

**Chair Hanson's Opening Remarks
for the Data Science and Artificial Intelligence (AI)
Regulatory Applications Public Workshops series
September 19, 2023**

Thank you, Vic!

Good morning, and welcome to the Nuclear Regulatory Commission's Data Science and Artificial Intelligence Regulatory Applications Public Workshop. I am pleased to be here today and open this important gathering.

Today marks another significant step in our ongoing commitment to safety and innovation within the NRC. As we gather here, we continue our journey to better understand and prepare for the integration of artificial intelligence and data science in nuclear applications.

In 2021, the NRC hosted the first three of these workshops where we discussed an introduction to AI, reviewed how it was being used in industry and at the agency, and set our sights on the future with a forward-looking, research-oriented discussion about where we see this technology headed. At that time, no one foresaw the explosion of interest in Large Language Models, such as OpenAI's ChatGPT or Google's Bard. While those tools are shaping much of the discussion today about how to leverage this technology, those earlier workshops laid the foundation for bringing us together today. Some of the outcomes from those earlier workshops included expanding our cooperation with domestic and international counterparts.

Because of our close cooperation throughout the workshops with counterparts at the Electric Power Research Institute, we added the new "Advanced Nuclear Technologies, Data Science and Artificial Intelligence" addendum to the EPRI-NRC Memorandum of Understanding for Cooperative Nuclear Safety Research.

Additionally, we formed an ongoing collaboration with the Canadian Nuclear Safety Commission and the United Kingdom's Office for Nuclear Regulation on overarching principles for reviewing the uses of AI technologies in nuclear activities. Our trilateral collaboration on an AI regulatory principles paper explores a consistent approach to evaluating the use of AI in regulated activities and explores potential areas of research.

These workshops testify to our dedication to staying at the forefront of technological advancements while ensuring the utmost safety in the nuclear sector. Clearly, interest in AI has not diminished in the two years since the first workshops. In fact, over 250 registered participants from 9 countries are present today, underscoring the widespread interest in this topic. Our primary objectives for this workshop are twofold:

Firstly, we aim to provide a platform for stakeholders and experts to showcase AI use cases that are being developed for nuclear applications. These presentations will offer valuable insights into the transformative potential of AI in enhancing safety and efficiency within the nuclear sector.

Second, we invite all of you to engage in a dialogue surrounding the regulatory and technical aspects of AI usage in nuclear applications. Your feedback and expertise are invaluable as we navigate this evolving landscape. We have learned much from previous interactions, and your input today will contribute to refining our strategies for the future. I ask for open and honest feedback about how you see the application of AI for the nuclear sector – either for pre-application activities, research and development, lessons learned, or safety functions. The NRC is trying to be proactive to better position ourselves to evaluate the innovative technologies of tomorrow.

Our AI Strategic Plan, publicly available in NUREG-2261, represents a milestone in our journey. Within this plan, you will find a Table, "Notional AI and Autonomy Levels in Commercial Nuclear Activities," which lays the foundation for our discussions here. It serves as a starting point for exploring the multifaceted attributes of AI systems and their implications for regulatory considerations at different interaction levels between humans and machine-based systems.

In closing, I want to express my gratitude to each of you for your participation. Together, we are forging a path towards a safer, more efficient, and technologically advanced future for nuclear applications. Let's make the most of this workshop, sharing knowledge, insights, and ideas to shape a regulatory framework that ensures both innovation and safety. I am excited to see the outcome of the workshop as I believe artificial intelligence is already enhancing our lives, and I am interested in seeing how it can further help us to do our job more efficiently. In fact, I employed ChatGPT to craft my speech today.

Thank you, and I look forward to an engaging and productive day ahead.