



## Joint Meeting with

## VCU Section of the American Nuclear Society

### Dr. John Kelly

Chief Technology Officer, Office of Nuclear  
Energy  
U.S. Department of Energy



### Dr. Patricia Paviet

Director of the Office of Materials and  
Chemical Technologies  
U.S. Department of Energy



**Thursday October 6th, 2016 at 5:30 p.m.**

At Virginia Commonwealth University, East Engineering Hall, Room E3229  
401 W. Main St, Richmond, VA 23284

[Directions to East Engineering Hall](#)

[Printable VCU Monroe Park Campus Map](#)

Recommended parking: JL Parking Lot, [West Main Street Parking Deck](#), Street Parking is often  
available in the evenings

***Vision and Strategy for  
Deploying Advanced  
Reactors in the United  
States***

***U.S. Department of  
Energy Fuel Cycle  
Technologies R&D  
Outlook***

Global efforts to address climate change will require large-scale decarbonization of energy production and use in the United States and elsewhere. Massive deployment of clean power technologies will be needed by mid-century to meet international commitments made by the parties to the United Nations Framework Convention on Climate Change at Paris in December 2015. Nuclear energy, which currently accounts for the largest share of carbon-free electricity production in the United States, could play a more substantial and potentially essential role in achieving greenhouse gas reductions on the scale necessary to meet international climate goals. Sustaining a substantial nuclear presence beyond 2050 will almost certainly require the successful development and deployment of a new generation of innovative advanced reactors, including small modular reactors and Generation IV reactors. Generation IV reactors could offer significant advantages relative to current nuclear reactor technology in terms of enhanced safety, lower cost, greater resource utilization, reduced waste management challenges, co-production of process heat for industrial operations, improved proliferation resistance, and easier operation. The talk will discuss the goals and objectives of DOE's advanced reactor strategy and DOE's actions to promote innovation in nuclear energy technology.

**Speaker Biography:**

Dr. John E. Kelly was appointed Deputy Assistant Secretary for Nuclear Reactor Technologies in the Office of Nuclear Energy in October 2010. His office is responsible for the Department of Energy (DOE) civilian nuclear reactor research and development portfolio, which includes DOE's programs on Small Modular Reactors, Light Water Reactor sustainability, and Generation IV reactors. His office also is responsible for the design, development, and production of radioisotope power systems, principally for NASA missions. In the international arena, Dr. Kelly chairs the

In order to maintain the U.S. domestic nuclear capability and its scientific technical leadership, the Department of Energy, Office of Nuclear Energy (DOE-NE) invests in various R&D programs to identify and resolve technical challenges related to the sustainability of the nuclear fuel cycle. Sustainable fuel cycles are those that improve uranium resource utilization, maximize energy generation, minimize waste generation, improve safety and limit proliferation risk. DOE-NE chartered a Study on the evaluation and screening (E&S) of nuclear fuel cycle options, to provide information about the potential benefits and challenges of nuclear fuel cycle options and to identify a relatively small number of promising fuel cycle options with the potential for achieving substantial improvements compared to the current nuclear fuel cycle in the United States. The identification of these promising fuel cycles helps in focusing and strengthening the U.S. R&D investment needed to support the set of promising fuel cycle system options and nuclear material management approaches. Along with the findings of the E&S Study will be presented the major research efforts underway to develop and demonstrate cost-effective used nuclear fuel recycling and waste management technologies.

**Speaker Biography:**

Dr. Patricia Paviet has joined the Department of Energy, Office of Fuel Cycle Technologies as the Director of the Office of Systems Engineering and Integration in December 2013. In her function, she is leading the systems analysis and integration program as well as the material recovery and waste form program. She is also involved with the creation of webinars in radiochemistry through the National Analytical Management Program (NAMP) education and training subcommittee, supported by DOE EM Carlsbad Field Office and EPA. While at the

Generation IV International Forum and the International Atomic Energy Agency's Standing Advisory Group on Nuclear Energy. Prior to joining the Department of Energy, Dr. Kelly spent 30 years at Sandia National Laboratories where he has been engaged in a broad spectrum of research programs in nuclear reactor safety, advanced nuclear energy technology, and national security. His reactor safety research focused on core melt progression phenomena, which led to an improved understanding of the Three Mile Island accident. Dr. Kelly is an active member of the American Nuclear Society and has served on the Nuclear Installations Safety Division in a number of leadership positions. Born in Detroit, Michigan, Dr. Kelly received his B.S. in nuclear engineering from the University of Michigan in 1976 and his Ph.D. in nuclear engineering from the Massachusetts Institute of Technology in 1980. Dr. Kelly married his wife, Suzanne, in 1976. They have three grown children, Julie, John, and Michael.

Idaho National Laboratory, she served as Deputy Director of the Fuel Cycle CORE (Center for Research and Education) where she was responsible for strengthening and expanding INL's university partnerships to areas such as actinide science, separations, safeguards and instrumentation. She was the chemistry and radiochemistry safety lead for AREVA working on the Mixed Oxide Fuel fabrication facility. She has also worked as an associate professor at the Idaho State University and at the University of Nevada Las Vegas. She has worked as a radiochemist for more than 25 years investigating the speciation and behavior of radionuclides and actinides under industrial reprocessing conditions, as well as nuclear repository conditions. . She is originally from France and received her Ph.D. in radiochemistry from the University Paris XI, and her M.S. and B.S. degrees in Chemistry from the University Nice, Sophia Antipolis. She is a member of the international committee of the American Nuclear Society, a member of the American Chemical Society and a member of the American Society of Mechanical Engineers.

### **Schedule:**

- Social Hour - 5:30 p.m.
- Dinner - 6:00 p.m.
- Presentation - 6:45 p.m.
- Adjourn - 8:00 p.m.

**COST:** Dinner: \$20 for VA-ANS Members (\$10 for students, \$25 for VA-ANS Non-members). Cash Bar.

Reservations for the meeting needed to be made by 4 p.m. on Tuesday, October 4th, 2016. Please address any questions to [Sama Bilbao y Leon](#).