



# The Neutrino

American Nuclear Society - Savannah River Section  
Newsletter - December 2012

<http://www.ans-sr.org> and <http://local.ans.org/savriv/>

## 2012 – 2013 ANS-SR Leadership

### Executive Committee (EC)

#### EC Section Officers:

##### **Chair**

Tinh Tran, URS

##### **Vice-Chair**

Kevin O’Kula, URS

##### **Treasurer**

Sid Keener, MOX Services

##### **Secretary**

TJ Corder, Southern Company

#### Additional EC Members:

##### **Education Outreach Chair**

Bob Eble, AREVA Federal Services

##### **Publications Chair**

Jay Bilyeu, Retired DOE/SR

##### **Programs Chair**

Ben Cross, SRNL

##### **Topical Chair**

Bill Wabbersen, SRNS

##### **Vogtle Liaison**

Phil Cupp, Southern Company

##### **At Large Members**

Mel Buckner, Retired SRNL  
Carl Mazzola, MOX Services

##### **Past Section Chair**

Amanda Bryson, MOX Services

#### Other Committee Chairs

##### **Arrangements Chair**

*Open Position*

##### **Membership Chair**

Sadie Jackson, MOX Services

##### **Retiree Liaison Chair**

*Open Position*

##### **Administrative Assistant**

Diane Shelton, Retired SRS

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## ANS-SR is Co-Sponsoring Topicals in 2013 and 2014!

ANS-SR, in partnership with the ANS Columbia Section, was selected to host the September 2013 Probabilistic Safety Assessment and Analysis (PSA 2013) Topical. The Columbia Section is taking the leadership role and the topical will be held in Columbia, South Carolina. The Columbia Section has recent experience in hosting topicals and ANS-SR is using this opportunity to regain our proficiency in hosting large national meetings. The Nuclear Installations Safety Division (NISD) partners with local chapters to sponsor the PSA biennial Topical Meetings, with international nuclear societies often co-sponsoring. See the last page of this Neutrino for the PSA 2013 Call for Papers.

ANS-SR is taking the lead in partnering with the ANS Columbia Section to co-sponsor the 2014 Decommissioning, Decontamination, and Reutilization (DD&R) and Robotics and Remote Systems (RSS) for Hazardous Environments Topical. This topical is scheduled for September 2014 in Charleston, South Carolina. The General Chair is Dr. Thomas Sanders from the Savannah River National Lab.

**Openings are available for interested volunteers to support these important initiatives.**

Please contact [ans.savannahriver@gmail.com](mailto:ans.savannahriver@gmail.com), contact ANS-SR Chair Tinh Tran at [tinh.tran@urs.com](mailto:tinh.tran@urs.com), or contact Topical Chair Bill Wabbersen at [william.wabbersen@srs.gov](mailto:william.wabbersen@srs.gov) to join the volunteers supporting these activities!

### WHY IS THIS IMPORTANT?

ANS-SR needs funds to continue to support the important activities you read about in the Neutrino, such as scholarships, Future City Competitions, and College Night. ANS-SR does not collect dues and does not make money on technical meetings and events. Hosting a topical will bring needed funds to our organization. WE NEED your support for the topical to help keep our good programs going. Please join the volunteer team today!

The American Nuclear Society – Savannah River Section covers 46 counties in Georgia and South Carolina.





**JOIN ANS-SR on Facebook, Twitter and YouTube**

FACEBOOK: <http://www.facebook.com/pages/ANS-SavannahRiver/143771258995015>

TWITTER: [http://www.twitter.com/ANS\\_SR](http://www.twitter.com/ANS_SR) (note the underline between ANS and SR)

YouTube: <http://www.youtube.com/user/ANSSavannahRiver>

A superior pilot uses his superior judgment to avoid situations which require the use of his superior skill.

- Frank Borman

Hoping and trying won't make it happen.  
Commit to doing it.

- H. Wyman Howard

## **JANUARY SPECIAL TECHNICAL MEETING**

### **TOUR AND DINNER AT PLANT VOGTLE**

ANS-SR participated in a special tour and dinner meeting at Southern Company's Plant Vogtle on January 9, 2012. The visit included tours of Vogtle Units 3 & 4, currently under construction. After the site tours, the Vogtle 3 & 4 Training Department hosted a hearty barbeque dinner. After dinner, an overview of the Combined Operating License (COL) process was presented, followed by tours of the fully functional Limited Scope Simulator (LSS) #1 and the Vogtle 3 & 4 Training Facility.





## **JANUARY TECHNICAL MEETING**

### **FRED DOHSE – “BEING A NUCLEAR LEADER”**

ANS-SR hosted a dinner meeting on January 12, 2012, at the Houndslake Country Club in Aiken, South Carolina. ANS-SR was pleased to have Fred Dohse as the featured speaker. Mr. Dohse is the Executive Vice President and Chief Operating Officer for Savannah River Nuclear Solutions, LLC (SRNS) at the Savannah River Site. He spoke to the audience on “Being a Nuclear Leader.”

Mr. Dohse earned a Bachelor of Science from the United State Naval Academy and a Master of Engineering from the University of Idaho. He is a 1993 graduate from the National War College and a Seminar XXI Fellow (1994-95) of Massachusetts Institute of Technology.

As Executive Vice President and Chief Operating Officer for SRNS, Mr. Dohse is responsible for safe execution of all Management & Operating contractor operations at SRS, including the Savannah River National Laboratory and the Site’s tritium operations. Mr. Dohse previously served as SRS Vice President for Nuclear Materials Operations, with responsibility for safe execution of all SRS nuclear operations.

Prior to joining SRNS, Mr. Dohse served as director of the CVN 77 Nuclear-Powered Aircraft Carrier Program at Northrop Grumman Newport News. In this position, his responsibilities included business operations, program management and customer relations for CVN 77. Mr. Dohse also served in the U.S. Navy for 30 years, attaining the rank of captain. During his naval career, he served



in leadership positions of increasing responsibility including Deputy Executive Secretary for the National Security Council (NSC) staff, Director of the Nuclear Arms Control Division, Joint Staff (Pentagon), and Commanding Officer, USS MEMPHIS (SSN 691).

## **FEBRUARY TECHNICAL MEETING**

### **DR. ERIC LOEWEN – “PLUTONIUM: PROMISE OR PERIL”**

ANS-SR and the Citizens for Nuclear Technology Awareness (CNTA) co-sponsored a technical dinner meeting on Wednesday, February 15, 2012, at Newberry Hall in Aiken, South Carolina. The featured speaker for this meeting was the 2011-2012 President of the American Nuclear Society, Dr. Eric P. Loewen. Dr. Loewen presented an interesting discussion on the topic of “Plutonium: Promise or Peril”.

Dr. Loewen is the Chief Consulting Engineer, Advanced Plants Technology, for General Electric-Hitachi Nuclear located in Wilmington, North Carolina. Dr. Loewen is currently promoting the sodium fast reactor and electrometallurgical processing of spent nuclear fuel as the most efficient and sustainable way to close the nuclear fuel cycle.

As the American Nuclear Society 2005 Congressional Fellow, Dr. Loewen worked in the office of Senator Chuck Hagel (R-NE), where he coordinated the Senator's inclusion of America's first legislation addressing global climate change policy into the Energy Act of 2005. After joining

the Idaho National Laboratory in 1999, Eric contributed to development of a Generation IV lead-bismuth cooled reactor and proliferation-resistant thorium-uranium fuel. During that time, he also supported the President's Climate Change Technology Program. From 1992 to 1997, Dr. Loewen served as Director of Research, Molten Metal Technology, in Fall River, Massachusetts,

where he developed and deployed nuclear applications for

hazardous waste management. He also served in the nuclear Navy from 1982 to 1993.



Dr. Clint Wolfe , CNTA Director; Dr. Eric Loewen, Past President ANS National; and Amanda Bryson, 2011-2012 ANS-SR Section Chair

Dr. Loewen graduated from Western State College in Gunnison Colorado with a BA in Mathematics and Chemistry (1983), and later attained a Master of Science in Nuclear Engineering (1992) and PhD in Engineering Physics (1999) from the University of Wisconsin-Madison.

## MARCH TECHNICAL MEETING

### CLAY RAMSEY – “STATUS OF THE MOX PROJECT AT SRS”

ANS-SR hosted a technical dinner meeting on March 21, 2012, at Carrabba's Italian Grill in Augusta, Georgia. The featured speaker for the evening was Clay Ramsey, Federal Project Director for the Mixed Oxide (MOX) Fuel Fabrication Facility currently under construction at the Savannah River Site. Mr. Ramsey provided an update on the status and progress of the MOX project and related Department of Energy/National Nuclear Security Administration initiatives.

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ANS-SR Local Section members hosted the ANS President's visit to the SRS MOX Project and were featured in the March/April 2012 ANS National newsletter:



*ANS President Eric Loewen, second from right, toured the MOX Fuel Fabrication Facility construction site with (from left) Zachary Kosslow, an ANS member and a student at North Carolina State University; Amanda Bryson, chair of the Savannah River Section and a nuclear criticality safety engineer at Shaw Areva MOX Services; and Kevin Hall, of the National Nuclear Security Administration. (Photo: Shaw Areva MOX Services)*

## MAY TECHNICAL MEETING

### **CHERI COLLINS - “VOGTLE 3 & 4 CONSTRUCTION UPDATE”**

ANS-SR held a technical dinner meeting on May 3, 2012, at the Plant Vogtle site in Burke County, Georgia. The featured speaker was Ms. Cheri Collins, Southern Company’s General Manager for External Alliances. Ms. Collins discussed the AP-1000 reactor design and provided an update on the status of construction of Vogtle Units 3 & 4. ANS-SR members also enjoyed an extensive tour of the construction site.





### JULY TECHNICAL MEETING

#### **DR. TOM SANDERS – “SMALL MODULAR REACTORS”**

ANS-SR held a technical dinner meeting July 10, 2012, September 14, 2011, at the Mi Rancho Restaurant in Augusta, Georgia. ANS-SR was privileged to host Dr. Tom Sanders as the featured speaker. Dr. Sanders is the Associate Laboratory Director for Clean Energy Initiatives at the Savannah River Site, and recently served as President of the American Nuclear Society National organization. Dr. Sanders spoke on the topic of small modular reactors (SMRs).

### SEPTEMBER SOCIAL MEETING

ANS-SR and the Savannah River Young Generation in Nuclear co-hosted another fun-filled “Trivia Night” at the Aiken Brew Pub in Aiken, South Carolina, on September 27, 2012. ANS-SR volunteers Brian Lenz, Amanda Bryson, and Bob Eble helped set-up and moderate the event.





## **NOVEMBER TECHNICAL MEETING**

### **SHAWN SHALER – “VOGTLE 3 & 4 CONSTRUCTION EXPERIENCES”**

ANS-SR hosted a technical meeting on November 8, 2012, at Bobby's BBQ Barn in Warrentonville, South Carolina. The featured speaker was Mr. Shawn Shaler, the Vogtle 3&4 Construction Site Manager. Mr. Shaler shared construction experiences related to the ongoing construction of Vogtle Units 3&4.



## **DECEMBER SOCIAL MEETING - “A HOLIDAY CELEBRATION OF FOOD AND WINE”**

ANS-SR, in partnership with the Health Physics Society–Savannah River Chapter and the Southeast Chapter of the Institute of Nuclear Materials Management, jointly hosted a holiday celebration of food and wine on Monday, December 10, 2012, at the North Augusta Community Center, North Augusta, South Carolina.

The menu consisted of five courses of heavy hors d’oeuvres paired with wine, followed by a dessert pairing. Dick and Sally Benjamin of Wine World (in North Augusta) inspired the wine selections and provided wonderful commentary as the dinner proceeded. Terry Wick again served as the executive chef, assisting in the selection of wines and recommending the pairings and progression.

Highlights of the evening included...

- Ernie Els Johannesburg Spread with Crawfish, Crab, and Spicy Herb-Seasoned Sour Cream (*Herding Cats Chenin Blanc 80% Chardonnay 20%, South Africa*)
- Biarritz Roast Chicken over Apple Slices served with sliced Baguettes (*Luberon Blanc 2011, La Vieille Ferme, France*)
- Bundaberg Coastal Free-Range Sliced Turkey with White Mountain Bread and Cranberry-Orange Zest Mold (*Traminer 65% / Riesling 35%, 2011, Rosemount, Australia*)
- Galacian Pork Stew Leon with Peppers, Onions, Carrots, Potatoes, and Parsnips, served with Castillian Bread Rounds (*Don Ramon Oak-Aged Red 2008, Campo de Borja, Spain*)
- Mount Diable California Black Hills Venison with Plum-Ginger Sauce (*Petite Sirah 2009, “Drops of Jupiter” (Concannon), Livermore, California*)
- Asturian Mountains Orange Sponge Cake with Raspberry/Ligonberry Glaze and Whipped Topping (*Rosado de Garnacha, “Carmen Dolores” 2011, Finca Venta Don Quijote, Spain*)

## OUTREACH HIGHLIGHTS

ANS-SR continued its highly active and vibrant outreach program during 2012. Here are a few highlights:

**Teacher's Workshops and Intern Workshops.** In partnership with Citizens for Nuclear Technology Awareness (CNTA), ANS-SR volunteers continued to develop and conduct Teacher Workshops in 2012. Bill Wabbersen, Mel Buckner, Amanda Bryson and other ANS volunteers taught sessions at the January 13<sup>th</sup> Workshop at the University of South Carolina Salkehatchie, at the March 2<sup>nd</sup> session at the Ruth Patrick Science Education Center in Aiken. ANS-SR also supported additional sessions held at the Savannah River Site for summer interns.



**Boy Scouts Nuclear Merit Badge.** On January 17, 2012, Bill Wabbersen taught nuclear science to boy scouts in Martinez, Georgia, seeking to attain the Nuclear Science Merit Badge.

**Future City.** On January 21, 2012, Bob Eble, Sid Keener, Tinh Tran, and Stephanie Zejewski participated in the Future City Competition. The theme was “energy innovation” and the winner of the Energy Award was W.A. Perry Middle School from Columbia. They used a combination of tidal, wind and compressed air storage power for their “Hydro-Utopia” city. Their system was connected to a smart grid that could monitor not only electric supply but also demand and reduced demand when not needed. They also had a disposal facility that injected trash deep into the earth, which was unique in that most teams had no disposal plans.



**Journey to the Center of the Atom.** ANS-SR volunteer Bill Wabbersen partnered with the Ruth Patrick Science Education Center (RPSEC) to develop and teach three sessions of a new class called the “Journey to the Center of the Atom”. In this program, students explore atomic structure using a series of hands-on activities. The session involves use of the “Interactive Nucleus” display developed by ANS-SR as well as a new activity called the “Interactive Chart of the Nuclides.” Jim Bazley, in coordination with RPSEC, did an outstanding job recording one of the sessions and the video can be viewed on the ANS-SR YouTube Page: <http://www.youtube.com/user/ANSSavannahRiver?feature=watch>. These first three sessions were so well-received that eight new classes were scheduled for January 2013.







**Barnwell Elementary School.** Bob Eble, Brian Dyke, and Walter Dyke conducted four presentations on radiation science and the radioactive world around us to about 100 sixth grade students at Barnwell Elementary on Friday, February 10, 2012.



**Jim Dyess Day at Fort Gordon.** ANS-SR volunteers Bob Eble, Alex Deng, and Henri Lee participated in the Jimmy Dyess Day Boy Scout event at Fort Gordon on October 6, 2012. About 150 scouts and parents visited the ANS-SR booth. A sampling of the information provided included radiation detection, learning about isotopes, learning about different types of radiation, radiation shielding, the nuclear power cycle, and comparison of nuclear fuel to other fuels.

**Middle and High School Nuclear Science/Basics of Radiation Outreach.** During February, March, and November of 2012, Bill Wabbersen taught nuclear science and “Basics of Radiation” sessions to multiple classes at Allendale-Fairfax High School and Aiken Middle School in South Carolina, and Lakeside Middle School in Georgia.

**CSRA College Night.** ANS-SR volunteers supported CSRA College Night for the 26<sup>th</sup> consecutive year. This year, Bob Eble was joined by Sadie Jackson, a recent graduate from South Carolina State University. Bob and Sadie partnered with Southern Nuclear representatives and discussed nuclear engineering and associated technologies career opportunities with over 300 students. ANS-SR awarded a \$1,000 scholarship to Justin Dunton, a senior at Midland Valley High School.



Sadie Jackson with ANS-SR scholarship winner  
Justin Dunton



ANS-SR volunteers Bob Eble and Sadie Jackson with  
Aimee Adamo from Southern Nuclear

**Citizens Advisory Board.** Bill Wabbersen was asked to speak to the DOE Citizens Advisory Board (CAB) on May 21, 2012, as a joint outreach effort on behalf of ANS-SR and CNTA. His discussion and hands-on sessions covered “Basics of Radiation” and “Risk” and were specifically designed for new CAB members. DOE and other personnel associated with the CAB also participated.

**Aiken High School Career Night.** On October 30, 2012, ANS-SR volunteers Martin Washington, Sid Keener and Bob Eble participated in the Aiken High School Career Night to discuss careers in nuclear science and technology. The volunteers were visited by about 100 students during this event.

**MOX Lunch & Learn Series.** ANS Chair Amanda Bryson continued the tradition by arranging additional programs following Jim and Conne’s departure. Bill Wabbersen, Bob Eble, and others taught various sessions throughout the year.

**Science Education Enrichment Day (S.E.E.D.)** ANS-SR once again supported the annual S.E.E.D. event at University of South Carolina-Aiken. Organizers estimate that about 3,000 students (primarily high school) and adults participated in the event on October 13, 2012. ANS-SR volunteers included Alex Deng, Sadie Jackson, Fred Pilot, Raj Brahman, and Chris Titcomb. Volunteers presented exhibits



describing how a pressurized water reactor works to supply power; the U-238 decay chain; and how a Nuclear Landmine Detector (LMD) works. The LMD exhibit attracted the most attention. The LMD is a simulation of neutron activation of nitrogen and gamma



detection mounted on a large toy truck. The truck was placed on a rug with a Cs-137 radiation source hidden under the rug (simulating the landmine) and was pulled by strings attached to the front and back of the truck. The simulated landmine was found by the increased activity registered by the detector.

Volunteers also shared handouts and materials provided to ANS-SR by ANS National.

**North Augusta High School Career Day.** Bob Eble and Martin Washington participated in career day and presented a 30 minute presentation on careers in the nuclear industry to three classes of 30 students each.



**North Augusta Middle School Career Day.** On December 5, 2012, Bob Eble and Henri Lee represented ANS-SR at the North Augusta Middle School Annual Career Day. They met with three classes of 7<sup>th</sup> grade students and discussed Sources of Radiation, Nuclear Power, Careers in Nuclear, and Radiation Protection.

**ANS-SR Local Section Outreach Goes National.** The “Interactive Chart of the Nuclides” developed for the “Journey to the Center of the Atom” workshop was presented by Bill Wabbersen at the ANS National Meeting in Chicago in June 2012. ANS National requested permission to use the “Interactive Chart” at the ANS Winter Meeting in San Diego and incorporated it into



the ANS National Teachers Workshop. The Chart was also lent to Penn State University for Teachers Workshops held over the summer.



ANS-SR plans to participate in the “Education, Training, and Workforce Development” sessions at the ANS National Meeting in Atlanta, Georgia, in June 2013. The following summary was submitted to ANS National in response to the call for papers for the National Meeting. The paper was authored by Mel Buckner, with contributions from Bill Wabbersen, Joe Kelley, Susan Wood (CNTA), Chuck Munns (CNTA), and Mindy Metts (SR Community Reuse Organization).

### **Educating for Nuclear’s Future – A Successful Regional Partnership**

The purpose of this presentation is to describe how regional nuclear-focused groups partnered together to maximize their ability to provide effective outreach in the local community and help develop an informed, educated workforce to support future nuclear industry needs.

The Citizens for Nuclear Technology Awareness (CNTA) is a regional nuclear advocacy organization with a membership of more than 400 which has been actively involved in promoting the public awareness of nuclear technology over the last 20 years. ANS - Savannah River Section (ANS-SR) partnered with CNTA to develop and deliver an aggressive outreach program to the local communities near the Savannah River Site (SRS) in South Carolina and Southern Company’s Vogtle Electric Generating Plant in Georgia. This includes a variety of programs to inform the public, particularly students and teachers, of the advantages of nuclear technologies and the risk of nuclear operations as well as career opportunities in the nuclear industry. CNTA and ANS-SR also partnered with the local Health Physics Society, the Ruth Patrick Science Education Center (RPSEC) at the University of South Carolina-Aiken, Energy Solutions, the SRS- Community Reuse Organization (SRS-CRO), and the Aiken Rotary Club to make this a community-wide effort.

The region surrounding Augusta, Georgia, has a strong nuclear history and is leading the nation in new nuclear facilities. The Southern Company is spearheading the nuclear renaissance in the U.S. with the construction of two AP1000s at the nearby Plant Vogtle. Coupled with this ground-breaking project is the construction of two additional AP1000s at the V.C. Summer Nuclear Generating Station near Columbia, South Carolina, just over an hour’s drive away. In addition, the MOX Fuel Fabrication Facility is being constructed on SRS to dispose of the excess weapons plutonium from the end of the Cold War. These three major projects are leading the future of nuclear energy in the United States.

In 2009, a regional nuclear workforce study sponsored by the SRS-CRO determined that nearly 10,000 new workers, including four general categories of professional, technician, engineer and craft, would be needed over the coming decade to support the expansion of the nuclear industry in the Georgia and South Carolina region and to replace retiring nuclear workers. In response to this study, CNTA, ANS-SR, and their partners decided to positively influence the future workforce by creating a “teachers workshop” that described basic information about nuclear technologies and informed the teachers of the need for a trained nuclear workforce.

CNTA and ANS-SR jointly developed and implemented a workshop for middle school and high school teachers called “Bringing Nuclear into the Classroom”. The first teacher workshop was held in March of 2009. Sessions were taught by CNTA and ANS-SR volunteers with diverse and extensive experience in the field and in the classroom. The workshop was then modified dramatically to include more hands-on activities that teachers could potentially use to excite students in their classrooms based on teacher feedback from that initial workshop. A small group of “cohort” teachers from both Georgia and South Carolina middle schools helped create a workshop that is both fun and informative. The current workshop includes hands-on styled presentations featuring the following topics: Atomic Fundamentals, Power Generation Fundamentals, Nuclear Fundamentals, Nuclear Technologies, Relative Risks, and

Regional Nuclear Technology Uses and Opportunities. A workshop was presented to regional teachers in 2011 and two more workshops were conducted in 2012. Summer interns (~50) from one of the primary contractors at SRS, Savannah River Remediation (SRR), participated in additional workshops during the summer of 2012. Plans for 2013 include at least three teachers' workshops along with presentations for interns of both of the prime contractors at SRS, i.e. SRR and Savannah River Nuclear Solutions (~100 total). The workshops have been so well received that initial planning has started for an advanced course for those with broader interest.

As the teacher workshops matured, ANS-SR developed two unique hands-on tools to help students and teachers more easily understand nuclear structure and how that structure is utilized in all nuclear technologies. The first of these unique tools, developed in partnership with CNTA, is the free-standing "Interactive Nucleus" display. In this display, red and blue ping pong balls represent protons and neutrons. Students and teachers use the Interactive Nucleus display by using different combinations of "protons" and "neutrons" to create their own "nucleus." Students place the balls into holes in the display's tabletop. The display then automatically determines the number of each colored ball and displays an audio and visual presentation describing properties and uses of the isotope that was created. The second unique tool is an "Interactive Chart of the Nuclides" kit that helps demonstrate the relationship between isotopes on a Periodic Table and a Chart of the Nuclides. The Interactive Chart of the Nuclides is used to help show the relationship between isotopes on a Periodic Table and a Chart of the Nuclides. Students and teachers use small colored tiles that represent stable, radioactive, and unstable isotopes to build a 3D Periodic Table with all isotopes from Hydrogen to Potassium. This 3D table is then converted to a 2D Chart of the Nuclides in which the colored tiles form a Line of Stability that becomes apparent to the participants. The Interactive Chart of the Nuclides helps develop an understanding of isotopes, and supports deeper learning when using the Interactive Nucleus display. The Interactive Chart of the Nuclides has since been used at two ANS National Teacher Workshops and a ANS-led teacher workshop at Pennsylvania State University.

The hands-on activities that were originally developed to support teacher workshops have been used to create the *Journey to the Center of the Atom* course for middle school and high school students conducted at the RPSEC. Students in the *Journey to the Center of the Atom* use both the Interactive Chart of the Nuclides and the Interactive Nucleus display to gain a deeper understanding of the structure and properties of the various nuclei. Three classes were conducted in 2012, and eight classes were conducted in early 2013.

Additional outreach activities include classroom presentations by ANS-SR and CNTA members to spark the interest of students in nuclear technology and potential career opportunities. In recent years presentations have been made on a near weekly basis to elementary, middle school and high school students across the region, with more than 1600 students participating each year. Both ANS-SR and CNTA have awarded scholarships to students who have demonstrated strong interest in nuclear technology and potential for academic achievement. In addition, CNTA sponsors a high school essay contest to promote a better understanding of nuclear technology and applications with awards of \$1000 to each winning student and \$500 to each winning student's school.

*Our joint efforts which promote the benefits of nuclear technology in our region and support the development of the future nuclear workforce will be described.*

## American Nuclear Society – Savannah River Section Local Section Five Year Membership Application (2013 – 2017)

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### Directory Information:

Last Name: \_\_\_ First Name: \_\_\_ M.I.: \_\_\_ Suffix: \_\_\_

Mailing Address: \_\_\_

City: \_\_\_ State: \_\_\_ Zip: \_\_\_

Email Address: \_\_\_ (used only for newsletter distribution, notification of meetings, and requests for local activity support)

Phone: \_\_\_

Occupation: \_\_\_ Employer: \_\_\_

Location: \_\_\_

Job Title: \_\_\_

Education Completed: Degree Year Graduated Course of Study

- |                          |     |     |     |
|--------------------------|-----|-----|-----|
| <input type="checkbox"/> | BS  | ___ | ___ |
| <input type="checkbox"/> | MS  | ___ | ___ |
| <input type="checkbox"/> | PhD | ___ | ___ |
- 

### Section Information:

Are you a National ANS Member? Yes  No

If Yes: To what do you belong?

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Accelerator Applications    | <input type="checkbox"/> Biology & Medicine        | <input type="checkbox"/> DD&R                       |
| <input type="checkbox"/> Education & Training        | <input type="checkbox"/> Environmental Sciences    | <input type="checkbox"/> Fuel Cycle & Waste Mgmt    |
| <input type="checkbox"/> Fusion Energy               | <input type="checkbox"/> Human Factors             | <input type="checkbox"/> Isotopes & Radiation       |
| <input type="checkbox"/> Material Science & Tech     | <input type="checkbox"/> Mathematics & Computation | <input type="checkbox"/> Criticality Safety         |
| <input type="checkbox"/> Nuclear Installation Safety | <input type="checkbox"/> Operations & Power        | <input type="checkbox"/> Radiation Prot & Shielding |
| <input type="checkbox"/> Reactor Physics             | <input type="checkbox"/> Robotics & Remote Systems | <input type="checkbox"/> Thermal Hydraulics         |
| <input type="checkbox"/> Aerospace                   | <input type="checkbox"/> Young Members             | <input type="checkbox"/> Comp Medical Physics       |
| <input type="checkbox"/> Nuclear H2 Production       | <input type="checkbox"/> Nuclear Nonproliferation  |   |

Are you a National Committee Member? Yes  No

Are you interested in working on a local committee? Yes  No

(e.g.: Executive Committee, Membership Committee, Scholarship Committee, Topical Committee, Outreach Committee...)

Interests: \_\_\_

Comments: \_\_\_

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*Membership is free, and you do not have to be an ANS National member  
Please forward completed application to [ans.savannahriver@gmail.com](mailto:ans.savannahriver@gmail.com)*

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## International Topical Meeting on Probabilistic Safety Assessment and Analysis

September 22-26, 2013 • Marriott Columbia • Columbia, South Carolina, USA

### CALL FOR PAPERS

PSA 2013 is a biennial international technical forum for communication of major probabilistic risk and safety topics worldwide, including issues, methods, applications, insights, policy and risk-informed regulation experience. The PSA 2013 meeting will be of interest to traditional applications including nuclear reactor facilities, nonreactor installations, processing, decontamination & decommissioning, and storage, as well as other nontraditional areas where probabilistic safety approaches are applied. The meeting will continue to follow lessons learned from the Fukushima Dai-ichi event through the perspectives of Japanese and international representatives. Invited and contributed papers, as well as student papers will be given. The organizers plan traditional oral paper and panel sessions well as a student poster session.

Authors should submit summaries of between 300 and 600 words in English via the conference website (<http://psa2013.org>). The summary should clearly state the objectives, methodology, results and conclusion of the paper.

PSA 2013 Proceedings will be issued in CD-ROM format.

Summaries Due	1 Feb. '13
Authors Notification	4 Mar. '13
Full Papers Due	3 May '13
Final Full Papers Due	19 Jun. '13



Sponsored by NISD  
 Nuclear Installations Safety Division

# PSA 2013

COLUMBIA, SC

### Planned Plenary Panel Sessions

- Opening & Closing Plenary Sessions
- PRA Implications of Fukushima Dai-ichi
- Industry Perspectives
- Risk-Informed Trends in Regulation
- Progress in Risk Standards Development and Use

### Suggested Paper Topics

- Accident Analysis
  - Severe Accident methods and Insights
  - Extended sequences
- Advanced Nuclear Reactor Systems
- Advances in Information Technology Supporting Risk-Informed Decision-Making
- Aging Management
- ASME/ANS Standards and Peer Reviews
  - Level 2/Level 3 PRA
  - Low Power/Shutdown PRA
  - Non-LWR
  - Fire PRA
  - Advanced Reactor
- Common Cause Failures
- Computer Code Development and Methods
- Configuration Risk Management
- Cyber Risk
- Databases
  - Component Reliability
  - Human Error Probability
- Digital Instrumentation & Control
- Dynamic PRA
- Emergency Preparedness and Response
- Environmental Impact Analysis
- External Events
  - Flooding Events
  - Fire Events
  - Natural Phenomena Hazards (Tornado, Hurricane, High Wind)
  - Seismic Events
  - Tsunamis
- Fukushima Event Impacts & Lessons Learned
  - Multi-unit Risk Applications
  - Emergency Preparedness Insights
  - Multi-site Risk Management
- Flooding PRA
- Full-Scope Level 3 PRA Advances
- Human Reliability and Human Factors
- IAEA, IEC, & IEEE Nuclear PRA Standards
- Interface Between PRA and the Deterministic Safety
- Small Modular Reactors
- SOARCA Program Insights to PRAs
- Software Reliability and Data Analysis
- Small Modular Reactors

- Standardized Plant Analysis Risk (SPAR) Models
- Level 1 PRA Developments
- Internal Fire Risk
  - Implementation of NFPA 805
- Level 2 & 3 PRA Developments
- Low-Power and Shutdown PRA
- Mitigating Systems Performance Index (MSPI) Issues
- Space Nuclear Risk Applications
- Natural Hazard Phenomena and External Events
- Non-LWR PRA
- Non-Nuclear PRA
- Next-Generation NPPs
- Nuclear Nonreactor Methods and PRA Applications
  - Beyond Design Basis Events
  - Fuel Cycle and Waste Processing
- Passive System Safety
- Plant Security
- Proliferation Risk
- PRA Human Resource Needs
- PRA Training & Education
- Quantitative Risk Analysis (QRA) in DOE Facilities
  - Interface with Safety Basis (Deterministic) Analyses
  - Chemical and Combustible Gas Issues
- Reliability Centered Maintenance
  - Reliability, Accessibility, Maintainability and Inspectability (RAMI) Programs
- Relicensing of Current Plants
  - Severe Accident Mitigation Alternatives (SAMA) Analysis
- Risk-Informing Regulation and Licensing
- Risk Management
  - PRA knowledge management
- Risk Metrics and Safety Goals
- Risk Perception and Communication
- Safety Culture and Organizational Factors
- Safety Margins and PSA
- Significance Determination Process (SDP) Issues
- Seismic PSA and Applications
  - Generic Issue 199
  - Seismic Margin Analysis
- Structural Reliability Methods
- Transportation Risks
- Waste Management & Decommissioning Status

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