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SAVANNAH RIVER NUCLEAR SOLUTIONS

SRNS Today



From bears to bikes, SRNS fills Santa's sleigh

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Welcome

to the December 2014 edition of

SRNS Today



Carol A. Johnson
Carol Johnson
 SRNS President and CEO

2014 is about to spin into 2015. I can't wait to see what the new year will bring.

As December draws to an end, it's time to look back, to assess where we've been and how we've done. And as January dawns, it's also time to look forward, to make plans for improvements and enhancements, and to bring a fresh perspective to our work.

I hope you'll take the time to read our 2014 SRNS Annual Report. This review of our accomplishments for the past fiscal year can be found at www.savannahrivernuclearsolutions.com/annual/2014srns_annual.pdf. This year, we're featuring videos to enhance our readers' understanding of how our operations help make the world safer. I'm very proud of everything the men and women of SRNS have accomplished, and I'm looking forward with anticipation to 2015.



SRNS continues to improve and streamline our operations. On the facing page, you'll find a story on how minimizing high level liquid waste in H Canyon will lead to a savings of taxpayer dollars. H Canyon is also playing a major role in a new spent fuel campaign now under way. For more on this story, please see Page 5.

Once again, our SRNS employees played Santa by giving generously to area children in need. More than 15,000 bicycles, tricycles and other toys filled several trucks for the U.S. Marine Corps Toys for Tots, and gifts for 820 Salvation Army Angel Tree children were donated as well. Please see Page 4 for the story and photos.

May your New Year be filled with peace and prosperity. I hope you enjoy this edition of SRNS Today. As always, thank you for your interest in Savannah River Nuclear Solutions.

About 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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SRNS plan minimizes high-level liquid waste, saves taxpayer dollars

SRNS has implemented a waste minimization plan which provides improvements to a number of processes in order to minimize the amount of high-level liquid waste produced by H Canyon activities.

H Canyon, the only operating production-scale, shielded chemical separations facility in the United States, is currently working on campaigns to blend down highly enriched uranium into low enriched uranium, which can be used as a fuel source to produce electricity by the Tennessee Valley Authority. During the process of blending down the uranium, highly radioactive liquid waste is produced. This waste is then transferred to the H Tank Farm for storage.

"SRNS created a waste minimization plan to reduce the amount of waste produced by H Canyon," said Patrick McGuire, DOE Assistant Manager for Nuclear Material Stabilization Project. "The plan presents the timing and implementation of the improvements to make sure the minimum amount of liquid waste is generated while supporting continuing campaigns in the canyon."

One of the improvements is lessening the frequency of sump flushes. The canyon floor is sloped so that any leaks that occur during canyon processes can be flushed into the sump. In the past, conservative estimates were made as to when flushes of the canyon floor needed to occur. The waste minimization plan changes that procedure so that the number of canyon runs are counted instead of estimated. This ensures the canyon floor is not flushed prematurely and reduces the number of flushes done each year.

Other improvements include repairing the Acid Recovery Unit, which recycles nitric acid for reuse in canyon processes, and changing procedures to allow for only necessary use of scrubber jumpers, which captures ammonium vapors in the process vessel vent system but increases liquid waste when used.

"The waste minimization program helps realize a significant savings of taxpayer dollars," said Wyatt Clark, SRNS Senior Vice President, Environmental Management Operations. "Every gallon of waste produced costs \$84 to be stored, evaporated, qualified and—for sludge—run through the melter to produce glass. Every gallon eliminated saves money. Another benefit is that it lets us leave a smaller footprint while completing our missions that help make the world safer."

Photo: Repairing the Acid Recovery Unit, which recycles nitric acid for reuse in canyon processes, was one of the improvements in the waste minimization plan

from bears to bikes

Employees, Toys for Tots, make Christmas dreams come true

With only two weeks until Christmas, SRNS employees celebrated the 20-year tradition of collecting toys by the truckload, partnering with the Marine Corps Reserve's Toys for Tots and the Salvation Army's Angel Tree program to benefit less fortunate children in the Central Savannah River Area.

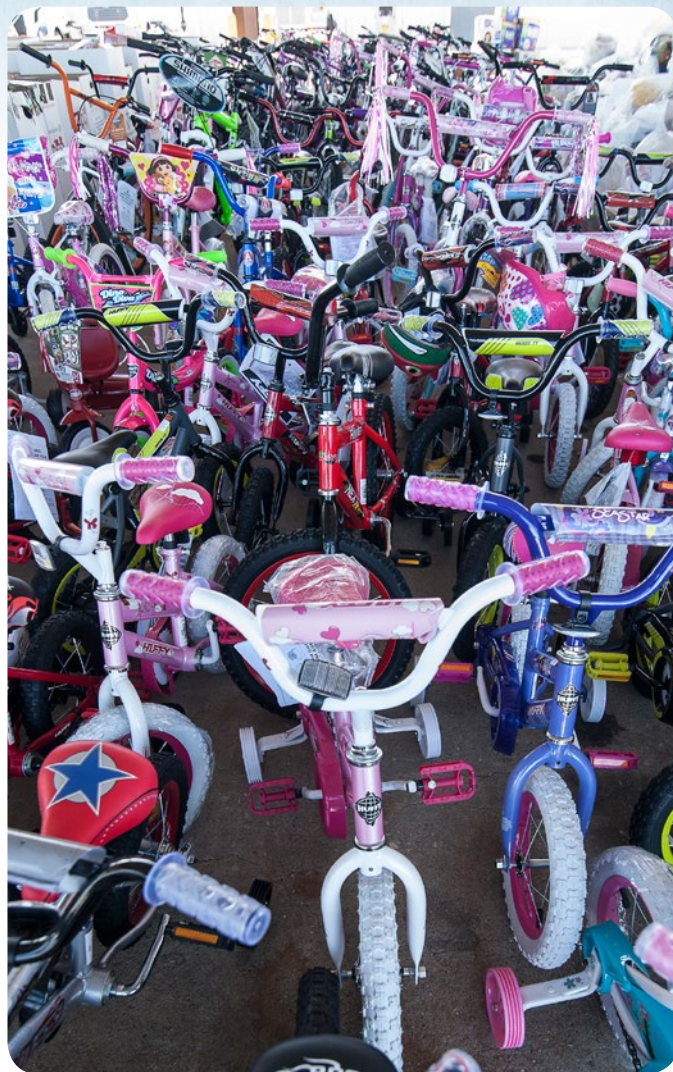
"To me, the greatest joy is putting a smile on a child's face. Our mission is to find local families in need and help provide for them," said Chief Marshall Gregory Smith of the Marine Corps. "What the Savannah River Site does is phenomenal. When I started volunteering with Toys for Tots five years ago, I couldn't believe the amount of toys that employees had collected, and continue to provide year after year. SRS makes our mission possible."

The annual event is sponsored by SRS Construction employees with the support and participation of the DOE-Savannah River, National Nuclear Security Administration-Savannah River, SRNS, Savannah River Remediation, Centerra Group, Augusta Building Trades, URS and Parsons. These companies and employees contribute in a variety of ways, from donating unwrapped toys to making monetary contributions. Over 15,000 toys were collected this year.

"When I wake up on Christmas morning, I stop and think about the number of children who are surprised with presents under the tree because of Toys for Tots and the Angel Tree program," said Julie Kirby, Chair, SRS Toys for Tots Campaign.

For the fourteenth year, Construction employees also sponsored the Salvation Army's Angel Tree program, enabling SRS employees to adopt 820 area children. Many SRS employees chose to give more than 6,000 clothing and accessory items to Angel Tree recipients.

"The Angel Tree program is one of our longstanding traditions, and it benefits not only the recipients but also those who donate gifts," said David Phelps of the Salvation Army. "This is my first time visiting SRS, and I've never seen as many Angel Tree items donated in one place."



Photos (clockwise from above): SRNS painter Billy Bennett with "Santa Bear;" bikes were some of the 15,000 toys collected at SRS this year; SRNS electrician Alton Harris presents one of the bikes to USMC Staff Sergeant Gregory Allen.



Touring Tritium Steve Goodrum (center), the National Nuclear Security Administration's (NNSA) Assistant Deputy Administrator for Stockpile Management, tours Savannah River Tritium Enterprise facilities with SRNS Director of Tritium Operations Lee Schifer (left) and NNSA-Savannah River Field Office Manager Doug Dearolph. Goodrum, who directs activities that support the safety, security and reliability of the nuclear weapon stockpile, spent a day touring Tritium Facilities and some of the Savannah River National Laboratory facilities that are integral to SRS' tritium work in support of the nation's defense. In addition to tours and presentations, he took time to recognize three groups of SRNS employees for their support of NNSA programs that are helping to ensure that America's smaller nuclear arsenal remains safe, secure and effective. He presented Defense Programs Awards of Excellence to Donna Hasty, Gary McElroy, Don Zecha and Charlie Miller in recognition of "Significant Contributions to the Stockpile Stewardship Program," for their work on the multi-site W76 Life Extension Program (LEP). He also recognized teams made up of Tritium Facility and SRNL personnel involved with NNSA's B61 LEP and W87 Alt 360 programs.

SRNS begins spent nuclear fuel campaign in H Canyon

SRNS has recently begun a multi-year campaign to process aluminum-clad spent nuclear fuel (SNF) that is currently stored at SRS.

This SNF is referred to as Material Test Reactor (MTR) SNF; the fuel is made up of uranium, aluminum, fission products and actinides from both foreign and domestic research reactors. MTR SNF is safely stored in L Basin in wet storage. In H Canyon, the SNF will undergo a chemical process that will separate the uranium and downblend the material into low enriched uranium, a form no longer usable in nuclear weapons. The end-product will be available for use in commercial power reactors, such as those operated by the Tennessee Valley Authority, to generate electricity. The plutonium and fission products are transferred to the high level waste system where they are ultimately made into a glass waste form at the Defense Waste Processing Facility at SRS.

"For years, H Canyon's primary mission was to separate uranium from SNF," said Bill Clifton, SRNS Senior Technical Advisor. "Now, L Basin

is beginning to near capacity, so it became necessary for us to start processing SNF again." This is one of a number of programmatic reasons for processing spent nuclear fuel as described in the Amended Record of Decision issued on March 2013.

"SRNS is authorized to disposition [approximately] 1,000 bundles of MTR SNF and [up to] 200 cores of High Flux Isotope Reactor (HFIR) SNF in accordance with the Amended Record of Decision signed March 29, 2013," said Allen Gunter, DOE-SR Senior Technical Advisor. "Processing of the HFIR cores is scheduled to begin in FY16. This mission will keep the canyon operational for several years."

"H Canyon is the only large scale, remotely operated chemical separations plant operating in the U.S.," Clifton said. "We are taking this SNF and turning it into a product to be used to create clean energy. The uranium is recovered and processed into a form that cannot be used for nuclear weapons, and this mission can only be completed here at SRS."

Three from SRNL to serve on national grid modernization consortium

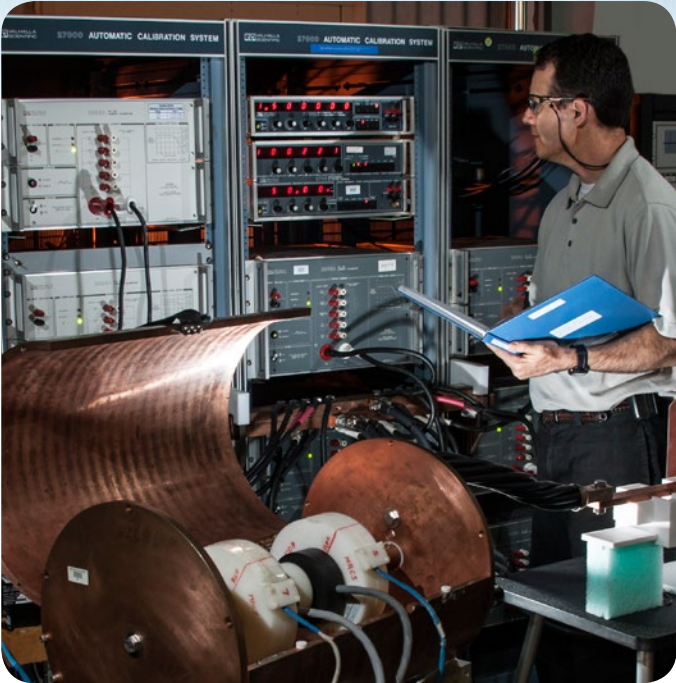
The nation's electric grid is old, with networks crisscrossing like jumbled twine. This mishmash of connections and controls also makes it vulnerable to attack.

While the grid performs as intended for the technology of yesterday, it is not designed for alternative energy sources of today or innovations of tomorrow. Three researchers from the Savannah River National Laboratory (SRNL) have been tapped to help strengthen the grid.

The U.S. Department of Energy has created the Grid Modernization Laboratory Consortium. Members of the Consortium represent the best of the best in power grid innovation, design and security. Collaboration between national laboratories, power generation industries and energy product manufacturers will lead to solutions that will fix the grid and deliver reliable and efficient power for our country.

SRNL Advisory Engineer Joe Cordaro, Fellow Engineer John McIntosh and Principal Engineer Chip Fisher have been selected to serve on the Consortium. Cordaro will focus on grid cyber security, McIntosh will focus on different devices and technology, and Fisher will work on sensors and measurement.

"As the U.S. grid uses more 'smart' devices to integrate various energy sources and for energy storage, the consequence of a cyber-attack would be widespread power disruption. Protecting an office computer from cyber crime is one thing, and difficult enough. Implementing cyber protection for systems that control our power grid while also protecting from system outage, that's magnitudes more difficult," said Cordaro.



SRNL Principal Engineer Chip Fisher at the SRNL High Current Laboratory, which is capable of generating 100,000 amps of electricity.

"The United States electrical grid was developed piecemeal from private companies, governments and a variety of collaborations. There were no uniform standards during development, so there are inefficiencies and weaknesses in the system. Infrastructure has also lagged behind technology such as modern computing. We must make our electrical grid more reliable and put science to work," explained McIntosh. "The DOE national laboratories are an ideal environment for developing best practices and pushing the envelope for technology to support grid modernization," he said.



Supporting ACTS

SRNS President and CEO Carol Johnson (left) presented a \$10,000 philanthropic giving donation to Carla Cloud, Executive Director, Area Churches Together Serving (ACTS) to support an upcoming women's enrichment series. ACTS has partnered with three nonprofits (Christ Central of Aiken and Wagener, Family and Marriage Coalition of Aiken, and Life Choices) to offer interactive sessions featuring themes such as parenting skills, financial planning and goal setting. The grant from SRNS will go towards stipends for guest speakers and babysitters as well as refreshments and entertainment to help make the workshops both enjoyable and educational for participants. Unlike formal classes on life skills, these informational sessions will have more of a "coffeehouse feel" and will place an emphasis on welcoming, embracing and building healthy relationships and establishing a network of role models.

Information Pods coming to Augusta

Curious about the Savannah River Site? In January, you'll have the chance to find out about some of the major missions at SRS and SRNL.

The SRS Information Pods will be held Jan. 28 at the Georgia Regents University Summerville Campus in the Jaguar Student Activities Center, located off Walton Way.

Participants may select two of four presentations to attend: Nuclear Materials Management, Environmental Monitoring and Restoration, Waste Management and SRNL.

Registration will begin at 5 p.m. on the day of the event and is on a first come, first served basis. Poster displays will also begin at 5 p.m., with presentations beginning at 6 p.m. and concluding by 8 p.m. The event is free of charge.



Registration opens for 2015 SRS Public Tour Program

2015 SRS Public Tour Dates

- January 8, 29
- February 10, 24
- March 12, 31
- April 16, 28
- May 12, 26
- June 9, 23
- July 9, 21
- August 11, 25
- September 10, 29
- October 8, 27
- November 10
- December 10

Registration for the Savannah River Site's 2015 public tour program will begin Dec. 29. More than 1,000 seats will be available during 22 tours to be held throughout the upcoming year.

Driving tours are offered each year at SRS to provide members of the public an opportunity to see many of the site's facilities and learn more about the site's history, current activities and future missions. The tour program at SRS is managed by Savannah River Nuclear Solutions.

The first of the 2015 tours will be held in January. Each tour starts at the Aiken County Applied Research Center located off Highway 278, near New Ellenton, and begins with an overview presentation about SRS and a safety briefing.

SRS tours are free of charge.

To register, visit www.srs.gov/general/tour/public.htm. If you experience difficulty registering online, call (803) 952-9472.

Each tour begins at 12:30 p.m. and typically ends at 4:30 p.m., and can accommodate about 50 people. Participants must be 18 years of age or older and citizens of the United States.

Note that reservations for spaces usually fill quickly. Interested individuals are encouraged to sign up as soon as possible, once the window for reservations opens.

Seats are limited to two individuals per reservation. Seats are filled on a first come, first served basis.

PEACE *on* EARTH



Savannah River Nuclear Solutions

We make the world **safer.**