate As Low As Reasonably Achievable (ALARA) principles of time, distance and shielding.

A cutter head is part of the Breaching Tool Robot used to remove the top of Tritium-Producing Burnable Absorber Rods (TPBARs), allowing tritium to be extracted from the rods when they are heated in a furnace during the extraction process. Ultimately, the tritium is loaded into containers, called reservoirs, and shipped to the Department of Defense, where they are installed in weapons.

"TPBARs come from an active reactor and are radioactive upon arrival at SRS," said Joey Huckabee, SRNS TEF Facility Manager. "Consequently, each time the cutter head is used on a TPBAR, it builds up a dose rate, complicating the refurbishing process. The cutter head requires refurbishing after a number of uses to ensure proper operation and to remove grit buildup caused by the cutting process. Commitment to ALARA principles while performing cutter head maintenance is vital to ensuring worker safety and health. Time should be minimized, distance should be maximized and shielding should be used while working on it."

To reduce exposure levels, an experienced crane operator shared an innovative idea to do the initial cutter head disassembly remotely inside the Target Rod Prep (TRP) module, an enclosed space that protects workers from radiation. All previous cutter head refurbishments were completed inside Hot Maintenance, where personnel conduct maintenance on equipment exposed to radiation.

This idea worked brilliantly, resulting in a 27% total dose reduction to workers and 22% reduction in the time required to refurbish the

cutter head, as well as being an excellent example of real-world application of ALARA principles.

"Operators used remote manipulators to maneuver basic hand tools and remove 30 screws from the cutter head's bottom plate," Huckabee said. "That took several days of tedious work, but afterward, they were able to remotely remove the cutter head's filter, which contained a large portion of the radiation dose. The grit is also highly radioactive, so operators used remote manipulators to clean the accessible areas of the cutter head to remove as much as possible. These steps were critical to reducing worker exposure levels and time required to do the subsequent Hot Maintenance refurbishment."

After remotely lifting the cutter head out of the TRP module and placing it in Hot Maintenance, mechanics, engineering and radiation protection personnel entered. Wearing personal protective equipment, they completely disassembled, inspected, cleaned, greased and reassembled it. They tested the refurbished cutter head to ensure it operated properly before they returned it to service.

"While the NNSA's tritium extraction mission already implements a multitude of safety procedures, we are committed to continually evaluating and refining our practices," said Jason Armstrong, NNSA Savannah River Field Office Manager. "Innovations such as this show the NNSA's commitment along with our contract partners to continue to execute our critical national security mission as safely and efficiently as possible."

SRNS Senior Vice President – NNSA Operations and Programs Mark Davis said, "We are committed to ensuring our country's national security needs are met, so it's vital that the equipment we use to provide the tritium needed for our nation's nuclear deterrent is properly functioning. As the backbone of deterrence in support of peace, worker safety and health are vital to ensuring continued mission success. I'm proud to work with a team who embraces innovative ideas to meet the complex challenges we face."

# Engineers share expertise during WORCshop@AU



Courtney Bernal, Joseph Newton, Kim Tsakonas, Tyler Gray, James Mason, Shanna Aten and Ashley Gess get ready to go on a driving tour this summer.

In an effort to recruit new students into nuclear science programs and eventually into the nuclear workforce, SRNS engineers are volunteers in Augusta University's WORCshop@AU program. The program is funded through the Workforce Opportunities in Regional Careers (WORC) II grant from NNSA and provides opportunities for SRNS employees to engage high school educators and students.

Engineers working on the Savannah River Plutonium Processing Facility (SRPPF) Project developed a real-world problem statement that educators from five schools in the region surrounding SRS are using to teach students engineering problem solving skills. SRPPF is part of NNSA's two-site approach to revitalize the nation's plutonium pit production capabilities in support of the nuclear deterrent. Twenty-four SRNS volunteers are lending their expertise to help educators and students develop solutions to the problem.

"The problem statement we developed was how to most cost effectively transport approximately 3,000 construction workers to and from the construction work site at SRS," said Rick Connolly, SRNS NNSA Capital Projects Engineering Deputy Director. "This is a real issue that we could face in a few years, so we're looking forward to the solutions students and their teachers present."

Evans High School, Hephzibah High School, Augusta Preparatory Day School and Edmund Burke Academy each have one educator in the WORCshop@AU program. Richmond County Technical Career Magnet School has two educators in the program.

James Mason, an Augusta Preparatory Day School teacher, was excited to learn about WORCshop@AU and the opportunities it would provide for his students. "I really like engaging my students in projects and activities that help them see how the concepts covered in class are applied in real-life," said Mason. "The opportunity to have my students interact with industry professionals from SRNS is going to open their eyes to careers that they might not otherwise have considered."

Mason, four other teachers and representatives from Augusta University toured SRS at the end of July to gain a better understanding of the problem statement and see firsthand areas of SRS it impacts.

Ashley Gess, Augusta University Assistant Professor of STEM/STEAM Education and Program Coordinator of WORCshop@AU, said, "Augusta University is a public university, and we are here to serve our people. It is essential for us to listen to what individuals and businesses need and work with them to create solutions. WORCshop@AU is one example of this partnership. Building a local workforce is key to SRNS' continued success and part of that process is to meaningfully engage local high school teachers with SRNS through mentorship."

The university expects to understand how to build teacher-business partnerships more effectively through WORCshop@AU. Their goal is to encourage more students to stay in science, technology, engineering and mathematics disciplines and choose pathways into local workforce opportunities like those at SRNS.

"Students are the workforce of the future, so we appreciate the employees who are donating their time to this important effort," said Taylor Rice, SRNS Education Outreach Programs Specialist. "We want to ensure educators are equipped with knowledge and information about future workforce needs, particularly those at SRS, that will help them as they influence student career pathways."

NNSA announced funding for the WORC II grant program in 2020. The \$5 million investment supports the development of the future workforce to carry out vital missions at SRS. Augusta University used a small portion of those funds to develop a summer teacher workshop called WORCshop@AU, which began in May, and a learning experience for students from August to December. Growing NNSA missions at the Site in support of the nation's nuclear deterrent prompted NNSA to enhance its efforts to develop an enduring workforce that will carry out these long-term missions.



**MARK YOUR CALENDARS:**

**CSRA College Night goes virtual**

Thursday, Nov. 4, 2021 • 5-8:30 p.m.

Registration information and more to come in October.

# D Area cooling tower demolished

SRNS has managed the complete removal of more than 85,000 cubic feet of waste and scrap material from the D Area complex at SRS. The latest structure to come down is a large industrial cooling tower built in 1952.

Made of fiberglass, steel and wood, likely from cypress trees, the cooling tower was constructed over a large concrete basin and designed to remove heat from the water used to generate steam in a nearby powerhouse.

One of the first steps during a typical decommission and demolition project is to inspect and characterize the entire structure to determine what materials were used for construction. This process determines the path forward for how to safely remove or deactivate potential health threats, such as asbestos or an unexpected source of electricity.

“The tower formerly enclosed approximately 3,800 square feet of space,” said Kelsey Holcomb, SRNS Project Manager, Area Closure Projects. “The tower was 49 feet wide, 63 long and about 50 feet tall with a large concrete foundation reaching seven feet in depth to form the water-filled holding basin. Working closely with our subcontractor, this demolition task was completed inexpensively, ahead of schedule and without a safety incident.”

Installed to draw cooling air across the cascading water within the tower, two huge motors and fans on the top of the structure were removed as well.

To date, 27,000 cubic feet of sanitary waste – including six cubic feet of hazardous waste and 3,000 cubic feet of recyclable materials – were transported from the cooling tower worksite.

“One of the few remaining steps is to remove 70 years of debris out of the concrete basin itself, where water accumulated before being pumped back to the powerhouse,” said Holcomb.

The cooling tower demolition contract was awarded to an SRNS mentor-protégé company, CTI and Associates (CTI), who have conducted the majority of the decommission and demolition work in D Area over the past year.



SRNS personnel work with a subcontractor to demolish a large industrial cooling tower built in 1952.

“CTI continues to impress us with their performance including meeting, and often exceeding, our safety and quality of work requirements,” said Holcomb. “SRNS requested that this project be accelerated, and CTI ensured that the task was safely and effectively accomplished as asked.”

Though the cooling tower is the largest of the four buildings coming down under the current contract with CTI; one of the other three structures in D Area presents an especially difficult challenge due to the presence of asbestos.

Upon completion of this contract, the next task order will be undertaken to remove an additional six buildings throughout D Area, for a total of 10 demolished between August and December of this year.

“In the near future, we’ll have a total of 34 structures removed from D Area. The completion of the D Area closure project will result in a significant footprint reduction for the Site, which is already at 89% of the 310 square-miles that make up the Savannah River Site,” said Holcomb. “Our goal is to return every waste site at SRS to a more natural state, which also reduces associated maintenance and environmental surveillance costs. Project by project, we’re continually learning how to better treat area closure sites.”

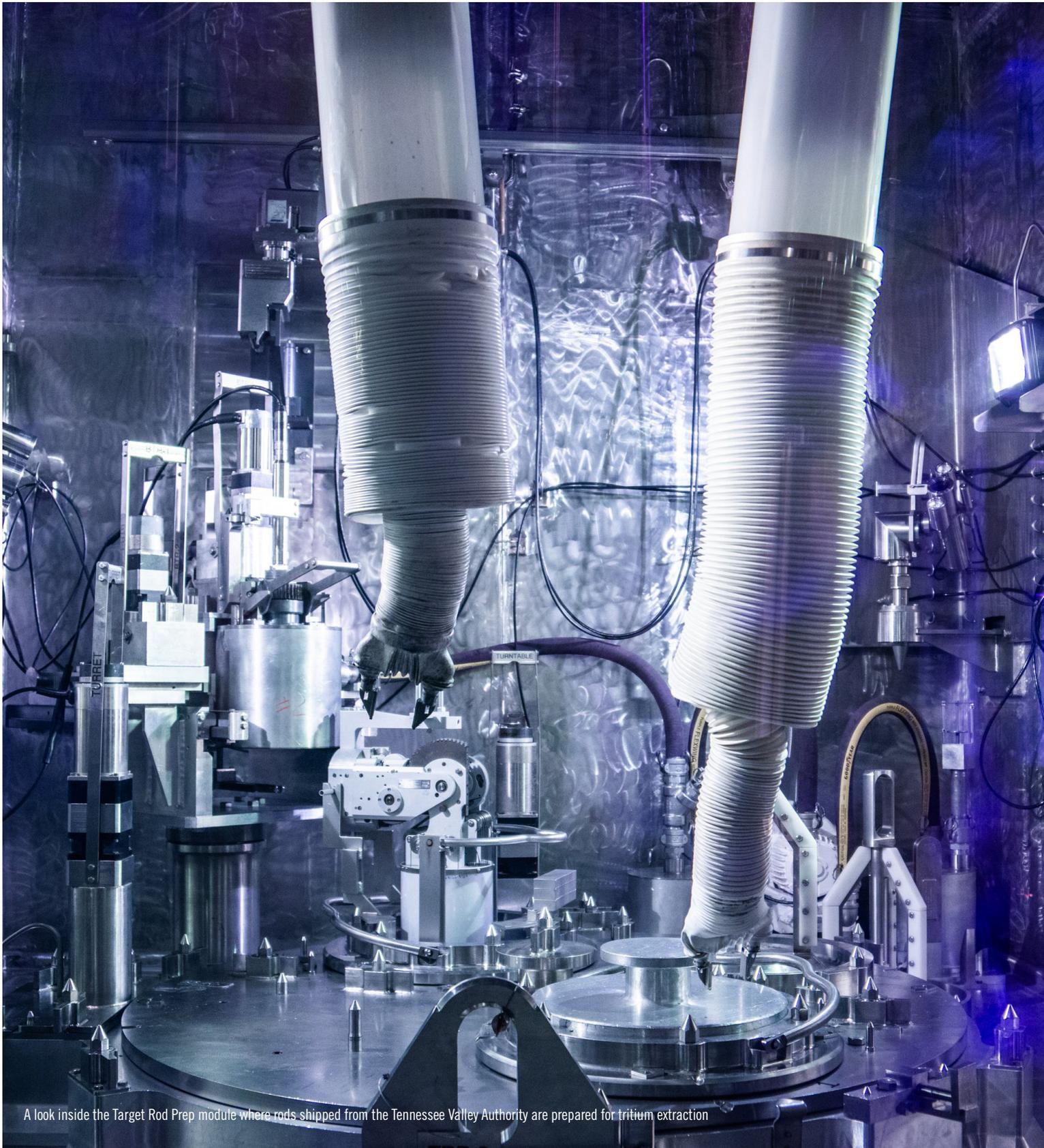
## Cookin’ for Kids donation

Recently, SRNS NNSA Operations and Programs Senior Vice President Mark Davis presented Child Enrichment Inc.’s Executive Director Kari Viola-Brooke with a \$10,000 contribution to sponsor its “Cookin’ for Kids Oyster Roast” at Daniel Field Airport. A United Way agency, Child Enrichment Inc. supports local child victims of abuse, neglect, and exploitation in the Augusta Judicial Circuit (Richmond and Burke Counties), the Columbia County Judicial Circuit and five additional counties in Georgia.

The group has helped more than 25,000 local children who have experienced abuse, exploitation, abandonment and neglect since opening its doors. “We have two distinct service programs designed to meet the varied needs of abused children, the Child Advocacy Center and the Court Appointed Special Advocate (CASA) Program,” said Viola-Brooke. “Since our services are free of charge, we rely on donors like SRNS and our community to ensure that no child goes without help.”

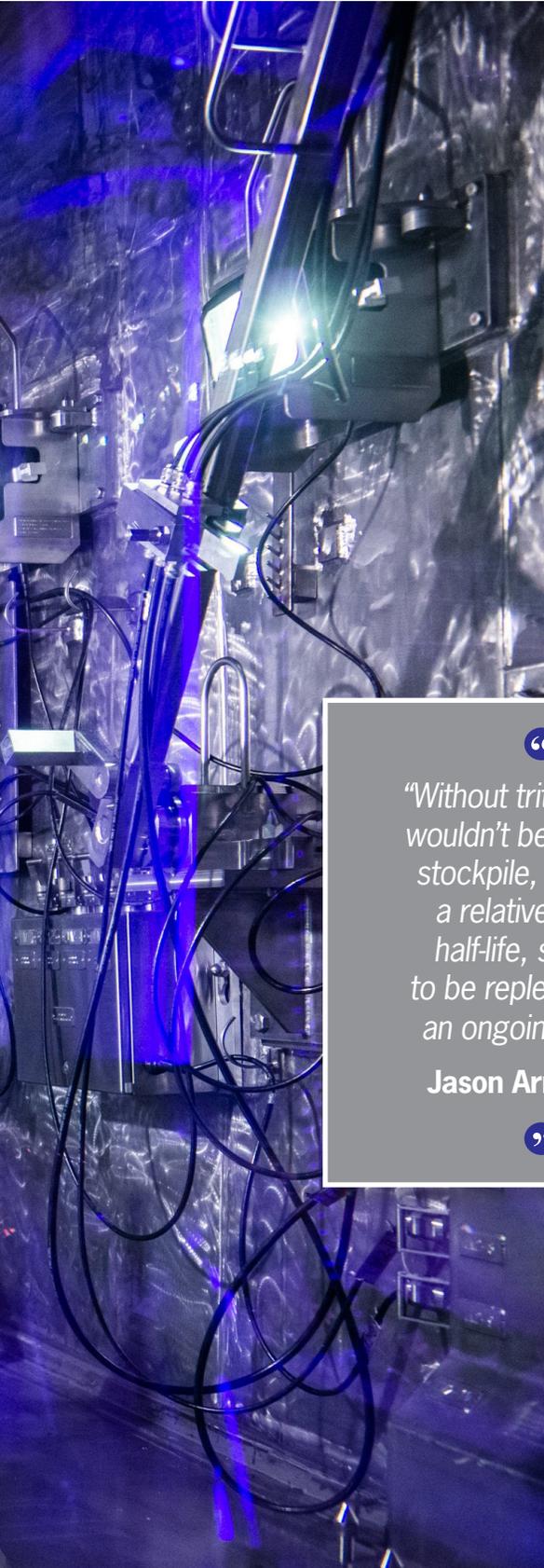


# TEF achieves record



A look inside the Target Rod Prep module where rods shipped from the Tennessee Valley Authority are prepared for tritium extraction

# number of operations



**T**he SRS Tritium Extraction Facility (TEF), which provides the hydrogen isotope needed for the nation's nuclear deterrent, has exceeded all previous records for number of extractions in a single fiscal year, surpassing the number of extractions SRS committed to complete during the year.

TEF completed seven extractions during fiscal year (FY) 2021 – the five that were promised for FY 2021 and the first two for next fiscal year. This more than doubles the previous record of three extractions in a single year.

Tritium is the radioactive isotope of hydrogen needed for modern nuclear weapons. "It's absolutely vital for our nuclear deterrent," explained Jason Armstrong, NNSA – Field Office Manager. "Without tritium, there wouldn't be a nuclear stockpile, but it has a relatively short half-life, so it has to be replenished on an ongoing basis." SRS is the only place in the country that provides the tritium used in the nation's stockpile.

NNSA is the semi-autonomous agency within the DOE responsible for ensuring the United States maintains a safe, secure and reliable nuclear stockpile.

"I'm exceptionally proud of our employees for achieving this record level of operation," said Mark Davis, Senior Vice President – NNSA Operations and Programs with SRNS, the company responsible for operating and managing SRS. "They had been working hard over the past few years to prepare for this, because they know how important it is to the nation. Then, they had to add the measures necessary to protect themselves and their coworkers from COVID-19 and adjusted to those."

SRS has been providing the nation's tritium since the 1950s, originally generated

in the Site's now-decommissioned nuclear reactors. In the contemporary process, rods called Tritium-Producing Burnable Absorber Rods (TPBARs) are irradiated in reactors operated by the Tennessee Valley Authority, then transported to SRS. There, in the TEF, the tritium is extracted from the rods, processed, transferred to SRS' H Area New Manufacturing (HANM) facility, and loaded into reservoirs for shipment to the military.

From its startup in 2006 through 2016, TEF was only required to conduct a single extraction each year to meet Department of Defense demands. Then in FY 2017, the facility's employees conducted three extractions for the first time.

The facility was scheduled to conduct a minimum of five extractions for FY 2021, marking the beginning of a multi-year increase that will see operations grow to eight extractions per year in 2026.

Actions to be ready for the increased workload began with the preparations for the 2017 milestone, including the start of hiring,

training and qualifying additional operators and other facility personnel. Today, TEF has reached full operational staffing in readiness for the increasing number of extractions.

Other preparations included bringing a second furnace online in the facility in 2019 to enhance operational flexibility and capability for the multiple annual extractions. In late 2020, SRNS also began operating a new diffuser/stacking system for TEF's waste gases. The new system allows TEF to handle its own gases, rather than having them processed along with other waste gases at HANM, increasing capacity and decreasing waste gas.

“Without tritium, there wouldn't be a nuclear stockpile, but it has a relatively short half-life, so it has to be replenished on an ongoing basis.”

**Jason Armstrong**

# 'Snap SRS' now on display



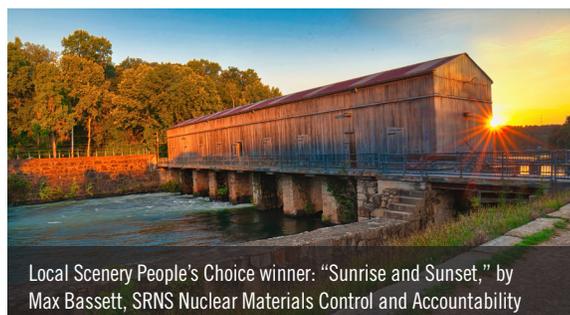
Science as Art People's Choice winner: "Fractal Fungi," by P.J. Perea, SREL



Nuclear Knowledge People's Choice winner: "Atoms Everywhere," by Amanda Hurst, SREL



SRS Scenery: "H Tank Farm Sunrise," by Michael Shaffer, SRR Waste Retrieval and Tank Closure



Local Scenery People's Choice winner: "Sunrise and Sunset," by Max Bassett, SRNS Nuclear Materials Control and Accountability

The third year for "Snap SRS," the only site-wide art contest, is almost complete. Led by the SRS Compelling Place to Work initiative, the employee-driven campaign aims to improve facility appearances and boost workplace morale through art.

All SRS employees had the opportunity to submit their original artwork this June in four categories:

- Nuclear Knowledge
- Science as Art
- Local Scenery
- SRS Scenery

A panel of judges, representative of each Site entity, reviewed the 330 submissions and selected 36 images for display in prominent locations across SRS.

All judging was anonymous with only the image, title and caption available for viewing. Yet, the winners in the top 36 are from SRNS, DOE-Savannah River, NNSA-Savannah River Field Office, Savannah River National Laboratory (SRNL), University of Georgia Savannah River Ecology Laboratory (SREL), Savannah River Remediation (SRR), Centerra, and Creative IT Solutions LLC; this signifies the high level of participation and coordination across Site organizations.

The top 36 images were finalists in the People's Choice Award sent through SRS Employee Communications. During the two-week voting period, over 2,000 unique respondents cast their ballot for their favorite photo in each category.

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**The Aiken Center for the Arts is hosting a "Snap SRS" exhibit to display the entire 36 piece collection for 2021. The art exhibit, open to the public, runs through Oct. 15.**

## 'Stories From a Big Chair' includes Laura Russo

Introducing...

### Stories From a Big Chair



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WINE PARLOR

FOOD • DRINKS • RETAIL

Aiken Center for the Arts recently hosted a "Stories From the Big Chair" event on Sept. 16, that featured local artists, including Laura Russo, SRNS employee and Snap SRS 2021 finalist. Russo spoke about her Snap SRS entry "The End of an Era."

## Compelling Place to Work

The Compelling Place to Work (CPTW) programs made significant progress during fiscal year (FY) 2021 with new food vendors, renovated dining spaces and added a splash of color with new planters at various facility entrances.

CPTW's mission is to improve the employee experience, while increasing engagement and fulfillment through various programs and projects. Below are a few of the successful initiatives accomplished in FY 2021:

- Established a new food service provider for the Site's main cafeteria
- Renovated dining spaces in K and N areas
- Coordinated the 2021 Snap SRS contest and art exhibit
- Established the Adopt-a-Planter program
- Installed touchless water dispensers in high-traffic areas
- Benchmarking and pursuit of a Childcare Interest Initiative
- Established a non-exempt mentoring circle program within SRNS Workforce Services

Many exciting things are planned for FY 2022; so look out for announcements coming soon.



SRS Scenery: "The End of an Era," by Laura Russo, SRNS Communications and Media Services



SRS Scenery: "Jumper Life," by Josh Montgomery, SRNS Environmental Services, Mechanical Shops

# Red Cross Heroes



John Melton



Jason Benton



Cal Cannon

Several SRNS employees were honored for their lifesaving actions by the Red Cross of Augusta at the Heroes Breakfast held on Sept. 15.

The Heroes Breakfast is an annual event established in an effort to raise public awareness of local heroes and volunteers who strive to carry out the mission of the Red Cross. Honorees are chosen for their acts of bravery and service to the community.

Savannah River Site Fire Department (SRSFD) firefighters John Melton and Cal Cannon were recognized with the Fire Rescue Hero Award. While attending a funeral for a fellow firefighter in Barnwell, they noticed a man had collapsed and was in cardiac arrest. Melton immediately began CPR while other firefighters in attendance located an AED and assisted Melton. After several minutes of CPR, the patient was revived and conscious. Melton and Cannon stayed with them until local EMS arrived, where they gave a report on the man's condition.

"My interest in the fire service and EMS field started the day I was born. My dad was the Fire Chief in Williston for 27 years," said Melton. "To be able to follow in his footsteps...is an honor and I hope I'll be able to live up to and fulfill his legacy the best I can."

Cannon was previously awarded the Water Rescue Hero Award at the 2020 Heroes Breakfast for his actions in saving the lives of two adults and a toddler involved in a late-night boating accident.

SRSFD EMTs Robert Ratcliff and Dale Kizer and paramedic Jason Benton were honored with the Medical



*"When I got a call from the America Red Cross that I was nominated (for this award), I felt overwhelmed. We do this not to be recognized as heroes, but it was great to be appreciated."*

**Dale Kizer**



Team Hero Award. The three medics were dispatched to transport a Site employee to the hospital. On the way, the employee was talking and answering questions when they began to quickly deteriorate. After assessing the condition of the employee, the medics recognized the signs of a brain bleed (headache, unilateral paralysis and nausea) and activated a stroke alert, which notifies a receiving hospital that a potential stroke victim is in route. The medics' rapid identification of the symptoms of hemorrhagic stroke ensured that a critical care team was prepared for the patient's arrival at the receiving hospital and facilitated the rapid delivery of lifesaving medication and care.

"When I got a call from the America Red Cross that I was nominated (for this award), I felt overwhelmed. We do this not to be recognized as heroes, but it was great to be appreciated," said Kizer.



**Cynthia Boler-Melton**

**AT SRNS:** Director, Enterprise System Solutions

**IN THE COMMUNITY:** 2020 United Way Loaned Professional of the Year

## THE PEOPLE OF SRNS

Cynthia Boler-Melton was honored by the United Way of Aiken County as its “2020 United Way Loaned Professional of the Year,” but because her campaign experience was significantly limited by the pandemic, the United Way asked her to return to support this year’s campaign.

The loaned professional outreach is an important, strategic investment made by SRNS and DOE, to support nonprofits in the communities surrounding SRS. It also provides unique professional development opportunities in project management, public speaking and networking with key business and community leaders. “We truly appreciate our friends at SRNS and DOE sharing Cynthia with us again,” says United Way of Aiken County President Sharon Rodgers.

Boler-Melton is Director of SRNS Enterprise System Solutions and, over her 33 year SRS career, has had diverse technical and managerial experience in analytical laboratory operations, project support and continuous improvement management. She holds a bachelor’s degree in Chemistry from Stillman College. In addition, she is a Certified Six Sigma Black Belt and Certified Lean Practitioner. Her life away from work is very family-focused: she and her husband, Woodie, have four children and two grandchildren. Boler-Melton enjoys using her culinary skills toward fundraising dollars for the American Heart Association, Toys for Tots and United Way. And after hours, one can find Boler-Melton cheering on her favorite professional teams: the Dallas Cowboys and the Golden State Warriors.

# United Way campaign kicks off

SRNS, Savannah River National Laboratory (SRNL), Centerra and Savannah River Remediation (SRR) are teaming up this year for the sitewide 2021 SRS United Way Campaign. SRNS has pledged a goal of raising \$800,000 of the collective \$1.4 million goal.

The annual Day of Unity event that kicks off the employee campaign was held virtually this year. Employees were provided a video where they heard from each company’s chair, co-chair or representative. The video also featured interviews with individuals who have been directly impacted by the assistance of United Way.

Each year, SRNS employees come together in support of the campaign to raise money for local United Way agencies. “With the resurgence of COVID-19 cases happening throughout our community, it is imperative that we all come together to help support our local United Way agencies,” said 2021 SRNS United Way Campaign Chair Rachael Simon. “Our SRNS employees always step up to the plate and help us make a

huge difference for United Way each year. Without the generosity of our employees, we would not be able to meet our goal year after year.”



The theme of the 2021 sitewide campaign is “Strengthening Families. Strengthening Communities” and began Sept. 1.

“We are so excited to be joining forces with SRNL, Centerra and SRR this year for our sitewide United Way Campaign,” said Candace Stevenson, 2021 SRNS United Way Campaign Co-Chair. “As we continue navigating through the COVID-19 pandemic, we are so appreciative of every employee who participates in donating to area fundraisers, text-to-give donations, eCard donations and their time to volunteer.”

Employees can make donations to the 2021 SRS United Way Campaign by filling out their personal eCards, which can be accessed through PeopleSoft or through the United Way tab located on InSite.

INNOVATION • DEFENSE

NONPROLIFERATION • ENVIRONMENT

# SRNS



**Savannah River Nuclear Solutions**

We make the world **safer.**