



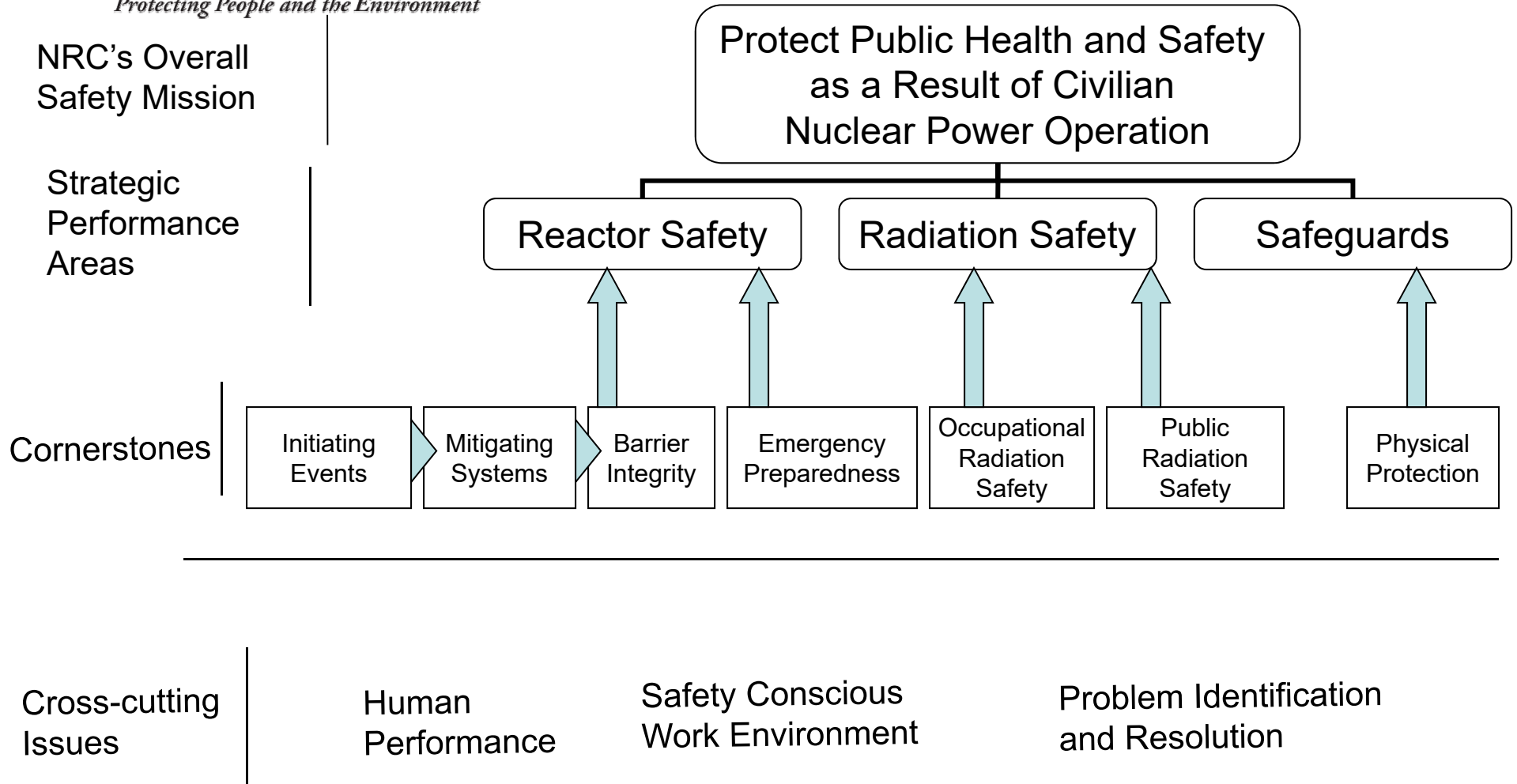
**Licensee Workshop for
Understanding NRC's Reactor
Oversight Process**
Perspectives on the SDP, PRA and PI&R

Presented by Russell Gibbs – U.S. Nuclear
Regulatory Commission

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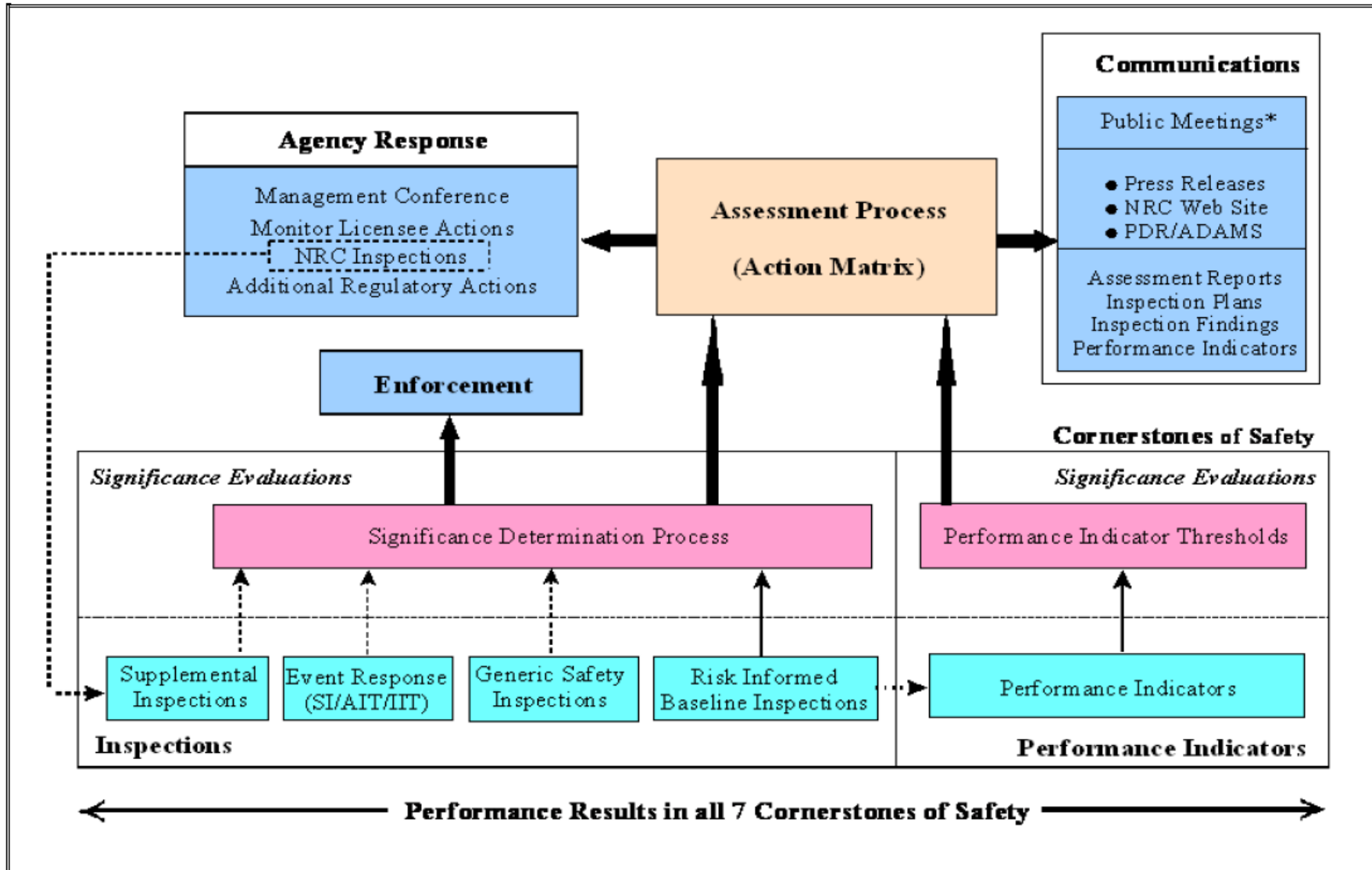
Tokyo, Japan

Oversight Framework

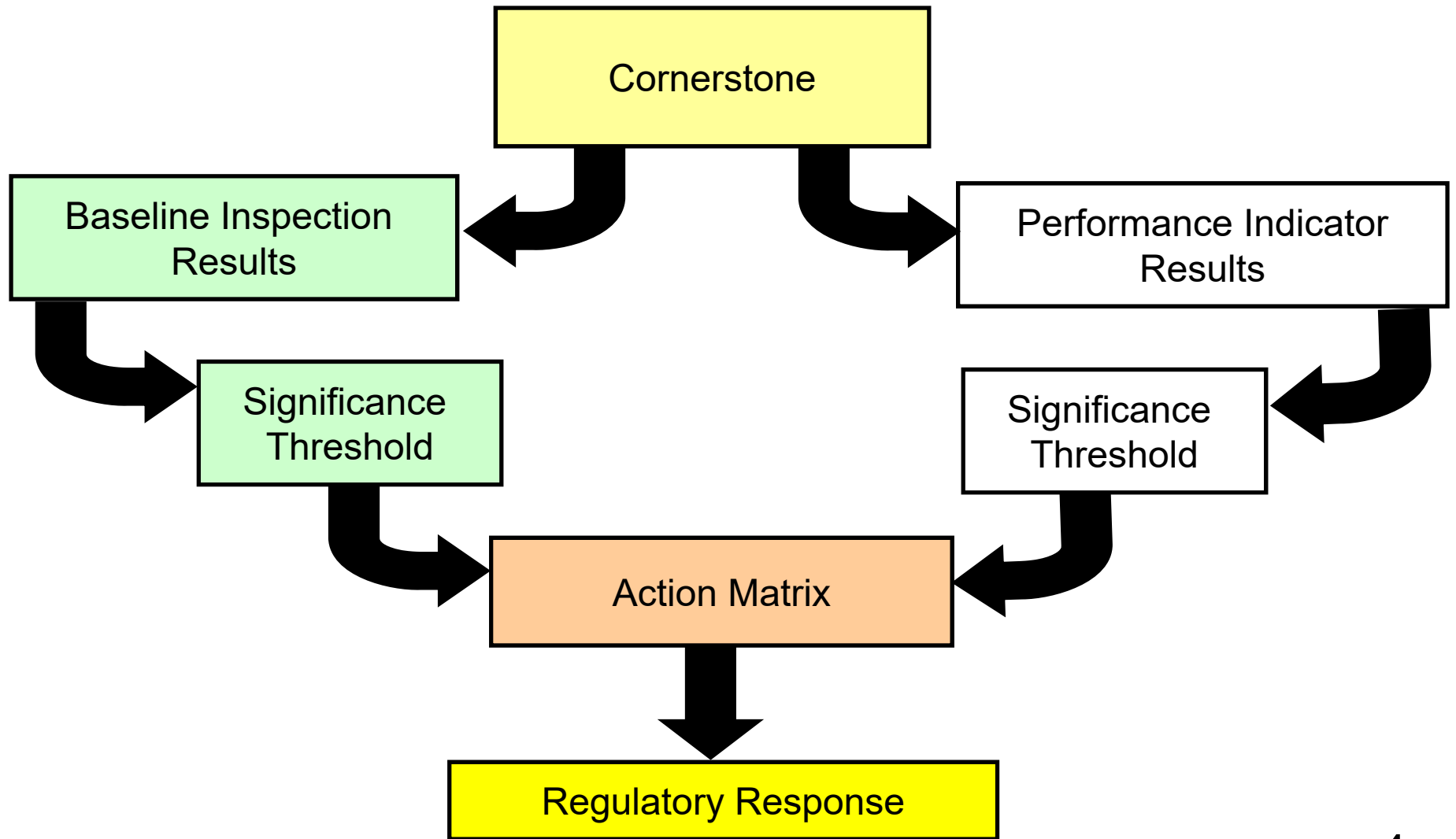




Reactor Oversight Process

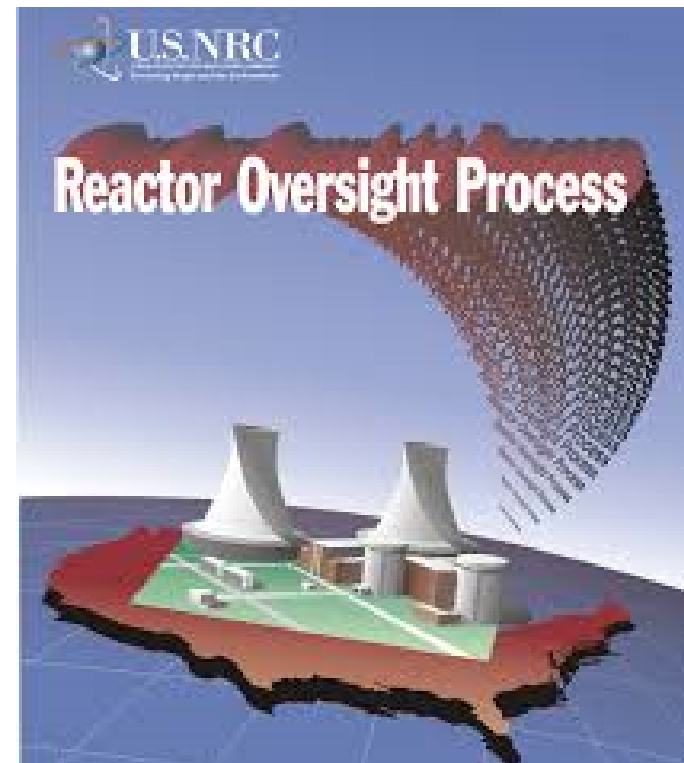


ROP Simplified



ROP Goals

- Maintain safety
- Improve efficiency and effectiveness
- Increase public confidence
- Reduce unnecessary regulatory burden



SDP Objectives (1)

- Characterize significance of inspection findings, using ***best available information***
- Provide stakeholders an ***objective and common framework*** for communicating the potential safety significance of inspection findings.

SDP Objectives (2)

- Provide basis for ***timely assessment*** and/or enforcement actions
- Provide inspectors with ***plant-specific risk information*** for use in risk-informing the inspection program



The Reactor Oversight Process is designed to be ***risk-informed and performance based.***

Risk-informed = using ***both*** relevant quantitative and qualitative information for decisions

Risk-informed \neq PRA

What is a risk-based decision?

Possible Answer – when the decision-maker overly relies upon risk information that may not be relevant and/or involves high levels of uncertainty.



How can a risk-informed decision be made for reactor power oversight?

What are *appropriate and relevant*
risk-informed decision-making inputs?
(Regulatory Guide 1.174)

Inappropriate Inputs to Decision

- Media interest
- Personal prejudices
- Political implications
- Financial impacts on licensees
- “Gut feel” (i.e., judgement with no technical basis)

When PRA not available or not productive for decision-making consider such factors as...

- Extent of degraded condition
- Exposure time
- Recovery actions
- Defense-in-depth
- Safety Margin

NRC Confidence in PRA

- PRA is an essential tool for evaluating risk increase in licensee performance deficiencies.
- PRA has matured since 1980's
- SPAR models are used to verify licensee results.
- PRA models have been peer reviewed
- NRC trains staff on PRA and its applications.

Balancing Qualitative and Quantitative Information

- NRC uses risk-informed qualitative information to screen inspection findings.
- Detailed risk evaluations require use of influential assumptions.
- Limitations of PRA must be considered

Biasing inputs and integrating results objectively is main challenge.

Significance Threshold

Performance Indicators



Inspection Findings



Use caution on over reliance on PRA point estimates for the SDP and possible misapplication of PRA

Key SDP Program Documents (1)

- Overall Program Document (IMC 0609)
- Significance and Enforcement Review Panel Process (IMC 0609 Att. 1)
- Appeal Process (IMC 0609 Att. 2)

Key SDP Program Documents (2)

- SRA Expectations (IMC 0609, Att. 3)
- Initial Characterization Procedure (IMC 0609 Att. 4)
- Bases Documents (IMC 0308, Att. 2)
- Risk Assessment Standardization Project (RASP) Handbook

Specific SDP Documents

- Numerous cornerstone/inspection finding specific SDP procedures developed (i.e., IMC 0609 App's A – O and their basis documents)
 - promotes objectivity, reliability and efficiency!
- Deterministic SDP procedures used for EP, RP and Security
- Probabilistic SDP procedure used for IE, MS and BI cornerstones



SDP Program management mainly includes annual assessment and associated metrics and stakeholder feedback for continuous improvement

Interactions with Stakeholders

Main reason for ROP success is intensive and frequent engagement with industry and other external stakeholders



Communications with Licensees (1)

- An open and transparent dialogue is essential
- Access to licensee models is preferred
- Must consider licensee perspectives
- Routine meetings conducted on PRA modelling/data issues

Communications with Licensees (2)

- For significant inspection findings there is significant dialogue with Senior Reactor Analysts, NRC managers and licensees
- New process developed to further improve communications
- Publicly available RASP Handbook is helpful



Problem Identification & Resolution

Perspectives on PI&R Oversight (1)

- Identifying and correcting plant problems is a foundation of the Reactor Oversight Process
- Baseline inspections performed on a routine basis and as needed for significant inspection findings

Perspectives on PI&R Oversight (2)

- NRC offers oversight credit for good licensee performance
- More significant problems = more PI&R inspection

Viewpoint - NRA and industry reaching a common understanding on licensee

Corrective Action Programs is a significant challenge for NRA's revised oversight program.

PI&R Methods (1)

- Are plant issues being appropriately added to the licensee's Corrective Action Program?
- Are the cause(s) of problems being evaluated in an acceptable manner?
- Are problems evaluated and corrected to prevent recurrence in a timely manner?

PI&R Methods (2)

- Is operating experience being properly evaluated?
- Are self-assessments effective?
- Are effective trending analyses being conducted?
- Is there a “healthy” safety conscious work environment?

Final Thoughts

Will Japan's nuclear industry be ready for NRA's pilot of its revised oversight program beginning in October 2018?

What are the key areas of needed attention and focus?

Suggest intensive and frequent dialogue with NRA going forward on key revised oversight program elements!



Questions and Answers