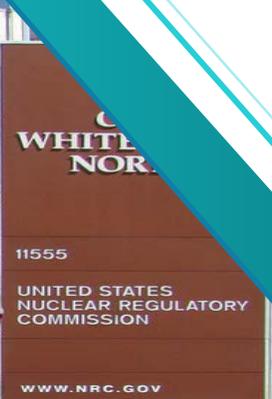


Strategic Programmatic Overview of the Operating and New Reactors Business Lines



Introduction

Dan Dorman

Deputy Executive Director for Reactor and Preparedness Programs, Office of the Executive Director for Operations



Operating Reactor Business Line

Andrea Veil, Strategic Priorities and Successes for the Operating Reactors Business Line

Caty Nolan, Continuously Improving the Reactor Oversight Process

Frank Arner, Leveraging Risk-insights to Enhance the Oversight of Operating Reactors

Caroline Carusone, Modernizing Our Licensing Programs



Strategic Priorities and Successes Operating Reactors Business Line

Andrea Veil

Director, Office of Nuclear Reactor Regulation



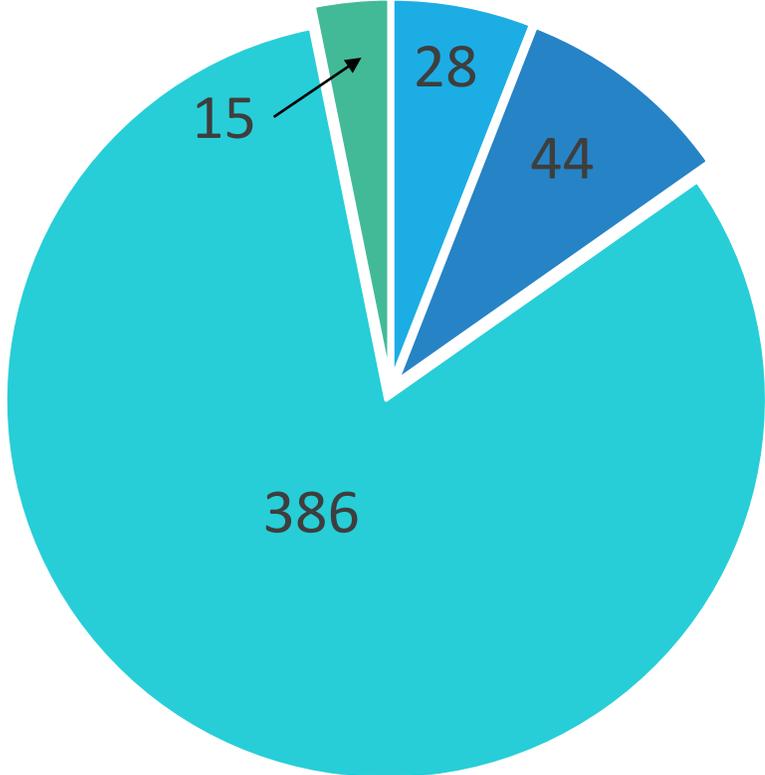
COVID-19: Maintaining Safety and Security while Preserving Openness and Transparency



Opportunities for public and industry engagement



COVID-19 licensing actions Issued

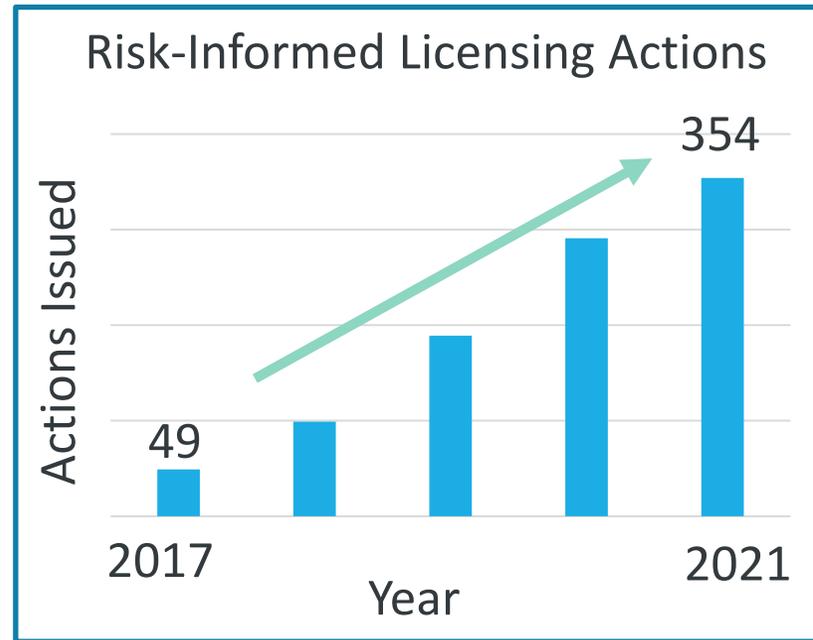


- LAR
- Relief Request
- Exemption
- Other

The Reactor Oversight Process Continues to Provide Objective, Risk-Informed, Understandable, and Predictable Oversight



Implementing continuous improvements



Inspecting risk-informed initiatives

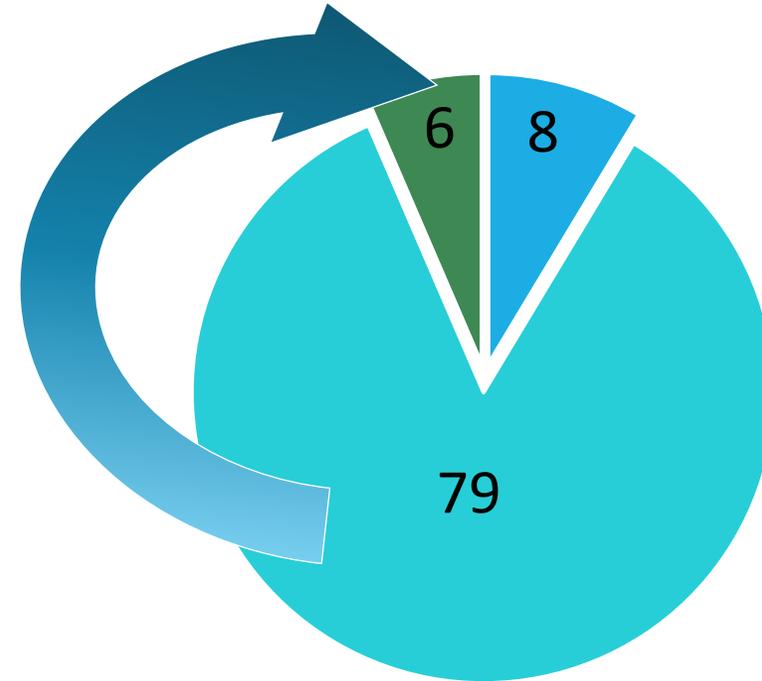


Focusing using the very low safety significance issue resolution process

NRC Subsequent License Renewal Reviews Make Safe Long-term Operation Possible

Key considerations for long-term operation:

- ✓ **SAFETY**
 - ✓ Reliability
-



■ 40 Years ■ 60 Years ■ 80 Years



Post-Fukushima Actions Have Improved Operating Nuclear Fleet Safety



Added capabilities to maintain key plant safety functions following a large-scale natural disaster



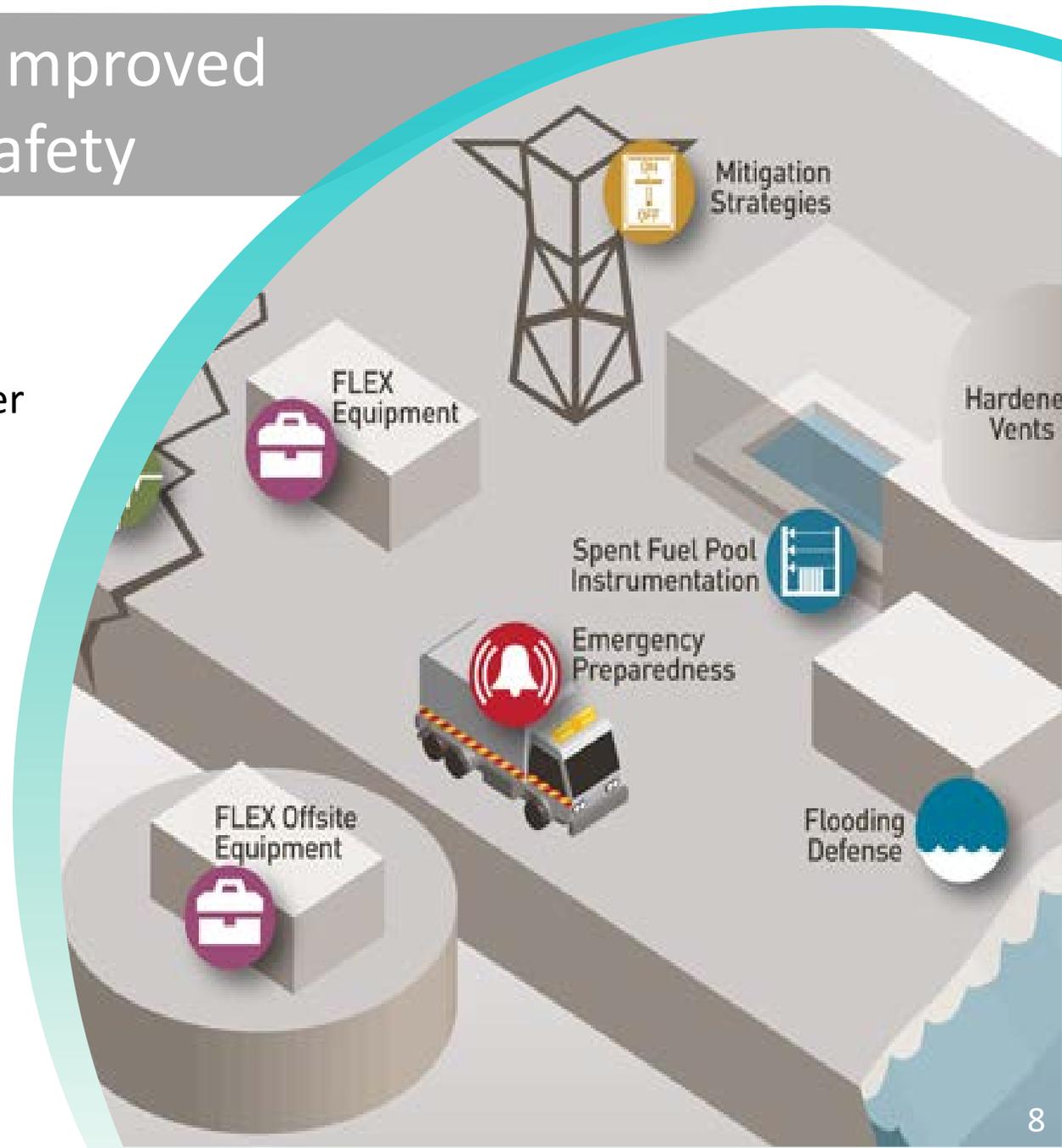
New equipment to better handle potential reactor core damage events



Strengthened emergency preparedness capabilities



Updated evaluations of the potential impact from seismic and flooding events



We Are Modernizing our
Regulatory Infrastructure to
Better Enable New
Technologies



We Are a Leader in Transformation and Innovation to Become a More Modern Risk-Informed Regulator

Be riskSMART

Risk Informed
Decisions



Data-Driven
Decisions



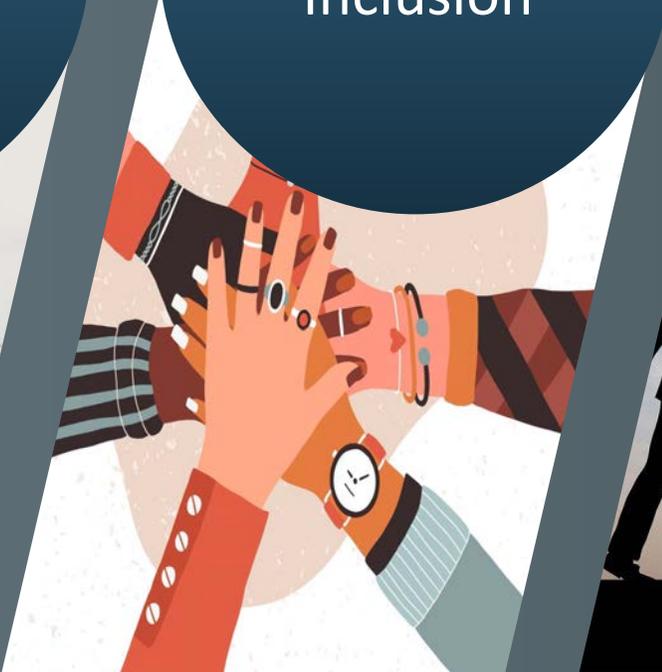
Innovation
Accelerator/Crowdsourcing

We Are Developing Our 21st Century Workforce

Culture Initiatives



Diversity and Inclusion



Professional Development



Knowledge Management



Continuously Improving the Reactor Oversight Process

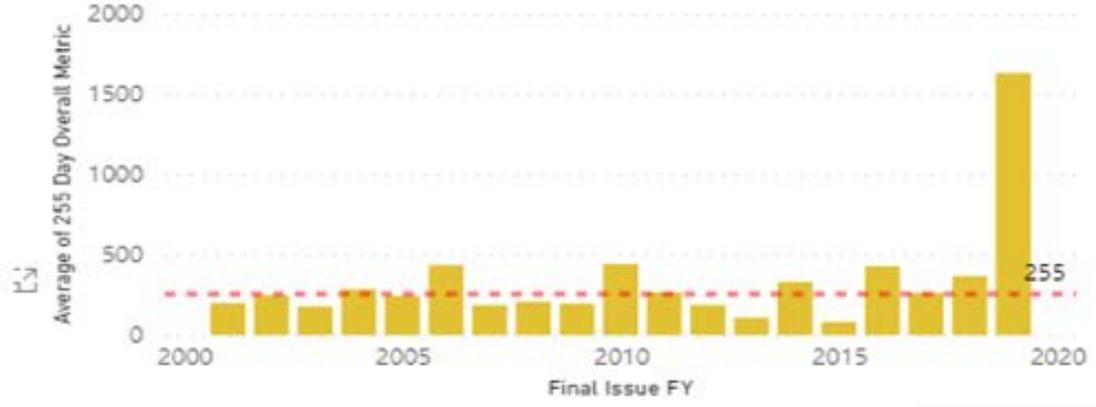
Caty Nolan

Reactor Systems Engineer, Division of Reactor
Oversight, NRR



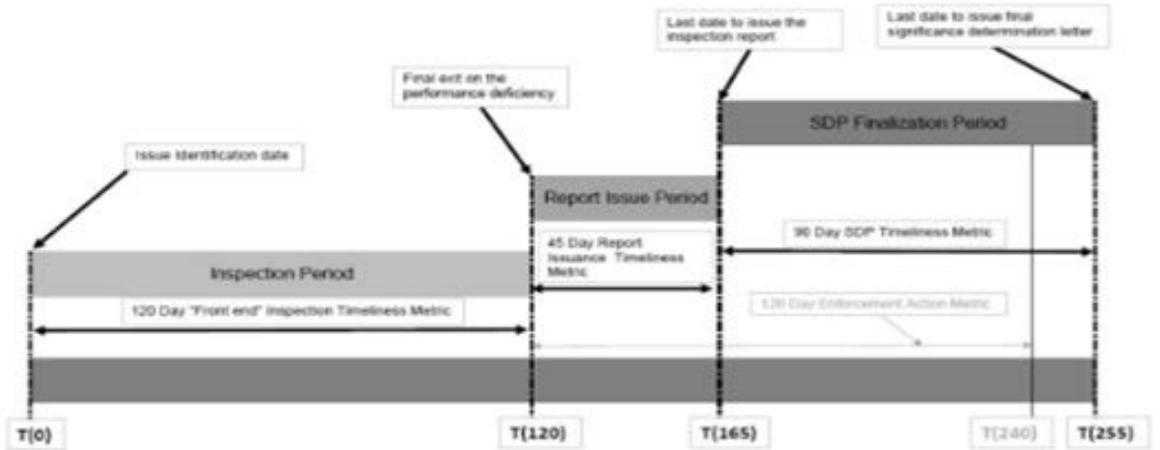
- Final SDP Color
- GREEN
 - GTG (security)
 - Minor PD
 - No PD
 - RED
 - WHITE
 - YELLOW

255-Day Overall SDP Completion Metric

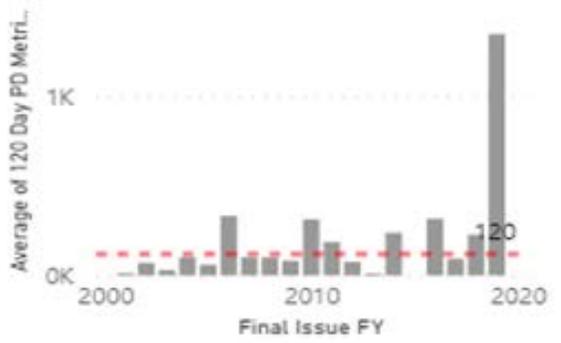


46

Count of EA #



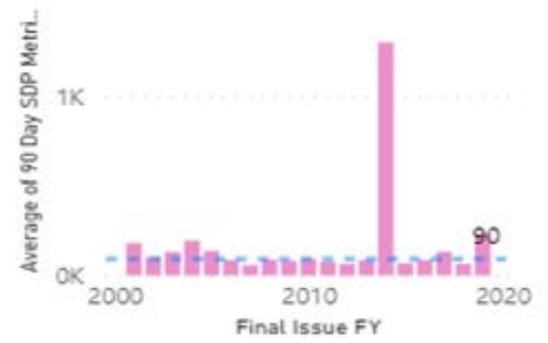
120-Day Inspection Period



45-Day IR Issue Period



90-Day SDP Finalization Period



SDP Tracker



Modernizing the ROP

Operating Experience & Generic Communication Hub

Help

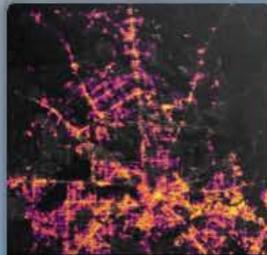
ROP Monitoring and Information



ROBLES - MAP Oversight



SCRAM Trends



Power Status



Operating Reactor Analytics (Public)



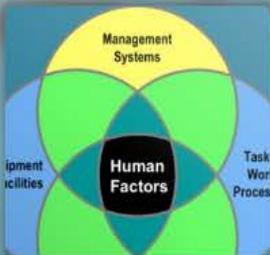
ROP Self-Assessment



Congressional Budget Justification



INPO Event Trending



Human Factors Information System



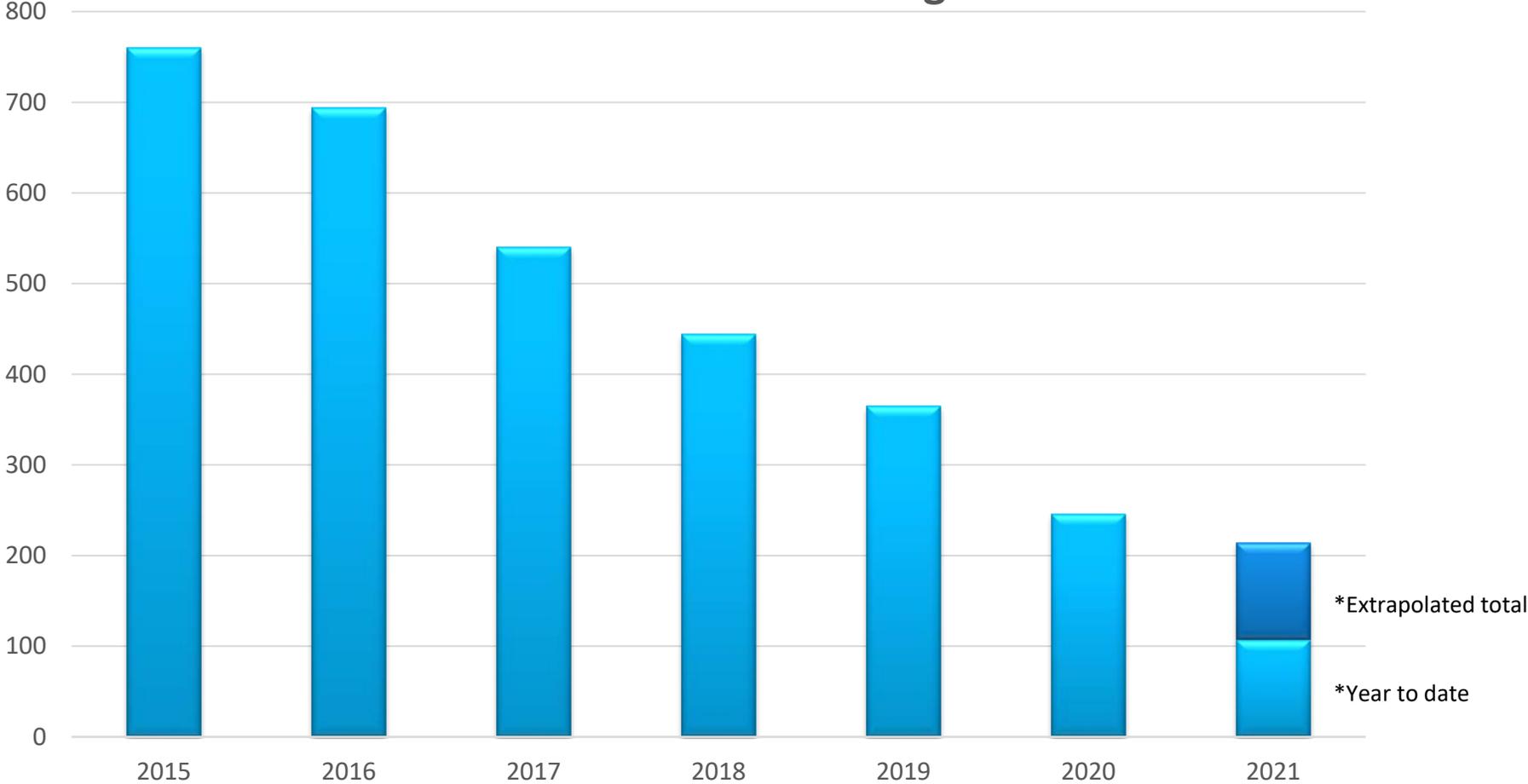
Accident Sequence Precursors (Public)



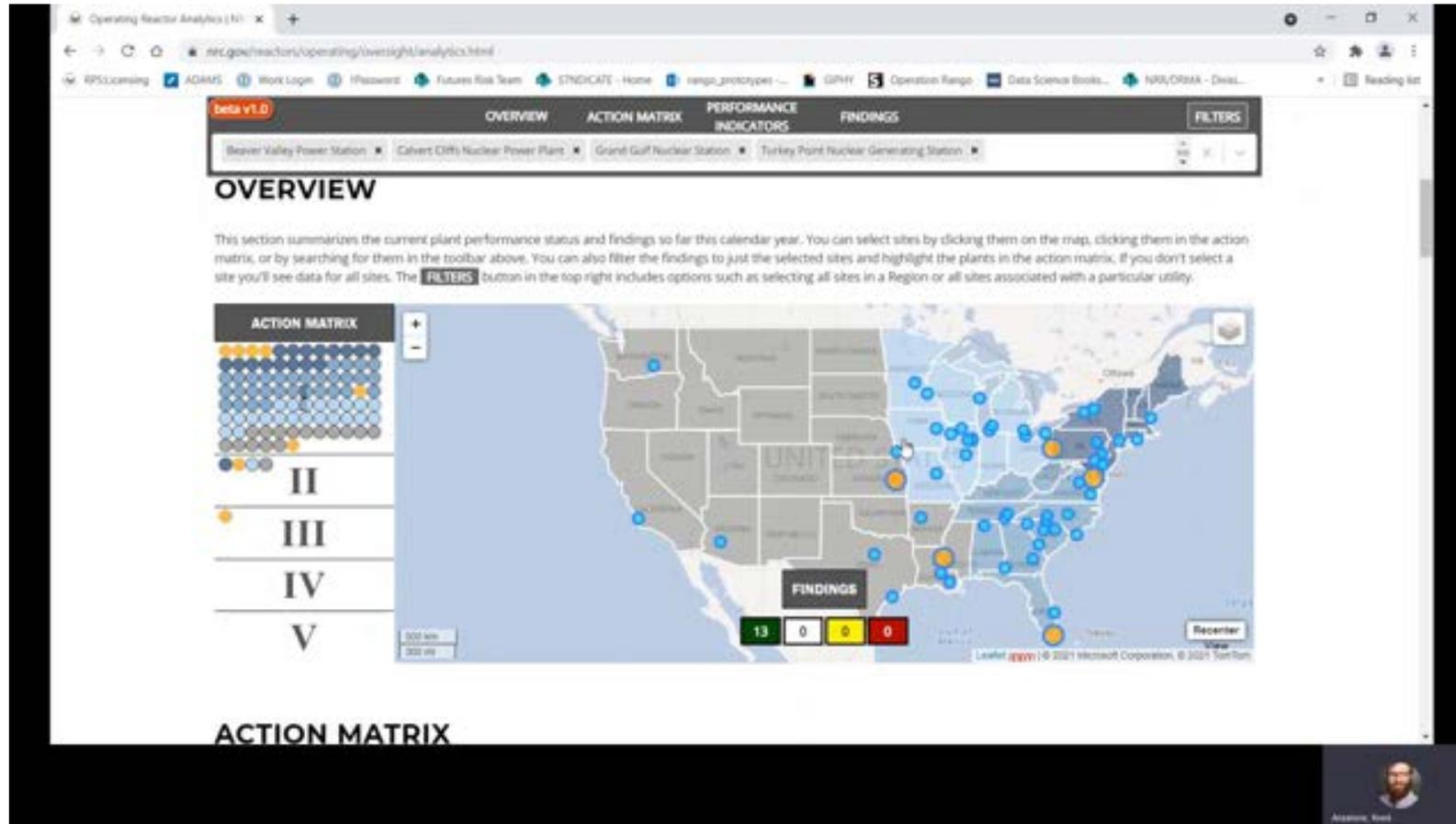
COVID-19 Site Local Conditions

Turning Data into Insights

Total Green Findings



Operating Reactor Analytics



DEMO VIDEO *Developed by Embark Venture Studios*

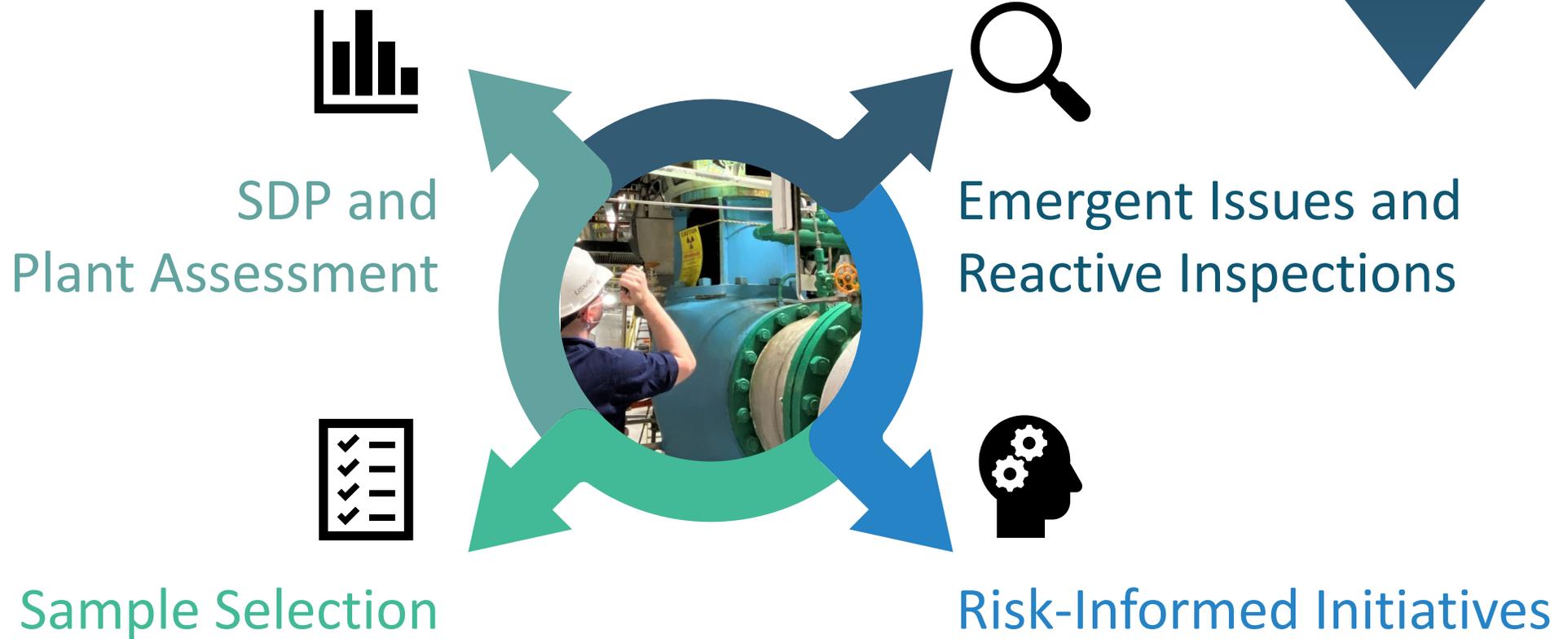
Leveraging Risk-insights to Enhance Oversight of Operating Reactors

Frank Arner

Senior Reactor Analyst, Division of Operating Reactor Safety, Region 1



PRA Models Are Integral to the Reactor Oversight Process



Use of PRA Insights in the Oversight of Risk-Informed Initiatives

Examples

- Use of 10 CFR 50.69 allowed for expedited repair of degraded piping.
- Use of the TSTF-505 program allowed for the safe online repair of components that would normally exceed Technical Specification allowed outage time.

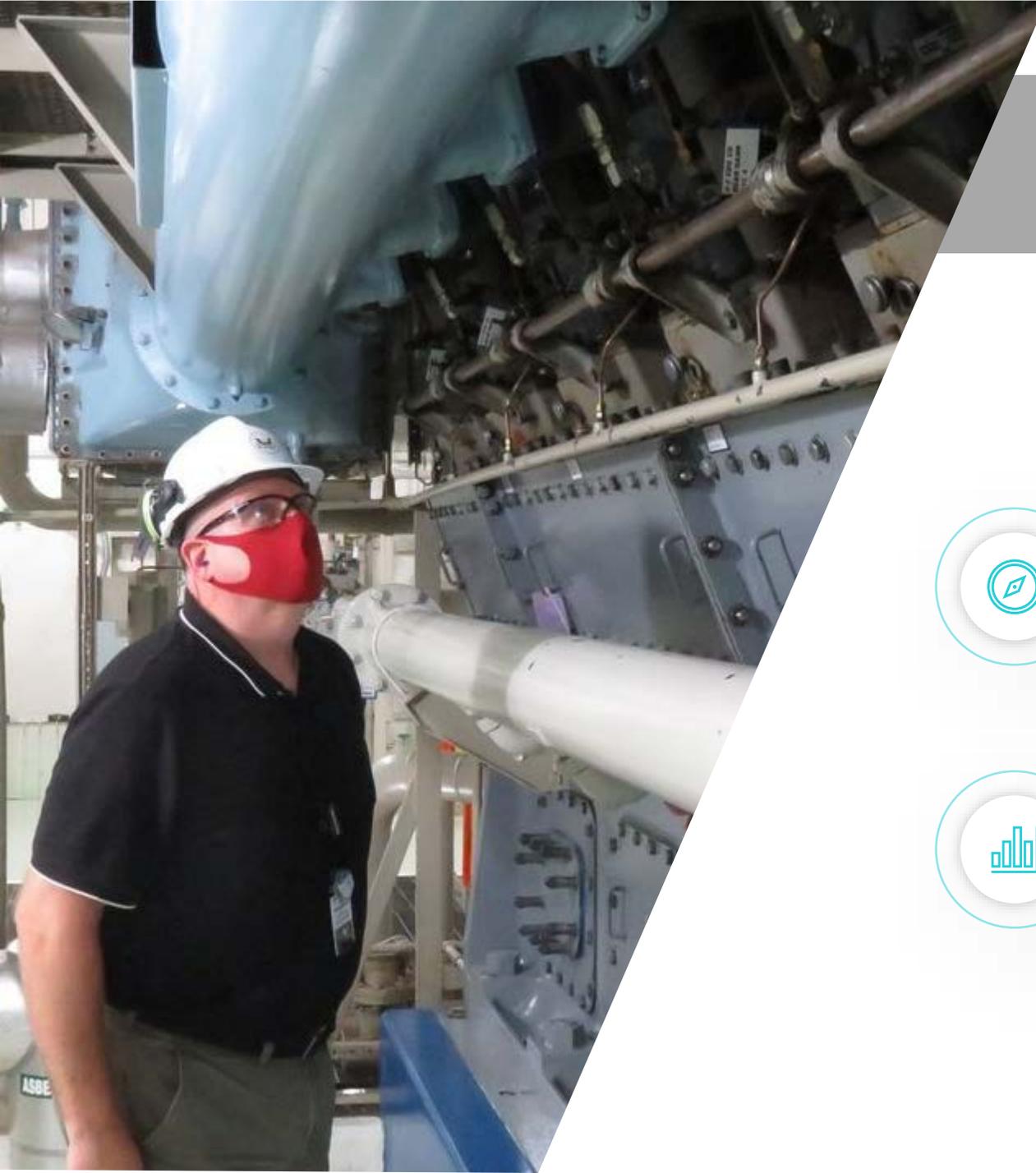
Sites with approved Risk-informed Programs



50.69



TSTF-505



Use of Risk Tools to Be riskSMART Regulators

NRC Standardized Plant Analysis Risk
SPAR models

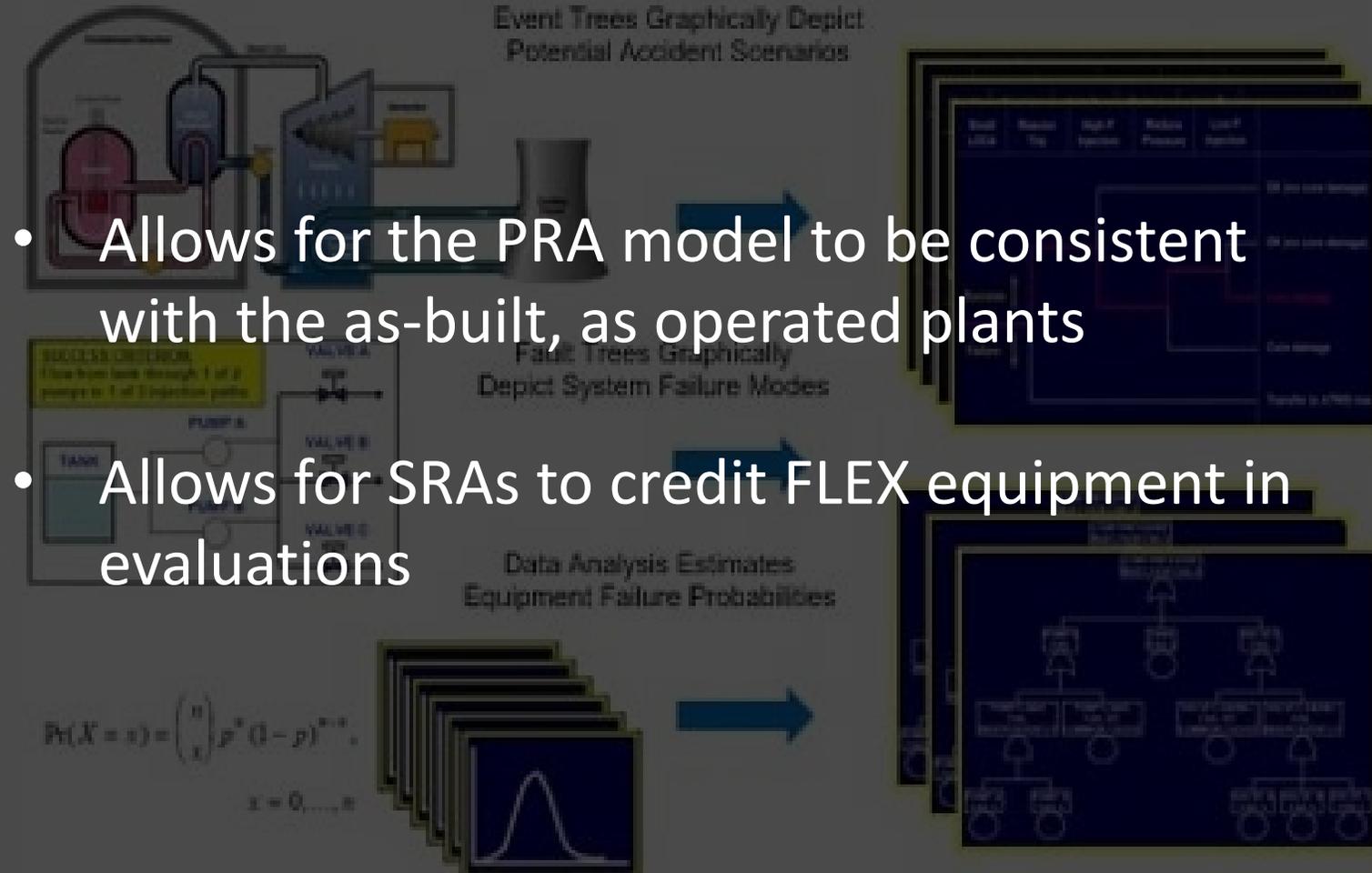


Provide **independence** from
Licensee models



Allow for **independent** analysis and
appropriate Action Matrix input
conclusions

Our Models Are Updated to Ensure Robust ROP Execution

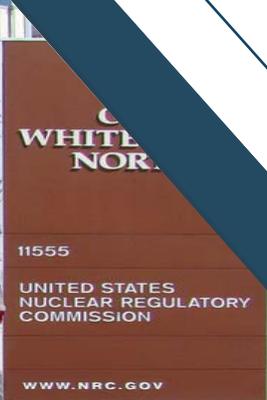


Preparing the Next Generation of Risk Professionals

- Weekly knowledge transfer sessions
- Resident inspector and Senior Reactor Analyst interactions during site turnovers
- Required SRAs and risk analyst qualification courses to ensure risk professionals stay in tune with state-of-the-art practices



Modernizing Our Licensing Program



Caroline Carusone

Deputy Director, Division of Operating
Reactor Licensing, NRR

Modernizing Our Licensing Program



Enhancing
Stakeholder
Engagement



Expanding Use
of Data and
Business Tools



Strengthening
Organizational
Capacity

Incorporating Stakeholder Feedback into Licensing Program



Risk-Informed Process for Evaluations



COVID-19 Regulatory Response



10 CFR 2.206 Program Improvements

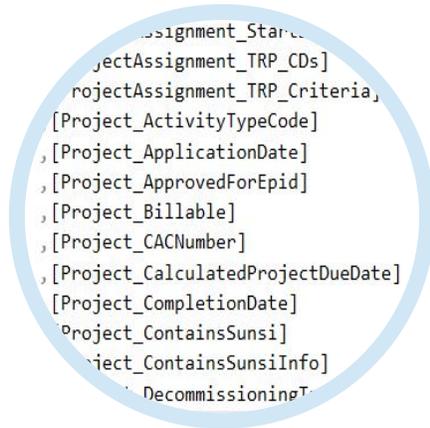


Revamped Technical Assistance Request (TAR) Process

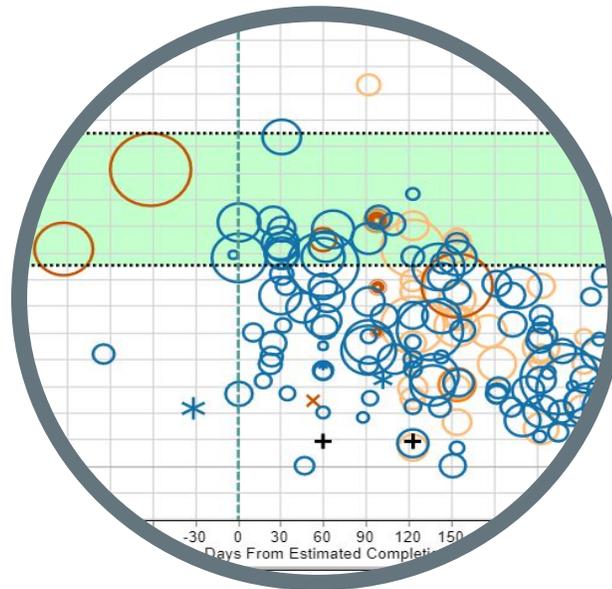
Average time to complete
Old: 365+ days
New: 30 days

31 public meetings
233 actions completed in FY21
31 Days Average review time
30 Online Submissions
Over \$500k Cost Savings with Summary FRNs

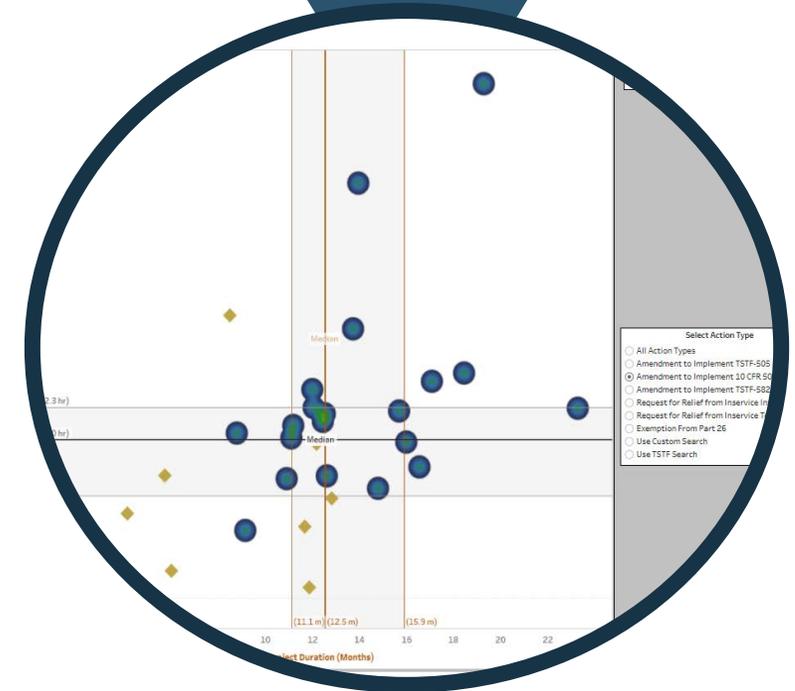
Expanding Use of Data and Business Tools



Data intake
architecture and
access

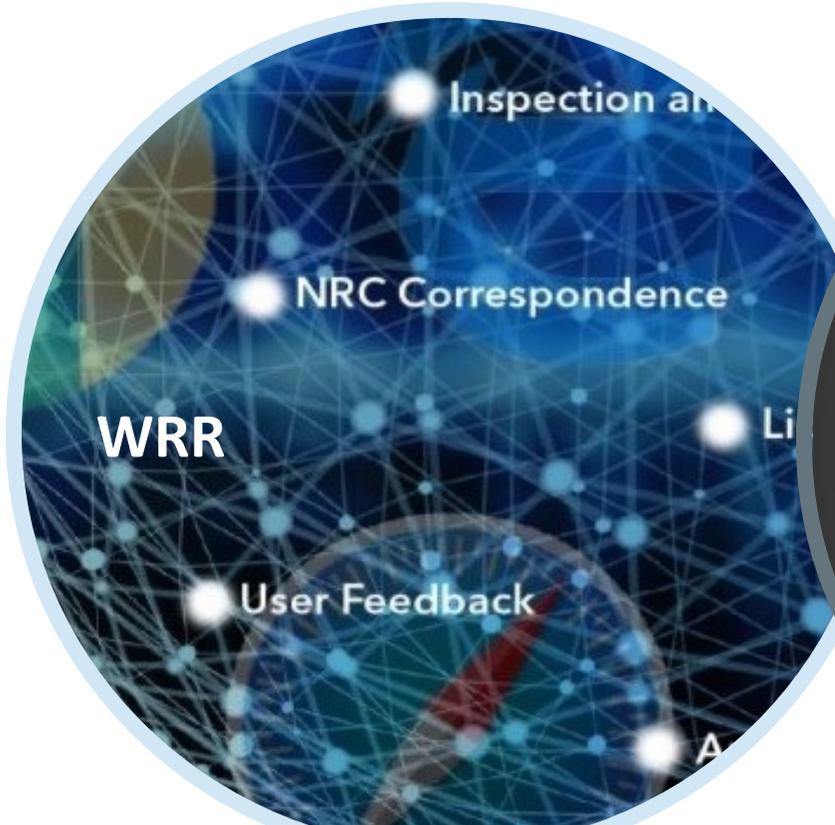


Data visualization to
track **performance** and
understand resource
impacts

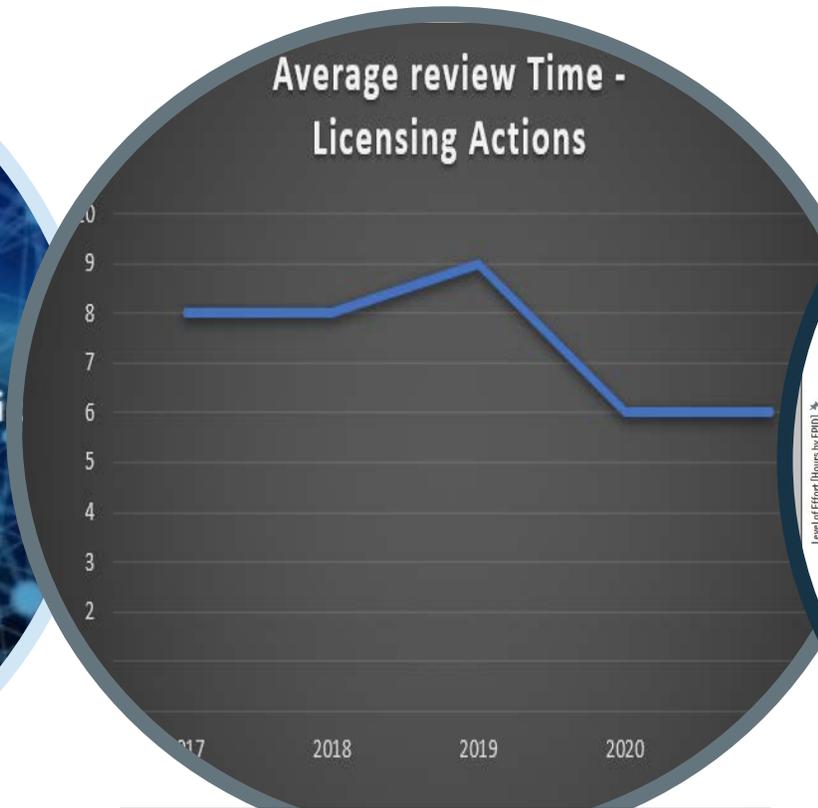


Trends analysis to **predict**
and plan for the future

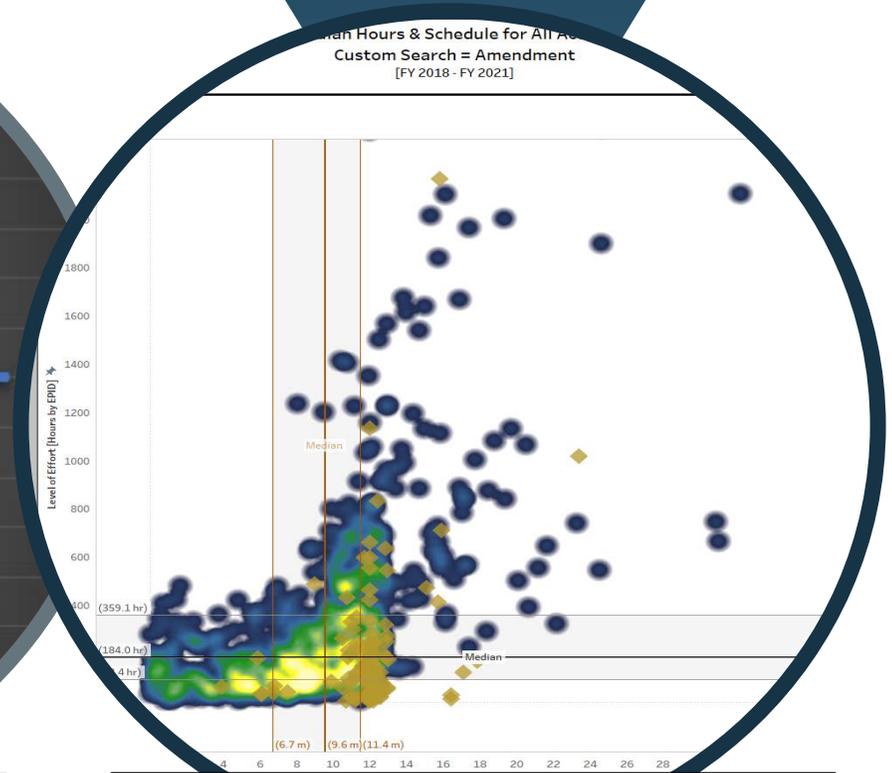
Early Returns on Data Modernization Efforts



Intake: Web-Based Relief Request Portal



Performance: Integrated Workload Management Tools



Prediction: Licensing Action Precedent Analysis

Strengthening Organizational Capacity



Evolving
Risk-Informed
Mindset and
Customer Focus



Leveraging
Collective
Talents



Cross-Training
and Knowledge
Management

Closing Remarks

Dan Dorman

Deputy Executive Director for Reactor and Preparedness Programs, Office of the Executive Director for Operations



Acronyms

CFR	Code of Federal Regulations
FLEX	Diverse and Flexible Coping Strategies
INPO	Institute of Nuclear Power Operations
LAR	License Amendment Request
MAP	Mission Analytics Portal
MAP-X	Mission Analytics Portal – External
NRC	U.S. Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
PRA	Probabilistic Risk Assessment
ROP	Reactor Oversight Process
SDP	Significance Determination Process
SPAR	Standardized Plant Analysis Risk
TSTF	Technical Specification Task Force

Introduction

Dan Dorman

Deputy Executive Director for Reactor and Preparedness Programs, Office of the Executive Director for Operations



New Reactor Business Line

Andrea Veil, Strategic Priorities and Successes for the New Operating Reactors Business Line

Nicole Coover, Vogtle Units 3 and 4

Mohamed Shams, Advanced Reactor Preparedness

Steven Vitto, Security Considerations for Advanced Reactors



Strategic Priorities and Successes

New Reactors Business Line

Andrea Veil

Director, Office of Nuclear Reactor Regulation





Vogtle 3 and 4

Advanced Reactors

Key Successes

Collaborating with the Canadian Nuclear Safety Commission

Supporting national priorities:
Advanced Reactor Demonstration Program

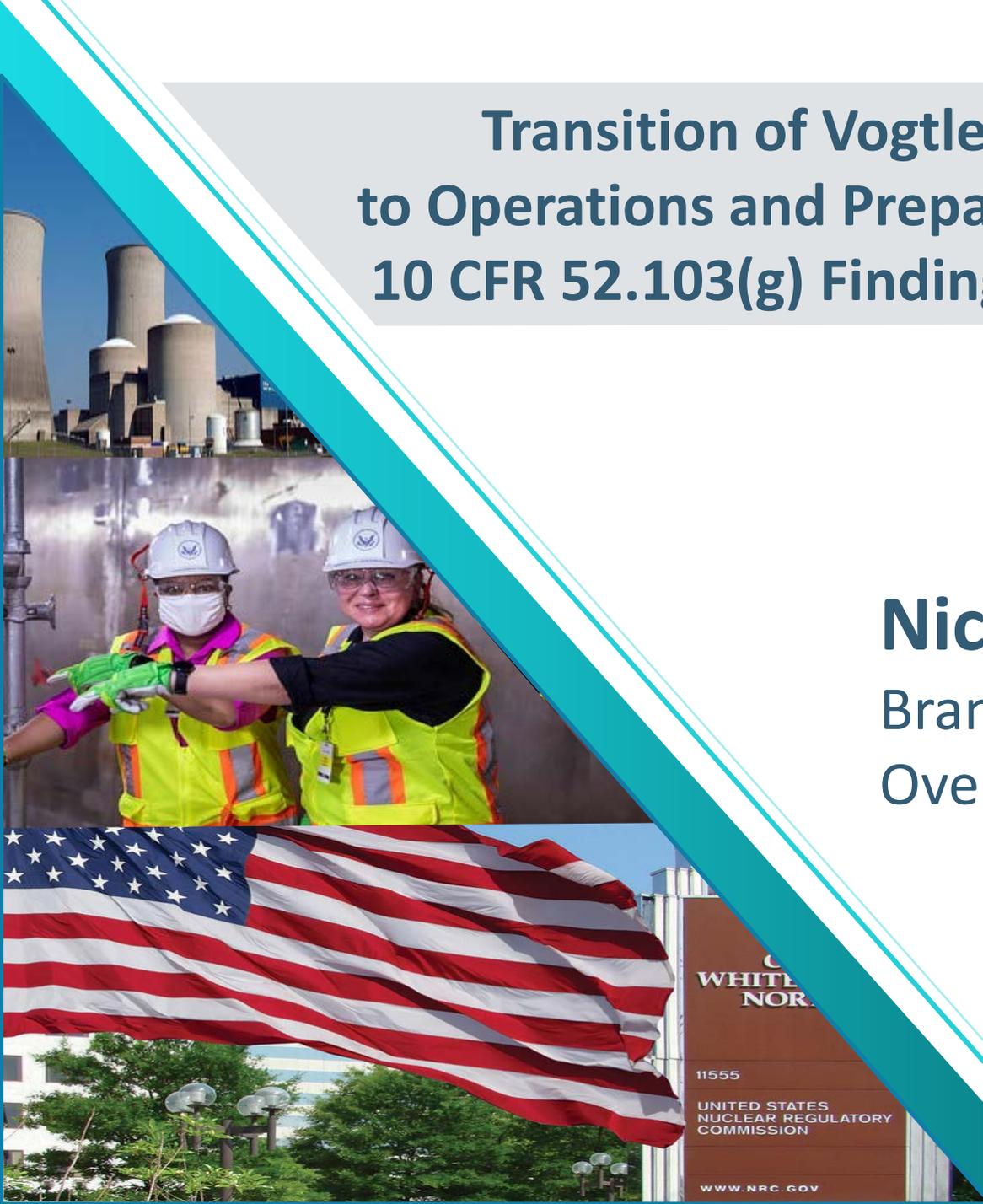
Preparing for new light-water reactor applications

Ensuring workforce readiness

Transition of Vogtle Unit 3 to Operations and Preparing for the 10 CFR 52.103(g) Finding for Unit 4

Nicole Coover

Branch Chief, Division of Construction
Oversight, Region 2





NRC and SNC Executive Site Visits



Vogtle Readiness Group



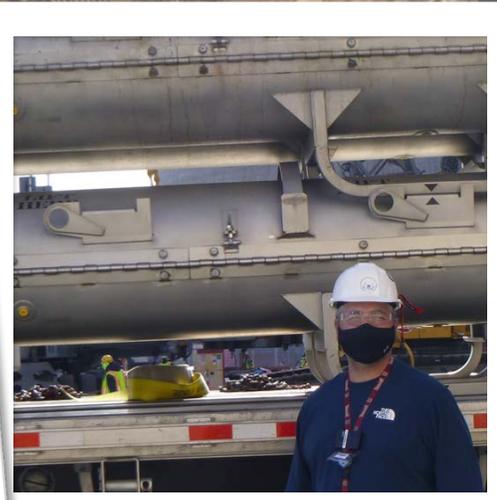
Teamwork by regional, resident, & HQ inspectors



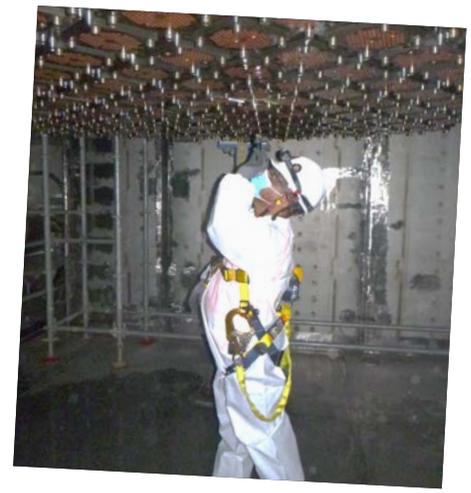
The NRC... IS WELL-POSITIONED AND EQUIPPED to conduct inspections and address emergent licensing issues.



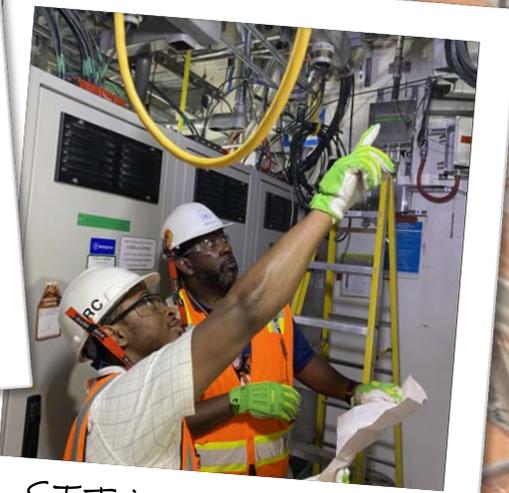
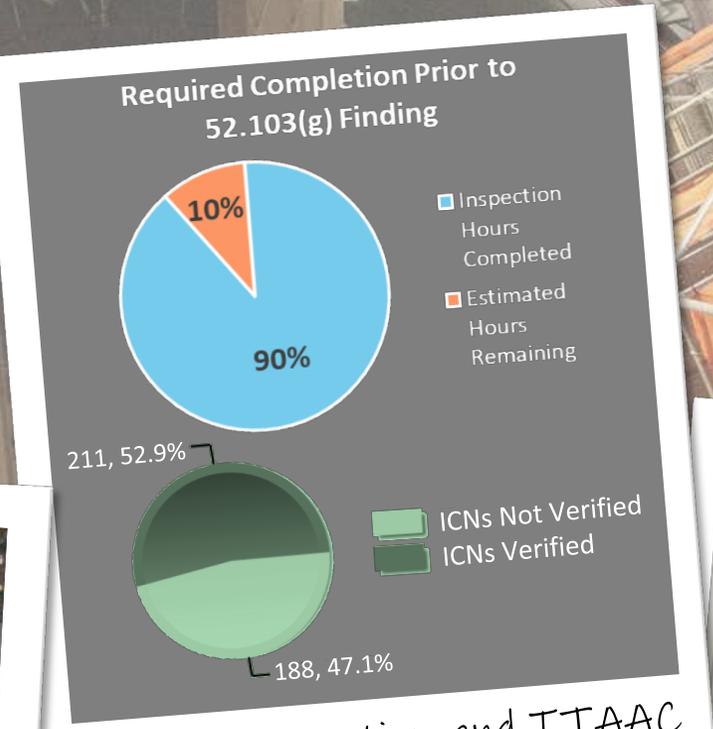
Testing team reviewing hot functional testing data



First fuel receipt



Reactor Vessel Internals



SIT inspecting the electrical raceway

...HAS THE EXPERTISE AND CAPACITY to effectively oversee the Vogtle 3&4 construction project.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 14, 2020

MEMORANDUM TO:

Marissa Bailey, Director
Division of Construction Oversight
Region II

Mark Miller, Director
Division of Reactor Projects
Region II

Mark Franke, Director
Division of Reactor Safety
Region II

FROM:

Michael King, Director /RA/
Vogtle Project Office
Office of Nuclear Reactor Regulation

Chris Miller, Director
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

SUBJECT:

TRANSITION TO REACTOR OVERSIGHT PROCESS
FOR VOGTLE ELECTRIC GENERATING PLANT,
UNITS 3 AND 4

The Vogtle Project Office and the Division of Reactor Oversight have worked with Region II to develop a plan to provide an effective and efficient transition of the Vogtle Electric Generating Plant, Units 3 and 4, from the Construction Reactor Oversight Process to the Reactor Oversight Process. The staff anticipates that it will continue to refine this plan as it gains experience with the transition process. The Vogtle Readiness Group will approve any deviations from this transition plan and determine whether future updates are warranted.

Enclosures:

1. Reactor Oversight Process Transition Plan for Vogtle Electric Generating Plant, Units 3-4
2. Figure 1 Transition to Reactor Oversight Process
3. Figure 2 Integrated Inspection Plan for Vogtle Units 1-4
4. Table 1 Performance Indicator Validity Summary

CONTACT: Andrea M. Johnson, NRR/VPO
301-415-2890

Transition Memo: [ML20191A383](#)

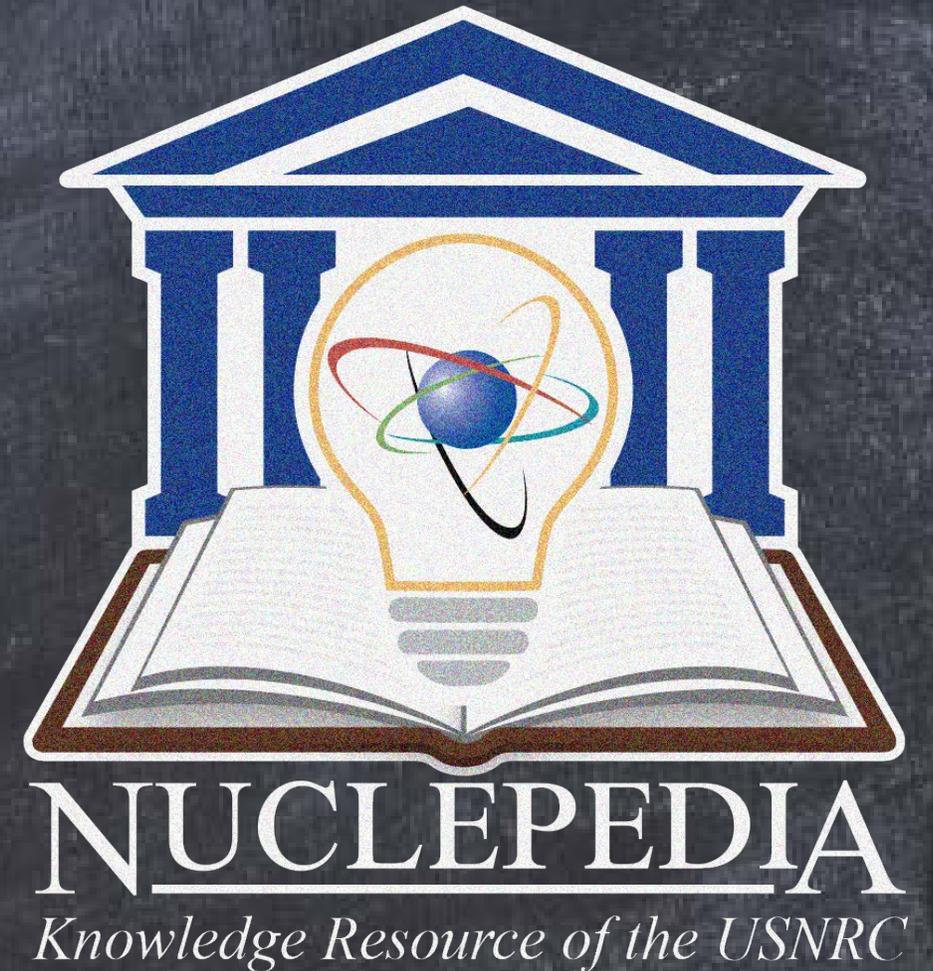
* This preview is not indicative of current data.



Vogtle 3&4 Resident Inspectors

...IS PREPARED to ensure a successful transition from construction to operation.

- Improve the effectiveness and efficiency of future construction programs
- Leveraging Nuclepedia to store feedback from staff across the agency, industry stakeholders, and the public



...IS EMBARKING ON A HOLISTIC LESSONS-LEARNED to capture Part 52 experience and inform future construction programs.

Advanced Reactor Preparedness



Mohamed Shams

Director, Division of Advanced Reactors and
Non-Power Production and Utilization Facilities,
NRR

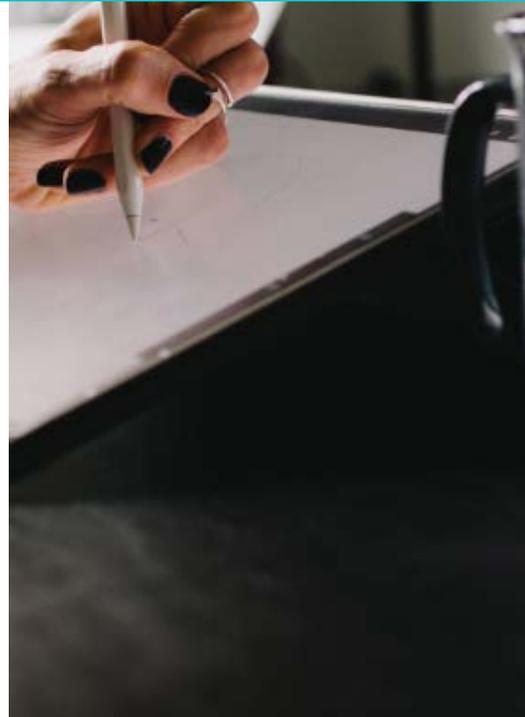
NRC is Building an Agile Advanced Reactor Program



Transforming the Regulatory Framework into a Modern, Risk-Informed Approach



Continuing extensive engagement with stakeholders



Evolving Part 53 & developing risk-informed guidance



Adhering to the principles of the Advanced Reactor Policy Statement



Completing key rulemaking activities

Safely Regulating Advanced Reactor Technologies Now and Into the Future



Engaging in licensing reviews



Active in preapplication engagements



Using core teams to perform risk-informed reviews



Creating tools to leverage data, optimize execution and enhance transparency

Partnering for Success

We are Strengthening Readiness through Research

Reference Plant Models
Code Development
Technical Basis for
Consensus Standards

Collaborating Internationally to Enhance Licensing the Reactors of the Future

US - Canada MOC
IAEA - SMR Regulators Forum
NEA - Working Group on the
Safety of Advanced Reactors

Security Considerations for Advanced Reactors

Steven Vitto,
Security Specialist, Division of Physical and
Cyber Security Policy, Office of Nuclear Security
and Incident Response



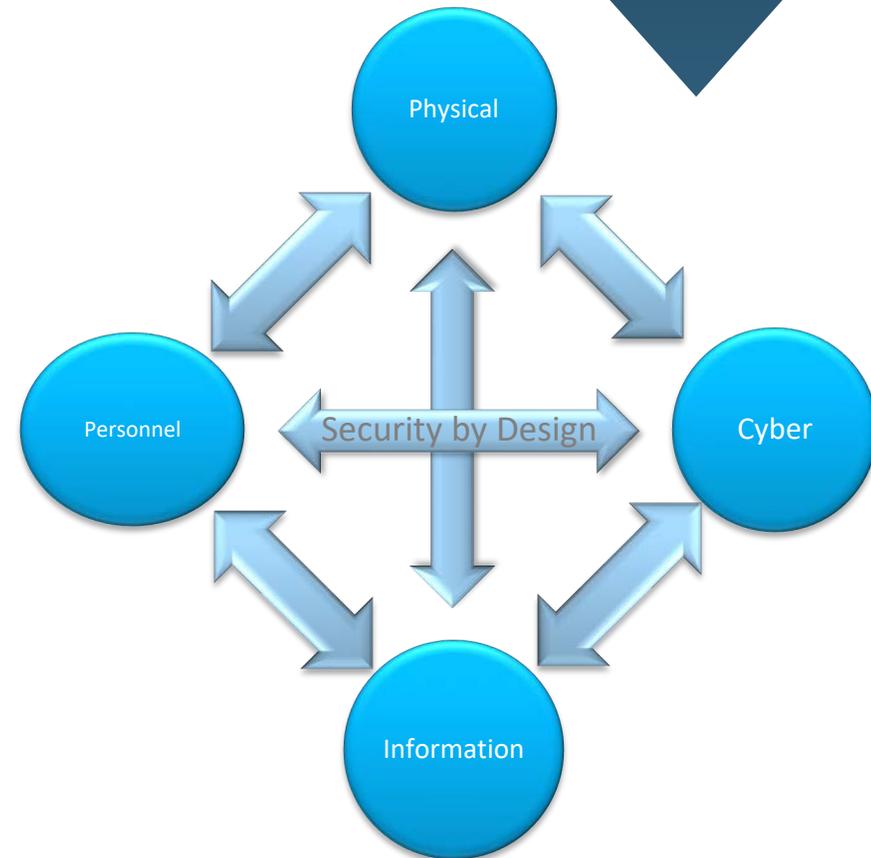
NSIR Remains Focused On:

- Safety and security of the current operating fleet
- Establishing a modern infrastructure for advanced reactors



Developing a Consequence-Based Approach to Security

- Variety of potential reactor designs
- Radiological consequence provides a benchmark for the proposed security framework
- Two key rulemakings:
 - Alternative Physical Security Requirements for Advanced Reactors
 - Part 53 Risk-Informed, Technology Inclusive Regulatory Framework for Advanced Reactors



Prepared to Regulate the Nuclear Technology of the Future

- Cultivating a team of interdisciplinary experts
- Maintaining open engagement with stakeholders
- Applying the right skill sets and resources to arrive at risk-informed and technically sound approaches

Early and Frequent Stakeholder Engagement is Critical



Delivering Success in Our Work and Supporting National Priorities

- Continued focus on new technologies and industry trends
- Cyber security to protect critical digital assets
- Ongoing threat assessment through engagement with interagency and law enforcement partners



Closing Remarks

Dan Dorman

Deputy Executive Director for Reactor and Preparedness Programs, Office of the Executive Director for Operations



Acronyms

CNSC	Canadian Nuclear Safety Commission
HQ	Headquarters
IAEA	International Atomic Energy Agency
ICN	Inspection Closure Notice
ITAAC	Inspections, Tests, Analyses, and Acceptance Criteria
MOC	Memorandum of Cooperation
NEA	Nuclear Energy Agency
NRR	Office of Nuclear Reactor Regulation
NRC	U.S. Nuclear Regulatory Commission
SIT	Special Inspection Team
SMR	Small Modular Reactor
SNC	Southern Nuclear Company