

Central Savannah River Section Activities

May 22nd “Flow Simulation of Off-Gas and Other Utility Systems To Uncover Significant Savings Opportunities.”- Todd Willman

You are cordially invited to a dinner meeting at the Aiken Brewing Company, 140 Laurens Street SW, Aiken, on Tuesday, May 22, at 6:30 pm. Todd J. Willman, Director of Development for EPCON International, will present a talk titled “Flow Simulation of Off-Gas and Other Utility Systems To Uncover Significant Savings Opportunities.” We will order dinner off the menu. To make reservations, please email James Laurinat at james.laurinat@srnl.doe.gov.

Presentation summary: The use of flow simulation software has not yet become widely used in



Speaker background: In addition to his position with the EPCON International computer simulation software company, Mr. Willman, pictured above, is Director of Engineering for EPI Engineering and Managing Director of the National Thermodynamic Laboratory. EPCON products include Engineer's Aide SiNet, the American Petroleum Institute Technical Data Book, and the Gas Producers' Association Databank. At EPI, engineering, Mr. Willman has overseen over 100 modeling and optimization studies at refineries and chemical plants with significant returns on investment. He has acquired six patents in the fields of thermodynamics, simulation software, and energy exploration.

Mr Willman is a Past Chair of the South Texas Local Section of the AIChE. In addition, he was instrumental in establishing the AIChE Regional Process Technology Conference.

April 19th Plant Vogtle Tour

You are invited to participate in the AIChE Central Savannah River Section tour of Plant Vogtle, 7821 River Road, Waynesboro, GA, on Thursday, April 19. Don't miss this opportunity to visit the site of the only new commercial nuclear reactor built in this country in the last 20 years!

There will be a presentation in the Visitor Center, followed by a driving tour through the construction site for the new reactors (Units 3 and 4). The tour will last from approximately 3 to 5 pm, but please plan to arrive between 2:30 and 2:45. Clothing appropriate for a construction site is required (long pants and closed toe, flat-soled shoes). Plant Vogtle will provide hard hats and safety glasses. Bring your driver's license or other form of government identification (such as a passport) with you.

Please make reservations by emailing James Laurinat at james.laurinat@srnl.doe.gov by 3:30 pm Friday, April 13.

Advance reservations are required. The tour group will be limited to no more than 30 individuals.



March 15th Medical Initiatives from the Nuclear Community.....

Applications of Innovative “Multi-Use” Technologies – George Wicks

For approximately 50 years, the Savannah River Site in Aiken SC has provided state of the art research, and critical products and services, primarily for national and defense needs. In 2004, the laboratory was designated the 12th National Laboratory in the Department of Energy (DOE) complex and later that year, an important Memorandum of Understanding was signed between the leadership of the Savannah River National Laboratory (SRNL) and the then Medical College of Georgia (MCG). The MOU was updated in 2011 with SRNL and the GA Health Sciences University (GHSU) with the overall goal to “... foster collaboration... in areas of life sciences, engineering and related technologies..... leverage resources and expertise from the two organizations... and explore opportunities that benefit both organizations”.

The talk will provide an overview of some of the exciting collaborations that have occurred between these two important CSRA organizations. At the cornerstone of these efforts are “multi-use technologies”, i.e., those that have been born, bred and developed in the nuclear complex and over many years, applied to a multitude of uses within the DOE complex, which also represent technologies that could be tailored for other uses in other fields. These multi-use technologies are now being examined by teams of scientists and engineers from SRNL, collaborating with medical researchers and clinicians from GHSU, to examine their potential for providing improved tools, and in some cases brand new tools, for doctors to improve patient care, in diagnostics, repair and replacement, and treatment and therapy techniques. Examples of these collaborations will be discussed in specific areas of digital radiography, microbiology, sensors/ robotics, advanced materials, and ceramics/ glass science.

Dr. George G. Wicks- Biosketch

Consulting Scientist

Savannah River National Laboratory (SRNL)

Aiken, South Carolina

Educational Background:

1974 PhD; MIT, Cambridge, Mass., Metallurgy & Mat’ls.

Sci.,

Thesis: Structural Studies of Amorphous Materials

1971 MS; Harvard Univ., Cambridge, Mass., Appl.

Physics & Eng.

1969 SM; Fla. State Univ., Tallahassee, Fla., Materials

Science

1967 BS; Fla. State Univ., Tallahassee, Fla., Engineering

Science

Work History:

Dr. George Wicks is a Consulting Scientist at the Savannah River National Laboratory, in Aiken, SC. He has been involved for more than 35 years in many areas of materials science, including vitrification and management of high level radioactive wastes, environmental remediation, sensor development, corrosion of materials, hydrogen storage systems, alternative and renewable energy, nuclear disarmament activities, C&B agents, and a variety of new medical initiatives. He has worked extensively in many areas of ceramics and glass science, and studied the properties and structure of glasses for a variety of applications at both Harvard and MIT, where he received his advanced degrees. Dr. Wicks developed the first ‘*Slurry Feeding System*’ for vitrification of the 34 million gallons of high-level waste at SRS in the more than billion dollar Defense Waste Processing Facility (DWPF), now in production. He has also been involved in leaching studies of nuclear glasses and in assessing the chemical durability of waste products and systems. He is co-author of the *SRL Kinetic Leachability Model* [Wallace-Wicks Model] describing leaching behavior of the complex 40-component SRS waste glass system and also, he designed, developed and coordinated, the

simulated nuclear waste systems. This involved burial and subsequent analyses of almost 2000 glass, metal and geologic samples, supplied from many different countries, in the WIPP salt site at Carlsbad, New Mexico. The 5-year effort involved samples and analyses provided by laboratories in 8 countries, including the U.S., Germany, France, Canada, Belgium, Japan, Sweden and the United Kingdom. These tests supplement his other international in-situ efforts, including the burial of over 100 SRS waste glass samples in granite in Sweden, the burial of SRS samples in clay in Mol Belgium, and the burial of both SRS waste glasses and natural glass analogs in limestone in the U.K.

Dr. Wicks is also co-inventor of *Sol-Gel Indicators*, a new class of composite material

science and engineering have resulted in significant benefits to mankind” and late in the year, also was the recipient of the **D.T. Rankin Award** for his contributions to the nuclear field. In 2009, Dr. Wicks also served on a National Inter-society Materials Board to help define materials needs in the U.S. in alternative and renewable

January 15th : Are you smarter than an iPhone? – Dave Olson



You are invited to attend the January meeting of the Central Savannah River Local Section of the American Institute of Chemical Engineers. We will meet at the Bridgestone Tire Company in Graniteville, SC, on Thursday, January 19, at 6 pm. A catered dinner will be served starting at 6:30, to be followed by our featured speaker.

Savannah River Remediation President and Project Manager Dave Olson will be the featured speaker. Mr. Olson will ask attendees an important question: Are you smarter than an iPhone? Today's smart phones seem to have all the answers, but it's always the people who resolve issues. Mr. Olson plans to interact with audience members to give them a chance at solving some pressing issues in the radioactive liquid waste arena at the Savannah River Site. In addition, he will explain the progress SRR is making in treating and dispositioning the waste, along with answering questions from the group. Mr. Olson, who has 30-years experience at SRS, leads the liquid waste contract for SRR.