Dr. John E. Kelly

Deputy Assistant Secretary for Nuclear Reactor Technologies

Tuesday, September 24, 2013 - Dominion Innsbrook Technical Center, Glen Allen, VA at 5:30 PM

Overview of the Nuclear Reactor Technologies Program and the Generation IV International Forum

Dr. John E. Kelly will give an overview presentation on the Nuclear Reactor Technologies program at the Department of Energy. Nuclear Reactor Technologies' mission is to keep the current fleet operating safely and to develop new nuclear technologies for deployment. In this presentation, he will talk about his directorate and cover the three areas that are **Light Water Reactor Technologies, Advanced Reactor Technologies, and Space Power Systems**. Additionally, he will talk about his role as Chair of the Generation IV International Forum (GIF) and provide an overview of this cooperative international endeavor organized to carry out the research and development (R&D) needed to establish the feasibility and performance capabilities of the next generation nuclear energy systems.

Further information regarding Nuclear Reactor Technologies can be found at the links below:

- Light Water Reactor Technologies

The existing U.S. nuclear fleet has a remarkable safety and performance record. Extending the operating lifetimes of current plants beyond 60 years and, where possible, making further improvements in their productivity will generate early benefits from research, development, and demonstration investments in nuclear power. In addition, this division encompasses Small Modular Reactor Technologies which can also be made in factories and transported to sites where they would be ready to "plug and play" upon arrival, reducing both capital costs and

construction times. The smaller size also makes these reactors ideal for small electric grids and for locations that cannot support large reactors, offering utilities the flexibility to scale production as demand changes.

- Advanced Reactor Technologies

As a result of ARC research, nuclear energy will continue to provide clean, affordable, and secure energy while supporting the administration's greenhouse gas reduction goals by introducing advanced designs into new energy and industrial markets. DOE will pursue RD&D on both advanced thermal and fast neutron spectrum systems.

- Space Power Systems

For over 50 years the Department of Energy and its predecessor agencies have been deeply involved in space research and exploration. Currently, the Office of Space and Defense Power Systems supplies Radioisotope Power Systems (RPS) to the National Aeronautics and Space Administration (NASA) and national security applications for missions that are beyond the capabilities of fuel cells, solar power and battery power supplies.

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 civilian nuclear reactor research and development portfolio, which includes DOE's programs on Small Modular Reactors, LWR 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 Generation IV International Forum. Prior to joining the Department of Energy, Dr. Kelly spent 30 years at Sandia National Laboratories where he was engaged in a broad spectrum of research programs in nuclear reactor safety, advanced nuclear energy technology, and national security. In the reactor safety field, he led efforts to establish the scientific basis for assessing the risks of nuclear power plant operation and specifically those risks associated with potential severe accident scenarios. His research focused on core melt progression phenomena and this led to an improved understanding of the Three Mile Island accident. More recently, his expertise in severe accidents was applied to determine the consequences of the Fukushima Dai-Ichi accident. In the advanced nuclear energy technology field, he led Sandia's efforts to develop advanced concepts for space nuclear power, Generation IV reactors, and proliferation-resistant and safe fuel cycles. These research activities explored new technologies aimed at improving the safety and affordability of nuclear power. In the national security field, he led national efforts to evaluate the safety and technical viability of tritium production technologies. Dr. Kelly is an active member of the American Nuclear Society and has served on the Nuclear Installations Safety Division for the last two decades in a number of leadership positions. His committee work has focused on increasing the publication of scientific work in the nuclear safety field and in developing national positions on the safety of nuclear power.

Schedule: T uesday September 24, 2013

- Social Hour - 5:30 p.m.
- Dinner - 6:00 p.m.
- Presentation - 6:45 p.m.
- Adjourn - 8:00 p.m.
- Directions to the Innsbrook Facility

COST: $20 ($10 for students) includes dinner. The registrations closed as of 4 p.m. on Thursday, September 19, 2013. Please address any questions to Brian Vitiello.