

# Briefing on ADVANCE Act Activities

March 4, 2025





## **Mirela Gavrilas**

**Executive Director for  
Operations**

The NRC protects public health and safety and advances the nation's common defense and security by enabling the safe and secure use and deployment of civilian nuclear energy technologies and radioactive materials through efficient and reliable licensing, oversight, and regulation for the benefit of society and the environment.







#ADVANCENRC

**Mike King**  
Special Assistant for  
ADVANCE Act, OEDO



# Openly Paving a Sustainable Path Forward

NRC's public ADVANCE Act webpage\*

Implementation status dashboard is available on the ADVANCE Act webpage



## ADVANCE Act (Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024)



\* <https://www.nrc.gov/about-nrc/governing-laws/advance-act.html>





# Actively Seeking Innovative Ideas

- External Contact Us Form
  - 32 total submissions
  - Ideas, comments, questions
- Internal Engagement Portal
  - 106 total submissions
    - 12 questions
    - 20 comments
    - 74 ideas



Note: Word cloud generated from staff idea submissions

# Hitting Our Early Targets



**Signed MOU with DOE on advanced nuclear fuels, as required by Section 404**

December 12, 2024



**Issued report on new hiring and pay authorities, as required by Section 502**

December 17, 2024



**Issued report on advanced methods of manufacturing and construction, as required by Section 401**

January 6, 2025



**Issued report on environmental reviews, as required by Section 506**

January 6, 2025





# Measuring our Results

## Accountability

- Established new enterprise risk
- Tasking responsible offices

## Impact

- Proposing new metrics
- Establishing office-level metrics





**Christopher Regan**  
Director,  
Division of Rulemaking,  
Environmental, and  
Financial Support, NMSS



# Optimizing the Program

Focusing on  
the most  
important

Technical review level:  
30% resource savings for  
subsequent license renewals

The  
“Blueprint”

Resource analyses: 5500-hour model for  
reactor renewal environmental impact  
statements

Future  
Streamlining

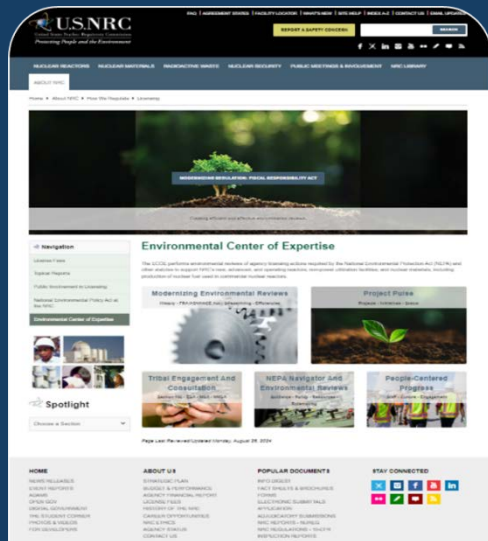
- Micro-reactor deployment: e-portal, Design Specific GEIS, potential future Categorical Exclusions
- Brownfield assessment (Section 206 of the Act)

Cooperation  
and  
Coordination

MOU on over 1/2 of new reactor projects: 50% resource  
saving when other agencies lead consultations



# Inspire Stakeholder Confidence! Optimizing the Environmental Review Program



New!  
One-stop shop  
external website



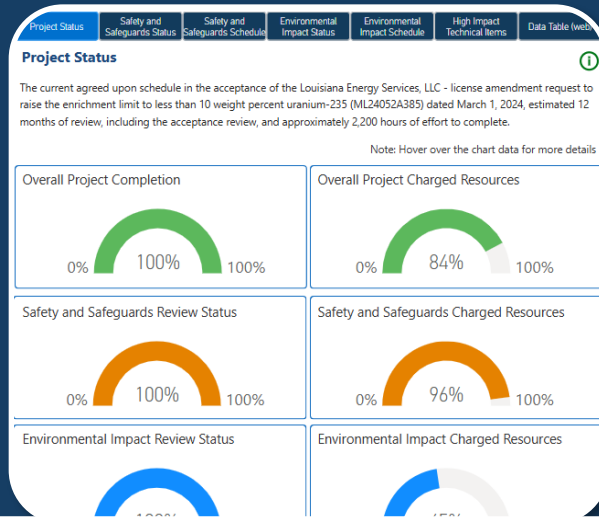
Preapplication  
engagements:  
fiscal year 24  
Tribal Consultations  
200 tribes  
27 tribal meetings  
486 letters



Public meeting  
options:  
  
virtual...  
hybrid...  
in-person...



# Other NMSS Activities



## Smarter Fuel Cycle Licensing Program

- 36 process improvements:
- more timely reviews
  - improved resource execution
  - increased transparency

## Foreign Ownership, Control, or Domination Changes

Focused project team  
streamlined actions





**Michele Sampson**

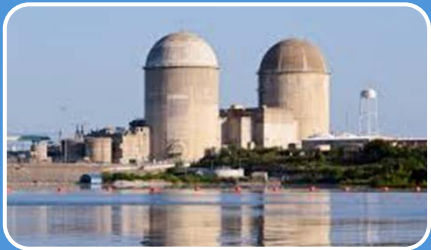
Director,  
Division of New and  
Renewed Licenses, NRR



# Safely Powering the Future



Leveraging our licensing experience on power uprates requests



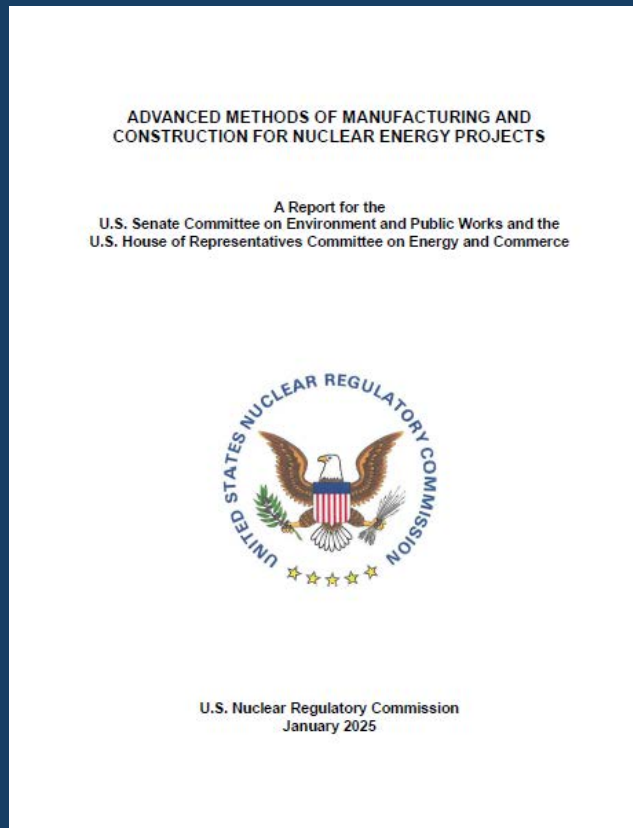
Streamlining license renewal reviews



Reinforcing licensing efficiencies expectations

# Leading Change by Meeting the Challenge

## Section 401 – Report on Advanced Methods of Manufacturing and Construction



Annual NRC Fall Standards Forum



# Enhancing Licensing Reviews with Crosscutting Solutions



- ✓ Section 206 – Regulatory Issues for Nuclear Facilities at Brownfield Sites
- ✓ Section 207 – Combined License Review Procedure
- ✓ Section 208 – Regulatory Requirements for Micro-reactors
- ✓ Section 505 – Nuclear Licensing Efficiency



**Jeremy Groom**

Deputy Director,  
Division of Radiological  
Safety and Security,  
Region IV





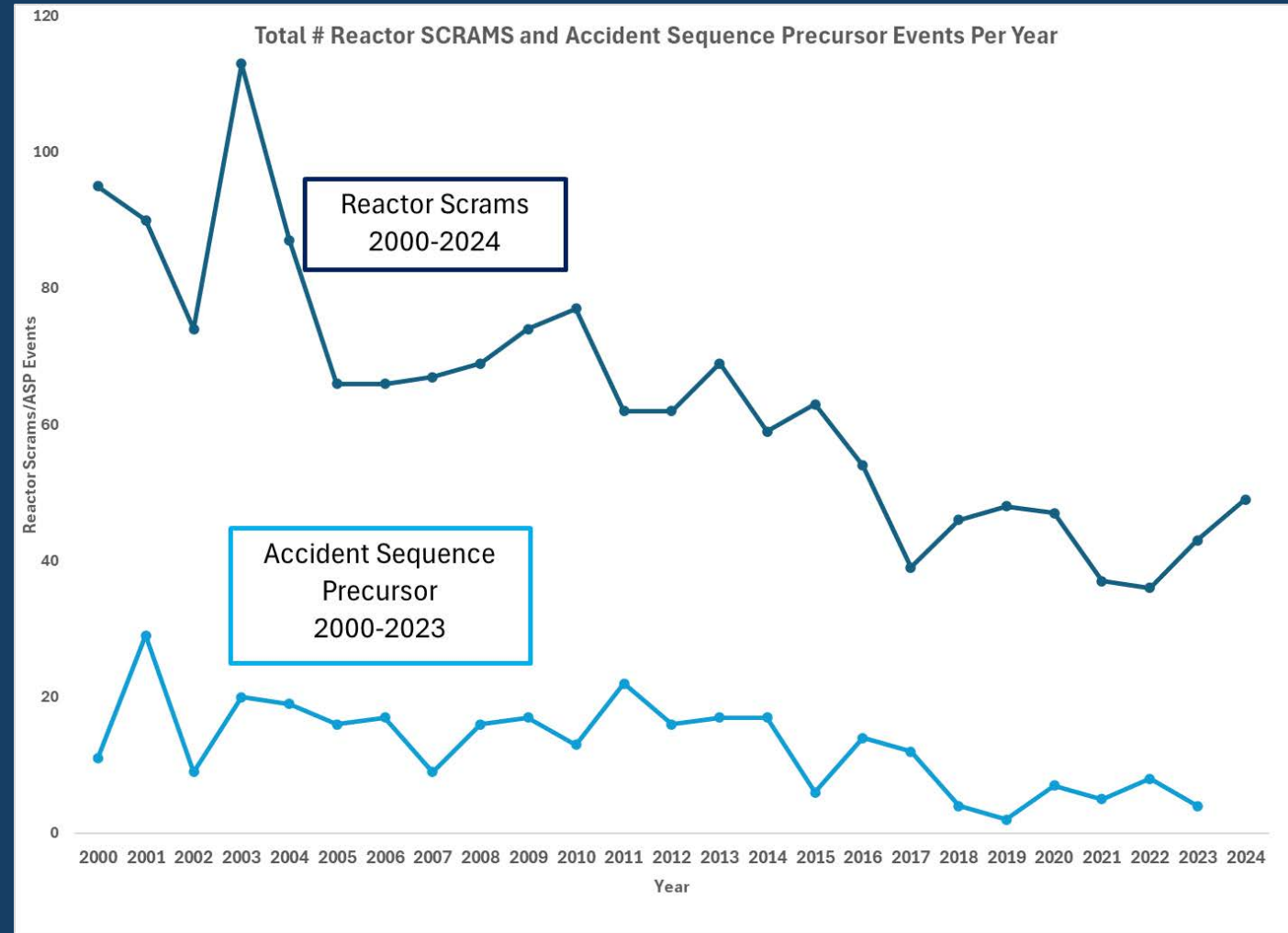
# Engaging the Oversight Community for Lasting Impact

- NRC staff are reviewing 185 suggestions on how to improve our reactor and materials oversight programs
- About 59% of these suggestions (109 total) have come from internal sources
- Significant NRC staff engagement (HQ, 4 Regional Offices, and resident sites) in recognition that changes need to be embraced in the culture of our oversight program



# Evidence Drives Our Ambitions

- ROP vs. Industry Performance
- ROP Inspection Hours
  - 2000: 2165 hours
  - 2024: 1904 hours
- Reactor Scrams
  - 2000-2004: avg. 91.8
  - 2020-2024: avg. 42.4
- Accident Sequence Precursor Events
  - 2000-2004: avg. 17.6
  - 2019-2023: avg. 5.2





# An ROP Focused on Performance



- Comprehensive review of the NRC's Reactor Oversight Process including security
  - All performance indicators (17 total)
  - All inspection procedures (42 total)
- Interim changes to reactor safety inspections frequency & scope based on industry performance
- Frequency, schedule, and content of security inspections
- Treatment of white findings
- Expand VLSSIR process and inspection preparation/documentation enhancements

# Materials Oversight and Differing Views

- Materials Oversight Programs
  - Leverage modern technology
  - Improve inspection reports
  - Develop centers of expertise
  - Streamline internal processes
- Differing Professional Views Program
  - Development of tools to characterize the safety significance of issues at the beginning of the DVP process
  - Program improvements to ensure issues are resourced and resolved consistent with their safety significance





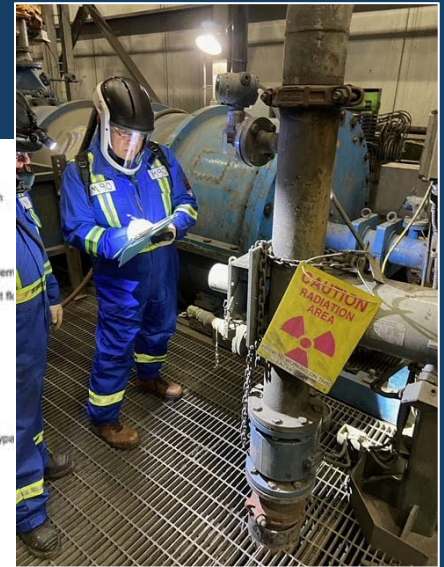
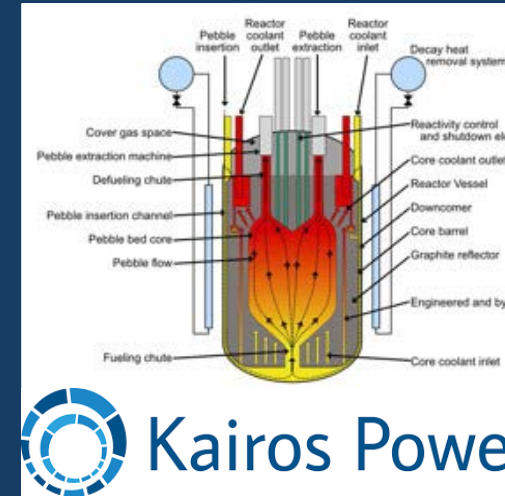


**Eric Dilworth**  
Deputy Chief Human  
Capital Officer



# Maximizing Use of Hiring Authorities

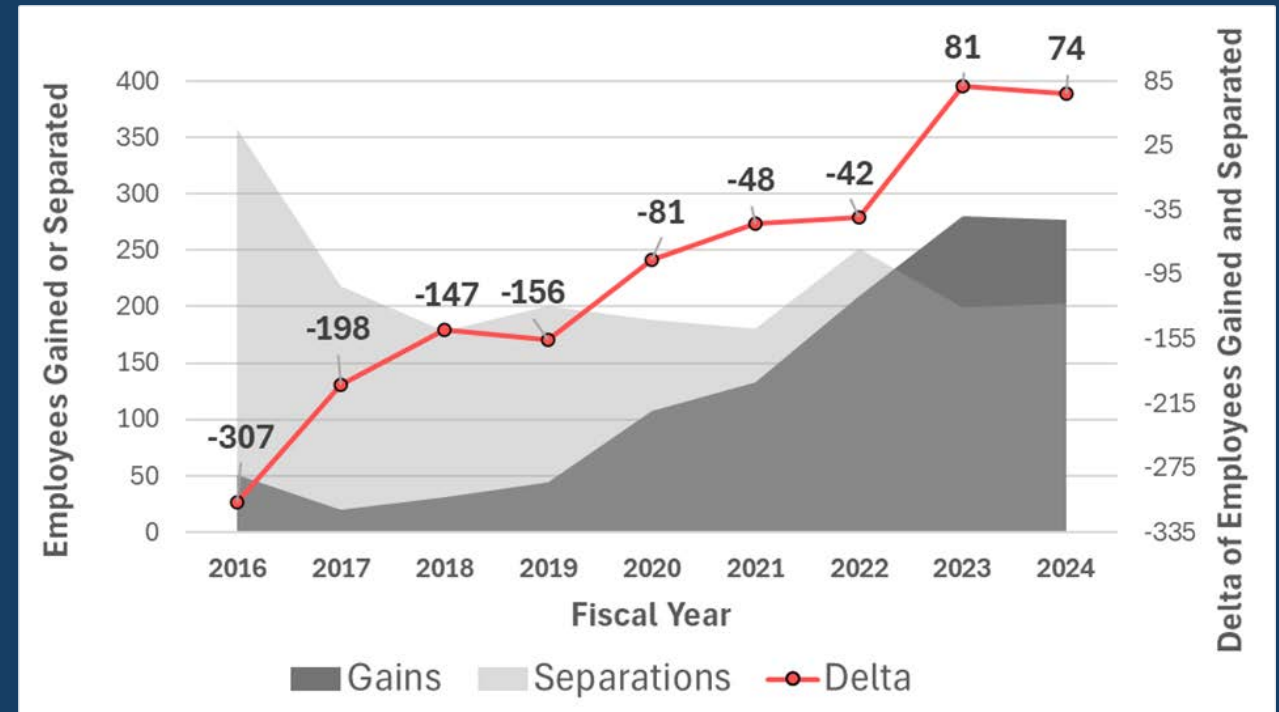
- ADVANCE Act Direct-Hire Authority
  - Streamlines hiring for exceptionally well qualified individuals
  - Up to 210 permanent appointments to covered positions at any one time
  - No more than 20 term-limited appointments per fiscal year
- With direct-hire authority, the NRC can target positions that require highly specialized expertise or are necessary for timely, efficient, and effective agency performance
- New ADVANCE Act direct-hire authority provides additional ways for the NRC to address workforce gaps, in addition to existing authorities





# Competitive Compensation for Designated Covered Positions

- High-Quality Workforce
  - Essential for NRC's safety and security mission amidst advancements in nuclear technology
- Importance of Strategic Workforce Planning for data-driven identification of critical and specialized roles
- Compensation Strategy
  - Align pay with qualifications and hiring bonuses up to \$25,000 with a two-year service agreement



Graph shows shift to positive net hiring gains beginning in fiscal year 2022 compared to prior net losses, due to employee separations exceeding hiring

# Rewarding High-Quality and Timely Contributions to the Mission

- Bonuses for Exceptional Performance
  - Up to \$25,000 for exceptional performance
- Retention Efforts
  - Competitive pay and incentives for critical projects
  - Ensures agency readiness for novel regulatory challenges





# Investing in Our Future

## US NRC Nuclear Regulator Apprenticeship Network - 2024 Cohort



 Kodaran Anand Chemical Engineer	 Jackson Barth Chemical Engineer	 Jennifer Beaton Fire Protection Engineer	 Devin Bradshaw Nuclear Engineer	 Samuel Cohen Environmental Scientist	 Jacob Davis Nuclear Engineer	 Jazmin Flores Environmental Scientist	 Kylar Coleman-Foley Physicist
 Elias Haddad Mechanical Engineer	 Anthony Jones Mechanical Engineer	 Riley Maynard Environmental Scientist	 Harrison Ngo Mechanical Engineer	 Liam O'Donoghue Mechanical Engineer	 Grace Pennington Chemical Engineer	 Rachel Qian Chemical Engineer	 Joshua Rhodes Mechanical Engineer
 Stephanie Roche-Rivera Mechanical Engineer	 Andrew Scheuermann Nuclear Engineer	 Dalton Sparks Industrial Engineer & Human Factors	 Alexandra Terres Materials Engineer	 Ethan Tievy Fire Protection Engineer	 Isaac Wang Electrical Engineer	 Gabriel Witter Civil Engineer	

- Strategic Investments
  - Partnering with academia to connect with early-career professionals
  - Annual solicitation of applications for NRAN to recruit and train emerging talent
- Developing Expertise
  - Improvements to LMS
  - Preparing the workforce for future workload demands







# Acronyms

ADVANCE Act – Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024

DVP – Differing Professional Views Program

DOE – United States Department of Energy

FOCD – Foreign Ownership, Control, or Domination

GEIS – Generic Environmental Impact Statement

HQ – NRC Headquarters

MOU – Memorandum of Understanding

NMSS – Office of Nuclear Material Safety and Safeguards

## Acronyms (cont.)

NRAN – Nuclear Regulator Apprenticeship Network

NRR – Office of Nuclear Reactor Regulation

OCHCO – Office of the Chief Human Capital Officer

OEDO – Office of the Executive Director for Operations

REFS – Division of Rulemaking, Environmental, and Financial Support

ROP – Reactor Oversight Process

LMS – Learning Management System