

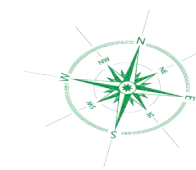


# EMBARKING ON THE ARTIFICIAL INTELLIGENCE JOURNEY

Luis Betancourt, P.E.

Branch Chief Champion for Artificial Intelligence

Office of Nuclear Regulatory Research



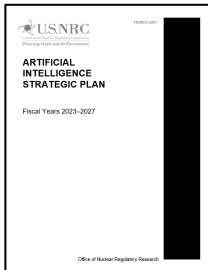


# Artificial Intelligence (AI) Landscape and the NRC

## NUCLEAR INDUSTRY (EXTERNAL)



Industry wants to use AI

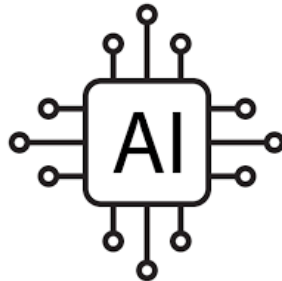


AI Strategic Plan to prepare staff to review AI

## OTHER CONSIDERATIONS AND OPPORTUNITIES (EXTERNAL)

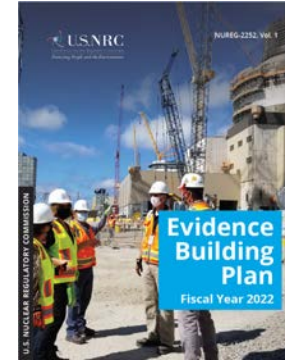


Executive Order 13960 and OMB reporting requirements for implementing agencies



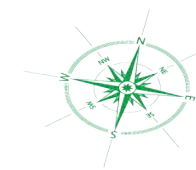
Wide range of AI meetings, conferences, and activities

## INTERNAL TO THE NRC



NRC Evidence Building Priority Questions

Internal interest in researching AI-based tools ranging from AI embedded in commercial applications to custom programming





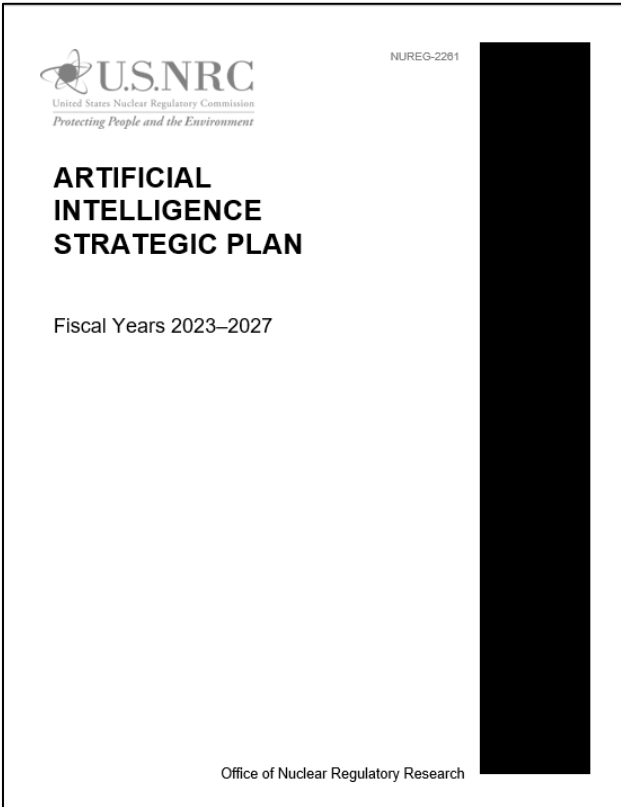
# Final AI Strategic Plan Is Now Complete

**Vision:** Continue to keep pace with technological innovations to ensure the safe and secure use of AI in NRC-regulated activities

**The AI Strategic Plan consists of five strategic goals:**

- Goal 1: Ensure NRC Readiness for Regulatory Decision-Making
- Goal 2: Establish an Organizational Framework to Review AI Applications
- Goal 3: Strengthen and Expand AI Partnerships
- Goal 4: Cultivate an AI-Proficient Workforce
- Goal 5: Pursue Use Cases to Build an AI Foundation Across the NRC

Appendix B on acknowledging internal uses of AI





# Executing the AI Strategic Plan

## AI Organizational Framework

- AI Steering Committee: expected to be formalized in spring 2023
- AI Community of Practice: expected to be launched in spring 2023

## Data Science and AI Regulatory Applications Workshops

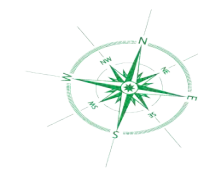
- Expected in summer 2023
  - Scoping Regulatory Engagement Levels and Common Terminology
- Future workshop
  - Regulatory Gaps and Considerations

## AI Implementation Plan

- Draft AI Implementation Plan: expected in summer 2023
- Final AI Implementation Plan: expected in fall 2023

## Strengthening Readiness through AI Research

- AI regulatory gap analysis
- AI use cases for the regulatory framework
- Survey of AI tools and methods for safety evaluation
- AI standards identification







# Gaining Valuable Information to Benchmark AI Activities

## Maintaining Awareness



NIST AI risk management framework standards development



Data science and AI regulatory applications workshops

## Communication Forums



Public meetings to inform key activities



National laboratories, vendors, and academic AI-focused workshops and seminars



GSA-sponsored AI Community of Practice

## Working Partnerships



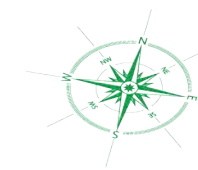
NRC/DOE-EPRI MOUs on data science, AI, and operating experience



IAEA consultancy and technical meetings on AI



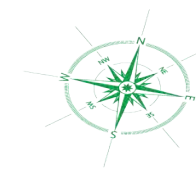
US-Canada-UK trilateral engagement on AI





## Moving Forward: 2023 and Beyond

- Continued safety and security in the nuclear industry is paramount
- Embrace new and innovative ways to meet the NRC's mission
- Maintain strong partnerships with domestic and international counterparts
- Engage with the NRC early and often





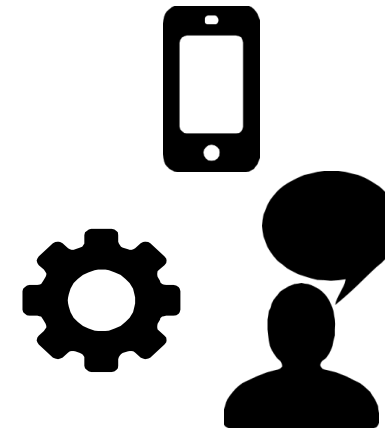
# Connect With Us

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