U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Hybrid Workshop to Support Comprehensive Review of Radiation Safety Cornerstones in Reactor Oversight Process

July 18, 2025

ADAMS Accession No. ML25199A022

https://www.nrc.gov/pmns/mtg?do=details&Code=20250885

Announcements/Introductions

Please identify yourself each time before speaking throughout the meeting.

Meeting Agenda

PUBLIC MEETING AGENDA

Hybrid Workshop to Support Comprehensive Review of Radiation Safety Cornerstones in Reactor Oversight Process

July 18, 2025, 09:00 AM to 12:00 PM ET

Virtual and In-Person at NRC HQ, One White Flint North
11555 Rockville Pike
Rockville, MD

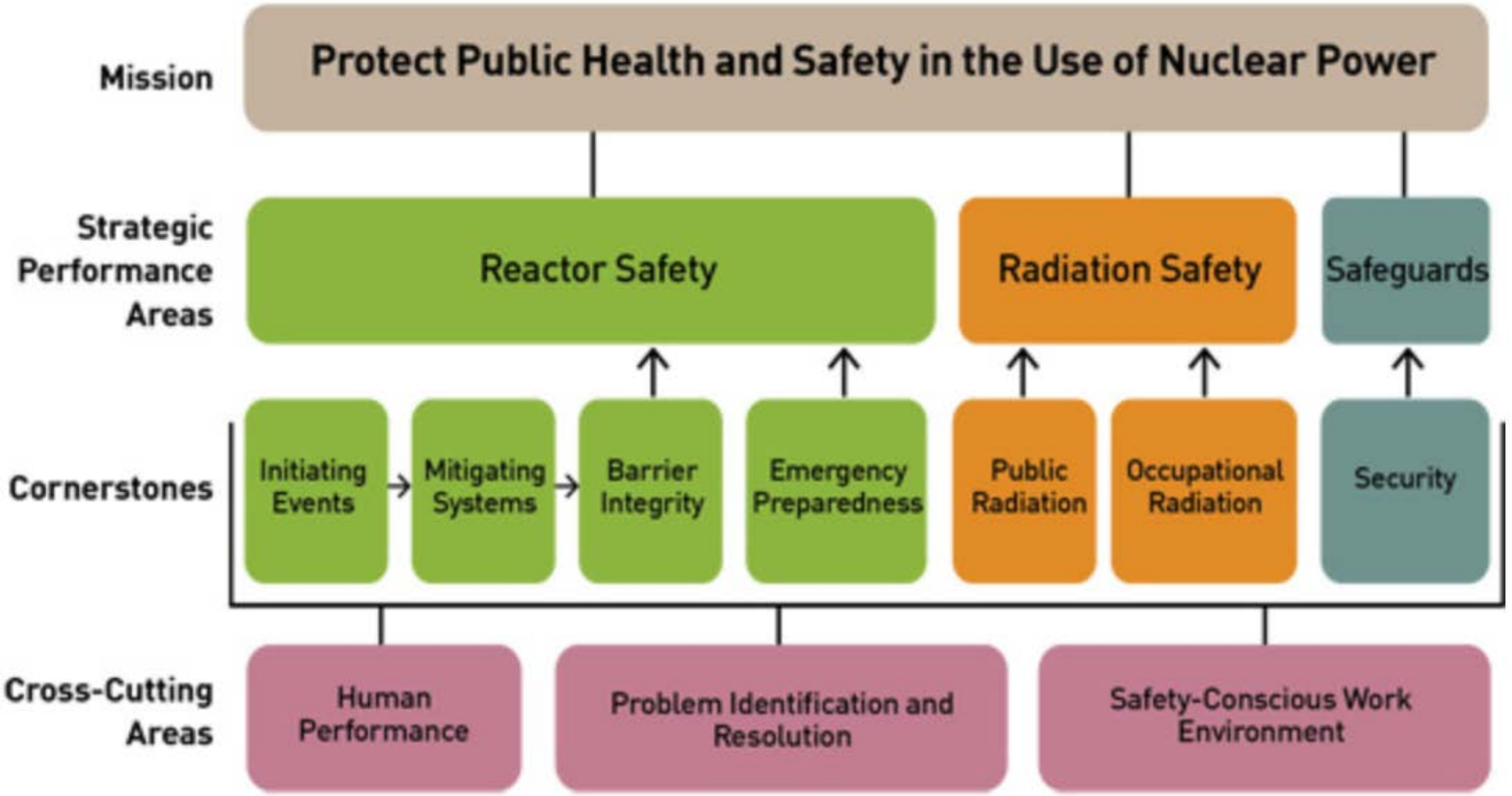
Time	***Topic***	***Speaker***
0900 ET	Introductions/Kickoff	NRC
0915-1000 ET	NRC Presentation	NRC
1000-1045 ET	Workshop Presentation/Discussion	Participants
1045-1100 ET	Break	
1100-1145 ET	Discussion	Participants
1145-1200 ET	Public Comments	Public
1200 ET	Adjourn	NRC

NRC Opening Remarks

Meena Khanna, Director (Acting) Division of Risk Assessment

Office of Nuclear Reactor Regulation

Reactor Oversight Process (ROP)



Why Oversight?

- Atomic Energy Act
- Industry and NRC and have roles in ensuring safety
  - Operate safely
  - Independently conclude…
- Inspections help confirm that U.S. nuclear power plants are meeting their responsibilities

Independently conclude…

BACKGROUNDER
Office of Public Affairs
301.415.8200
www.nrc.gov • opa.resource@nrc.gov

Oversight of Nuclear Power Plants

Background

The NRC and the nuclear industry both have roles ensuring the safety of U.S. nuclear power plants and their ability to protect workers and the public from radiation. The NRC's regulations and guidance cover both the construction and operation of nuclear reactors. Utilities are responsible for meeting those regulations to design, build, and operate their facilities safely. The NRC also approves plant-specific changes that must be properly implemented by the plant operators. All of this work helps ensure safe plant operation, as well as safe plant shutdowns in the event of an accident. The NRC's licensing and oversight programs confirm that U.S. nuclear power plants are meeting their responsibilities.

The NRC's objective, timely, and risk-informed oversight assesses plant performance. More information on this Reactor Oversight Process is available on the NRC's website.

Inspection Program

The Atomic Energy Act of 1954 provides the NRC's inspection authority to inspect nuclear power plants to protect public health and safety. NRC inspections assess whether licensees are properly conducting operations and maintaining equipment to ensure safe operations. Inspectors monitor the licensee's activities and provide findings to the licensee's management. If necessary, NRC experts conduct follow-up inspections to ensure that the licensee has addressed its findings.

Most NRC reactor inspections are conducted by our resident and regional inspectors. Since 1977, resident inspectors have been stationed at each nuclear power plant to provide first-hand, independent assessment of plant conditions and performance. Resident inspectors live near the nuclear power plant they oversee. They maintain offices at the plant during regular business hours, and monitor plant activity during overnights, weekends and holidays, as needed. Resident inspectors provide quick NRC response to incidents at the plant.

Engineers and specialists from the nearest NRC regional office and/or headquarters support the resident inspectors. The NRC's regional specialists cover areas such as plant security, emergency planning, radiation protection, environmental monitoring, plant equipment and systems, fire protection, and construction activities.

https://www.nrc.gov/docs/ML0606/ML060690104.pdf

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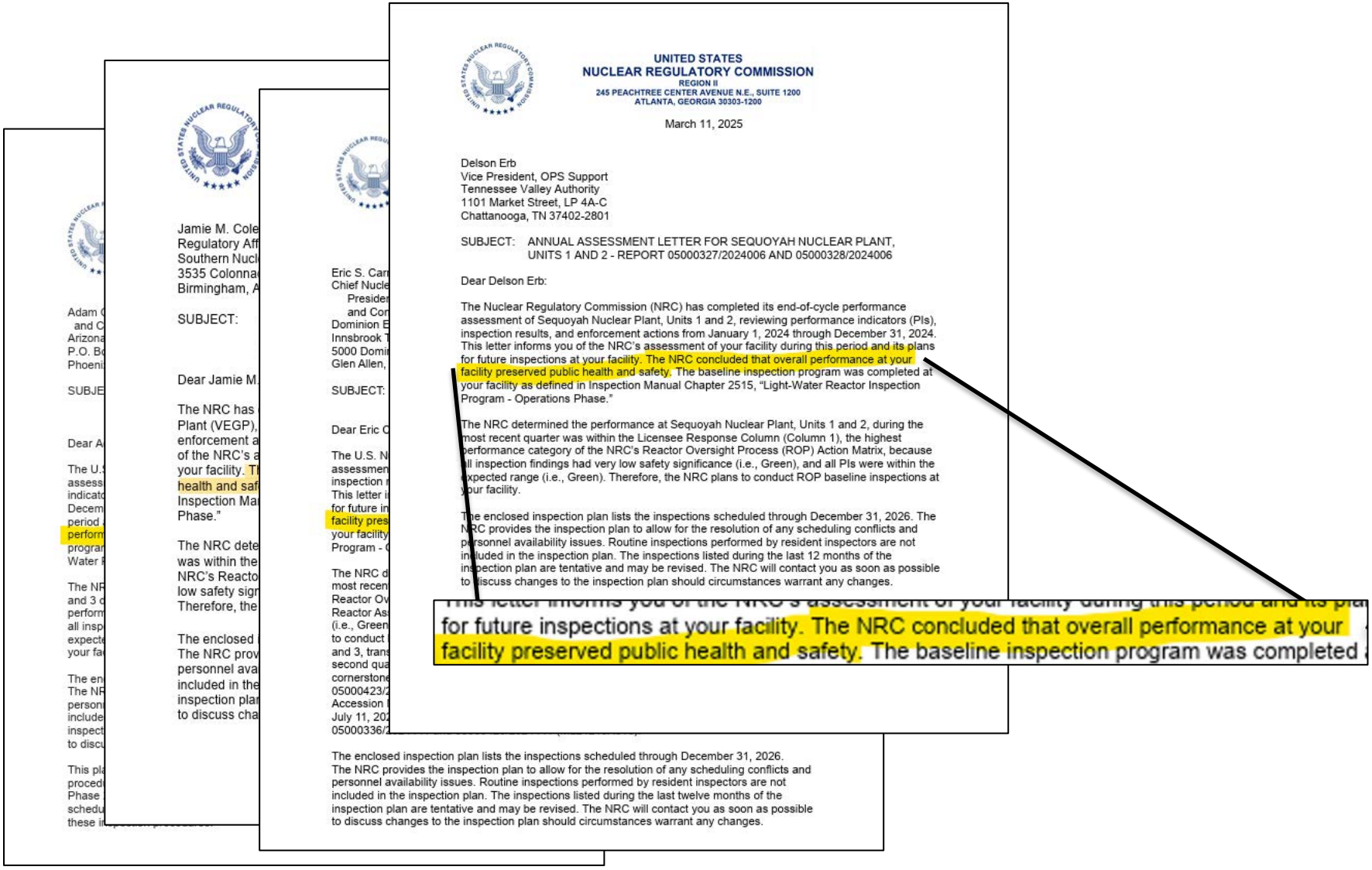
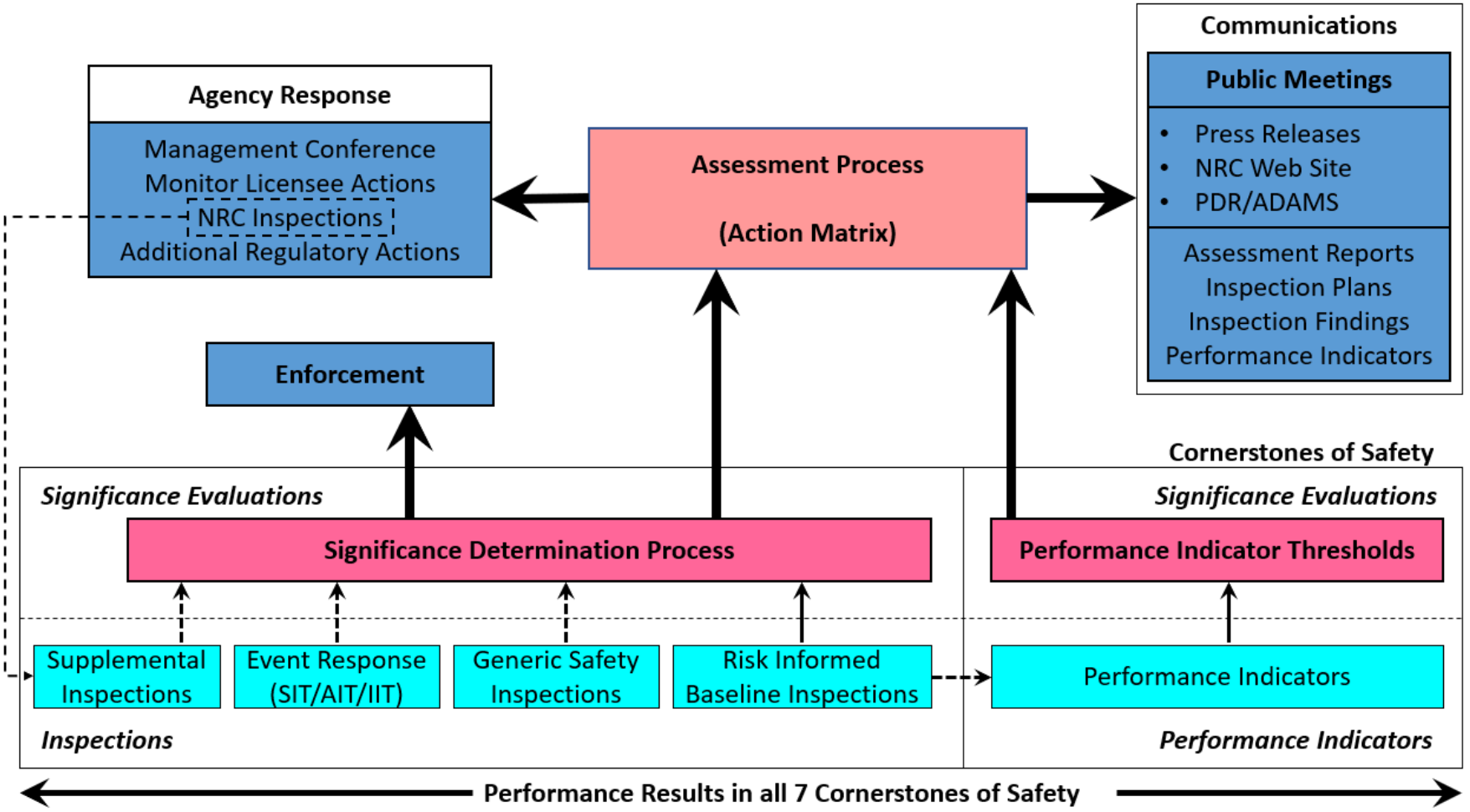
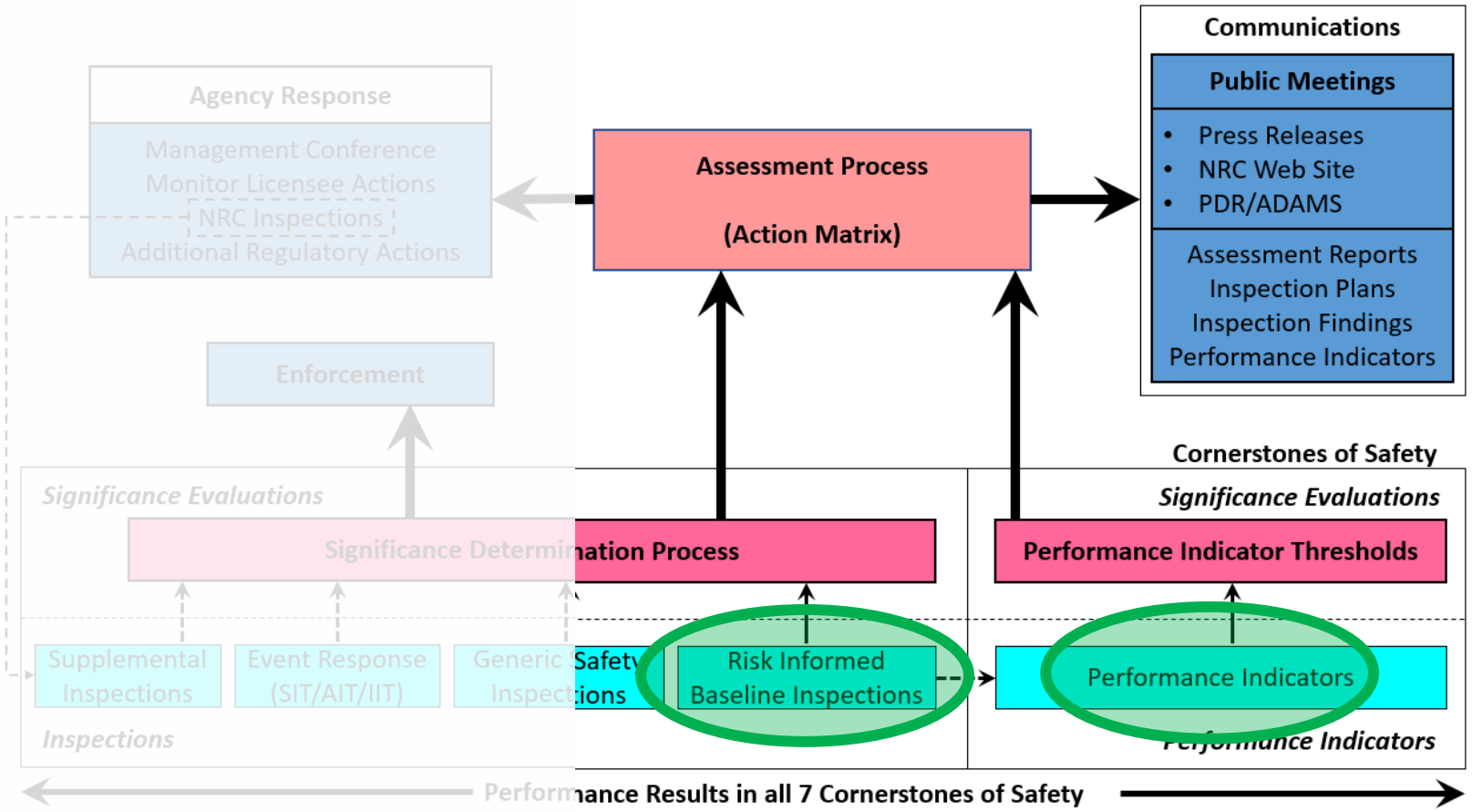


Assessment Letters: https://www.nrc.gov/reactors/operating/oversight/listofasmrpt.html

Assessment of Plant Performance



Assessment of Plant Performance



Radiation Safety Inspection Procedures

IP	71124.01	Radiological Hazard Assessment and Exposure Controls
IP	71124.03	In-Plant Airborne Radioactivity Control and Mitigation
IP	71124.04	Occupational Dose Assessment
IP	71124.05	Radiation Monitoring Instrumentation
IP	71124.06	Radioactive Gaseous and Liquid Effluent Treatment
IP	71124.07	Radiological Environmental Monitoring Program
IP	71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Developing Inspectable Areas

Exhibit 9: Occupational Radiation Safety Cornerstone

Cornerstone objective

Attributes

Areas to Measure

Inspectable Areas

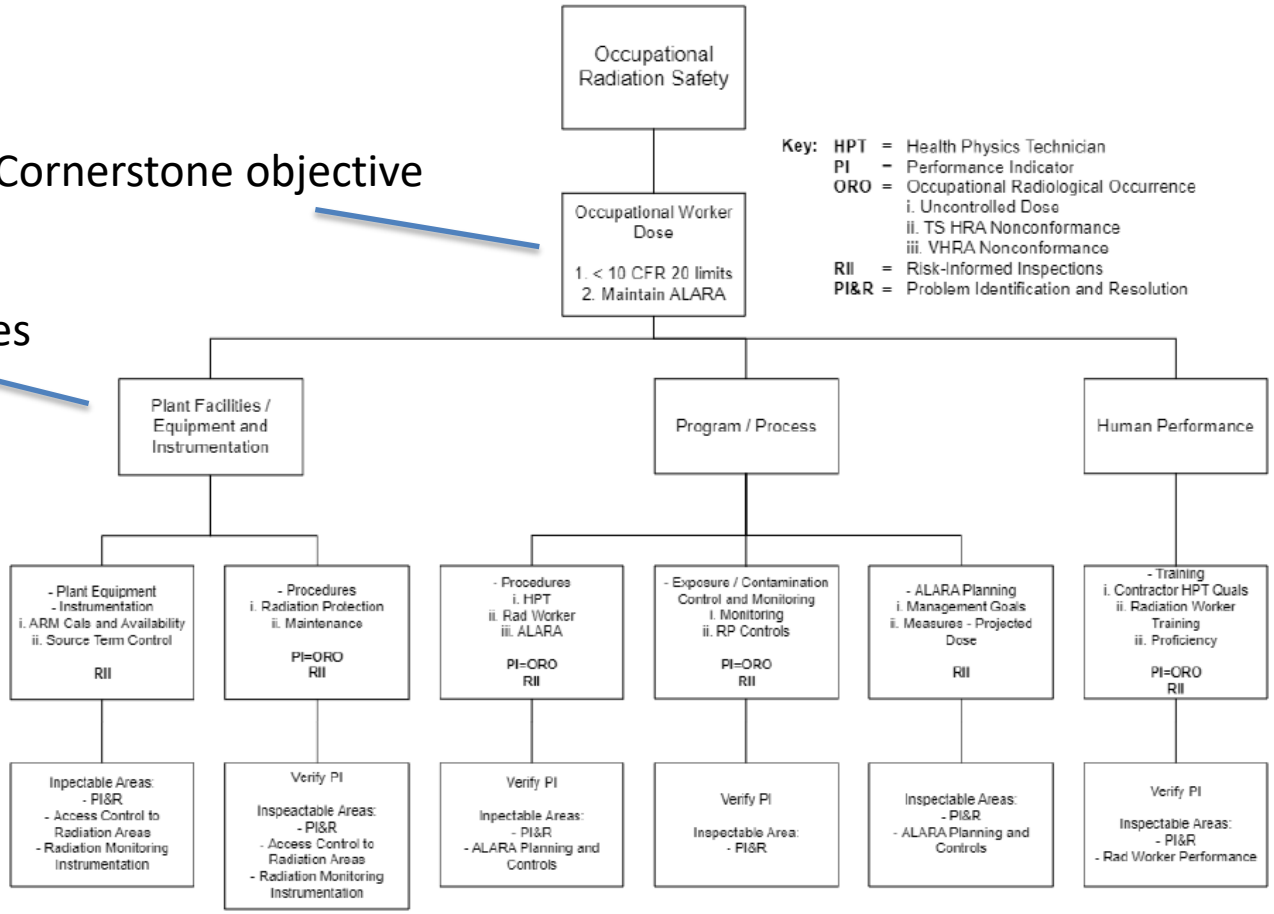
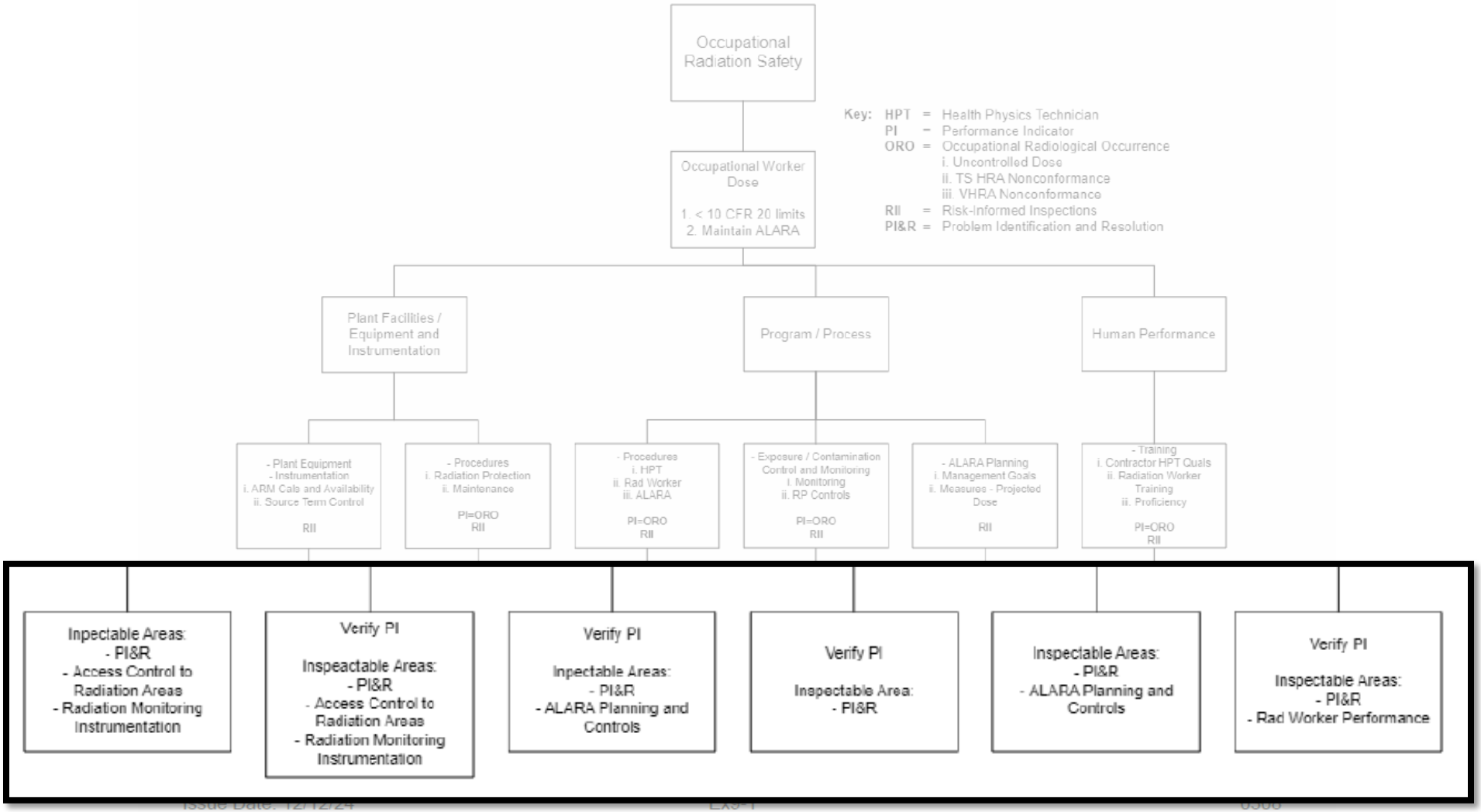


Exhibit 9: Occupational Radiation Safety Cornerstone

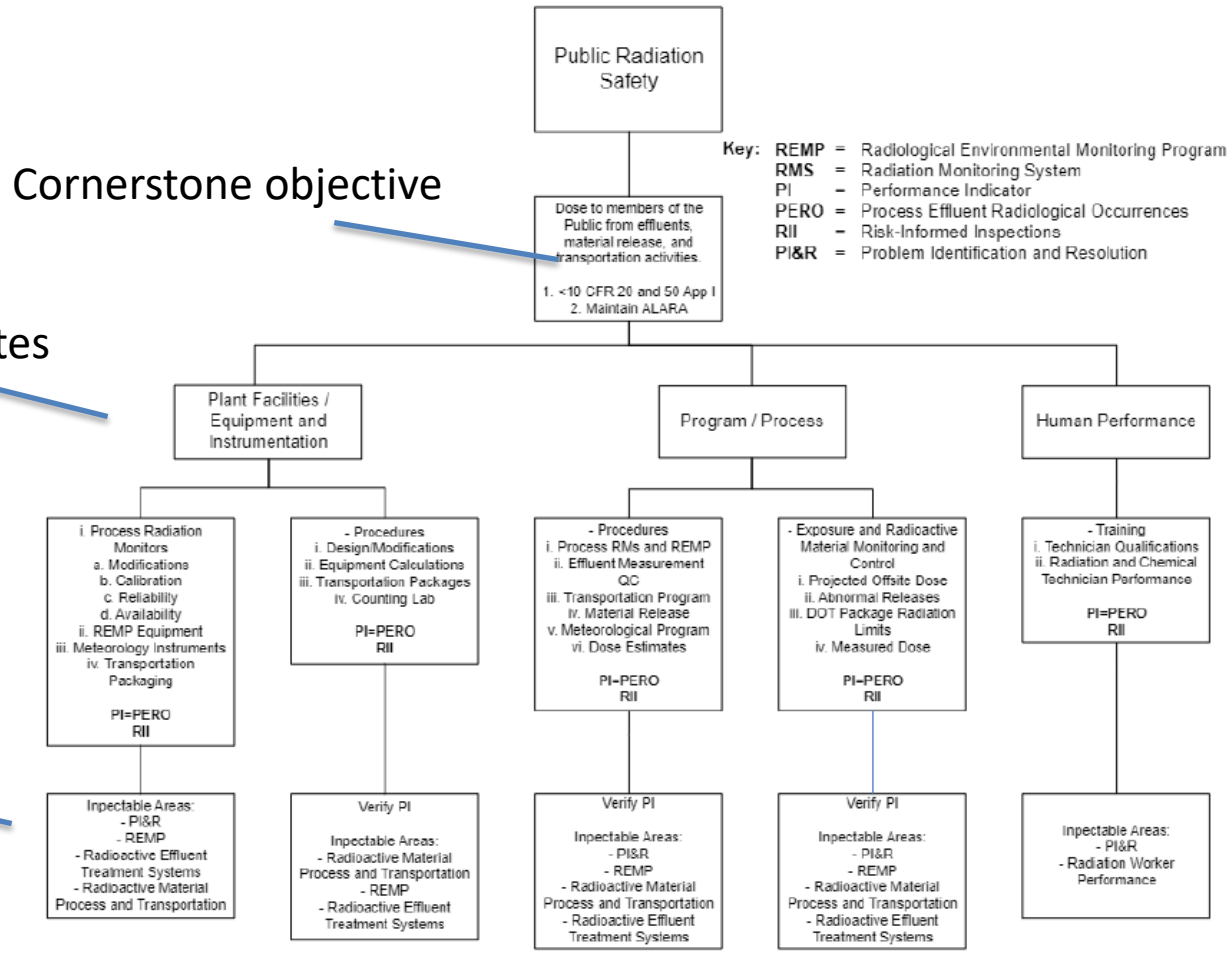


Occupation Radiation Safety

Objective, Attributes and Areas to Measure

Cornerstone	RADIATION SAFETY – Occupational Radiation Safety
Objective	To ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation.
Attributes	**Areas to Measure**
Plant Facilities/Equipment and Instrumentation	Plant Equipment Instrumentation, (ARM Cals & Availability, Source Term Control), Procedures (Radiation Protection and Maintenance)
Program & Process	Procedures (HPT, Rad Worker, ALARA); Exposure/Contamination Control and Monitoring (Monitoring and RP Controls), ALARA Plannir (Management Goals, Measures - Projected Dose)
Human Performance	Training (Contractor HPT Quals, Radiation Worker Training, Proficiency)

Exhibit 10: Public Radiation Cornerstone



Cornerstone objective

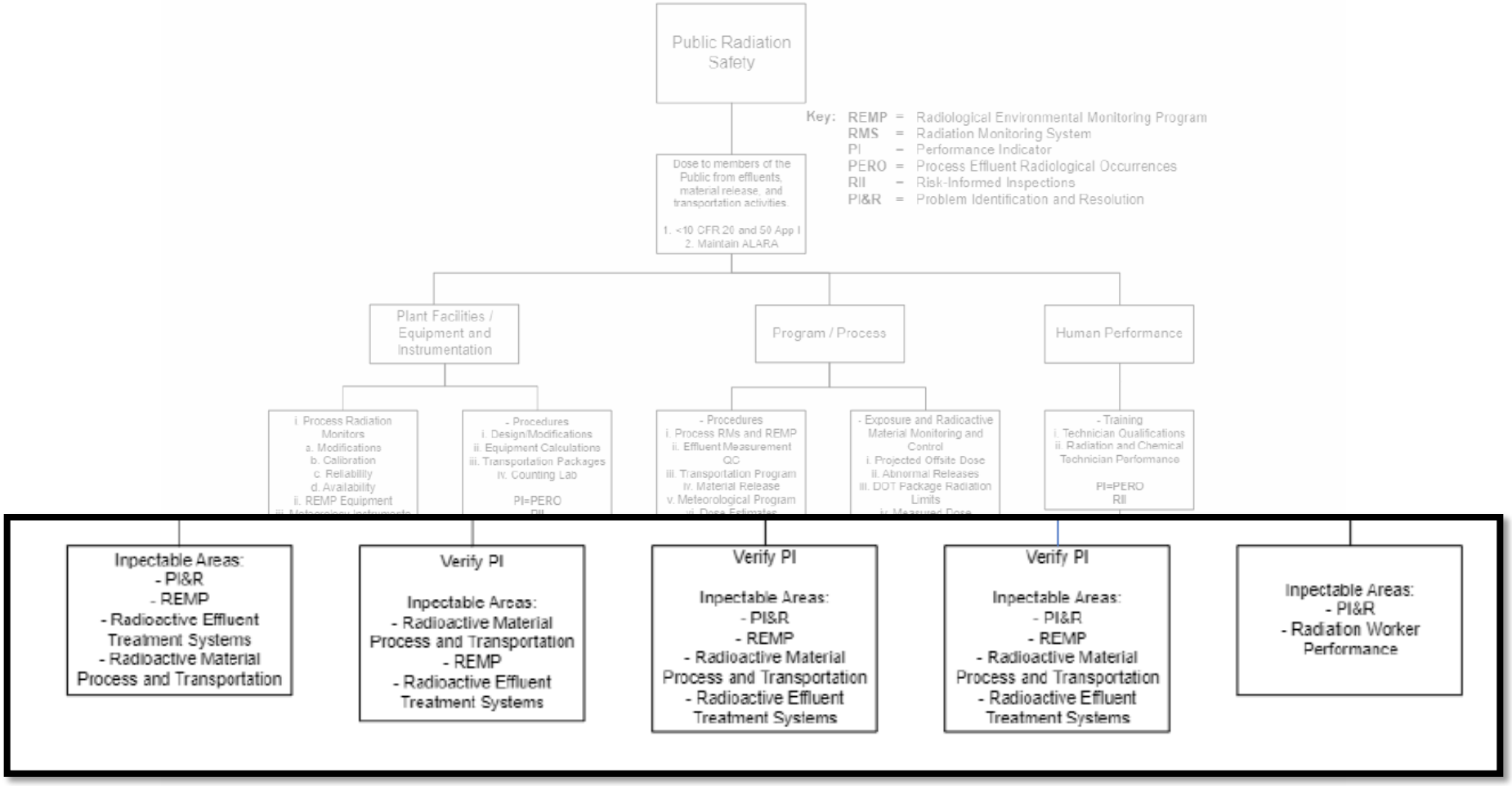
Attributes

Areas to Measure

Inspectable Areas

Issue Date: 12/12/24 Ex10-1 0308

Exhibit 10: Public Radiation Cornerstone



Public Radiation Safety

Objective, Attributes and Areas to Measure

Cornerstone	RADIATION SAFETY – Public Radiation Safety
Objective	To ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation.
Attributes	**Areas to Measure**
Plant Facilities/Equipment and Instrumentation	Process Radiation Monitors (RMS) (Modifications, Calibrations, Reliability, Availability), REMP Equipment Meteorology Instruments, Transportation Packaging, Procedures (Design/Modifications, Equipment Calculations, Transportation Packages, Counting Labs)
Program & Process	Procedures (Process RMs & REMP, Effluent Measurement QC, Transportation Program, Material Release, Meteorological Program, Dose Estimates), Exposure and Radioactivity Material Monitoring and Control (Projected Offsite Dose, Abnormal Release, DOT Package Radiation Limits, Measured Dose)
Human Performance	Training (Technician Qualifications, Radiation & Chemical Technician Performance)

Public Radiation Safety PI

- **Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual (RETSs/ODCM) (PR01)**—Radiological effluent release occurrences per reactor unit that exceed the values listed below:
  - Liquid Effluents
    - Whole Body—1.5 millirems per quarter (mrem/qtr)
    - Organ—5 mrem/qtr
  - Gaseous Effluents
    - Gamma Dose—5 millirads per quarter (mrad/qtr)
    - Beta Dose—10 mrad/qtr
    - Organ Doses from I-131, iodine-133, tritium, & particulates—7.5 mrem/qtr

Public Radiation Indicator	Thresholds		
	(White) Increased Regulatory Response Band	(Yellow) Required Regulatory Response Band	(Red) Unacceptable Performance Band
RETS/ODCM Radiological Effluents	> 1	> 3	N/A

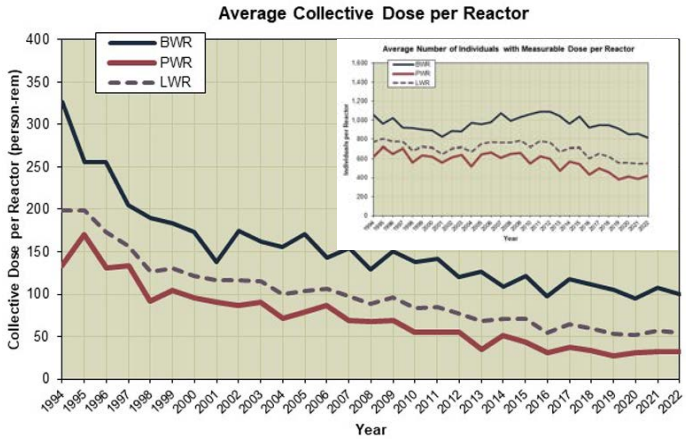
Occupational Radiation Safety PI

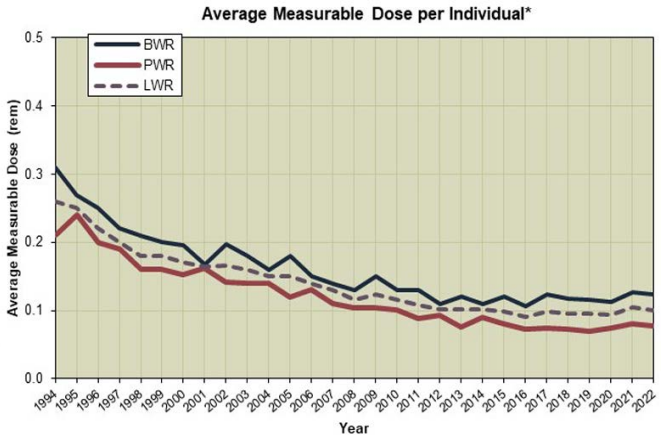
- **Occupational Exposure Control Effectiveness (OR01)**—The PI for this cornerstone is the sum of the following:
  - Technical specification high radiation area occurrences
  - Very high radiation area occurrences
  - Unintended exposure occurrences

Occupational Radiation Safety Indicator	Thresholds		
	(White) Increased Regulatory Response Band	(Yellow) Required Regulatory Response Band	(Red) Unacceptable Performance Band
Occupational Exposure Control Effectiveness	> 2	> 5	N/A

Regulatory Experience

Occupational and Public Dose





NUREG-0713, Vol 44

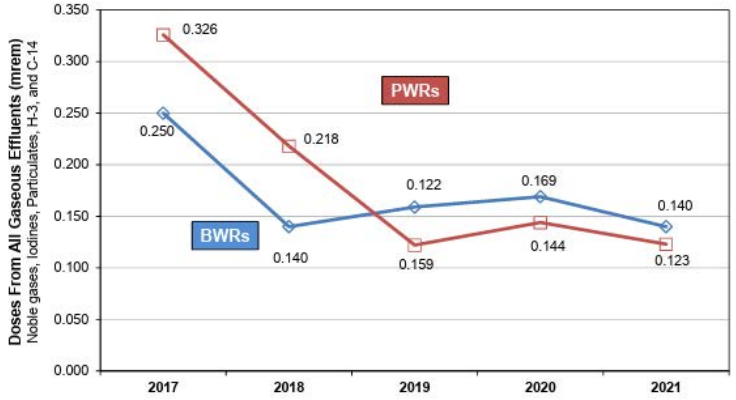


Figure 3-21 Median Maximum Annual Organ Dose, Gaseous Effluents 5-Year Trend, 2017–2021

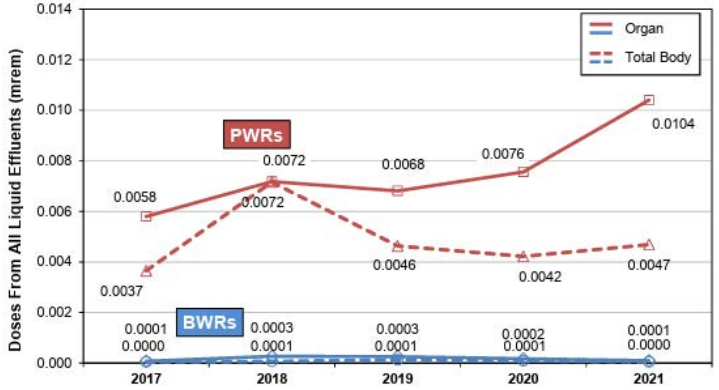


Figure 3-22 Median Maximum Annual Dose, Liquid Effluents 5-Year Trend, 2017–2021

NUREG/CR-2907, Vol 27

NUREG-0713: https://www.nrc.gov/docs/ML2430/ML24303A136.pdf
NUREG/CR-2907: https://www.nrc.gov/docs/ML2413/ML24134A119.pdf

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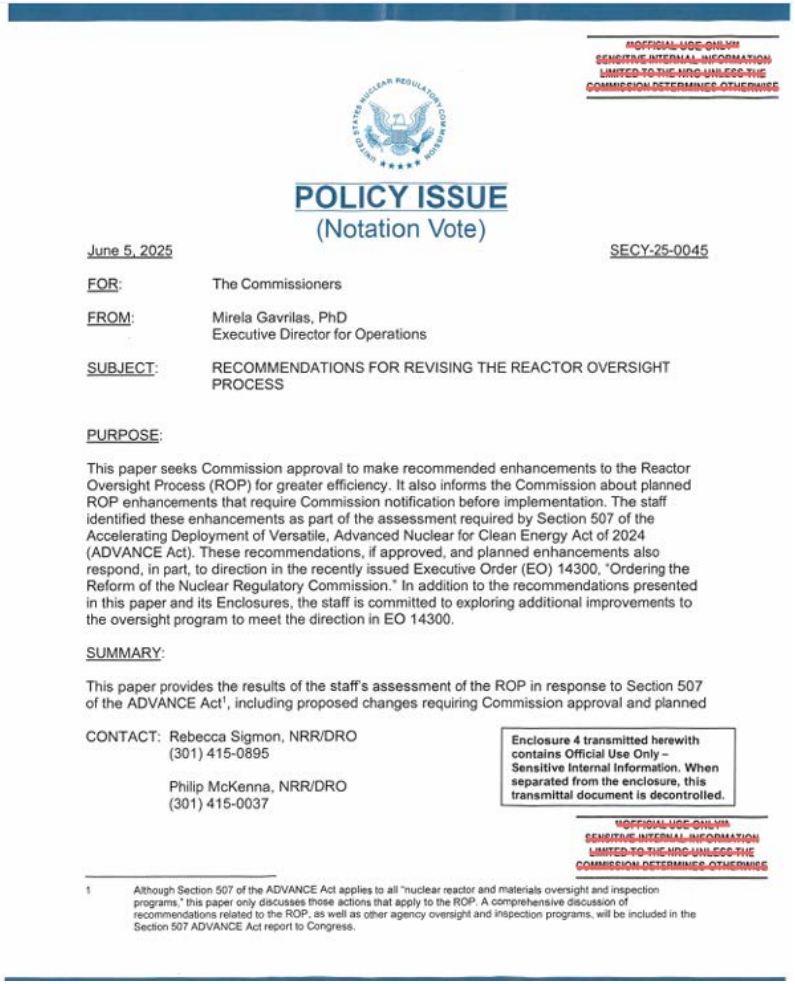
SECY-025-0045



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POLICY ISSUE
(Notation Vote)

June 5, 2025 SECY-25-0045

FOR: The Commissioners

FROM: Mirela Gavrilas, PhD
Executive Director for Operations

SUBJECT: RECOMMENDATIONS FOR REVISING THE REACTOR OVERSIGHT PROCESS

PURPOSE:

This paper seeks Commission approval to make recommended enhancements to the Reactor Oversight Process (ROP) for greater efficiency. It also informs the Commission about planned ROP enhancements that require Commission notification before implementation. The staff identified these enhancements as part of the assessment required by Section 507 of the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act). These recommendations, if approved, and planned enhancements also respond, in part, to direction in the recently issued Executive Order (EO) 14300, "Ordering the Reform of the Nuclear Regulatory Commission." In addition to the recommendations presented in this paper and its Enclosures, the staff is committed to exploring additional improvements to the oversight program to meet the direction in EO 14300.

SUMMARY:

This paper provides the results of the staff's assessment of the ROP in response to Section 507 of the ADVANCE Act[1], including proposed changes requiring Commission approval and planned

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1 Although Section 507 of the ADVANCE Act applies to all "nuclear reactor and materials oversight and inspection programs," this paper only discusses those actions that apply to the ROP. A comprehensive discussion of recommendations related to the ROP, as well as other agency oversight and inspection programs, will be included in the Section 507 ADVANCE Act report to Congress.

https://www.nrc.gov/docs/ML2512/ML25127A212

Selected ROP Revision Items

- Revise guidance on inspecting to minimum samples instead of nominal samples. Gives guidance on when it may be appropriate to expect above minimum samples based on risk or licensee performance. SRI or Team Inspection lead makes the decision, Branch Chief (BC) if single person inspection. BC still approves going above max samples (and informs DD). IMC 2515 App A and IMC 0308 Attachment 2 will be issued before 1 July.

- Expand the VLSSIR language in all ROP guidance documents including Inspection Manual Chapter (IMC) 0612 to cover all potential compliance issues verses only licensing basis issues. IMC 0612 and IMC 0612 Appendix B were issued on 5/27/2025 (in effect now).

- Dual path ROP and TE violations are eliminated for Green and SLIV issues. IMC 0612 Appendix B issued on 5/27/2025 (in effect now).

- Entrance and Exit meetings are reduced. Entrance meetings optional (coordinate with licensee) and minimal in time. Exit meetings – Can (and will most likely be) remote meetings. Exit can be Team lead with Licensing Manager, especially if no findings. IMC 2515 revision will be issued before 1 July.

For Workshop Discussion

- What performance-related information is available to licensees that can be used by the NRC to risk-inform its inspection effort? Is this information standardized across the industry? If not standardized, is there support for doing so? Would the staff have the ability to document this information in an inspection report to justify modulating inspection effort?

- What approaches that do not involve inspection are available to verify performance indicator information?

- The staff is considering shifting some inspection effort to remote-based inspection if it can conclude that licensee performance can be adequately evaluated using this approach. Given preexisting knowledge of the IP 71124 inspection procedures, what would be the licensees' resource impact of shifting some of the inspection effort to remote?

For Workshop Discussion

- Recognizing that radioactive effluents and environmental monitoring are areas of low radiological safety significance, but important areas of the NRC's regulatory framework, what changes could the staff consider to right-size oversight in this area?

- Radiation protection programs are best assessed during periods of high radiological risk significance; however, at these times, licensee personnel resources are most strained. What are some approaches that the NRC and licensees could adopt to ensure risk-informed, performance-based inspection can continue during these periods, while minimizing impact on licensee resources.

"NRC concluded that overall performance at your facility preserved public health and safety"

Thank you!

Break

Public Comment

Contacts

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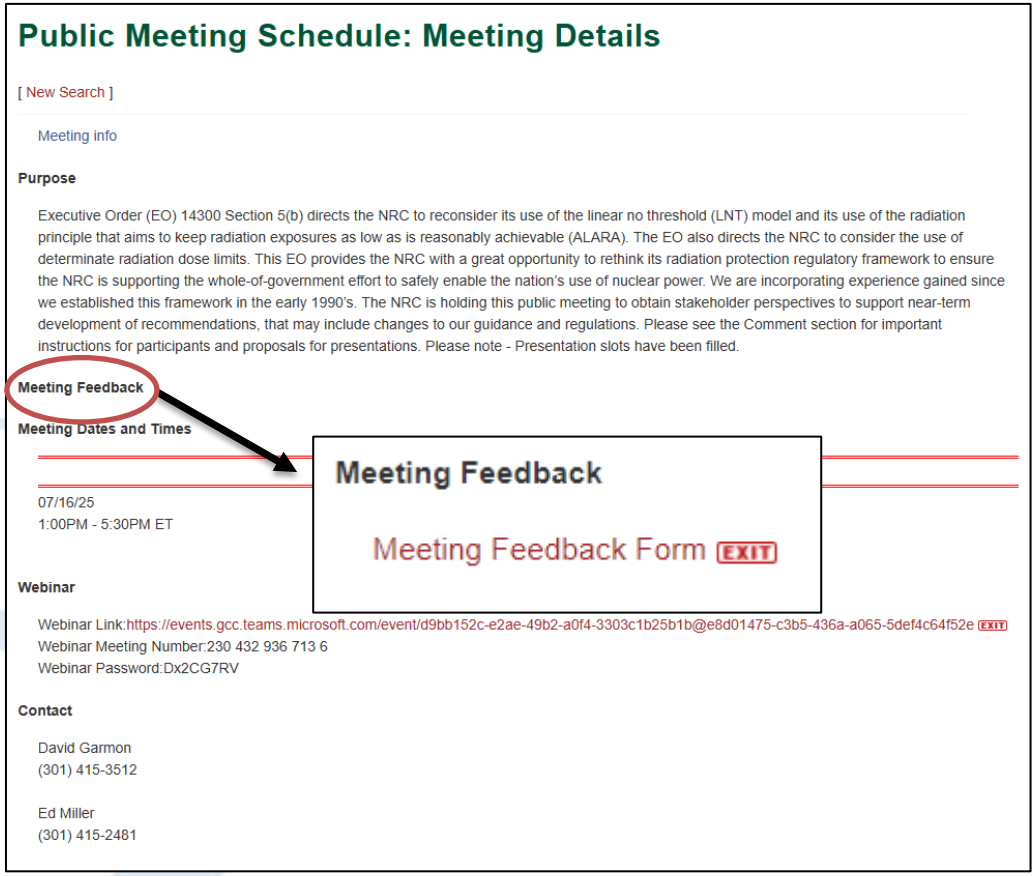
How did we do?



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