



NRC REACTOR OVERSIGHT PROGRAM OVERVIEW

NEW REGULATORY REACTOR OVERSIGHT PROCESS

- Overview of the Process
 - Cornerstones of Safety
 - Performance Indicators
 - Inspection
 - Enforcement
- Use of Risk Insights to Determine Baseline Inspection
- Use of Risk Models to Help Determine Appropriate Level of Regulatory Involvement

REASONS FOR CHANGE

- Reinventing Government
- Mature Industry
- Congressional Pressures

FOUR KEY NRC OUTCOME MEASURES

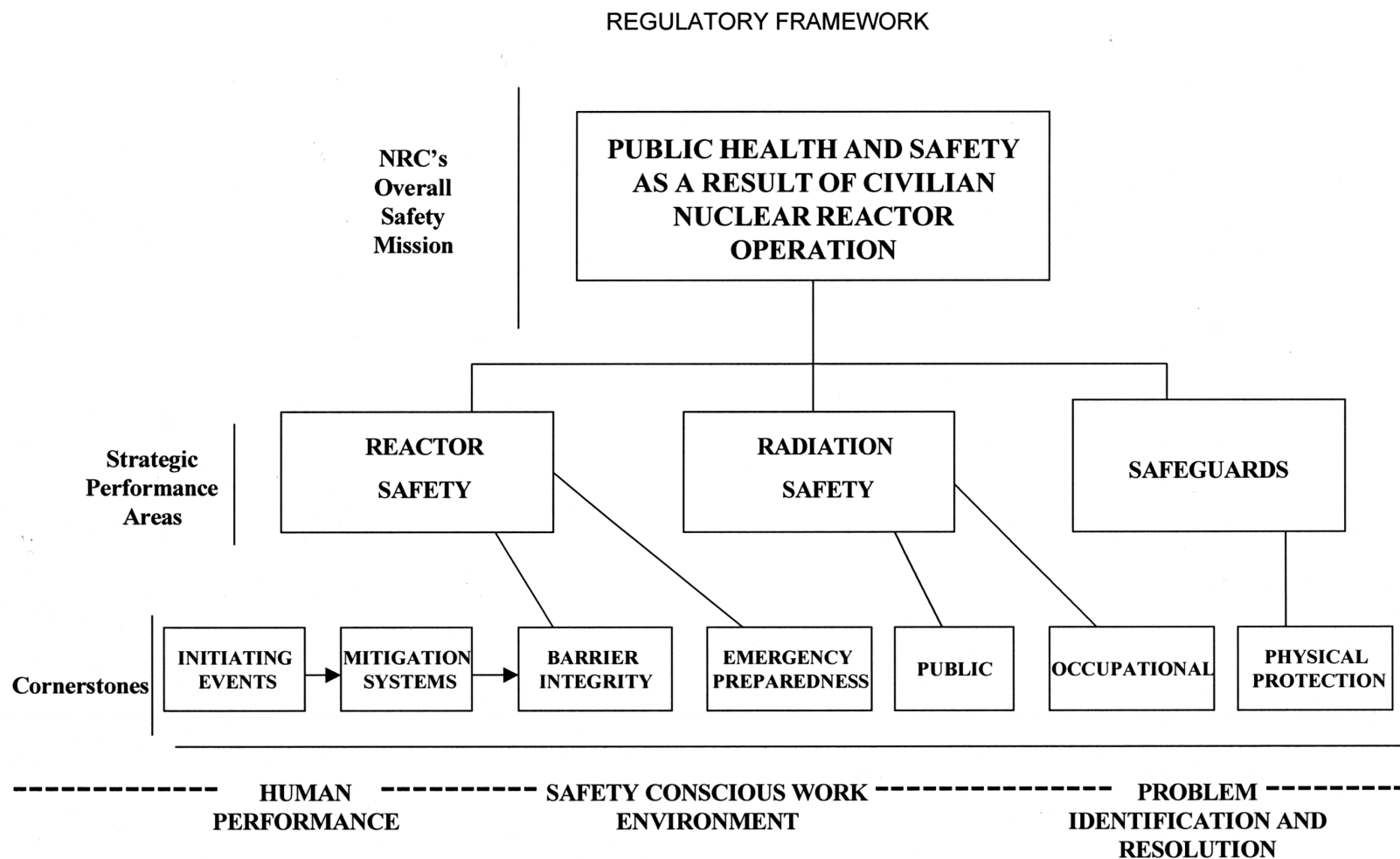
- *Maintain Safety* by establishing regulatory oversight framework that ensures continued safe operation.
- *Enhance public confidence.*
- *Improve effectiveness, efficiency, and realism* of oversight process by focusing resources on most risk significant issues.
- *Reduce unnecessary regulatory burden.*

FEATURES OF OVERSIGHT PROGRAM

- Focuses Inspections on Activities Where Potential Risks Are Greater.
- Applies Greater Regulatory Attention to Facilities with Performance Problems While Maintaining a Base Level of Regulatory Attention on Plants That Perform Well.
- Makes Greater Use of Objective Measures of Plant Performance.
- Gives the Industry and Public Timely and Understandable Assessments of Plant Performance.
- Avoids Unnecessary Regulatory Burden.
- Responds to Violations in a Predictable and Consistent Manner That Reflects the Safety Impact of the Violations.

ROP Characteristics

- Objective: Subjective decisions and judgment were not central process features
- Predictable: Stakeholders know regulatory response to issues and indicators
- Scrutable: Be able to understand NRC actions in response to licensee performance
- Risk-informed: NRC and licensee resources are focused on those aspects of performance having the greatest impact on safe plant operation using risk.



REACTOR SAFETY CORNERSTONES

- Initiating Events – Focus on Minimizing The Occurrences of Events That Could Lead to an Accident.
- Mitigating Systems – Focus on Assuring The Ability of Safety Systems to Respond And Lessen The Severity of an Accident.
- Barrier Integrity – Focus on Maintaining Barriers to The Release of Radioactivity in an Accident.
- Emergency Preparedness – Focus on Plans by Utility And Government to Shelter or Evacuate People in The Event of an Accident.

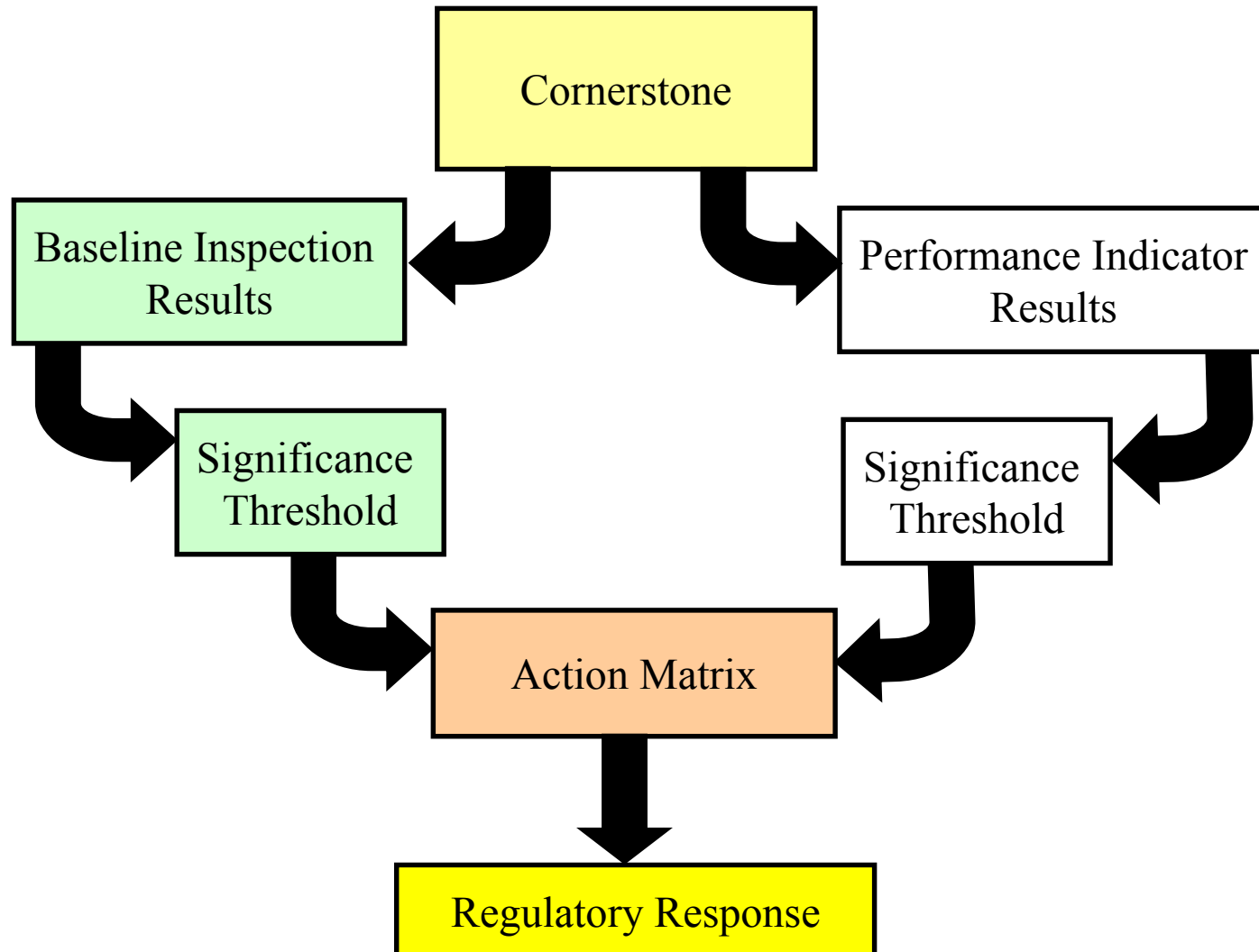
RADIATION SAFETY AND SAFEGUARDS CORNERSTONES

- Public Protection – Focus on Public Protection from Radioactive Exposures due to Routine Reactor Operations
- Occupational Worker Protection – Focus on Protection of Worker Health from Radioactive Exposures due to Routine Reactor Operations
- Physical Protection – Focus on Protection against Radiological Sabotage

USE OF RISK INFORMATION

- Oversight process based on a dual system-performance indicators (PIs) using objective data, and focused inspection that complements the PIs
- Risk information is used to identify PIs, and to establish thresholds for regulatory action commensurate with safety significance
- Risk information is used to focus the inspection program on those issues important to safety
- A significance determination process (SDP) has been developed to assess the safety significance of inspection findings to determine the appropriate regulatory response

REVISED REACTOR OVERSIGHT PROCESS



PERFORMANCE INDICATORS

- Performance Indicators Use Objective Data to Monitor Performance in Each of the Cornerstone Areas

INITIATING EVENTS PERFORMANCE INDICATORS

- Unplanned Scrams/Trips
- Scrams/Trips With Loss of Normal Heat Removal
- Unplanned Changes in Power

MITIGATING SYSTEMS PERFORMANCE INDICATORS

- Safety System Unavailability
- Safety System Failures

BARRIER PERFORMANCE INDICATORS

- Fuel Cladding as Measured by
RCS Activity
- RCS Leak Rate

EMERGENCY PREPAREDNESS PERFORMANCE INDICATORS

- Emergency Response Organization (ERO) Drill Performance
- Readiness of ERO
- Availability of Notification System

RADIATION SAFETY PERFORMANCE INDICATORS

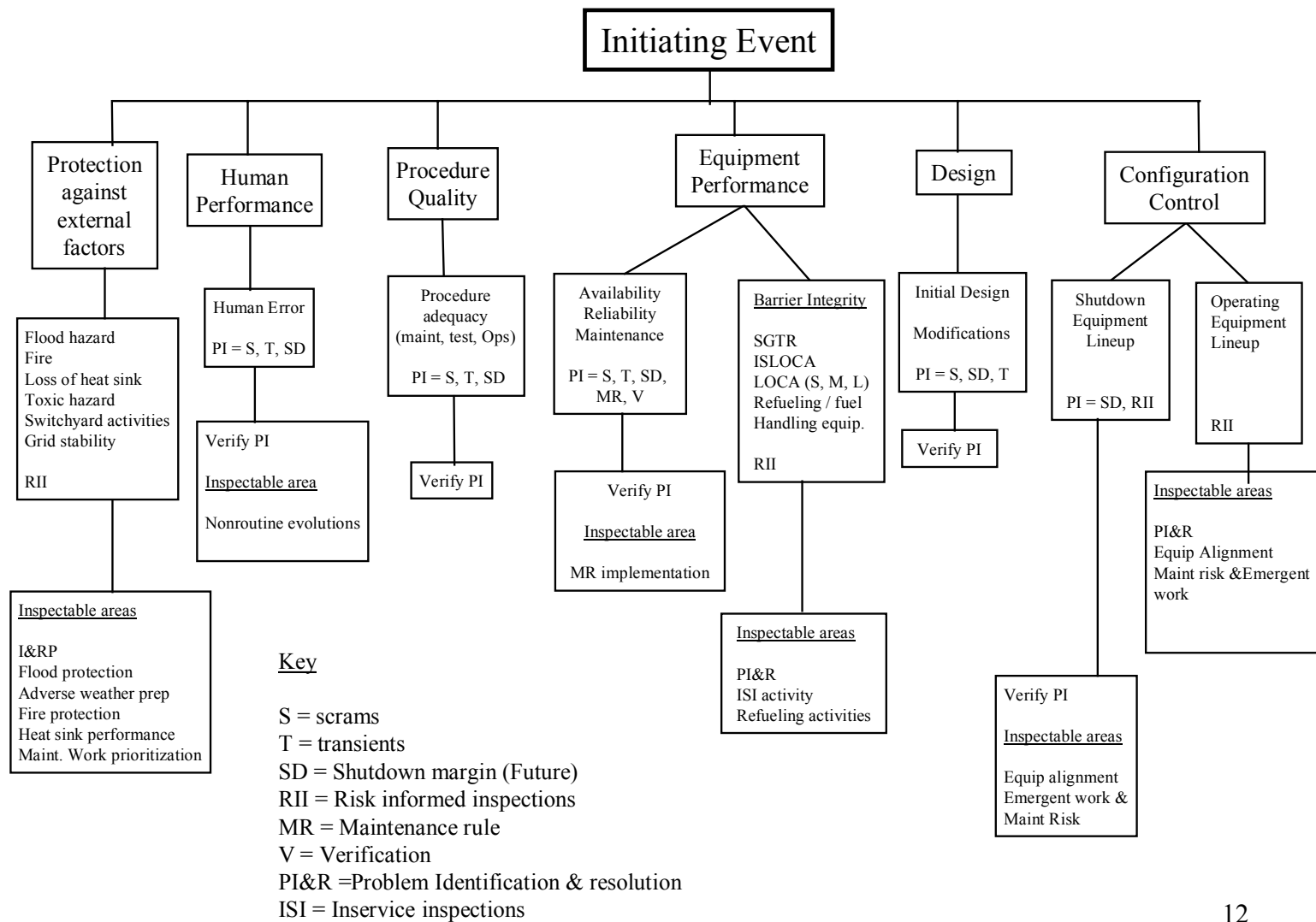
- Compliance With Access Control Requirements
- Uncontrolled Radiation Exposures
- Effluent Releases Requiring Reports to NRC

PHYSICAL PROTECTION PERFORMANCE INDICATORS

- Security System Availability Index
- Personnel Screening
- Fitness-For-Duty Program Effectiveness

BASELINE INSPECTION PROGRAM

- Minimum Level of Inspection Conducted at All Plants Regardless of Performance.
- Three Basic Parts:
 - Inspection in Areas Which Performance Indicators Are Not Identified or Do Not Fully Cover a Cornerstone.
 - Performance Indicator Verification.
 - Licensee Problem Identification and Resolution Program.



OTHER INSPECTIONS

- Supplemental Inspections as Required for Declining Performance
- Event Response When Determined to Be Necessary.
- Inspections When Needed for Resolution of Generic Issues.

SIGNIFICANCE DETERMINATION PROCESS (SDP)

- The SDP Is Used to Assign Risk Values (Colors) to Inspection Findings.
- The SDP Provides a Methodology for Assessing Inspection Findings and PIs on an Equivalent Basis.
- SDPs Have Been Created for all Cornerstones
- SDPs for Reactor Safety for Full Power and for Shutdown, Containment Integrity (LERF), and Fire Protection are based on PSA models.

SIGNIFICANCE DETERMINATION PROCESS (SDP)

- To Characterize the Significance of an Inspection Issue Consistent with the NRC Regulatory Response Thresholds Used for Performance Indicators (PIs).
- To Provide a Framework for Discussing and Communicating the Potential Significance of Inspection Findings.
- To Provide a Basis for Assessment of Licensee Performance and Enforcement Actions Associated with an Inspection Finding.

SDP DEFINITIONS

- Observation - A Fact; Any Detail Noted During an Inspection.
- Finding – An Issue of Concern that is Related to a Licensee Performance Deficiency. A Finding May or May Not Be Related to a Violation.
- Apparent Risk Significant Finding - Observation Resulting from Deficient Licensee Performance That Has Been Processed Through the SDP and Whose Significance Determination Is Greater than **Green**.

LEVEL OF SIGNIFICANCE ASSOCIATED WITH PERFORMANCE INDICATORS AND INSPECTION FINDINGS

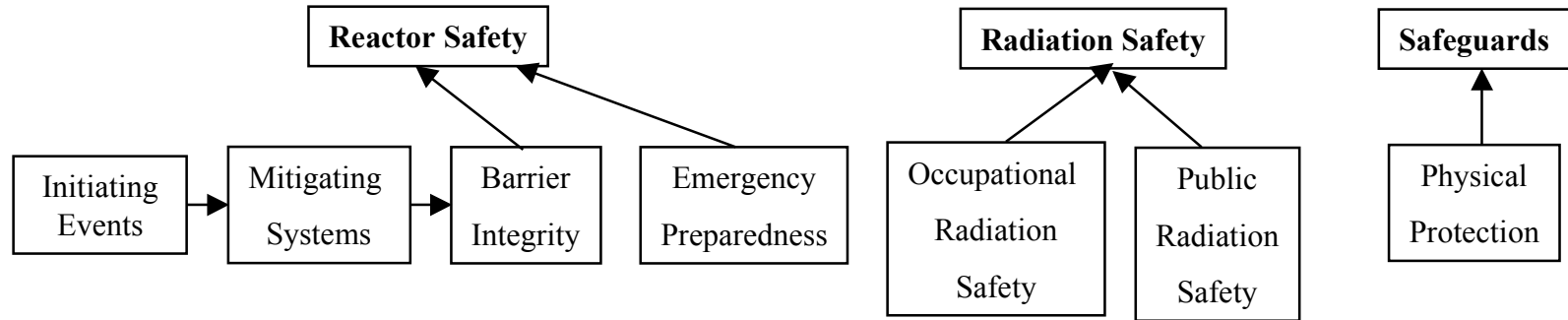
- Green - very low risk significance – baseline inspection
- White - low to moderate risk significance – supplemental inspection (95001)
- Yellow - substantive risk significance – supplemental inspection (95002)
- Red - high risk significance – supplemental inspection (95003)

$\Delta\text{CDF} < 1\text{E-}6$ Green
$1\text{E-}6 < \Delta\text{CDF} < 1\text{E-}5$ White
$1\text{E-}5 < \Delta\text{CDF} < 1\text{E-}4$ Yellow
$\Delta\text{CDF} > 1\text{E-}4$ Red

GREEN FINDINGS

- A Green Finding Does Not Mean That the Performance Issue Associated with the Finding Is Good, Has No Risk, or Is Even Acceptable.
- It May Represent Non-Conformance or a Violation.
- However, the Safety Significance of the Finding Is Low and Does Not Generally Warrant Further NRC Attention.
- A **Green** Finding Is Considered to Be Within the “Licensee Response Band.”
- Licensees Are Still Required to Return to Compliance with the Regulation and Their License Commitments. ²⁶

Web Page - Plant Performance Summary



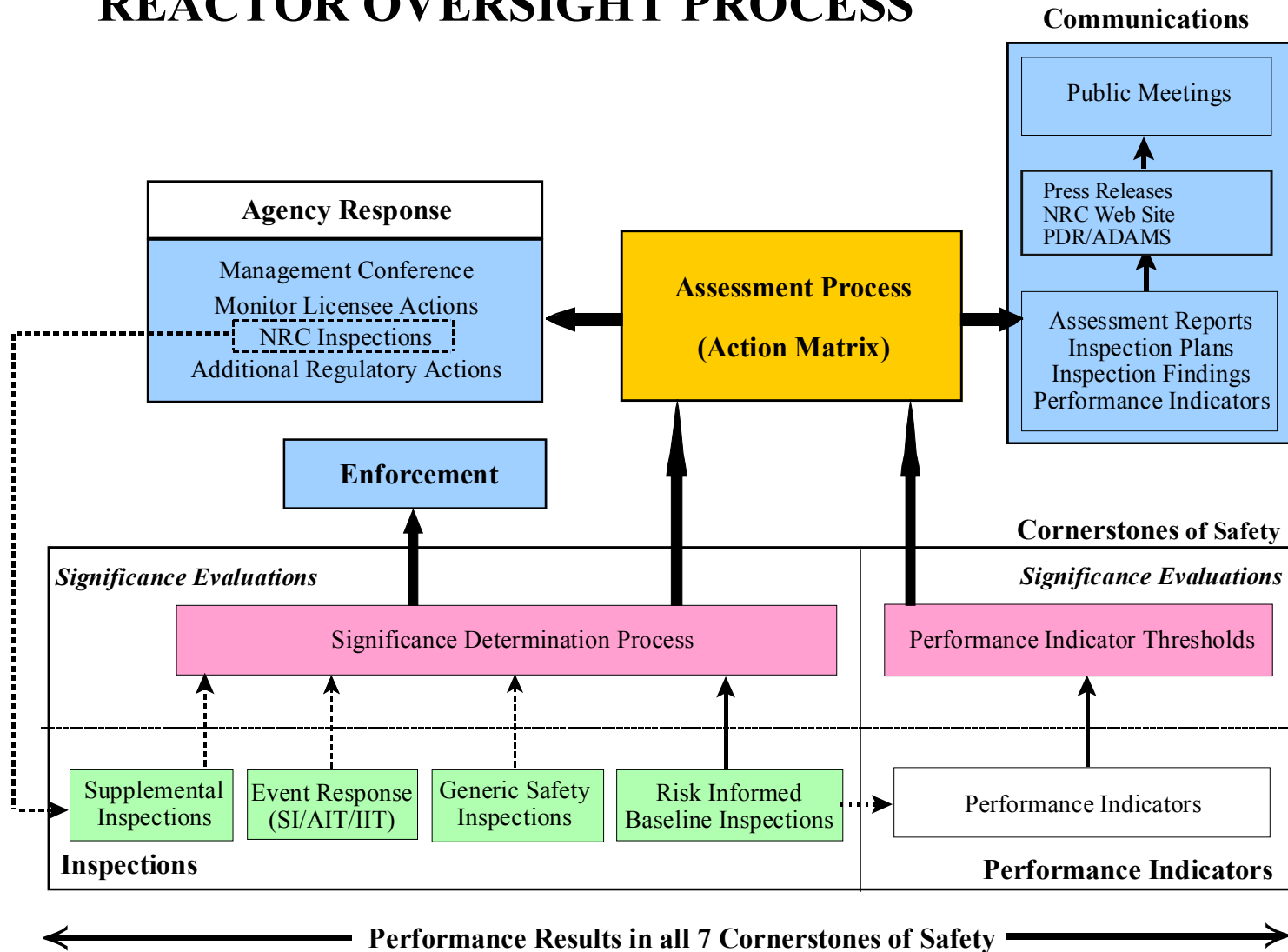
Performance Indicators Based on data through November 30, 1999

Unplanned Scrams	Emergency AC Power System Unavailability	Reactor Coolant System Specific Activity	Drill/Exercise Performance	Occupational Exposure Control Effectiveness	RETS/ODCM Radiological Effluents	Protected Area Equipment
Scrams with Loss of Normal Heat Removal	High Pressure Injection System Unavailability	Reactor Coolant System Leakage	ERO Drill Participation			Personnel Screening Program
Unplanned Power Change	Heat Removal System Unavailability		Alert and Notification System			FFD/Personnel Reliability Program
	Residual Heat Removal System Unavailability					
	Safety System Functional Failure					
<i>Initiating Events</i>	<i>Mitigating Systems</i>	<i>Barrier Integrity</i>	<i>Emergency Preparedness</i>	<i>Occupational Radiation Safety</i>	<i>Public Radiation Safety</i>	<i>Physical Protection</i>

Most Significant Inspection Findings

3Q/1999	No findings this quarter	Green	No findings this quarter	No findings this quarter	Green	No findings this quarter	No findings this quarter
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REACTOR OVERSIGHT PROCESS

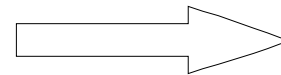
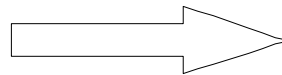
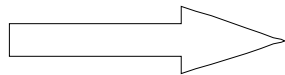


ASSESSMENT

- Performance Indicators and Inspection Findings Are Combined for an Overall Assessment of Plant Performance.
- Action Matrix Is Used to Assess Performance and Determine Regulatory Actions.

ACTION MATRIX CONCEPT

Licensee Response	Regulatory Response	Degraded Cornerstone	Multiple/Rep. Degraded Cornerstone	Unacceptable Performance
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Increasing Safety Significance

Increasing NRC Inspection Efforts

Increasing NRC/Licensee Management Involvement

Increasing Regulatory Actions

Action Matrix

		Licensee Response Column	Regulatory Response Column	Degraded Cornerstone Column	Multiple Repetitive Degraded Cornerstone Column	Unacceptable Performance Column
Results		All assessment inputs (performance Indicators (PI) 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	One degraded cornerstone (2 White inputs or 1 Yellow input) or any 3 White inputs in a strategic performance area; cornerstone objectives met with minimal reduction in safety margin	Repetitive degraded cornerstone, multiple degraded cornerstones, multiple Yellow inputs, or 1 Red input ¹ ; 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
Response	Regulatory Conference	Routine Senior Resident Inspector (SRI) interaction	Branch Chief (BC) or Division Director (DD) meet with Licensee	DD or Regional Administrator (RA) meet with Licensee	EDO (or Commission) meet with Senior Licensee Management	Commission meeting with Senior Licensee Management
	Licensee Action	Licensee Corrective Action	Licensee corrective action with NRC oversight	Licensee self assessment with NRC oversight	Licensee performance improvement plan with NRC oversight	
	NRC Inspection	Risk-informed baseline inspection program	Baseline and supplemental inspection 95001	Baseline and supplemental inspection 95002	Baseline and supplemental inspection 95003	
	Regulatory Actions	None	Document response to degrading area in assessment letter	Document response to degrading condition in assessment letter	10 CFR 2.204 DFI 10 CFR 50.54(f) letter CAL/Order	Order to modify, suspend, or revoke licensed activities
Communications	Assessment Report	BC or DD review / sign assessment report (w/ inspection plan)	DD review / sign assessment report (w/ inspection plan)	RA review / sign assessment report (w/ inspection plan)	RA review / sign assessment report (w/ inspection plan) Commission informed	
	Public Assessment Meeting	SRI or BC meet with Licensee	BC or DD meet with Licensee	RA discuss performance with Licensee	EDO (or Commission) discuss performance with Senior Licensee Management	Commission meeting with Senior Licensee Management
Increasing Safety Significance 						

¹ It is expected in a few limited situations that an inspection finding of this significance will be identified that is not indicative of overall licensee performance. The staff will consider treating these inspection findings as exceptions for the purpose of determining appropriate actions.

ENFORCEMENT OVERVIEW

Violations are Divided into Two Groups:

- 1 Violations That Can Be Assessed by the Significance Determination Processes (SDP).
- 2 Violations Subject to Traditional Enforcement Process.

SDP ASSESSED VIOLATIONS

- SDP Will Characterize Risk Associated with Violation.
- Low Risk Significant Violations Will Be Non-Cited and Entered into Corrective Action Program.
- Higher Risk Significant Violations Will Be Subject to Requirements of Action Matrix.



TRADITIONAL ENFORCEMENT ACTIONS

- Willfulness Including Discrimination.
- Actions That May Impact NRC's Ability for Oversight of Licensee's Activities.
- Actual Consequences Such as an Overexposure to Public or Plant Personnel or a Substantial Release of Radioactive Material.