



SPRING 2016

CNTA AWARE

CITIZENS FOR NUCLEAR TECHNOLOGY AWARENESS

A WORD FROM OUR EXECUTIVE DIRECTOR—MIKE JOHNSON

New & Returning Members



Over this last three months, CNTA has moved out on several initiatives:

- Our membership drive is showing great progress. The Members Mixer in February was well-attended, and Fitz Trumble signed up a number of new members that night. I'm excited to see that so many new and current members are doing a great job of spreading our message. We're tallying numbers for the mini iPad, and we'll award it at the Up & Atom breakfast on April 26.



- We've received some good input and interest in getting the Mentoring Program kicked off. I've taken feedback and made some modifications to the original program. You'll be seeing some additional information soon.

- Chuan Wu has taken the lead getting the Speaker's Bureau re-established, and it's not too soon for all of you who volunteered to start thinking about how you would present your topics, both to a technical audience and a non-technical one. We'll call for presentations at some point in the future.



- CNTA is working with the Academy for Lifelong Learning at USC Aiken to present a series of classes on current missions at the Savannah River Site.



- Planning and sign-up for the CNTA golf tournament in May and the Southeast Summer Nuclear Institute (SSNI) in June are well underway.



As you can see, there is a lot going on, and CNTA has all who are volunteering your time to thank.

MEETING THE NEEDS OF THE NUCLEAR INDUSTRY AIKEN TECHNICAL COLLEGE

Across the country, the nuclear industry is seeking to employ a new generation of workers as a significant number of its current workforce begins to retire. Despite the increase in workforce demand, the availability of hires with the training needed has lagged behind.

Recognizing the critical need for a trained workforce to help fill the vacancies, Aiken Technical College and Savannah River Nuclear Solutions collaborated to develop a new nuclear fundamentals certificate program which launched in February.

“Each graduate with this certificate in hand will find multiple employers in the nuclear field, locally, regionally and even nationally, interested in their potential as a new hire,” said Dr. Susan Winsor, ATC President.

The two-semester program prepares students for entry-level positions in the nuclear industry. The curriculum consists of seven courses that provide an introduction to topics such as chemistry, process control and radiation fundamentals.

It also adds to the College’s offerings of nuclear programs such as its radiation protection technology program, which is also a high-demand area in the industry.

Earlier this year, SRNS stated in a news release that the company expects to hire about 2,000 general production operators, radiation control personnel and mechanics over the next several years to fill many of the positions that will become vacant due to attrition.

The ability to graduate with a marketable skill is one of the reasons student Jason Moore was attracted to the nuclear fundamentals program.

“I was between jobs at the time and thought it would be a very good opportunity for me,” said Moore. “It’s been a great program...I’ve learned a lot in just this short amount of time.”

Sheila Stevens, also in the cohort, agreed noting that earning the certificate will be an additional asset for her as she is already familiar with the industry and would like to work in environmental safety.

She also hopes that others will take advantage of the program and enroll in future cohorts.

“I think it is a perfect match for this community,” she said. “It’s a certification that can be directly applied on the job. I also like that it can prepare us to work for Savannah River Site or any of the other surrounding sites. It gets your foot in the door and I think that’s a great opportunity.”

ATC plans to begin its next cohort in May. Those interested in learning more about the program can visit www.atc.edu or call (803) 508-7263. Pictured below are Jason Moore (left) and Sheila Stevens (right).




CNTA EDUCATION COMMITTEE SUMMARY

A “Bringing Nuclear into the Classroom” teacher workshop was held March 4th at the Ruth Patrick Science Education Center (RPSEC). Thirty two teachers attended the workshop and provided very positive comments on their evaluation forms.

The Southeastern Summer Nuclear Institute (SSNI 2016) is scheduled for June 15-17, 2016. It is anticipated that 25-30 middle and high school teachers will participate. Information and registration forms can be found on the CNTA website, www.c-n-t-a.com under Education Outreach or on the Ruth Patrick Science Education Center (RPSEC) website, www.rpsed.usca.edu. Registration closes May 15.

Other happenings:

- A subcommittee comprised of Nora Swanson (Ga. Power), Marissa Reigel (SRNL), and Susan Wood is researching a new initiative for middle school students.
- Mel Buckner and Susan Wood have been meeting with NAYGN groups at VC Summer and Plant Vogtle to discuss opportunities for joint outreach activities.
- Classroom lectures on nuclear topics continue to draw interest with support from ANS-SR with recent or planned presentations at Kennedy Middle School, Greenbrier HS, Davison Fine Arts, the DIG STEM festival in Williston, etc.
- The high school essay contest closed February 29 with 16 entries from schools throughout the CSRA. Winners will be announced in April or early May.



Bringing Nuclear Into the Classroom
(A workshop for Lower Savannah River Area science & math teachers)

Sponsored by
Citizens for Nuclear Technology Awareness &
Ruth Patrick Science Education Center
With support from
American Nuclear Society, Aiken Rotary, Energy Solutions & AECOM

Date: March 4, 2016
Ruth Patrick Science Education Center
8:00 a.m.—4:30 p.m.

8:00 a.m.	Welcome and Introductions
8:30 a.m.	Atomic Fundamentals
9:30 a.m.	Nuclear Fundamentals (Parts 1 and 2)
11:30 a.m.	Lunch—USCA Cafeteria
12:30 p.m.	Power Generation Fundamentals
1:30 p.m.	Nuclear Power—Energy for the Future
2:30 p.m.	Risk (Real vs. Perceived)
3:30 p.m.	Regional Nuclear Technology Uses & Opportunities
4:15 p.m.	Wrap-up
4:30 p.m.	Adjourn



DEFENSE WASTE PROCESSING FACILITY CELEBRATES 20 YEARS OF OPERATION

AIKEN, S.C. (March 21, 2016) – Twenty years ago this month, the first high-level waste at the Savannah River Site (SRS) was converted into glass.

The nation's only operating vitrification facility, the Defense Waste Processing Facility (DWPF), has been the steady and reliable workhorse of liquid waste operations at SRS.

Vitrification, also called glassification, is the process of using extremely high temperatures to turn the sludge waste, combined with frit (a sand-like material), into a glass form. A 65-ton melter is used to glassify the waste into borosilicate glass, which immobilizes it, and makes it suitable for safe, long-term disposal in stainless steel canisters. Currently, these canisters are safely stored in an on-site facility until a federal repository is identified.

DWPF has been safely treating the high-level liquid waste at the Department of Energy (DOE) facility since radioactive operations began on March 12, 1996, with the transfer of sludge waste feed to DWPF. A little over a month later, on April 29, the first radioactive canister was poured. DWPF poured its 4,000th canister of glassified waste December 31, 2015.

Savannah River Remediation (SRR) operates DWPF, as well as other liquid waste facilities at SRS, as part of its contract with DOE. Operations are expected to continue at DWPF for approximately 20 more years and about 4,000 more canisters are scheduled to be produced.

Jack Craig, DOE-SR Manager, said that DWPF's success is not just impressive, but necessary.

"DWPF is important to the Department of Energy; it's important to the surrounding communities; and it's important to the state of South Carolina," Craig said. "Stabilizing the waste by making it into glass means the risk is significantly reduced for the people, the community and the environment."

Mark Schmitz, Acting SRR President and Project Manager, said this facility has been a proven process for dispositioning the high-level liquid waste at SRS.

"The longevity and success of DWPF are attributes of the safe operations performed by our workers over the last two decades," Schmitz said. "DWPF is a robust, safe, efficient, and reliable facility. We're looking forward to seeing continued success over the next 20 years."

DWPF Heritage

DWPF's origins are traced back long before startup in 1996. In the mid-1970s, DOE recognized significant safety and cost advantages in immobilizing the liquid waste into a solid form. About 20 different wasteforms, including synthetic rock, ceramic, and cement, were evaluated as a solution to stable, long-term storage of the liquid waste. In 1982, DOE selected borosilicate glass as the choice end form for the high-level waste at SRS. Research confirmed that the radioactive constituents in the waste were chemically bound in the borosilicate glass matrix, making it a highly durable wasteform.

In November 1983, ground was broken for the construction of DWPF, which would be the nation's first vitrification plant. After construction was completed, the facility went through a vigorous startup testing program. Eighty canisters of simulated glass were poured during testing.

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Construction of the Defense Waste Processing Facility

DEFENSE WASTE PROCESSING FACILITY CELEBRATES 20 YEARS OF OPERATION (CONTINUED FROM PAGE 4)

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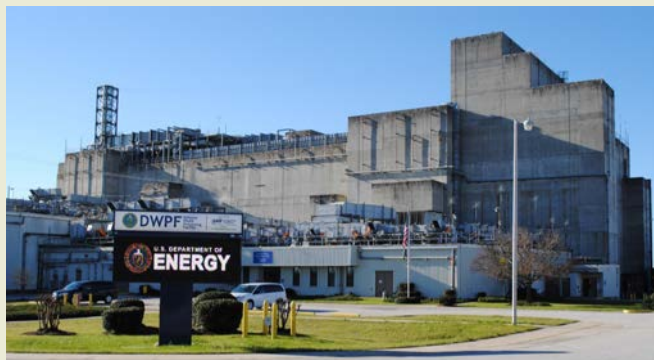
DWPF Facts

- DWPF contains 71,000 cubic yards of concrete and 10,500 tons of reinforcing steel. The 10-foot-thick concrete foundation mat is reinforced by 2¼-inch diameter reinforcing steel.
- DWPF has poured 4,032 (as of March 9) of more than 8,000 total expected canisters.
- DWPF has removed approximately 58.6 million curies of measure of radioactivity from the liquid waste at SRS.
- DWPF has poured nearly 16 million pounds of molten glass since 1996.
- DWPF has seen only two different melters in its lifetime. Melter 2 has poured more than 10 million pounds of glass and is still safely and efficiently operating, exceeding design life by more than 10 years.

-DOE-

SRS is owned by DOE. The SRS Liquid Waste contract is managed by SRR, which is composed of a team of companies led by AECOM with partners Bechtel National, CH2M and BWX Technologies. Critical subcontractors for the contract are AREVA, EnergySolutions and URS Professional Solutions.

Additional information on the Department of Energy's Office of Environmental Management and the Savannah River Site can be found at <http://www.em.doe.gov> or <http://www.srs.gov>.



The Defense Waste Processing Facility has been operating at the Savannah River Site for 20 years.

PLUTONIUM DISPOSAL NEEDS OK US, RUSSIA MUST AGREE ON MOX ALTERNATIVE, OFFICIAL SAYS

March 18, 2016

The Augusta Chronicle

By Travis Highfield

Despite plans to close SRS' mixed oxide plant, a top National Nuclear Security Administration official has said current regulations don't allow for the plutonium disposal originally destined for the site.

The federal government has also yet to have formal conversations with Russia regarding an alternative to MOX, designed to facilitate an agreement between the U.S. and Russia to dispose of 68 metric tons of weapons-grade plutonium. The material covered under the agreement is enough to create about 17,000 nuclear weapons, according to the MOX project.

The U.S. is currently on the hook to dispose of more than 34 metric tons, seven of which are at Savannah River Plant with the rest in storage at Pantex Plant near Amarillo, Texas. At a Senate Appropriations Committee hearing Wednesday, Lt. Gen. Frank Klotz, NNSA undersecretary, said there are an additional six tons at SRS that aren't covered under that agreement.

Currently, the Department of Energy and the NNSA have statutory authority to dispose of all 13 tons in storage at SRS at a facility in New Mexico, but after President Obama proposed mothballing MOX, which would convert weapons-grade plutonium into fuel for commercial reactors, in favor of a dilute and dispose approach, Klotz said his agency would have to seek additional permission to dispose of the 34 metric tons.

"We expect that we would have to do some work on statutory authorities associated with that," he said.

Upon hearing this, U.S. Sen. Graham, R-S.C., rattled off a line of questioning and interrupted Klotz before he could complete his responses.

"So let's see if I got this," Graham said. "We're going to change the entire program, then we're going to go to the Russians to see if they're O.K. with it? Is that the plan?"

To which Klotz replied: "That is the plan."

When asked what would happen to the MOX, which contractors say is about 70 percent complete, Klotz paused and again attempted to answer but was once again cut off by Graham.

Earlier this month, Energy Secretary Ernest Moniz said that he doesn't believe a stop work order will be issued for MOX in 2016, but language in Obama's budget proposal means that one could be issued in the following fiscal year if supported by Congress.

<http://chronicle.augusta.com/news/metro/2016-03-17/nnsa-official-says-negotiations-russia-legal-issues-remain-should-mox-close?v=1458266619>



DEVELOPER SELECTED FOR NEW SRNL ADVANCED MANUFACTURING COLLABORATIVE

The U.S. Department of Energy (DOE) is one step closer to the creation of an Advanced Manufacturing Collaborative for the Savannah River National Laboratory (SRNL). Savannah River Nuclear Solutions, LLC (SRNS), as operator of SRNL, has selected the Aiken Advanced Manufacturing Partnership (AAMP), LLC to develop a proposal for space for the Collaborative. The proposed location is planned for the University of South Carolina Aiken campus in Aiken, SC. This new laboratory space will help promote partnerships between Industry, Academia, and Government in the creation and implementation of new technology. The property to be developed is currently owned by the university and is located near SRNL.

The proposed 70,000 square foot space will include chemistry labs, engineering fabrication labs, high bay and industrial work space, and staff offices. AAMP, LLC will provide and maintain the laboratory and office space, and SRNS will enter into a subsequent lease agreement for use of the facility. This innovative public/private approach will allow the DOE and SRNL to expand capabilities through private financing and collaboration on scientific and technological innovation.

“The Department of Energy is pleased with this new opportunity in Advanced Manufacturing. It is our duty to find smarter and safer ways to address the Environmental Management, National Security, and Clean Energy needs of our nation. It is only through the combined use of new technologies that these duties can be fulfilled,” said Savannah River Site Manager Jack Craig.

“We at SRNL look forward to creating a more open environment for collaborative research and development in areas such as process intensification, smart manufacturing, cyber, virtual simulation, and advanced robotics. This space will allow SRNL to build the future of innovation. By thinking creatively, we can more effectively partner our talent with industry and academia to address a multitude of technology needs,” said SRNL Laboratory Director Dr. Terry Michalske.

The Savannah River National Laboratory is a multi-program applied research and development laboratory for the U.S. Department of Energy. SRNL applies state-of-the-art science and engineering to provide practical, high-value, cost-effective solutions for our nation’s environmental cleanup, nuclear security and clean energy challenges. For more information, visit <http://srnl.doe.gov>.



DOE'S SWPF INTEGRATION INVOLVES CONTRACTOR TEAMWORK AT SRS

The Salt Waste Processing Facility (SWPF), currently under construction at the Department of Energy's (DOE) Savannah River Site (SRS), involves multiple SRS contractors successfully integrating work to complete the project's construction and connection to the existing liquid waste facilities.

A key objective for DOE-SR in the next few years is to fully integrate SWPF into the liquid waste system. Accomplishing this objective requires close partnering between DOE and its contractors. Savannah River Remediation (SRR), the liquid waste contractor at SRS, DOE and Parsons, the SWPF engineering, procurement and construction contractor, have been closely interfacing on integration of SWPF with the liquid waste system.

A recent example of this interface involves a transfer of electrical equipment to SWPF, which resulted from successful integration between various DOE-SR contractors. Electrical equipment needed to complete electrical connections for SWPF was identified at SRS and transferred to the SWPF project. Once electrical connections are complete, the equipment transfer will result in approximately \$20,000 total cost savings for DOE-SR for the SWPF project.

SWPF construction completion date is scheduled for April 2016, well ahead of schedule according to Frank Sheppard, Parsons Vice President and SWPF Project Manager.

"The Electrical Equipment transfer is an example of many other implemented strategies to safely accelerate the SWPF construction schedule," Sheppard said. "Effective integration between Parsons, SRR and DOE is key for this project to reach early completion and enable this critical component of the DOE's cleanup plan for the legacy liquid waste at SRS."

SRR led the interface between Parsons, Savannah River Nuclear Solutions (SRNS), the SRS management and operating contractor, and DOE-SR which approved the transfer of equipment from one contractor to another. The equipment was transferred in February 2016 at the SRNS Electrical Equipment Yard.

Shayne Farrell, Deputy Federal Project Director for SWPF, said the transfer of equipment from SRNS to Parsons displayed an excellent example of teamwork and partnering.

"SRR, Parsons, SRNS and DOE provided integral assistance and support to make this happen," Farrell said. "The transaction took place over a very short time period, was very well coordinated, and the reuse of on-hand, spare equipment resulted in a substantial cost savings to DOE-SR and the taxpayer."

Parsons requested support from the SRR SWPF Integration Program for the electrical equipment, and according to Keith Harp, SRR SWPF Integration Program Manager, SRR working with SRNS Utilities and Operating Services identified the needed materials housed in an SRNS electrical lay down yard on Site.

"We recognized an opportunity to take advantage of the integration process with SRS contractors, and it turned into a success for DOE," Harp said. "We're seeing the strength of the integration team when teamwork and cost savings come together."

SWPF will be the key liquid waste facility for processing approximately 90 percent of the remaining 36 million gallons of tank waste. SWPF will separate the salt waste into a low-volume, high radioactivity fraction for vitrification in the Defense Waste Processing Facility and high-volume, decontaminated salt solution to the Saltstone Facility for disposal as low-level waste.

SWPF will utilize technology currently being used in SRR's Interim Salt Disposition Project Modular Caustic Side Solvent Extraction Unit (MCU). Lessons learned from MCU operations are shared during bi-monthly meetings of the SRS SWPF Integration Team, which includes representatives from SRR and Parsons. SRR also participates in monthly SWPF construction interface meetings with DOE and Parsons.



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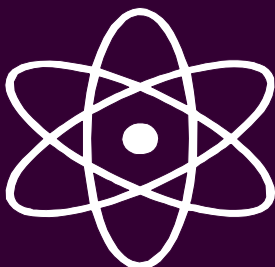
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TO PROVIDE EDUCATION AND INFORMATION ON APPLICATIONS OF NUCLEAR TECHNOLOGY INCLUDING:

- ◆ Energy Sources
- ◆ Medical Applications of Radiation
- ◆ Industrial Applications including Food Irradiation
- ◆ Nuclear Production Processes
- ◆ National Security

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