GEN IV International Forum
Expertise | Collaboration | Excellence

Webinar Invite

Education and Training Working Group

Join us on March 30, 2023, 8:30 am EST (UTC-4)

Advanced Reactor Safeguards and Material Accountancy Challenges

The worldwide expansion of nuclear energy is likely to be led by the deployment of advanced and small modular reactors. These reactors are enabled by significant private and public support and hope to capitalize on lower upfront costs, modular construction, enhanced safety, and better integration in the power grid. The Generation IV International Forum seeks to enable the safe and secure expansion of nuclear energy through eight goals covering sustainability, economics, safety & reliability, and proliferation resistance & physical protection. Nuclear material safeguards are a key consideration of the proliferation resistance goal. Advanced reactor vendors, depending on deployment location, will need to meet both domestic material control and accounting (MC&A) regulatory requirements as well as international safeguards obligations. Many of the advanced reactor designs have limited regulatory experience and must navigate a regulatory structure that was built up around large light water reactors (LWRs). The use of different coolants, fuels, sealed cores, and variations in fuel handling all present MC&A and safeguards challenges. This webinar will provide an overview of materials accountancy challenges for advanced reactors, the differences between domestic and international safeguards requirements, and proliferation resistance goals as defined by the Generation IV International Forum. The presentation will be built around the six Generation-IV systems describing key challenges for each area and how new safeguards approaches and technologies can enable new nuclear deployment.

Free webcast!

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Register NOW at:
https://attendee.gotowebinar.com/register/4110245373091648602

Who should attend:
policymakers, managers, regulators, students, general public

Dr. Ben Cipiti is a Distinguished Member of the Technical Staff in the Nuclear Energy Fuel Cycle program area at Sandia National Laboratories with over 18 years of experience in safeguards and security analysis for advanced nuclear reactors and fuel cycle facilities. He is the National Technical Director for the Advanced Reactor Safeguards Program in the Office of Nuclear Energy within the Department of Energy. Dr. Cipiti has a deep technical background in safeguards and developed the Separation and Safeguards Performance Model (SSPM) for analysis and design of materials accountancy systems for nuclear facilities. The SSPM modeling capabilities cover a range of nuclear fuel cycle facilities including enrichment, fuel fabrication, aqueous reprocessing, pyroprocessing, and advanced nuclear reactors. Safeguards, Security (including Cyber), and Safety by Design is a core principle in Dr. Cipiti's work. He works to promote the need for consideration of the 3S's early in the design process to help the nuclear industry develop robust yet cost effective system designs.Dr. Cipiti earned his Ph.D. in Nuclear Engineering from the University of Wisconsin-Madison and B.S. in Mechanical Engineering from Ohio University-Athens.

Upcoming Webinars

5 April 2023. Overview of Graphite R&D in Support of Advanced Reactor Systems, Dr. Will Windes, INL, USA

24 May 2023, Graphite-Molten Salt Interactions, Dr. Nidia Gallego, ORNL, USA

7 June 2023, International Knowledge Management and Preservation of SFR Panel Session Cal Doucette, ARC Energy, Canada; Joel Guidez, retired CEA, France; Hiroki Hayafune, JAEA, Japan; Patrick Alexander, Terrapower, USA; Ron Omberg, PNNL, USA

For more information, please contact Patricia Paviet at patricia.paviet@pnnl.gov or visit the GIF website at www.gen-4.org