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Please Register for Next G4SR Technical Webinar on Oct. 5: Regulatory and Standards Readiness for Innovation in Nuclear

1 message

Canadian Nuclear Society <noreply@xcdsystem.com> Wed, Sep 29, 2021 at 12:39 PM
Reply-To: benjamin.rouben@sympatico.ca
To: wilsonlam.cns@gmail.com, wilsonklam@gmail.com

Dear Mr. Wilson Lam,

If you have already registered for this Webinar, you will receive the attendance credentials / details on Friday. You do not need to register again.

The Cost- Free G4SR Webinar: "Regulatory and Standards Readiness for Innovation in Nuclear " is OPEN for registration.
Please click this link to register NOW:

Registration link: https://forms.gle/DH9Sn76iThLMd6NW9
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Webinar Title: Regulatory and Standards Readiness for Innovation in Nuclear
Webinar Date: Tuesday, October 5
Time: between 1:30-3:00 pm EST (90 min)

The Generation IV and Small Reactor (G4SR) Division of the Canadian Nuclear Society is pleased to present an important webinar on **Regulatory and Standards Readiness for Innovation in Nuclear** with a panel of distinguished speakers from:

- Canadian Nuclear Safety Commission (CNSC);
- US Nuclear Regulatory Commission (NRC);
- CANDU Owners Group (COG); and
- Canadian Standards Association (CSA Group)

Emerging nuclear innovations provide the tools that can predict equipment's fitness for service and can replace human activities in the operation and maintenance of a nuclear facility (e.g., artificial intelligence, drones, autonomous vehicles, additive manufacturing). To respond to the innovations with creativity and agility, it is generally agreed that the regulatory framework and standards development should foster strategies on:

- Acquiring knowledge in response to technological nuclear innovations;
- Ensuring that the regulatory framework and standards are sufficiently flexible and outcomes-focused to enable innovation to safely and securely thrive;
- Enabling greater experimentation, testing of innovations possibly by using regulatory sandboxes;
- Supporting innovators to navigate the regulatory landscape and comply with regulatory requirements;
- Building dialogue with society and stakeholders on how technological innovation should be regulated; and
- Fostering strong cooperation across the globe to harmonize innovative products and services where possible.

This webinar will present and discuss the best practices and research projects from regulators, standards development organizations, and industry organization on nuclear innovations from the strategies mentioned above with use cases (e.g., drones have been used for NPP containment building visual inspection; artificial intelligence for component aging and longevity research).

It is hoped that this webinar starts a dialogue with society and stakeholders on how technological innovation should be regulated.
The invited speakers will deliver presentations and answer questions from the audience in a moderated Q&A session.

Agenda

Webinar Session Introduction	Wilson Lam (Canadian Nuclear Society G4SR Chair)	3 min
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Topic #1: Disruptive, Innovative and Emerging Technology and the Canadian Nuclear Safety Commission's Regulatory Framework	Kevin Lee, CNSC	15 min
Topic #2: Moving at the Pace of Change: Achieving Regulatory Readiness as a Modern, Risk-Informed Regulator	Luis Betancourt, NRC	15 min
Topic #3: Innovation Never Stops in the Canadian Nuclear Industry	Carlos Lorencez, COG	15 min
Topic # 4: Holding the Future to a Higher Standard: CSA Nuclear Program and Innovation	Larisa Logan, CSA Group	15 min
Panel Discussion with Audience Q&A		30 min

Topic 1: Disruptive, Innovative and Emerging Technology and the Canadian Nuclear Safety Commission's Regulatory Framework

Kevin Lee, Canadian Nuclear Safety Commission

Biography: Kevin Lee currently leads the Canadian Nuclear Safety Commission's (CNSC) team analyzing disruptive, innovative and emerging technology (DIET). This team aims to ready the CNSC to evaluate and regulate DIET in the nuclear industry. He is also actively engaged in work readying the CNSC's regulatory framework for the regulation of Advanced Reactor Technology (ART) and Small Modular Reactors (SMRs) as well as active on numerous other policy and regulatory files at the CNSC across the broad spectrum of the Canadian nuclear sector, including fusion technologies. He has over 30 years of providing regulatory, policy and operational expertise, and extensive experience in government including nearly a decade spent as Special Assistant to the Right Hon. Jean Chretien.

Abstract: The past few years has witnessed growing interest in the impact disruptive, innovative and emerging technologies (DIET) may have on CNSC's Regulatory Framework. While technology always advances, what has changed is the increasingly rapid rate at which industry is adopting and deploying DIET. Sectors developing advanced reactor technology have identified potential efficiencies through DIET and there is evidence all sectors of the nuclear industry are quickly adopting DIET.

To help the CNSC stay as far ahead of the DIET development and implementation curve as possible, the CNSC formed a DIET working group (WG) to explore the prospective impacts of DIET on CNSC's Regulatory Framework and develop a strategy to ensure readiness. Meetings with the nuclear industry, other similar Canadian industries as well as other government departments helped the DIET working group establish criteria to determine if a DIET is:

a) likely to be implemented and requires updates to the regulatory framework
b) likely to be implemented but is sufficiently addressed in the regulatory framework
c) unlikely to be implemented in the foreseeable future

Topic 2: Moving at the Pace of Change: Achieving Regulatory Readiness as a Modern, Risk-Informed Regulator

Luis Betancourt, US Nuclear Regulatory Commission (NRC)

Biography: Luis Betancourt is the Chief of the Accident Analysis Branch in the U.S. Nuclear Regulatory Commission (NRC)'s Office of Nuclear Regulatory Research (RES). Mr. Betancourt leads highly skilled reactor engineers/scientists and data scientists on artificial intelligence and offsite consequences of postulated

severe accidents. Mr. Betancourt joined the NRC in 2008 as a Digital Instrumentation and Controls Engineer in RES. Since that time, he has held several positions of increasing responsibility, including Project Manager and Technical Reviewer in the NRC's Office of Nuclear Reactor Regulation (NRR), the Office of New Reactors (NRO), and the Office of Nuclear Material Safety and Safeguards; Acting Chief of the Instrumentation, Controls, and Electronics Engineering Branch in NRO; and Technical Assistant for the Division of Safety Systems in NRR. Most recently, Mr. Betancourt served as the Technical Assistant for the NRR Front Office, where he supported the executive team in advancing NRR's priorities and vision. Throughout his career, he has been an ardent proponent of Science, Technology, Engineering, and Mathematics education and continues to volunteer and represent the agency at multiple annual youth outreach events in the Washington D.C. area.

Before joining the NRC, he worked as a Controls Engineer for G.E. Aviation and as a New Products Engineer at Stryker Endoscopy. Mr. Betancourt received a B.S. in Electrical Engineering from the University of Puerto Rico, Mayagüez Campus. He is a graduate of the 2010 NRC's Nuclear Safety Professional Development Program and the 2016 NRC's In-House Meeting Facilitator and Advisor Program. Mr. Betancourt is a registered Professional Engineer in the state of Maryland.

Abstract: The NRC is committed to enabling the safe and secure use of new and emerging technologies, especially those that can increase the safety and security of nuclear facilities. Regulatory readiness is a critical part of the NRC's plan to support that deployment. This presentation will highlight the challenges and path forward of 1) achieving regulatory readiness through regulatory engagement and research cooperation, 2) maintaining a diverse and capable regulatory workforce, and 3) leveraging domestic and international partnerships to achieve success, all while protecting public health and safety on a day-to-day basis.

Topic 3: Innovation Never Stops in the Canadian Nuclear Industry

Carlos Lorencez, CANDU Owners Group

Biography: Carlos Lorencez has more than 30 years experience in the nuclear industry and has spent the last 24 years at Ontario Power Generation. While in OPG, Carlos main focus was on nuclear safety which has included the safe operation of 10 reactor units and support for their associated areas of nuclear safety, waste management, emergency preparedness and regulatory affairs. In the past few years, he has also focused on the nuclear safety of isotope production, SMRs and decommissioning. Carlos recently joined COG's management team as the Director of Nuclear Safety and Environmental Affairs, from where he works with industry to achieve excellence in CANDU performance and to create a strong role for nuclear in a clean energy future. Carlos holds a master's degree in nuclear engineering from México's Instituto Politécnico Nacional and a doctorate in chemical engineering from the University of Toronto.

Abstract: Innovation has never stopped since Canada began developing its nuclear program: every new nuclear reactor design always introduced innovative ideas and improvements when compared with previous designs. Similarly, design and safety analysis methodologies continued developing to maximize operating margins while ensuring the safe operation of the reactors. All of the above was accomplished within a solid standards and regulatory framework.

After more than 70 years of familiarity with CANDU technology, the arrival of significantly different Small Modular Reactors technologies creates a challenge to the use of current standards and regulatory framework. Both effort and collaboration are needed to ensure that our updated framework is flexible enough to license in Canada these new technologies without halting our historic progress and innovation.

Topic 4: Holding the Future to a Higher Standard: CSA Nuclear Program and Innovation

Larisa Logan, CSA Group

Biography: Larisa Logan is Program Manager, Power Generation and Delivery Standards at Canadian Standards Association (CSA Group), an independent, not-for-profit membership-based association dedicated to safety, social good, and sustainability. In her role, Larisa manages the CSA Nuclear Standards Program and works with staff and multi-stakeholder groups to develop and maintain standards-based solutions that address the needs of industry, government, and the public for the nuclear sector.

Prior to joining CSA Group, Larisa worked as a structural engineer. She holds a Master's of Applied Science degree from McMaster University and a Bachelor of Science in Civil Engineering degree from the University of Alberta. Larisa is a licensed professional engineer in Ontario and holds Lean Six Sigma Green Belt and LEED AP certification.

Abstract: Canadian Standards Association, operating as CSA Group (CSA), has been developing standards for the Canadian nuclear sector for more than 45 years. With over 65 standards in use and development, CSA nuclear standards support safe and reliable nuclear operations and address emerging subjects.

The presentation will provide an overview of the CSA nuclear standards program and standards development initiatives related to nuclear innovation. The topics covered will include initiatives and examples of flexible and responsive standards development approaches; strategic reviews of nuclear standards to help facilitate the safe and consistent use of innovation, including emerging digital technologies, advanced manufacturing, and small modular reactors; and research on standards harmonization to support the Canadian nuclear sector. Finally, opportunities for current nuclear stakeholders, innovators, and the public to engage in standards development will be outlined.

Moderator:

Wilson Lam, Generation IV and Small Reactor (G4SR) Technology Division, Canadian Nuclear Society
President & Consultant, CTI Simulation.

Biography: Wilson Lam has 30+ years in the nuclear industry and almost 15 years with the Ontario Ministry of Energy as the senior government nuclear technology advisor (retired in Dec. 2020). Now President and Consultant at CTI Simulation Inc.

Enriched experience from working at Ontario Hydro on the design and construction of the Bruce B nuclear generating station, to developing computer NPP PC based simulators for the IAEA to educate nuclear professionals, to joining the Ontario Ministry as Senior Policy Advisor to provide policy analysis and advice on the Canadian Roadmap for SMRs in 2018 and in collaboration with provincial and utility partners on deliverables under the provincial Premiers' SMR Memorandum of Understanding signed in 2019

Recipient of Nuclear Achievement Award in 2020, as the lead international conference organizer for the Generation IV and Small Reactor (G4SR) conferences in 2018, G4SR-2 Virtual Summit in 2020, and G4SR-3 Virtual Summit in 2021.

Note: the Chatham House Rules are applicable for the information contained in the CNS G4SR Webinar.

When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.

Sometimes the speaker(s) and their affiliation(s) need to be named when publicizing the meeting. This virtual meeting is within the spirit of the Chatham House Rule to allow people to speak as individuals, to express views that may not be those of their organizations, and to encourage free discussion. People usually feel more relaxed if they don't have to worry about their reputation or the implications if they are publicly quoted.

For any inquiries on G4SR webinars, please contact Dr. Ben Rouben at benjamin.rouben@sympatico.ca

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