

Reactor Oversight Program



Objectives

- **Develop an understanding of the NRC's power reactor oversight program**
- **Understand how the ROP helps satisfy the NRC mission**

Oversight Program Begins with the Mission....

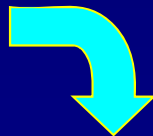
The mission of the NRC is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials in order to protect public health and safety, promote the common defense and security, and protect the environment.

The Mission feeds into.....

The Strategic Plan – Goals and Outcomes



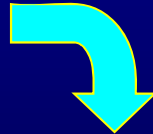
Which feeds into—



Regional/Office Operating Plans



Which then direct—



Inspection Activities

Strategic Plan

Goals

Safety: Ensure adequate protection of public health and safety and the environment.

and

Security: Ensure adequate protection in the secure use and management of radioactive materials.

Strategic Plan

Measureable Outcomes

- Prevent the occurrence of any nuclear reactor accidents.
- Prevent the occurrence of any inadvertent criticality events.
- Prevent the occurrence of any acute radiation exposures resulting in fatalities.
- Prevent the occurrence of any releases of radioactive materials that result in significant radiation exposures.
- Prevent the occurrence of any releases of radioactive materials that cause significant adverse environmental impacts.
- Prevent any instances where licensed radioactive materials are used domestically in a manner hostile to the United States.

Inspection Activities

Pre-2000 Program

Inspection program

Enforcement Program

Systematic Assessment of Licensee Performance (SALP)
Program

Inspection Activities

Resource Management Under the SALP Program

- Inspection Resources Determined Through the Assessment Process
- Good performing plants received less inspection
- Performance could decline markedly before it was recognized
- Poor performing plants received more inspection
- Performance could “appear” worse than was actually the case
- Resource Allocations Made Every 18-24 Months

Inspection Activities

History

Despite limitations of old oversight program, performance overall improved from mid-1980 levels

HOWEVER - industry averages meaningless at a true problem plant

The Challenge - develop new oversight program that:

- recognizes improved performance
- minimizes unnecessary burden
- increases efficiency
- is aligned to a particular plant's risk
- is objective and understandable
- is still effective in identifying and addressing poor performance

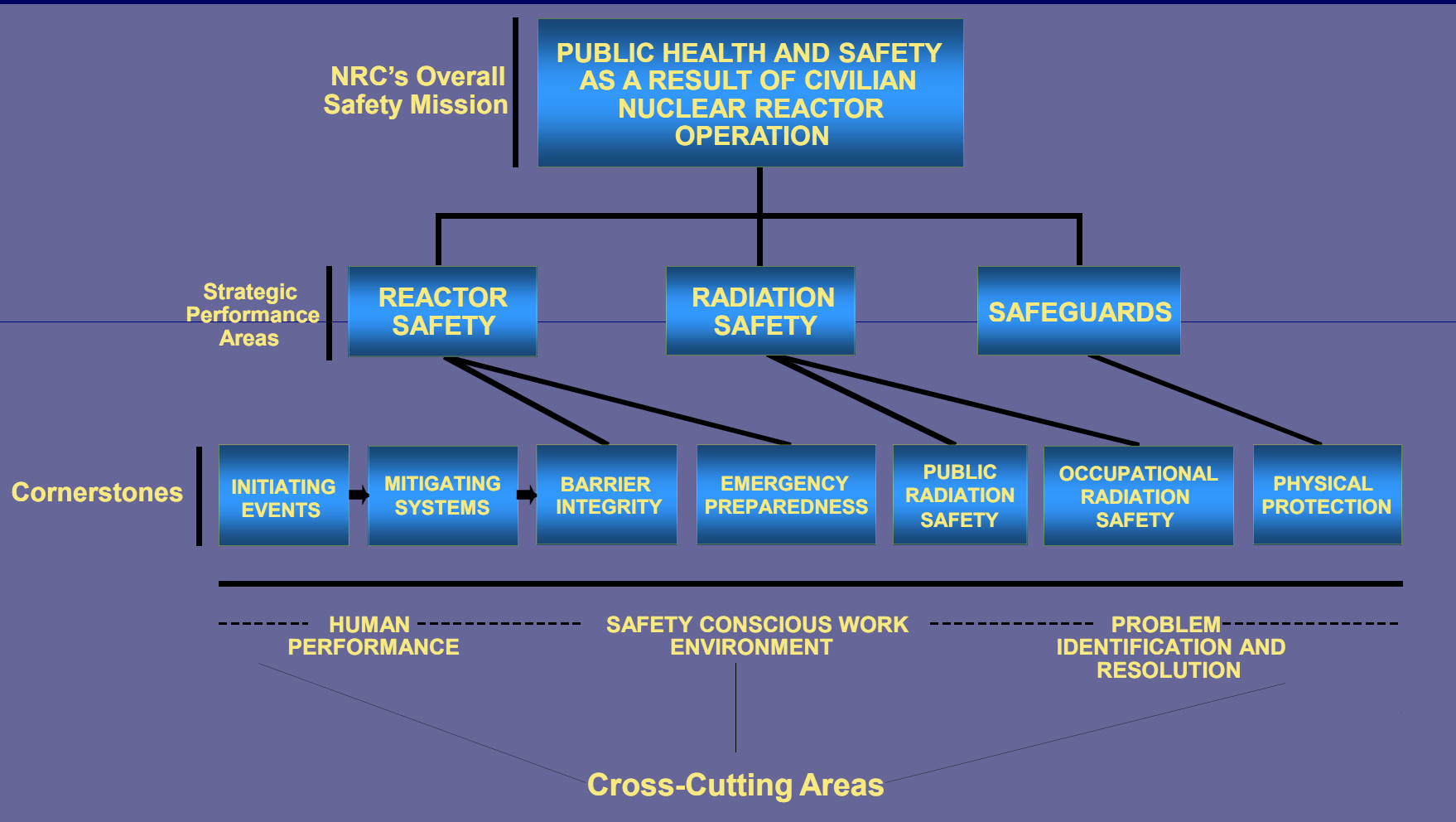
Inspection Activities

New Program

Framework much like NRC strategic plan

Connects agency mission to areas of operational concern

Regulatory Framework



Performance Measurements

Plant performance measured by:

- Performance Indicators
- Inspections
- Performance Indicators + Inspections = Plant Assessment

Performance Indicators

| ▪Cornerstone | ▪Indicator |
|--------------------------------|--|
| ▪Initiating Events | <ul style="list-style-type: none"> ▪Unplanned scrams per 7000 critical hours ▪Scrams with loss of normal heat removal ▪Unplanned power changes per 7000 critical hours. |
| ▪Mitigating Systems | <ul style="list-style-type: none"> ▪Safety system functional failures ▪Mitigating System Performance Index |
| ▪Barrier Integrity | <ul style="list-style-type: none"> ▪Reactor coolant system activity ▪Reactor coolant system leakage |
| ▪Emergency Preparedness | <ul style="list-style-type: none"> ▪Drill/Exercise performance ▪Emergency response organization drill participation ▪Alert and notification system reliability |
| ▪Occupational Radiation Safety | <ul style="list-style-type: none"> ▪Occupational exposure control effectiveness |
| ▪Public Radiation Safety | <ul style="list-style-type: none"> ▪Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) ▪Radiological Effluent Occurrences |
| ▪Physical Protection | <ul style="list-style-type: none"> ▪Not publicly available |

Inspections

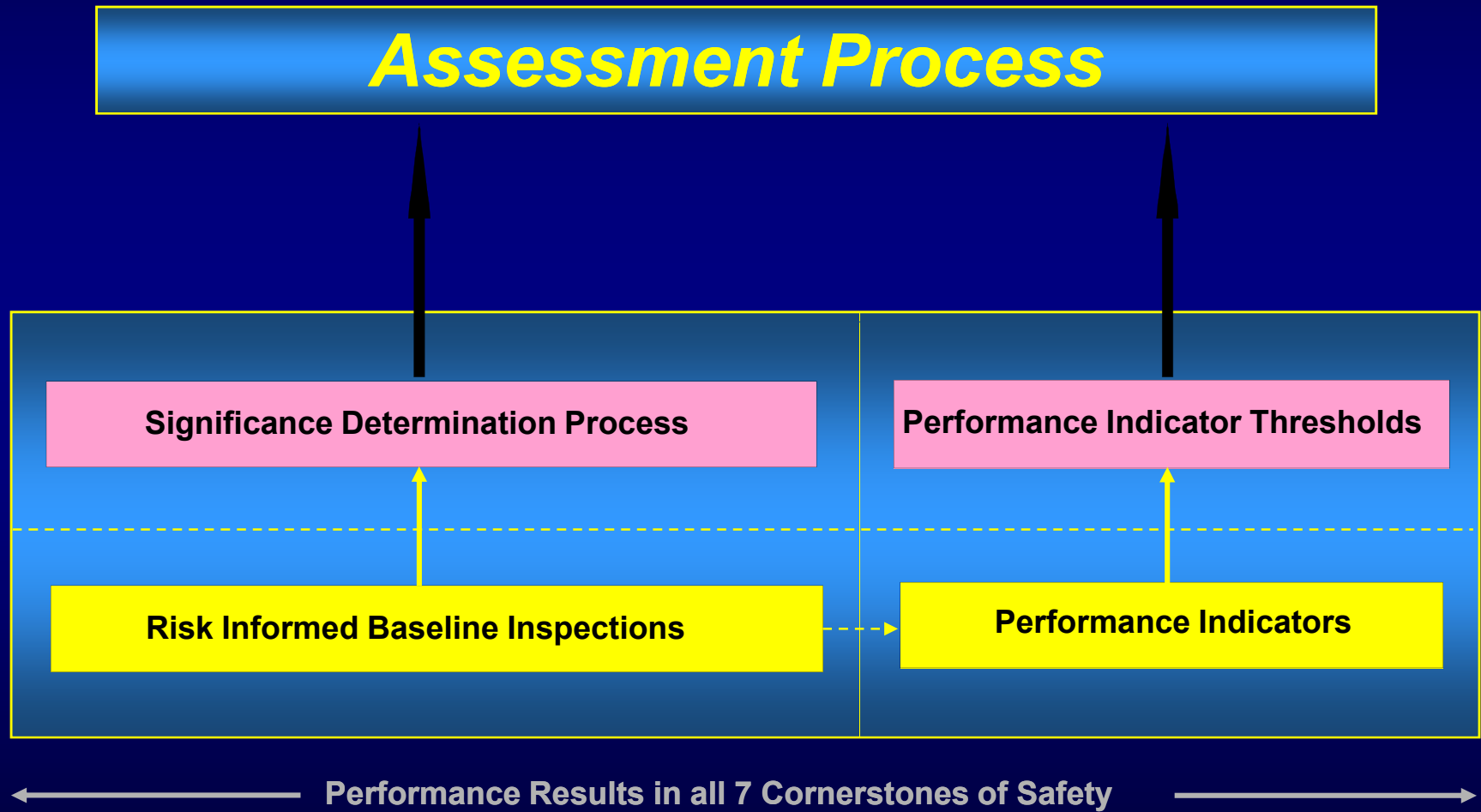
Baseline Inspection Program

- common to all licensees
- based on cornerstone areas
- focused on risk-significant activities and systems
- reviews cross-cutting issues

Inspections beyond baseline performed “for cause”

Types of inspections vary

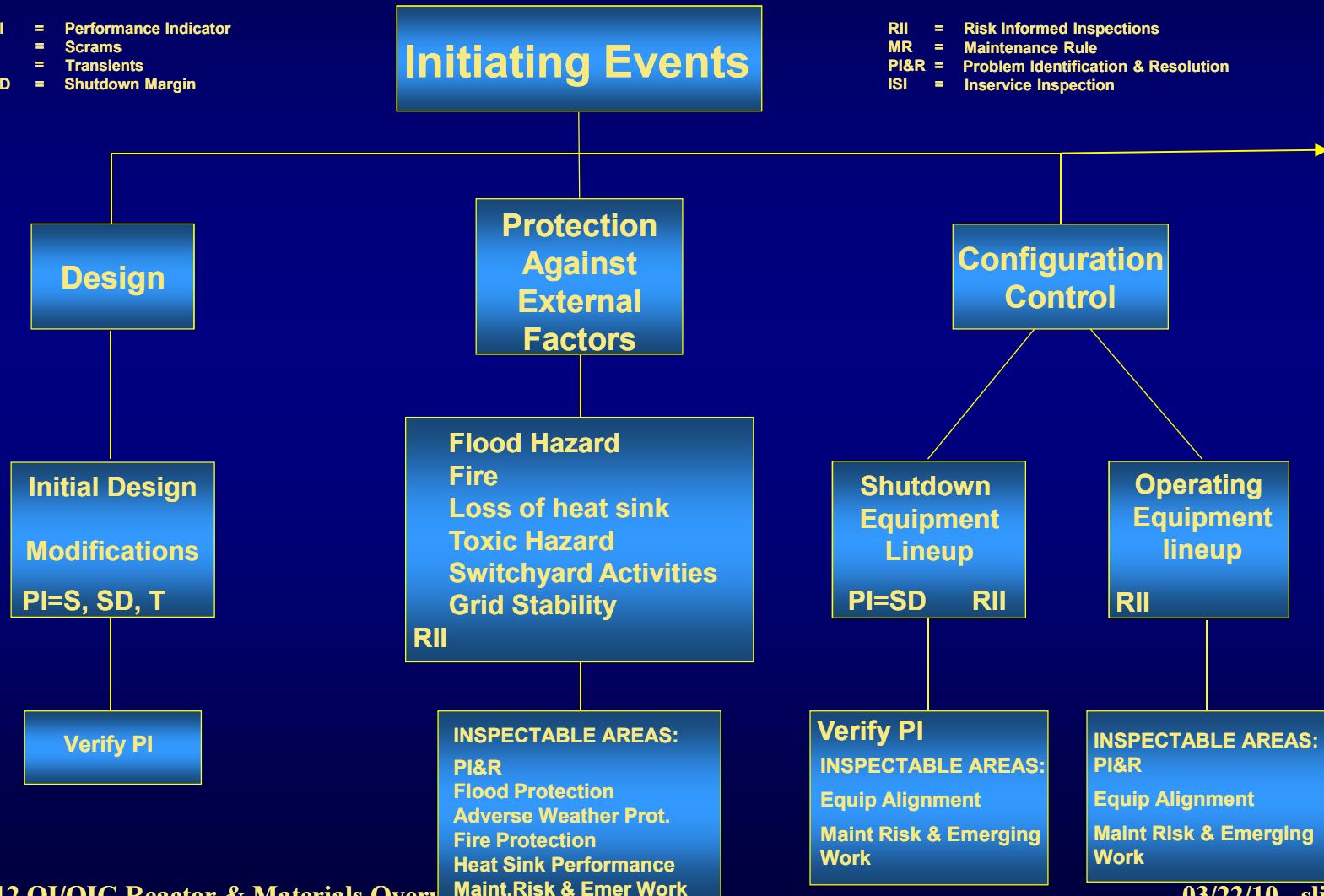
Baseline Effort



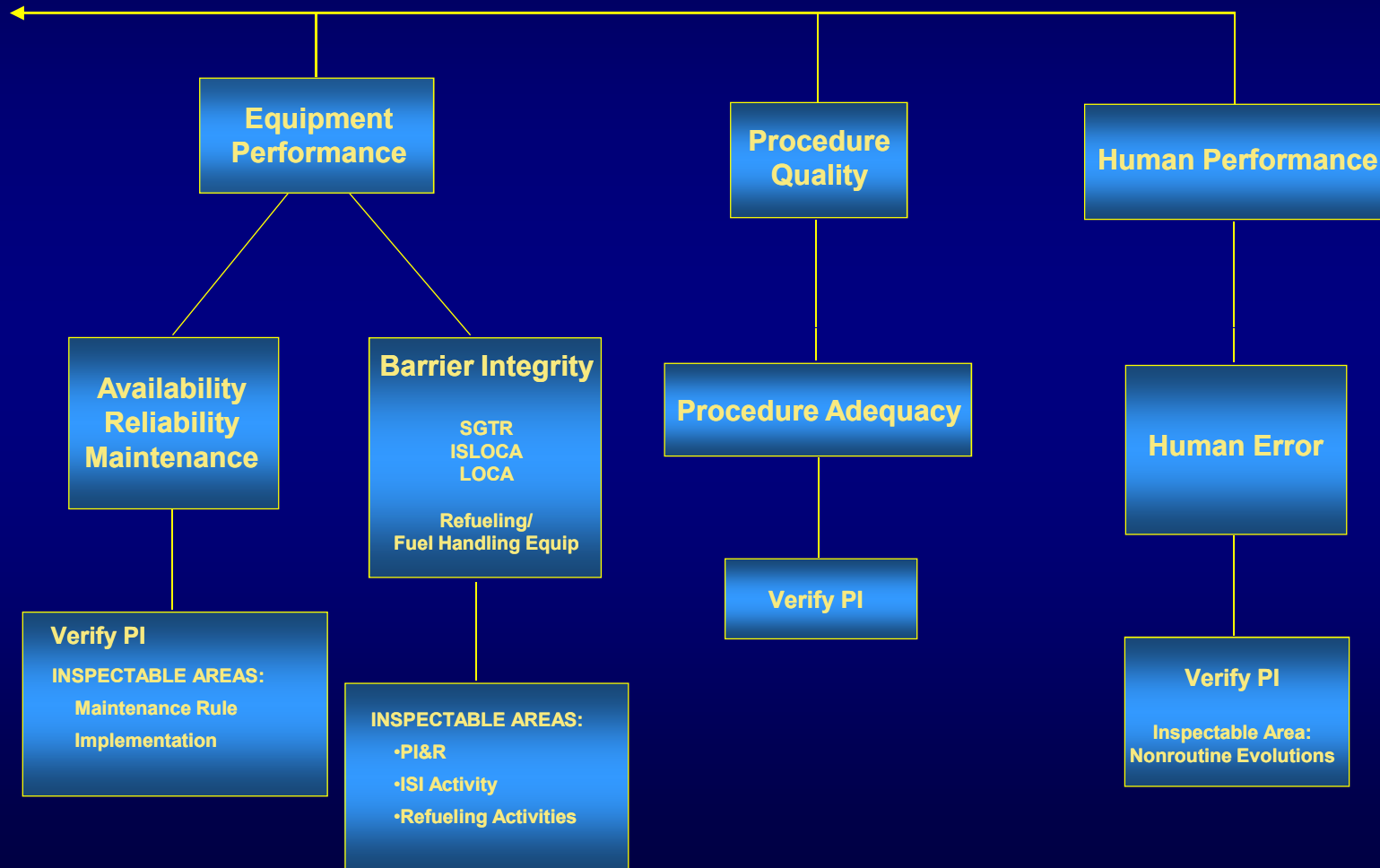
Cornerstone Detail Example

PI = Performance Indicator
 S = Scrams
 T = Transients
 SD = Shutdown Margin

RII = Risk Informed Inspections
 MR = Maintenance Rule
 PI&R = Problem Identification & Resolution
 ISI = Inservice Inspection



Cornerstone Detail Example

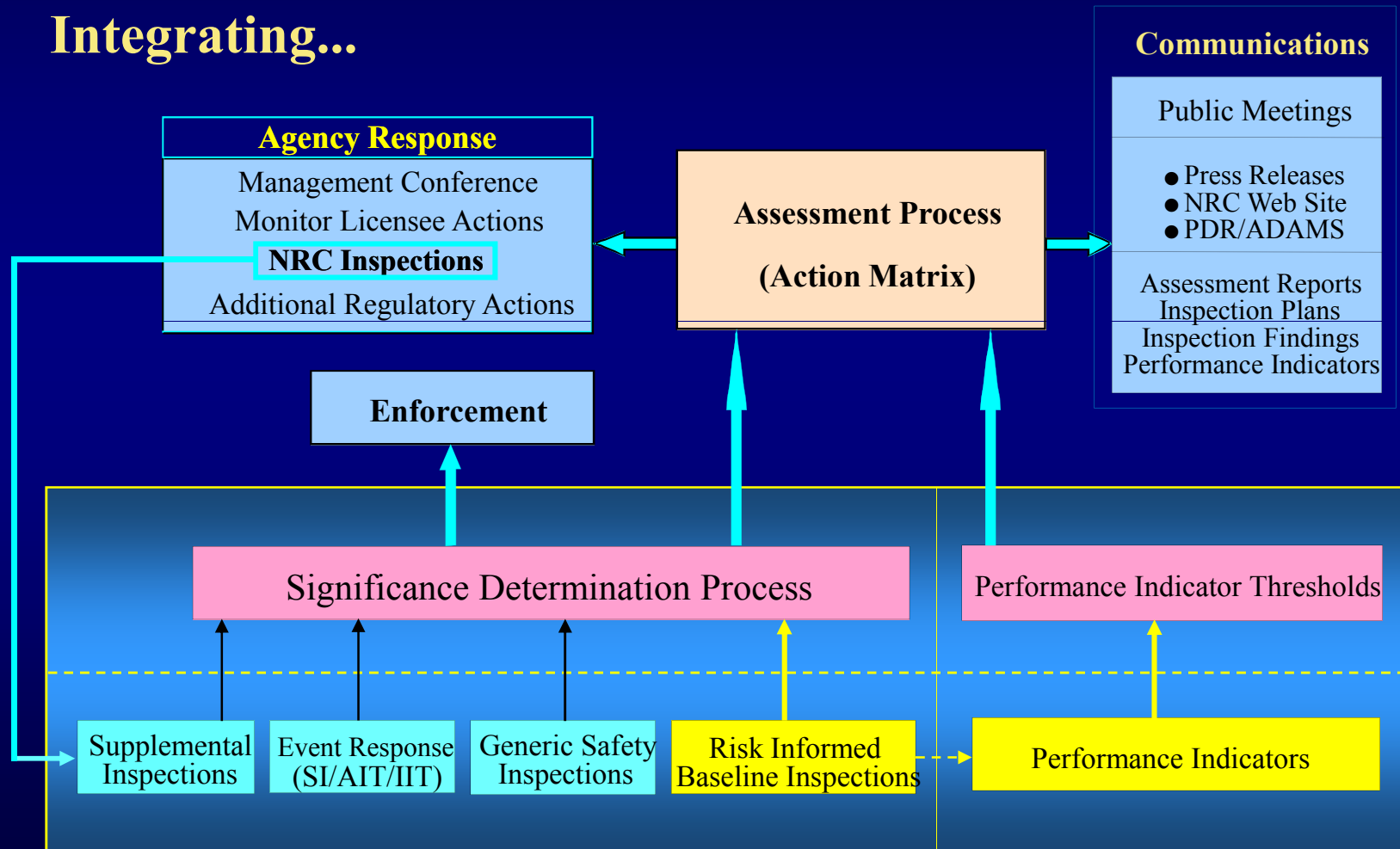


Agency Action Matrix

| | Licensee Response Column | Regulatory Response Column | Degraded Cornerstone Column | Multiple/Repetitive Degraded Cornerstone Column | Unacceptable Performance Column | IMC 0350 Process |
|---------------------------------------|--|---|---|--|---|--|
| / | All Assessment Inputs (Performance Indicators (PIs) and Inspection Findings) Green; Cornerstone Objectives Fully Met | One or Two White Inputs (in different cornerstones) in a Strategic Performance Area; Cornerstone Objectives Fully Met (in the rolling 12 month (4 quarters) Assessment Period). | One Degraded Cornerstone (2 White Inputs or 1 Yellow Input) or any 3 White Inputs in a Strategic Performance Area; Cornerstone Objectives Met with Moderate Degradation in Safety Performance | Repetitive Degraded Cornerstone, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or 1 Red Input; Cornerstone Objectives Met with Longstanding Issues or Significant Reduction in Safety Margin | Overall Unacceptable Performance; Plants Not Permitted to Operate Within this Band, Unacceptable Margin to Safety | Plants in a shutdown condition with performance problems placed under the IMC 0350 process |
| Regulatory Performance Meeting | None | Branch Chief (BC) or Division Director (DD) Meet with Licensee | DD or Regional Administrator (RA) Meet with Licensee | RA (or EDO) Meet with Senior Licensee Management | Commission meeting with Senior Licensee Management | RA (or EDO) Meet with Senior Licensee Management |
| Licensee Action | Licensee Corrective Action | Licensee root cause evaluation and corrective action with NRC Oversight | Licensee cumulative root cause evaluation with NRC Oversight | Licensee Performance Improvement Plan with NRC Oversight | | Licensee Performance Improvement Plan / Restart Plan with NRC Oversight |
| NRC Inspection | Risk-Informed Baseline Inspection Program | Baseline and supplemental inspection procedure 95001 | Baseline and supplemental inspection procedure 95002 | Baseline and supplemental inspection procedure 95003 | | Baseline and supplemental as practicable, plus special inspections per restart checklist. |
| Regulatory Actions ¹ | None | Supplemental inspection only | Supplemental inspection only | -10 CFR 2.204 DFI -10 CFR 50.54(f) Letter -Confirmatory Action Letter / Order | Order to Modify, Suspend, or Revoke Licensed Activities | CAL/Order requiring NRC approval for restart. |
| Assessment Letters | BC or DD review/sign assessment report (with inspection plan) | DD review/sign assessment report (with inspection plan) | RA review/sign assessment report (with inspection plan) | RA review/sign assessment report (with inspection plan) | | N/A. RA (or 0350 Panel Chairman) review/ sign 0350-related documents. |
| Annual Public Meeting | SRI or BC Meet with Licensee | BC or DD Meet with Licensee | RA (or designee) Discuss Performance with Licensee | RA or EDO Discuss Performance with Senior Licensee Management | | N/A. 0350 Panel Chairman conduct public status meetings periodically |
| Commission Involvement | None | None | None | Plant discussed at AARM (Agency Action Review Meeting) | Commission Meeting with Senior Licensee Management | Commission meetings as requested, restart approval in some cases. |
| INCREASING SAFETY SIGNIFICANCE | | | | | | |

ROP Summary

Integrating...





THE END