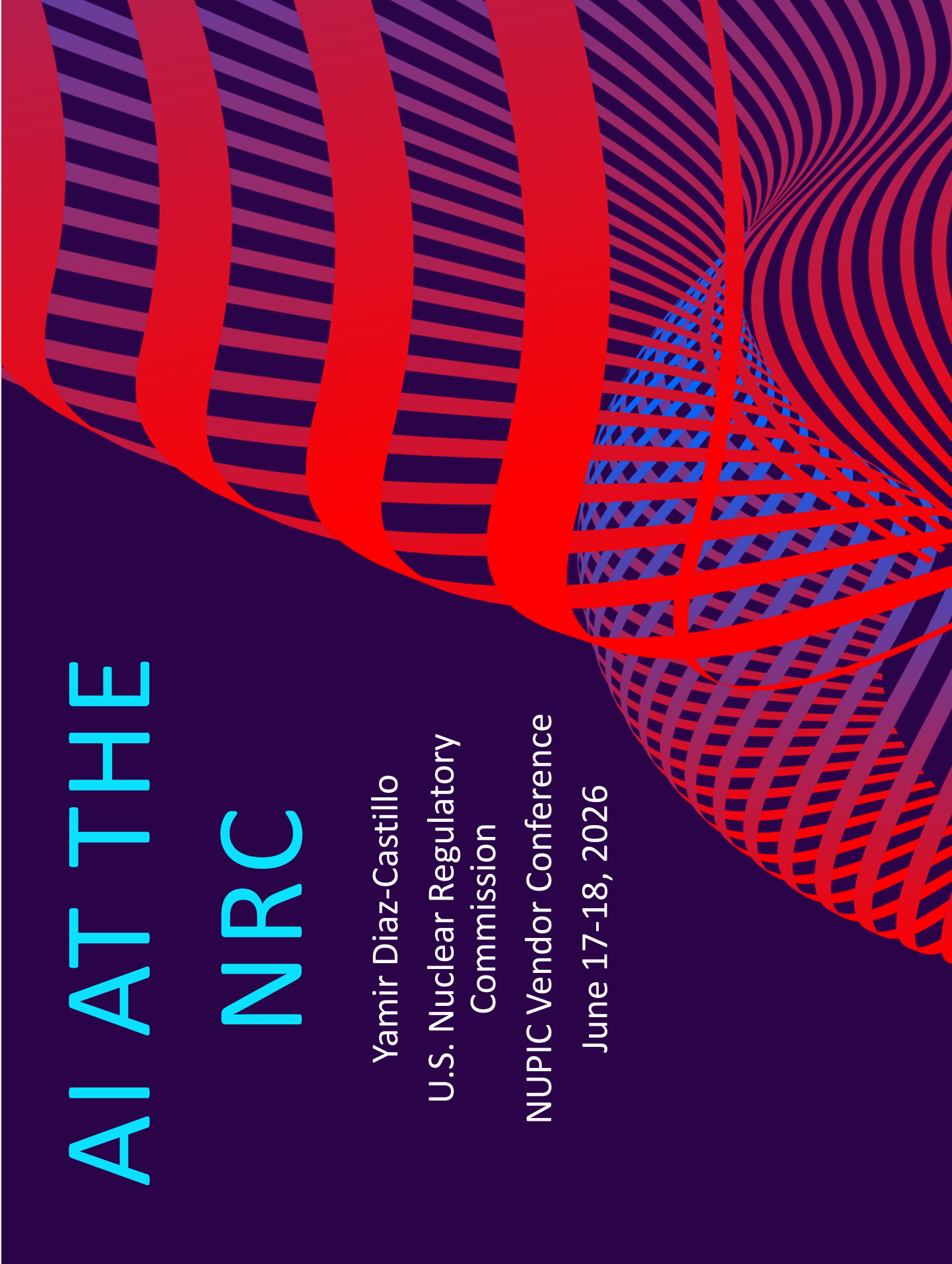


AI AT THE NRC

Yamir Diaz-Castillo
U.S. Nuclear Regulatory
Commission
NUPIC Vendor Conference
June 17-18, 2026



NRC's Definition of AI

Artificial Intelligence is defined as a **machine-based system** that can go beyond defined results and scenarios and has the **ability to emulate human-like perception, cognition, planning, learning, communication, or physical action.**





NRC's Vision and Goal

Vision: To responsibly leverage AI in support of the NRC's mission, empowering staff to efficiently make risk-informed decisions, drive regulatory innovation, and protect public health, safety, and the environment.

Goal: Ensure NRC's regulatory framework effectively enables the safe and secure use of AI in regulated activities.

What We Have Accomplished

- Issued SECY-24-0035, “Advancing the Use of Artificial Intelligence at the U.S. Nuclear Regulatory Commission (ML24086A002).
- Appointed a Chief AI Officer and created an AI Governance Board and an AI Steering Committee.
- Published an AI principles paper with Canada and the United Kingdom in September 2024 (ML24241A252).
- Issued the final report on “Regulatory Framework Gap Assessment for the Use of Artificial Intelligence in Nuclear Applications” in October 2024 (ML24290A059).
- Published the NRC’s AI Strategic Plan in September 2025 (ML25269A196).





Use of AI at the NRC

LICENSING





- Assist in drafting safety evaluation components, precedent checks, and acceptance reviews for Power Uprates.
- Summarizing industry reports or academic references for Advanced Reactor reviews.
- Advanced templating and review support tools to support AP1000 Revision 20 review.
- SUNSI and acceptance review tools to support subsequent license renewal review efficiency.
- Development of Clinch River safety evaluation report templates for several chapters.

OVERSIGHT

- Automatic content generation for portions of SECY papers and rulemaking documents.
- Evaluating inspection procedures and identifying opportunities to consolidate guidance.
- Supporting research and code development and generating outlines and appendices for inspection procedures.
- Performing mock qualification boards and providing study guidance.

Use of AI at the NRC

NRC's Layered, Risk-Managed AI Ecosystem

| AI | Uses | NRC Internal Information | Agency Developed | Images | Worldwide Web Access | ADAMS |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|  Copilot Office productivity for individual users—draft, edit, summarize, and streamline everyday work tasks using select organizational data. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|  SimplifAI Consistent, mission-aligned regulatory analysis and content creation using curated data to support NRC staff teams and processes. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|  ChatGPT  Gemini Generalist tools offering advanced reasoning, multimodal interaction, and exploratory analysis across domains. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Public Outreach

- NRC hosts an annual Data Science and AI Regulatory Applications Public Workshop.
- Free to attend but registration is required.
- More information can be found at: <https://www.nrc.gov/public-involve/conference-symposia/data-science-ai-reg-workshops>



Frequently Asked Questions

- What is the status of nuclear industry use of AI in NRC-regulated applications?
- Are there regulations in place covering the use of AI in nuclear facilities? If so, can you comment on how these regulations were developed and how compliance is monitored or enforced? If there are no regulations, how does the NRC view the use of AI in nuclear facilities?
- What is the NRC's position on licensees and applicants using generative AI to write documents submitted to the NRC?



More information can be found at:
<https://www.nrc.gov/ai>



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