



Increasing NRC Readiness in Artificial Intelligence Decisionmaking

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ROP Bi-Monthly Meeting
May 26, 2022



Artificial Intelligence (AI) and the Nuclear Industry

- The nuclear industry is researching and using AI applications
- The U.S. Nuclear Regulatory Commission (NRC) recognizes the potential to use data science and AI for regulatory decisionmaking
- The NRC must be prepared to evaluate these technologies

The NRC is developing the AI Strategic Plan to better position the agency in AI decisionmaking



Developing the AI Strategic Plan to better position the agency in AI decisionmaking



Engaged interdisciplinary team of AI subject matter experts across the agency



Leveraging insights from the 2021 Data Science and AI Regulatory Applications Workshops*



AI Strategic Plan to be finalized after receipt and consideration of comments from the public and feedback from the Advisory Committee on Reactor Safeguards

*See NRC public Web site at <https://www.nrc.gov/public-involve/conference-symposia/data-science-ai-reg-workshops.html>

Fostering Partnerships

- Commenced interactions with other federal partners to explore AI evaluation approaches, lessons learned, and collaboration opportunities
- Similarly engaged with international counterparts interested in AI for nuclear
- Maintaining continual engagement on state-of-the-art research
- Enhancing and leveraging existing MOUs

Other Federal Agencies



U.S. ARMY



NIST

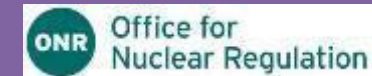
Research Organizations



International Counterparts



Strål
säkerhets
myndigheten
Swedish Radiation Safety Authority



Leveraging MOUs



New Data Science
and AI Addendum



Operating Experience
and Data Analytics

NRC AI Challenges

Current

Workforce Training

Traceable and Auditable Evaluation Methodologies

Internal Challenges: Automating Internal Agency Business Processes

External Challenges: Understanding Licensee and Applicant AI Usage

Future

Regulatory Guidance and Decisionmaking Development

Differentiating AI Usage for Reactor Design Versus Autonomous Control

Explainable AI and Trustworthy AI – Reliability and Assurance

Internal AI Budget Predicated on Emergent Industry Applications

**DRAFT U.S. Nuclear
Regulatory Commission
Artificial Intelligence
Strategic Plan**
Version 1.0

Looking Ahead

- **Expected Summer 2022**
 - Publish draft AI Strategic Plan in the *Federal Register* for public comment
 - Host public meeting on draft AI Strategic Plan
 - Host 2022 Data Science and AI Regulatory Applications Workshop
- **Expected Fall 2022**
 - Finalize AI Strategic Plan



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