



NRC Advanced Reactor Construction Oversight Process (ARCOP)

1

Stakeholder Workshop Series





Welcome



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Office of Nuclear Reactor Regulation (NRR)



Meeting Introductions and Guidelines



Purpose and Desired Outcome

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Purposes of Workshops

- ❑ Discuss the objectives and draft conceptual framework of the proposed NRC Advanced Reactor Construction Oversight Process (ARCOP).
- ❑ Initiate dialogue with the public stakeholders about advanced reactor construction oversight options.
- ❑ Gain understanding of various perspectives on options being considered

*Please note that NRC guidance discussions are preliminary and are not meant to convey a final regulatory position.



Planned Workshop Sessions

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Session 1, February 28, 2024:

Introduction to NRC Advanced Reactor Construction Oversight, and the ARCOP (draft) Framework.

Session 2, Date TBD:

Inspection Scoping

Session 3, Date TBD:

Enforcement and Assessment

Session 4, Date TBD:

Follow up discussions



Session 1:

Introduction to ARCOP (draft) Framework

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Topics

- ▣ ARCOP- Purpose, Applicability, and Conceptual Framework
- ▣ Areas for Adjustment
 - Inspection Scoping
 - Determining Significance of Noncompliances
 - Assessing Inspection Results
- ▣ ARCOP Development Timeline



ARCOP Focus: Construction Quality

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NRC Mission: Safety and Security of Public Health and the Environment



Reactor Construction Oversight Objectives: Establish reasonable assurance that facilities are built and will operate in accordance with their approved design and licensing bases



ARCOP Focus: Verify advanced reactor construction **Quality**.

Provide confidence that SSCs will perform satisfactorily in service.

Verify security and other programs in place to support operations.



Construction Quality

SECY-23-0048

"VISION FOR THE NUCLEAR REGULATORY COMMISSION'S ADVANCED REACTOR
CONSTRUCTION OVERSIGHT PROGRAM"

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Quality of Construction, construction quality, adequate quality, etc. are all terms that refer to quality assurance during the design, manufacture, and construction of reactor plant structures, systems, and components. **The NRC defines quality assurance in 10 CFR 50, appendix B "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," as:**

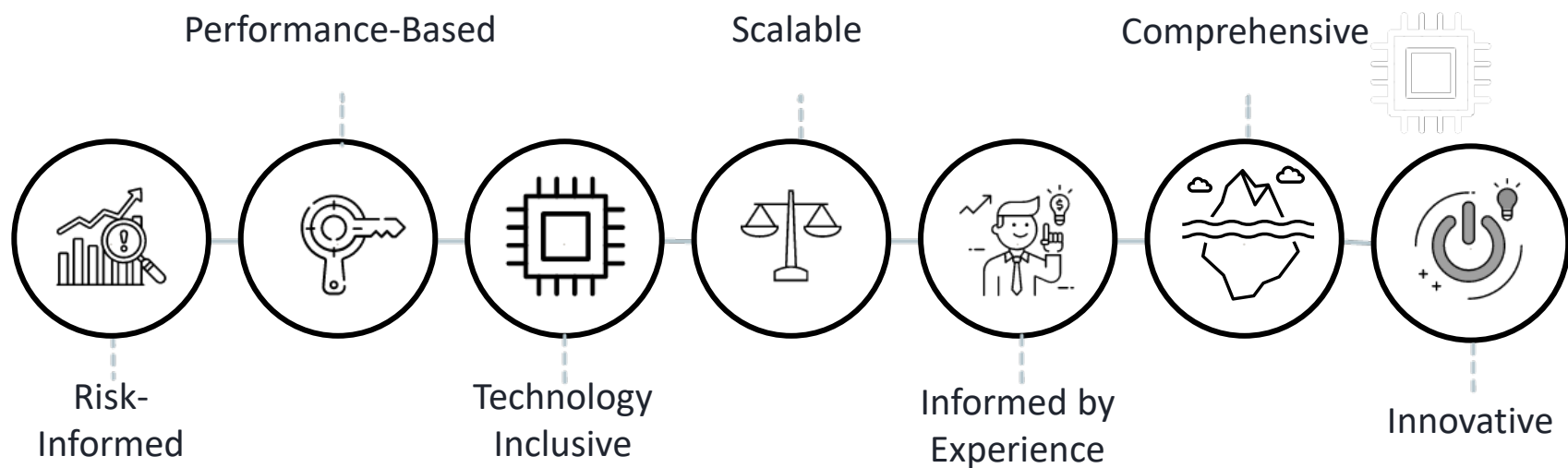
...those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service. Quality assurance includes quality control, which comprises those quality assurance actions related to the physical characteristics of a material, structure, component, or system which provide a means to control the quality of the material, structure, component, or system to predetermined requirements.



Key Guiding Principles (SECY 23-0048)

...in addition to the NRC principles of good regulation

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ARCOP Reactor Applicability

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ARCOP will apply to:

- ▣ Non-Light Water Reactors
- ▣ Light water, small modular reactors
- ▣ Microreactors

ARCOP will *not* apply to:

- ▣ Research and test reactors
- ▣ Radioisotope production facilities



Why ARCOP?

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A scalable and risk-informed oversight program is required that:

- ❑ Adapts to all advanced reactor technologies.
- ❑ Accounts for different licensing pathways (Parts 50, 52, and 53).
- ❑ Applies lessons learned from AP1000 construction projects and other nuclear construction projects.
- ❑ Adjusts for potentially greater use of factory manufacturing and shorter expected construction timelines.



NRC Oversight Program Elements

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□ Performance Monitoring

Inspection, allegations, operating experience (OpE) and construction experience (ConE)

□ Enforcement

Dispositioning noncompliances using safety/security significance

□ Assessment

Characterizing performance and determining NRC response



Technology Inclusiveness

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ARCOP proposes to use
Fundamental Safety Functions
(FSFs) to form the basis of the
risk-informed technology
inclusive oversight program.

IAEA Safety Standards
for protecting people and the environment

Safety Classification of
Structures, Systems and
Components in
Nuclear Power Plants

Specific Safety Guide
No. SSG-30





Technology Inclusiveness – Fundamental Safety Functions (FSFs)

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1. Control of reactor power and reactivity
2. Removal of heat from the reactor and fuel stores
3. Confinement of radioactive materials



ARCOP Framework (Conceptual)

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**NRC
Mission**

License and regulate the use of byproduct, source, and special nuclear materials to ensure adequate security and safety for the public and the environment

**ARCOP
Objective**

Provide reasonable assurance that advanced reactors will be built and operated in accordance with their licensing and design bases, the atomic energy act of 1954 (as amended), and the NRC's rules and regulations

**ARCOP
Strategic
Performance
Areas**

**QUALITY OF
REACTOR PLANT
CONSTRUCTION**

**SAFEGUARDS
and SECURITY**

**OPERATIONAL
READINESS**

**ARCOP
Cornerstones
of Safety**

**REACTIVITY
CONTROL FSF**

**HEAT REMOVAL
FSF**

**RADIONUCLIDE
RETENTION FSF**

**SAFEGUARDS
AND SECURITY
PROGRAMS**

**OPERATIONAL
PROGRAMS**



NRC Oversight Elements and FSFs*

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1. Inspection: SSC inspection scoping focuses on those SSCs important to fulfilling FSFs.
2. Enforcement: Significance of findings are based on their potential impact on the design's ability to maintain FSFs with the deficiency present during operations.
3. Assessment: Performance is characterized by considering the Quality of Construction of SSCs supporting the FSFs.

* This slide applies to the "Quality of Reactor Plant Construction" strategic performance area only. "Operational Readiness" and "Safeguards and Security" areas are based on measures of safety/safeguards applicable to the design.



Stakeholder Engagement Point



Key ARCOP Decision Points

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Discussion topics for each of the ARCOP oversight elements:

- Inspection Scoping
 - Enforcement
 - Assessment

Workshop format for key decision points:

- Considerations
- Options considered
- Option requiring further development



Key Decision Point #1: How is inspection scope determined?

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Considerations

- Inspection should verify the reactor plant's ability to fulfill the FSFs in a risk-informed manner.
- Inspection scoping should be flexible to account for development of experience (e.g., adjustments from first reactor to Nth reactor).
- Inspection should be results-driven and performance-based (e.g., quality focused and prioritizes observing performance versus reviewing paperwork).



Key Decision #1: Inspection Scoping (Concept)

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Options Considered:

- A. Specific SSC and ITAAC inspection sample targeting (AP1000)
- B. Baseline “Inspection Scoping Matrices”:
Project-specific sampling of construction areas.
- C. Availability Based Inspection:
Periodic site inspections throughout construction



Key Decision Point #1: How is inspection scope determined?

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Considerations (continued)

- Program should allow flexibility for technology-based solutions for efficiency gains.
- Inspection scoping should be applicable to parts 52 (using ITAAC) and 50 (without ITAAC). For plants licensed under Part 52, sufficient inclusion of independent inspection of ITAAC performance provides documentation to support licensing decision.
- The NRC should apply the appropriate amount (number of inspections) and type (technical expertise) of resources to inspection to verify quality of SSCs supporting FSFs. This may include flexibility to perform inspections under the vendor inspection program, under a construction inspection program, or a combination of both.



Key Decision #1: Inspection Scoping (Concept)

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Option A: Specific SSC and ITAAC Targeting

Description: An expert panel ranks SSCs and ITAAC in order of safety importance and risk of deficiencies occurring and going undetected/corrected prior to operations. Activities that rank above an established threshold are “targeted” for inspection.

Note: This was the inspection scoping method used for inspection of the AP1000 projects. The NRC AP1000 lessons learned report ([ML 23325A202](#)) states that this method resulted in inefficiencies (i.e., “chasing samples”).



Key Decision #1: Inspection Scoping (Concept)

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Option B: Baseline “Inspection Scoping Matrices” define a project-specific sampling of construction areas.

Description: An expert panel identifies SSCs and ITAAC that are important to fulfillment of the FSFs. A matrix is created to define the baseline inspection program, which includes key risk information and number of samples proposed for each construction area. Inspection samples are then selected using a risk-informed, performance-based methodology, similar to the ROP.



Inspection Scoping Matrix – Conceptual Example

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SSCs	Importance Ranking based on design risk	Risk of deficiency that goes undetected.	Structure Foundations and Buildings	Structural Concrete	Structural Steel and Supports	Mechanical Components	Valves	Piping	Pipe Supports/ Restraints	Electrical Components and Systems	Electrical and Fiber Optic Cable	Electrical Power Supplies	Instrumentation & Controls Components and Systems
Minimum Construction Area Samples Required			4	6	3	8	1	3	3	5	4	2	4
Maximum Construction Area Samples			7	9	6	12	3	5	5	8	7	5	7
Water Storage Tanks	High	Medium				X							
Steam Separators	Medium	Medium				X		X	X				
Passive float valves	High	Medium					X	X	X				
Dual wall leak barrier - leak detection system	High	High								X			X
Water level monitor-tank control system	High	High								X			X
Vessel	High	Medium				X							
Core barrel	High	High				X							
Software Lifecycle	High	High (Installation)											X
Field sensors	High	High									X		X
Reactor trip system	High	High											X
Shutdown Elements	High	High				X							
Reactor Coolant	High	Medium											
Spent Fuel Storage Rack	High	High				X							
Rx Bldg. Foundation	High	High	X										
Rx Bldg. Structural elements	High	Medium		X	X								



Key Decision #1: Inspection Scoping (Concept)

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Option C: Availability based Inspection via periodic site inspections throughout construction.

Description: Teams of multi-disciplinary inspectors perform regularly scheduled inspections and choose samples based on available construction activity during the period.

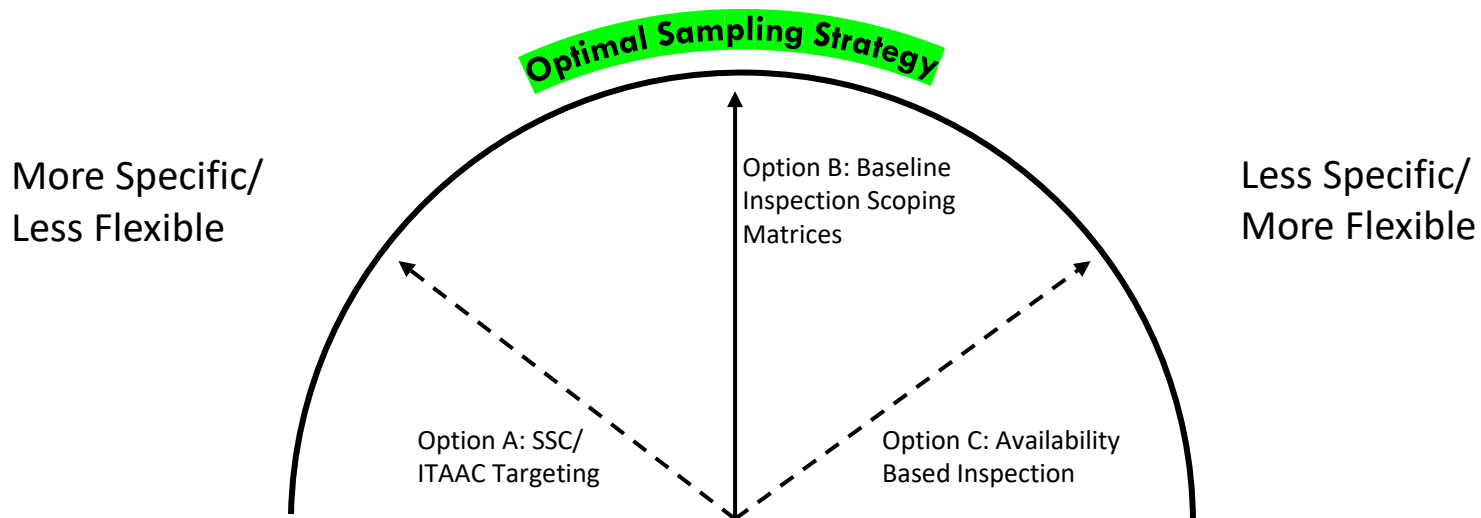


Key Decision #1: Inspection Scoping (Concept)

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Option Requiring Further Development:

Option B: Inspection Scoping Matrix provides the most efficient method to provide the information necessary to make a licensing decision to operate.





Stakeholder Engagement Point



Key Decision Point #2: How should we scope safety-significant activities occurring at manufacturing facilities?

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Considerations

- Inspection should be results driven and performance based (e.g., quality focused and prioritizes observing performance versus reviewing paperwork)
- In some deployment models, significant portions of safety-significant construction will occur in a factory.
- Restricting inspection scope to a specific location (i.e., on-site) would result in variations to inspection scoping for different models. Reactor quality relies on work at manufacturing facilities and on-site construction and the ratio of manufacturing/on-site construction is design specific.



ARCOP Draft Terminology

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- **“On-Site”**: The site of the reactor plant’s final installation. (i.e., the site where the reactor is licensed to be installed and ultimately operated).

- **“Manufacturers”**
Smaller reactor plant sizes may allow *complete, or nearly complete reactor plants* to be assembled in a factory setting.
 - ▣ The term “manufacturer” generically to refer to these factory settings
 - ▣ Work equivalent to “final installation” of most safety-related or nonsafety-related, risk significant SSCs
 - ▣ Manufacturers may, or may not, have a Manufacturing License (ML)
 - ▣ There may not be a manufacturer associated with every project.

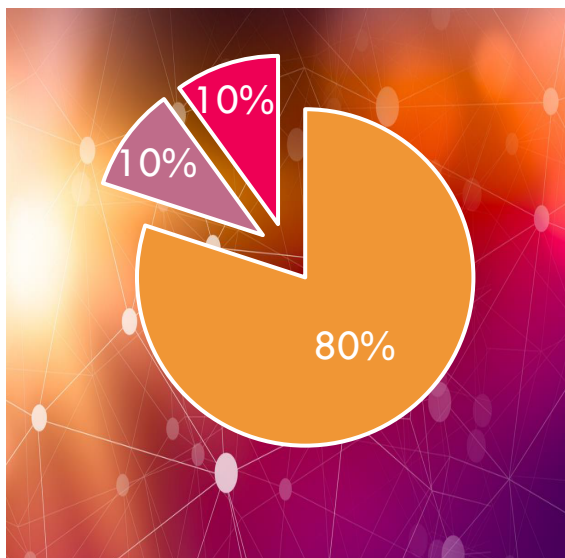
- **“Traditional Vendors”** are suppliers of components and services (to manufacturers or on-site). Traditional vendors will remain in the existing NRC vendor inspection program.



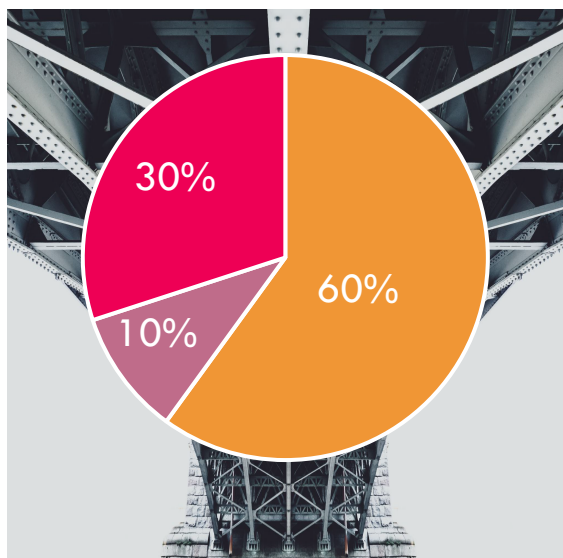
Example Advanced Reactor Scenarios

30

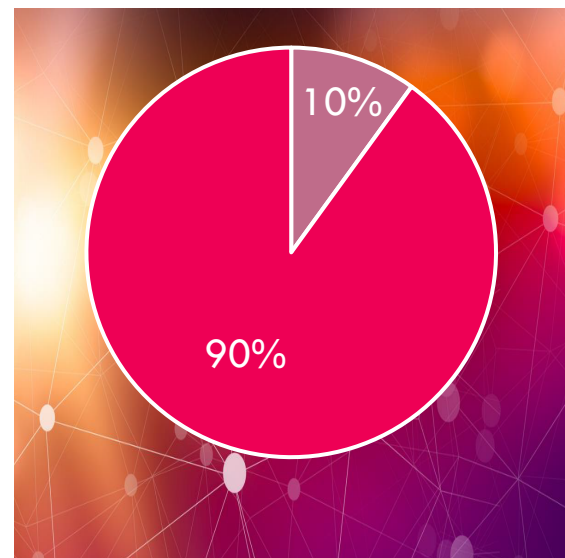
% OF RISK-SIGNIFICANT CONSTRUCTION ACTIVITY AVAILABLE FOR INSPECTION BY LOCATION BASED ON PLANT DESIGN ATTRIBUTES



Micro Reactors



Small modular reactors



Large reactors



Onsite



Manufacturing Facility



Traditional Vendor

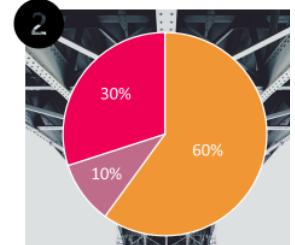
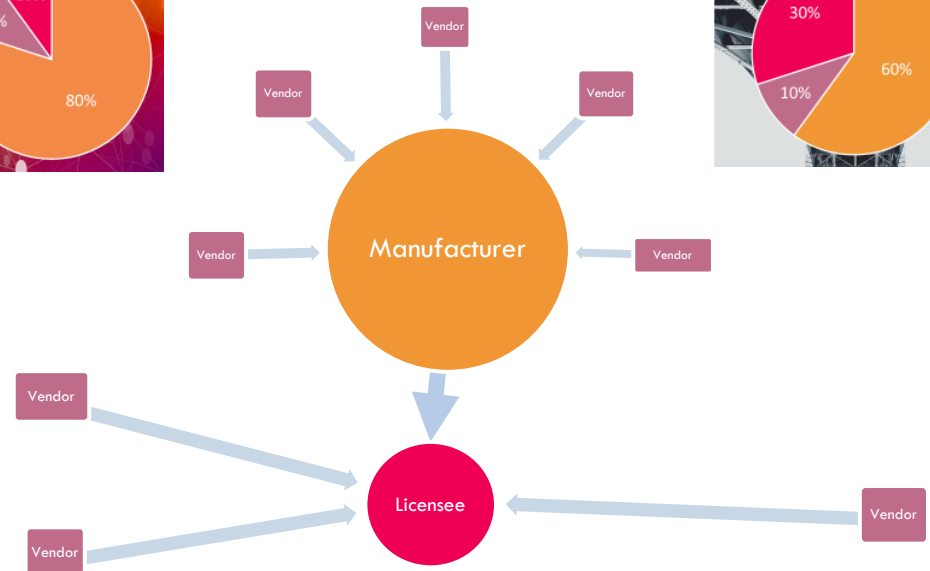
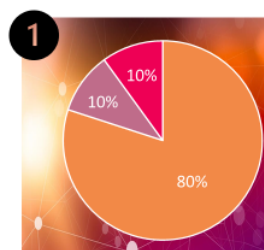
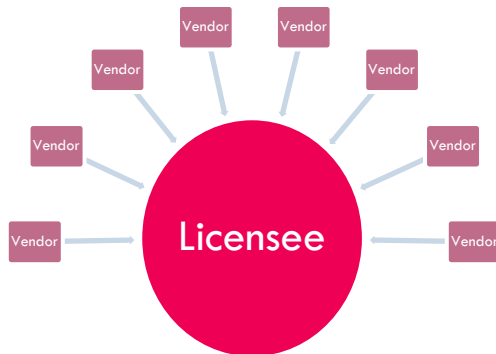
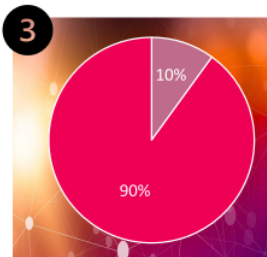
Note: These percentages are estimated and provided for illustration purposes only.



Example Advanced Reactor Scenarios

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% OF RISK-SIGNIFICANT CONSTRUCTION ACTIVITY AVAILABLE FOR INSPECTION BY LOCATION BASED ON PLANT DESIGN ATTRIBUTES



Onsite Manufacturing Facility Traditional Vendor



Key Decision #2: Manufacturer Inspection Scoping (Concept)

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Options

- A. Off-site activities not covered under construction oversight.
- B. Hybrid Vendor Model (AP1000)
- C. Integrated Baseline Inspection Scoping Matrix



Key Decision #2: Manufacturer Inspection Scoping (Concept)

33

Option A: Divide inspection programs between “off-site” and “on-site”

Description:

- Vendor inspection only for “off-site”
- ARCOP inspection only for “on-site”

Notes: This option may require a significant increase in the vendor inspection program and may create inequities in oversight for different deployment models.



Key Decision #2: Manufacturer Inspection Scoping (Concept)

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Option B: Hybrid vendor model (AP1000)

Description: Vendor inspections supplemented with construction inspectors for targeted risk-informed inspections.



Key Decision #2: Manufacturer Inspection Scoping (Concept)

Option C: Integrated Baseline Inspection Scoping Matrix

Description: Inspection scoping matrix includes all manufacturing and on-site activities that have significant impact on safety. ARCOP applies to all activities in the matrix.

Traditional vendors continue to be inspected under VIP.



Key Decision #2: Manufacturer Inspection Scoping (Concept)

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Option Requiring Further Development:

Option C: Integrated Baseline Inspection Scoping Matrix :

- provides appropriate inspection scope for assembly of reactor modules independent of location, and
- provides a consistent regulatory approach for advanced reactor construction projects.



Stakeholder Engagement Point



Key Decision Point #3:

How can we best structure finding significance determination to reflect risk during construction?

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Considerations

- Significance Determination (including more-than-minor determination) for construction oversight should **appropriately characterize finding significance based on risk to operations** and should be comparable to risk thresholds in ROP (source: [SRM-SECY-10-0140](#)).
- Determining the significance of findings should not be overly complex as to require extensive NRC infrastructure to execute, or extensive licensee time and resources to support (AP1000 Lesson Learned).



Key Decision #3: Significance Determination (Concept)

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Options

- A. Finding significance is assigned based on potential impact to FSFs during reactor operations using a qualitative SDP.
- B. Design specific SDPs, including quantitative measures (such as RAW scores) when appropriate, used to inform finding significance.
- C. Traditional enforcement significance/enforcement (ref. section 6.5 of the [NRC Enforcement Policy](#))



Key Decision #3: Significance Determination (Concept)

40

Option A: Finding significance is assigned based on potential impact to FSF during reactor operations using a qualitative SDP applicable to all designs.

Specific criteria for each category are under development.

Finding Safety or Security Significance	Criteria
Yellow	Substantial potential impact on FSFs during operations
White	Low-to-moderate potential impact on FSFs during operations
Green	Very Low potential impact on FSFs during operations
Minor	No potential impact to FSFs during operations



Key Decision #3: Significance Determination (Concept)

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Option B: Design specific SDPs, including quantitative measures (such as RAW scores) when appropriate, are used to inform finding significance.

Description: Similar to AP1000 SDP

NRC INSPECTION MANUAL	
INSPECTION MANUAL CHAPTER 2519	
CONSTRUCTION SIGNIFICANCE DETERMINATION PROCESS	



Quality of Construction	Quality of Construction	Green	White	Yellow	Red
		Green	Green	White	Yellow
		Green	Green	Green	White
		Green	Green	Green	Green
		Very Low	Low	Intermediate	High
		SSC Risk Importance			

Risk Importance derived from PRA information.



Key Decision #3: Significance Determination (Concept)

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Option C: Traditional enforcement significance/enforcement

The staff would use broad categories described in section 6.5 of the NRC Enforcement Policy to disposition construction inspection findings and use those severity levels to determine NRC response.



Key Decision #3: Significance Determination (Concept)

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Option Requiring Further Development:

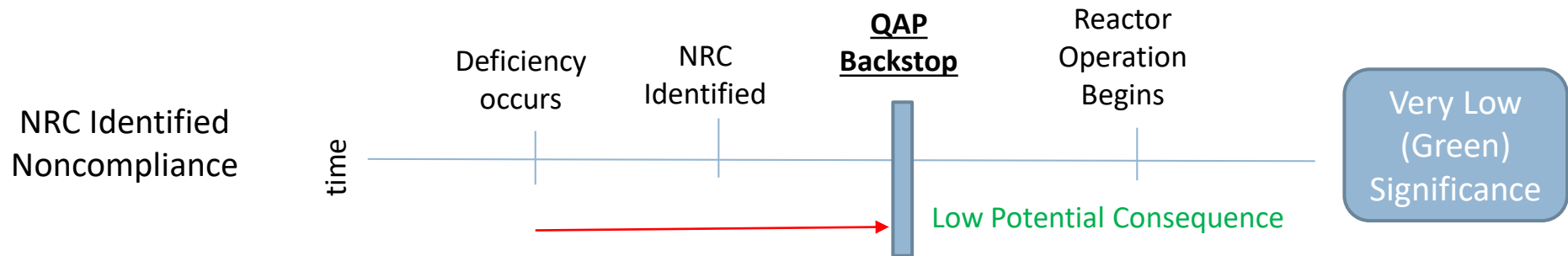
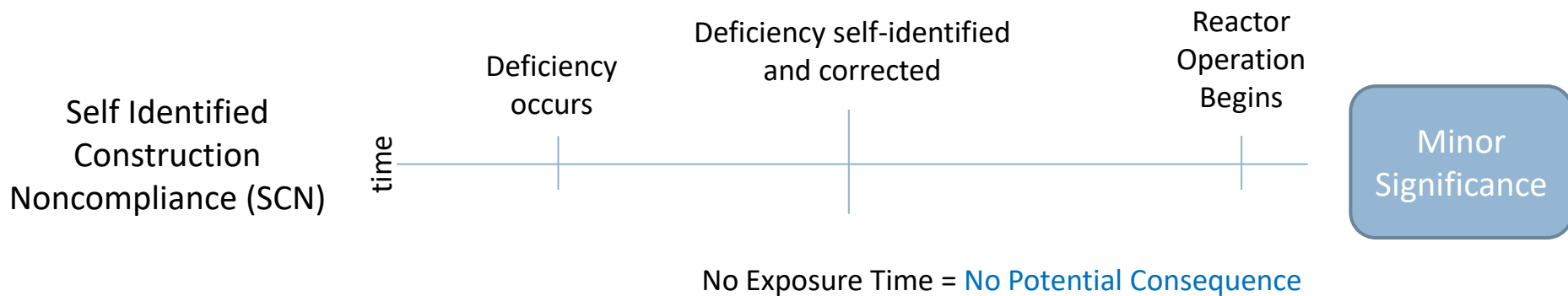
Option A: The qualitative significance table based on potential impact FSFs during operations:

- inherently risk-informed and technology-inclusive
- does not rely on PRA information, which may not be available for some projects at the onset of construction.



Other Proposals – Finding Significance (Concept)

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Stakeholder Engagement Point



Key Decision Point #4:

How should we disposition findings that occur at manufacturing facilities?

Considerations

- A significant amount of safety-significant fabrication and testing that was once performed on-site may be performed by manufacturers.
- Currently available enforcement tools include:
 - Non-Cited Violations (NCVs) and Notices of Violations (NOVs) for permit holders, licensees, licensed manufacturers, and applicable regulations for non-licensed manufacturers (e.g., Part 21)
 - Notices of Nonconformances (NONs) for noncompliances with indirectly imposed requirements (i.e. contractual obligations) for non-licensed manufacturers and vendors



Key Decision #4: Dispositioning Manufacturer Findings (Concept)

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Options

- A. Apply the traditional vendor enforcement process to non-licensed manufacturers and apply the ARCOP enforcement process to ML holders.
- B. Use existing enforcement tools. For findings identified at a manufacturing facility, screen for risk significance.
- C. Create new risk-informed enforcement tool for manufacturers.



Key Decision #4: Dispositioning Manufacturer Findings (Concept)

48

Option A: Apply the traditional vendor enforcement process to non-licensed manufacturers and apply the ARCOP enforcement process to ML holders (risk-informed significance).

Description:

The traditional non-licensee enforcement process uses NONs, NCVs and NOVVs.

License holders and construction permit holders do not use NONs.



Key Decision #4:

Dispositioning Manufacturer Findings (Concept)

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Option B: Apply ARCOP significance process to all manufacturers but use existing enforcement tools.

Description: This option would risk inform all manufacturer findings using the ARCOP SDP, regardless of licensing status. This allows the ARCOP to transparently and predictably respond to findings. Note, because NONs are administrative actions, this would require separately assessing significance of NONs that occur at manufacturers and documenting NRC follow-up in separate correspondence.



Key Decision #4:

Dispositioning Manufacturer Findings (Concept)

50

Option C: Create new enforcement tool for manufacturers.

Description: Develop a new risk-informed enforcement tool for manufacturers (both licensed and non-licensed).



Key Decision #4: Dispositioning Manufacturer Findings (Concept)

Option Requiring Further Development:

Option B: Apply ARCOP significance process to all manufacturers but keep existing enforcement tools

- provides a means of consistently determining appropriate NRC response using risk information
- addresses safety-significant issues at both manufacturing facilities and on-site.



Stakeholder Engagement Point



Key Decision #5:

How to assess inspection results?

53

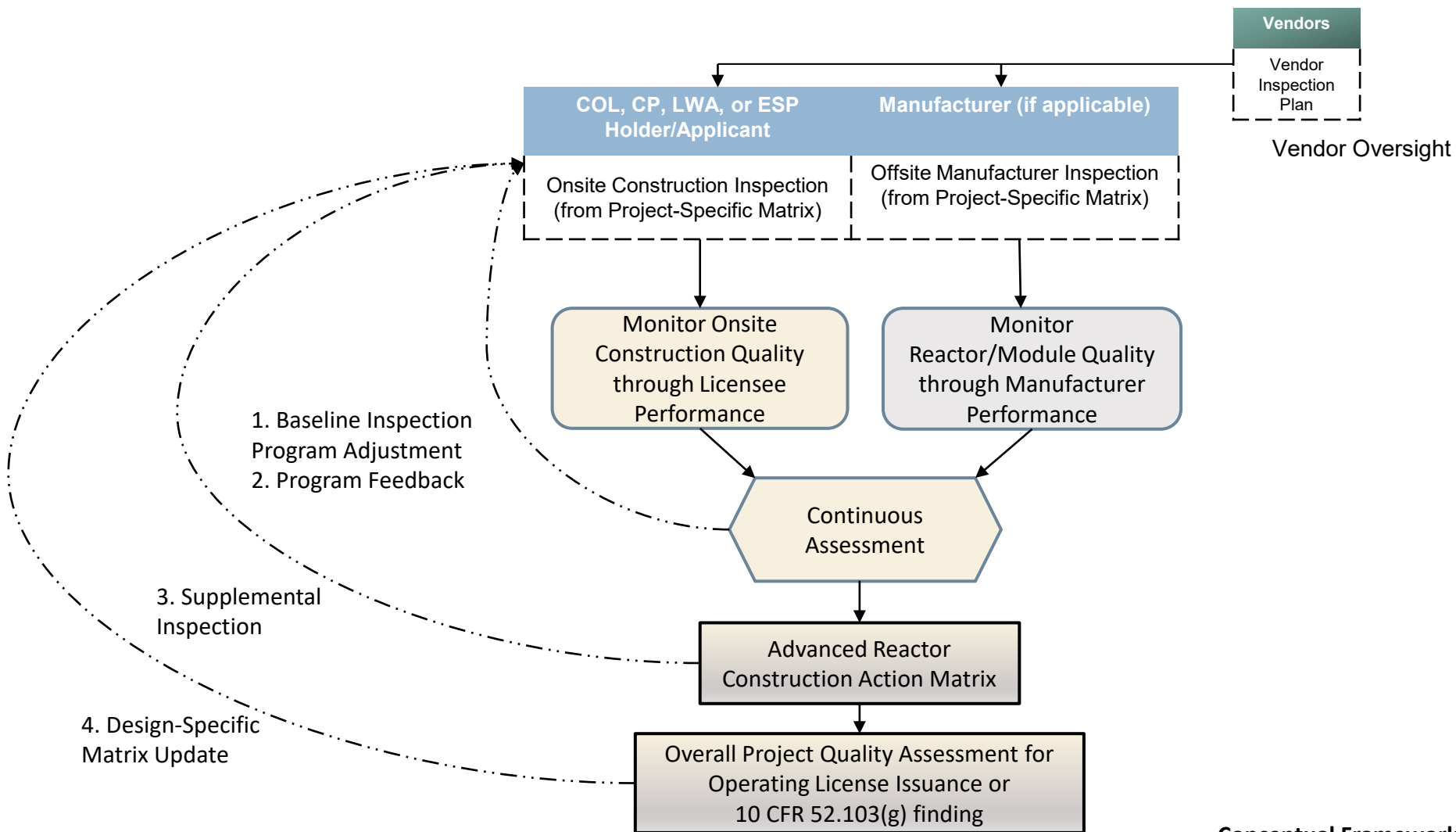
Considerations (objectives of NRC Assessment)

- To arrive at an objective assessment of a licensee's/permit holder/manufacture effectiveness in assuring construction quality through the evaluation of the inspection history, enforcement history, allegations, and safety culture.
- To provide guidance for making timely and predictable decisions regarding appropriate agency actions.
- To provide a method for informing licensees and the public of the results of the NRC's assessment results.



Key Decision #5: How to assess inspection results?

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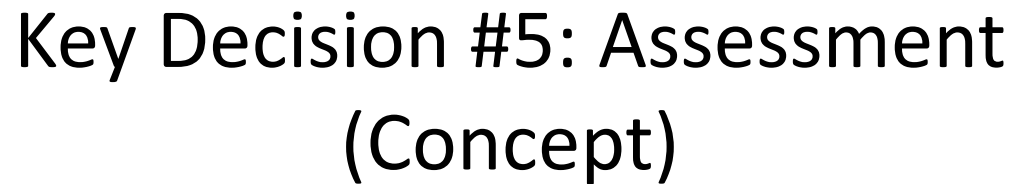


Key Decision #5: Assessment (Concept)

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Options

- A. Traditional Action Matrix concept for each project (combines manufacturers and applicants/licensees)
- B. Traditional Action Matrix concept for each manufacturer and licensee/applicant (separately)
- C. Construction Response Table describes licensee and NRC response to specific finding types and significance.



Integrated Project Quality Draft Construction Action Matrix

		Licensee Response Column (Column 1)	Regulatory Response Column (Column 2)	Degraded Performance Column (Column 3)	Multiple/ Repetitive Degraded Cornerstone Column (Column 4)	Unacceptable Performance Column (Column 5)
RESULTS		All Inspection Findings Green; Cornerstone Objectives Fully Met	One or Two White Findings in a strategic performance area; Cornerstone objectives met with minimal degradation in safety performance	One degraded cornerstone (3 white findings or 1 yellow finding) or any 3 white findings in a strategic performance area; Cornerstone objectives met with moderate degradation in safety performance	Repetitive degraded cornerstone, multiple degraded cornerstones, multiple yellow findings, or 1 red finding; Cornerstone objectives met with longstanding issues or significant degradation in safety performance	Overall unacceptable performance; Construction suspended in the area of concern
RESPONSE	Regulatory Performance Meeting	None	Branch Chief (BC) or Division Director (DD) Meet with Licensee	RA/DRA (or Designee) Meet with Senior Licensee Management	Office of the Executive Director for Operations (EDO)/Deputy Executive Directors for Operations (DEDO) (or Designee) meet with Senior Licensee Management	EDO/DEDO (or Designee) Meet with Senior Licensee Management
	Licensee Action	Licensee Corrective Action	Licensee Root cause Evaluation and corrective action with U.S. Nuclear Regulatory Commission (NRC) Oversight	Licensee cumulative root cause evaluation with NRC Oversight	Licensee Performance Improvement Plan with NRC Oversight	Licensee Performance Improvement Plan / Construction Restart Plan with NRC Oversight
	NRC Inspection	Risk-Informed Baseline Inspection Program	Baseline and supplemental Inspection Procedure 90001	Baseline and supplemental Inspection Procedure 90002	Baseline and supplemental Inspection Procedure 90003	Baseline and Supplemental as Practicable, Plus Special Inspections per Construction Restart Checklist
	Regulatory Actions ¹	None	Supplemental inspection only	Supplemental inspection only Plant discussed at Agency Action Review Meeting (AARM) if conditions met	-10 CFR 2.204 Demand for Information -10 CFR 50.54(f) Letter - CAL/Order Plant discussed at AARM	Order to Modify, Suspend, or Revoke Licensed Activities Plant discussed at AARM
COMMUNICATION	Assessment Letters	BC or DD review/sign assessment letter (w/ inspection plan)	DD review/sign assessment letter (w/ inspection plan)	DRA review/sign assessment letter (w/ inspection plan)	RA review/sign assessment letter (w/ inspection plan)	RA review/sign assessment letter (w/ inspection plan)
	Public Stakeholders	Various public stakeholder options (see section 12) involving the Senior Resident Inspector or BC	Various public stakeholder options (see Section 12) involving the BC or DD	RA/DRA (or Designee) Discuss Performance with Senior Licensee Management	EDO/DEDO (or Designee) Discuss Performance with Senior Licensee Management	EDO/DEDO (or Designee) Discuss Performance with Senior Licensee Management
	External Stakeholders ²	None	State Governors	State Governors, DHS, Congress	State Governors, DHS, Congress	State Governors, DHS, Congress
	Commission Involvement	None	None	Possible Commission Meeting if Licensee Remains for 1½ years	Commission Meeting with Senior Licensee Management Within 6 mo. ³	Commission Meeting with Senior Licensee Management
INCREASING SAFETY SIGNIFICANCE→						



Key Decision #5: Assessment (Concept)

Option B: Traditional Action Matrix concept for each manufacturer and licensee/applicant (separately)

Description: Manufacturer and permit/COL holder are assessed separately, but a combined assessment of project quality is used to inform licensing decision.

Manufacturer
Draft Construction Action Matrix

	Licensee Response Column (Column 1)	Regulatory Response Column (Column 2)	Degraded Performance Column (Column 3)	Multiple/ Repetitive Degraded Cornerstone Column (Column 4)	Unacceptable Performance Column (Column 5)
RESULTS	All Inspection Findings Green, Cornerstone Objectives Fully Met	One or Two White Findings in a strategic performance area; Cornerstone objectives met with minimal degradation in safety performance	One degraded cornerstone (3 white findings or 1 yellow finding) or any 3 white findings in a strategic performance area; Cornerstone objectives met with moderate degradation in safety performance	Repetitive degraded cornerstone, multiple degraded cornerstones, multiple yellow findings, or 1 red finding; Cornerstone objectives met with longstanding issues or significant degradation in safety performance	Overall unacceptable performance; Construction suspended in the area of concern
RESPONSE	Regulatory Performance Meeting	None	Branch Chief (BC) or Division Director (DD) Meet with Licensee	RA/DRA (or Designee) Meet with Senior Licensee Management	EDO/DEDO (or Designee) Meet with Senior Licensee Management
	Licensee Action	Licensee Corrective Action	Licensee Root cause Evaluation and corrective action with U.S. Nuclear Regulatory Commission (NRC) Oversight	Licensee Performance Improvement Plan with NRC Oversight	Licensee Performance Improvement Plan / Construction Restart Plan with NRC Oversight
	NRC Inspection	Risk-Informed Baseline Inspection Program	Baseline and supplemental Inspection Procedure 90001	Baseline and supplemental Inspection Procedure 90003	Baseline and Supplemental as Practicable, Plus Special Inspections per Construction Restart Checklist
	Regulatory Actions ¹	None	Supplemental inspection only	-10 CFR 2.204 Demand for Information -10 CFR 50.54(f) Letter -CAL/Order Plant discussed at AARM if conditions met	Order to Modify, Suspend, or Revoke Licensed Activities Plant discussed at AARM
COMMUNICATION	Assessment Letters	BC or DD review/sign assessment letter (w/ inspection plan)	DD review/sign assessment letter (w/ inspection plan)	DRA review/sign assessment letter (w/ inspection plan)	RA review/sign assessment letter (w/ inspection plan)
	Public Stakeholders ²	Various public stakeholder options (see Section 12) involving the Senior Resident Inspector or BC	Various public stakeholder options (see Section 12) involving the BC or DD	RA/DRA (or Designee) Discuss Performance with Senior Licensee Management	EDO/DEDO (or Designee) Discuss Performance with Senior Licensee Management
	External Stakeholders ³	None	State Governors	State Governors, DHS, Congress	State Governors, DHS, Congress
	Commission Involvement	None	None	Possible Commission Meeting if Licensee Remains for 1½ years	Commission Meeting with Senior Licensee Management Within 6 mo. ³
INCREASING SAFETY SIGNIFICANCE→					

CP/COL Holder
Draft Construction Action Matrix

	Licensee Response Column (Column 1)	Regulatory Response Column (Column 2)	Degraded Performance Column (Column 3)	Multiple/ Repetitive Degraded Cornerstone Column (Column 4)	Unacceptable Performance Column (Column 5)
RESULTS	All Inspection Findings Green, Cornerstone Objectives Fully Met	One or Two White Findings in a strategic performance area; Cornerstone objectives met with minimal degradation in safety performance	One degraded cornerstone (3 white findings or 1 yellow finding) or any 3 white findings in a strategic performance area; Cornerstone objectives met with moderate degradation in safety performance	Repetitive degraded cornerstone, multiple degraded cornerstones, multiple yellow findings, or 1 red finding; Cornerstone objectives met with longstanding issues or significant degradation in safety performance	Overall unacceptable performance; Construction suspended in the area of concern
RESPONSE	Regulatory Performance Meeting	None	Branch Chief (BC) or Division Director (DD) Meet with Licensee	RA/DRA (or Designee) Meet with Senior Licensee Management	EDO/DEDO (or Designee) Meet with Senior Licensee Management
	Licensee Action	Licensee Corrective Action	Licensee Root cause Evaluation and corrective action with U.S. Nuclear Regulatory Commission (NRC) Oversight	Licensee Performance Improvement Plan with NRC Oversight	Licensee Performance Improvement Plan / Construction Restart Plan with NRC Oversight
	NRC Inspection	Risk-Informed Baseline Inspection Program	Baseline and supplemental Inspection Procedure 90001	Baseline and supplemental Inspection Procedure 90003	Baseline and Supplemental as Practicable, Plus Special Inspections per Construction Restart Checklist
	Regulatory Actions ¹	None	Supplemental inspection only	-10 CFR 2.204 Demand for Information -10 CFR 50.54(f) Letter -CAL/Order Plant discussed at AARM if conditions met	Order to Modify, Suspend, or Revoke Licensed Activities Plant discussed at AARM
COMMUNICATION	Assessment Letters	BC or DD review/sign assessment letter (w/ inspection plan)	DD review/sign assessment letter (w/ inspection plan)	DRA review/sign assessment letter (w/ inspection plan)	RA review/sign assessment letter (w/ inspection plan)
	Public Stakeholders ²	Various public stakeholder options (see Section 12) involving the Senior Resident Inspector or BC	Various public stakeholder options (see Section 12) involving the BC or DD	RA/DRA (or Designee) Discuss Performance with Senior Licensee Management	EDO/DEDO (or Designee) Discuss Performance with Senior Licensee Management
	External Stakeholders ³	None	State Governors	State Governors, DHS, Congress	State Governors, DHS, Congress
	Commission Involvement	None	None	Possible Commission Meeting if Licensee Remains for 1½ years	Commission Meeting with Senior Licensee Management Within 6 mo. ³
INCREASING SAFETY SIGNIFICANCE→					



Key Decision #5: Assessment (Concept)

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Option C: Construction Response Table describes licensee and NRC response to specific finding types and significance.

Description: Focus on quality issues and their resolution with standard response table for findings.



Key Decision #5: Assessment (Concept)

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Option C: Draft Construction Response Table

RESULTS		GREEN INSPECTION FINDING	WHITE INSPECTION FINDING	YELLOW INSPECTION FINDING	UNACCEPTABLE QUALITY* *see section xyz for guidance
RESPONSE APPLIED TO EACH LICENSEE OR NON-LICENSEE FINDING	Regulatory Engagement Meeting	None	Branch Chief (BC) or Division Director (DD)	Deputy Regional Administrator or designee meet with senior management	Executive Director for Operations or designee meet with senior management
	Enforcement Action Recipient Response	Corrective Action Program	Root cause evaluation and corrective action	Root cause evaluation and corrective action	Performance Improvement Plan with NRC Oversight.
	NRC Inspection	Baseline Inspection	Supplemental Inspection (IP 1) and evaluation for additional baseline inspection(s) in area(s) of concern.	Supplemental Inspection (IP 2) and evaluation for additional baseline inspection(s) in area(s) of concern.	Possible Order/ Confirmatory Action Letter. Supplemental team inspection (IP 3). Evaluation for expanded baseline inspections.
COMMS	Inspection Report or Letter	Branch Chief review/sign inspection report. IR posted on public website.	DD review/sign inspection report (w/ inspection plan). IR posted on public website.	DRA review/sign inspection report (w/ inspection plan). IR posted on public website.	RA or EDO review/sign assessment letter. (w/ inspection plan). Letter posted on public website. Consider public meeting.



Key Decision #5: Assessment (Concept)

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Option Requiring Further Development:

Option C: Construction Response Table because:

- Relatively simpler to understand and implement.
- Does not comingle licensee and non-licensee, or manufacturer and on-site inspection findings.
- Eliminates the need to have quarterly, semi-annual, or annual assessment periods to determine the proper NRC response.

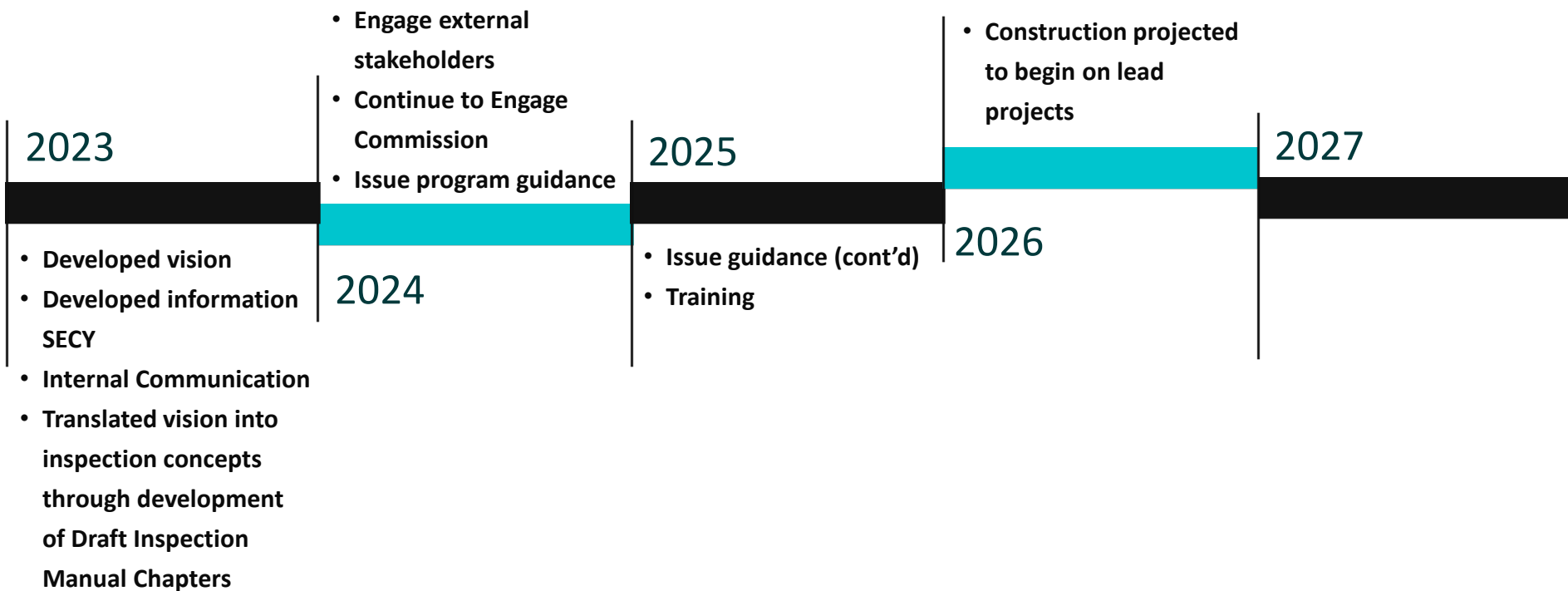


Stakeholder Engagement Point



ARCOP Development Timeline

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Planned Workshop Sessions

Session 1, February 24, 2024:

Introduction to NRC Advanced Reactor Construction Oversight, and the ARCOP (draft) Framework.

Session 2, Date TBD:

Inspection Scoping

Session 3, Date TBD:

Enforcement and Assessment

Session 4, Date TBD:

Follow up discussions



ARCOP Points of Contact

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NRC on Social Media

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WWW.NRC.GOV

Twitter: <https://twitter.com/nrcgov>

Facebook: <https://www.facebook.com/nrcgov/>

Instagram: <https://www.instagram.com/nrcgov/>

YouTube: <https://www.youtube.com/user/NRCgov>

Flickr: <https://www.flickr.com/photos/nrcgov/sets>

LinkedIn: <https://www.linkedin.com/company/u-s--nuclear-regulatory-commission/>

GovDelivery: <https://service.govdelivery.com/accounts/USNRC/subscriber/new>



Feedback on this Public Meeting



<https://feedback.nrc.gov/pmfs/feedback/form?meetingcode=20240179>



Closing Remarks



Acronyms

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ARCOP	Advanced Reactor Construction Oversight Program
COL	Combined Operating License
ConE	Construction Experience
CP	Construction Permit
ESP	Early Site Permit
FSF	Fundamental Safety Function
ITAAC	Inspection, Test, Analysis, and Acceptance Criteria
LWA	Limited Work Authorization
ML	Manufacturing License
NCV	Non-cited Violation
NON	Notice of Nonconformance
NOV	Notice of Violation
OpE	Operating Experience
QAP	Quality Assurance Program
RAW	Risk Achievement Worth
SCN	Self Identified Construction Noncompliance
SDP	Significance Determination Process
SSC	Structure, System, or Component



End of Workshop #1