



Prairie Island Annual Assessment Meeting

CY2008 Reactor Oversight Program



Welch, MN
May 13, 2009

Purpose of Today's Meeting



- A public forum for discussion of the licensee's performance
- NRC will discuss the licensee performance issues identified in the annual assessment letter
- Licensee will be given the opportunity to respond to the information in the letter and inform the NRC of new or existing programs to maintain or improve their performance

Agenda



- Introduction
- About the NRC
- Review of the Reactor Oversight Process
- National Summary of Plant Performance
- Discussion of Prairie Island Plant Performance
- Licensee Response and Remarks
- NRC Closing Remarks
- Break
- NRC available to address public questions

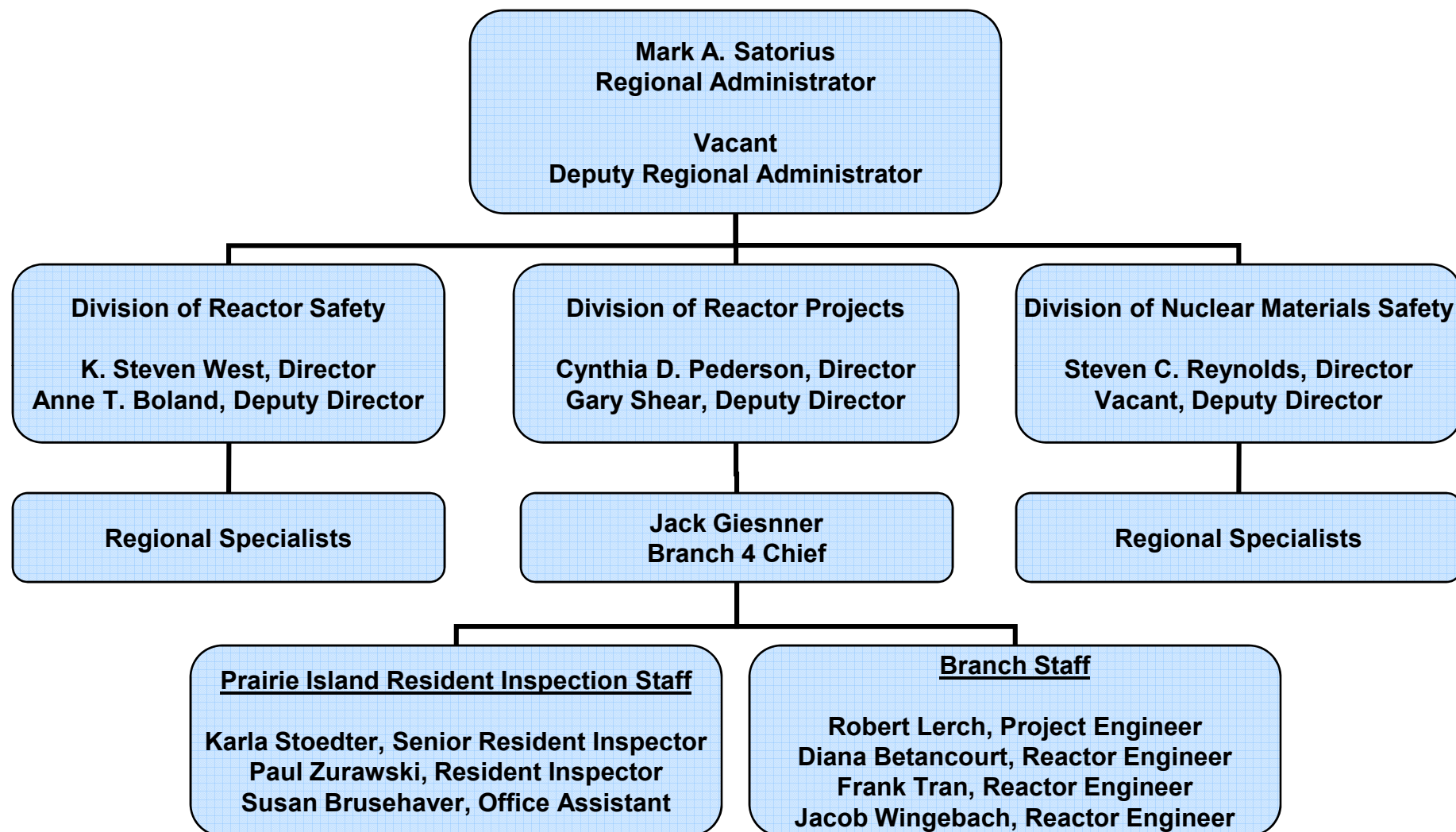
Who We Are



- The Atomic Energy Commission was established by Congress in 1946 to encourage the use of nuclear power and regulate its safety
- In 1974 Congress divided the AEC into two parts
 - U.S. Nuclear Regulatory Commission
 - Department of Energy
- The NRC is headed by a Chairman and four Commissioners, all appointed by the President and confirmed by the Senate for staggered five-year terms.

				Vacant
Commissioner Kristine L. Svinicki	Commissioner Gregory B. Jaczko	Chairman Dale E. Klein	Commissioner Peter B. Lyons	

Region III Organization



NRC Representatives

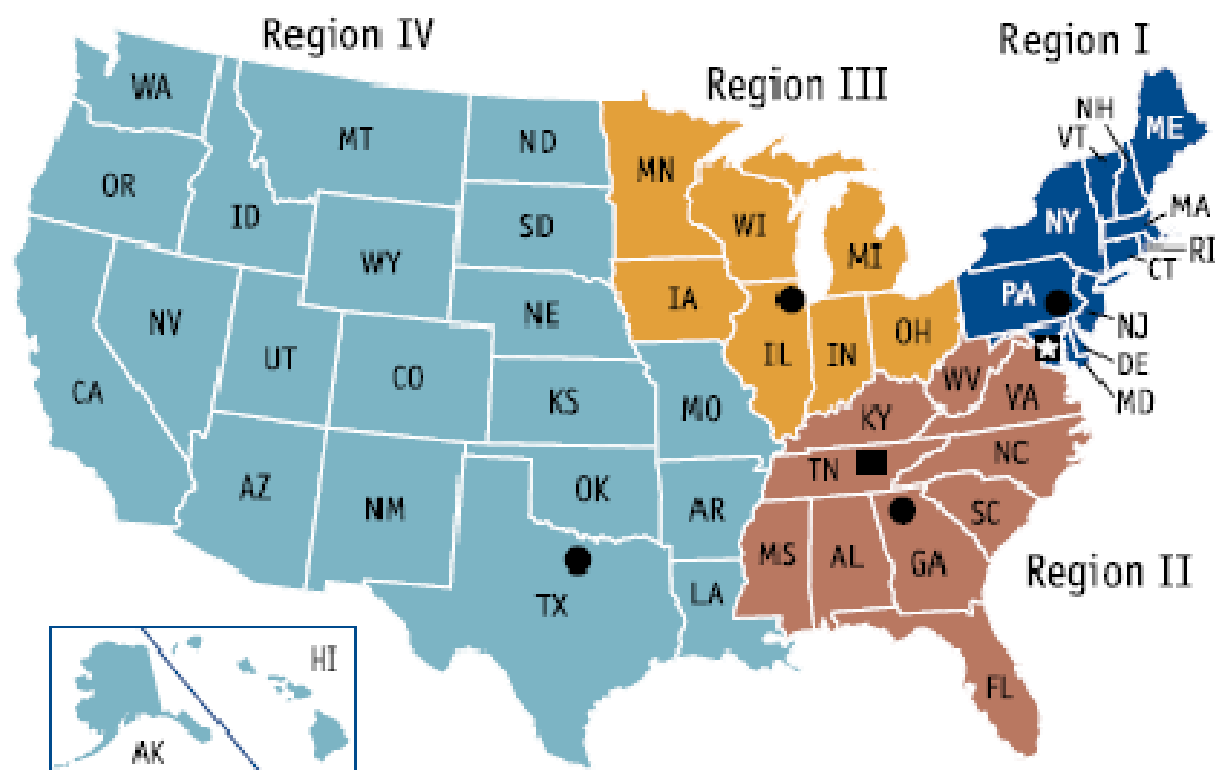


- Cynthia Pederson, DRP Division Director
 - (630)-829-9600
- Jack Giessner, Branch Chief
 - (630) 829-9619
- Karla Stoedter, Senior Resident Inspector
 - (651) 388-8209
- Paul Zurawski, Resident Inspector
 - (651) 388-8209
- Thomas Wengert, Project Manager, NRR
 - (301) 415-4037

Who We Are



- The NRC employs approximately 3,500 people
- NRC inspectors are assigned full-time to each nuclear power plant and fuel cycle facility



Who We Are



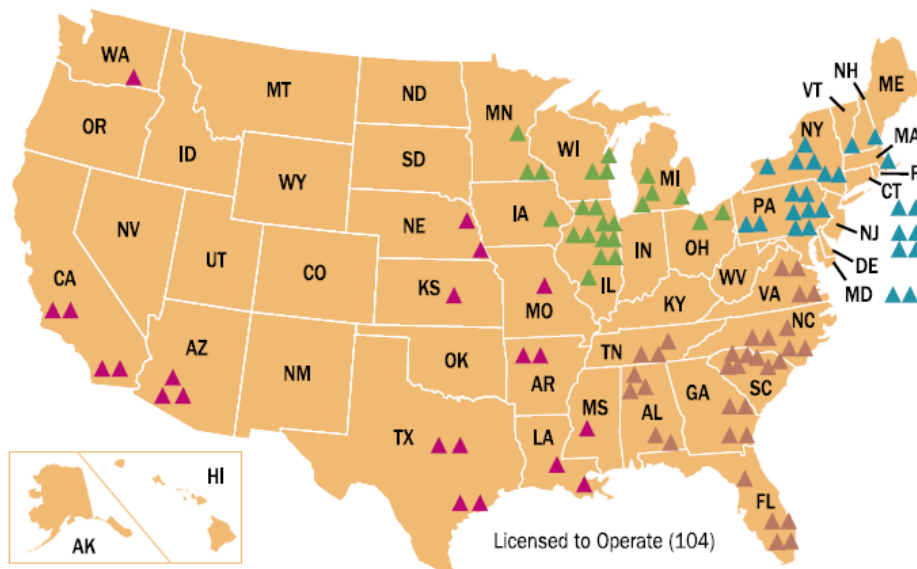
The NRC Mission:

To license and regulate the nation's civilian use of byproduct, source and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.

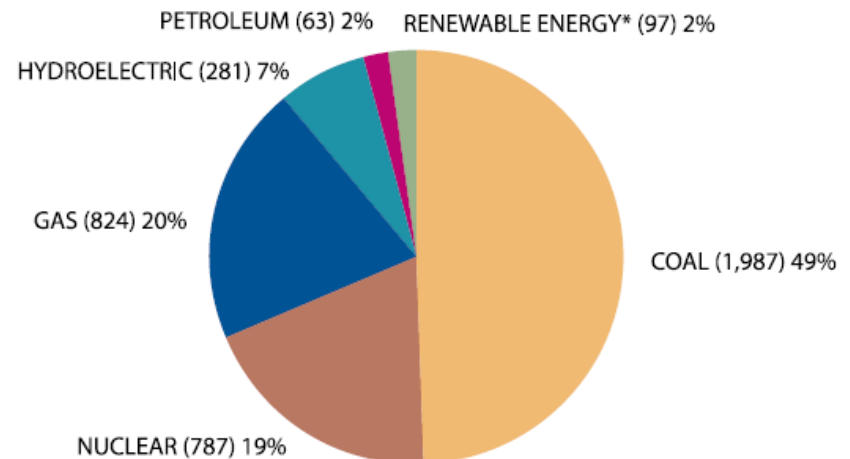


Nuclear Power Facts

- 104 nuclear plants at 65 sites produce approximately 20% of U.S. electricity
- Nuclear electrical generation in 2007 totaled 806 billion kilowatt-hours
- World-wide, there are 437 nuclear plants in 30 countries (as of 2007)

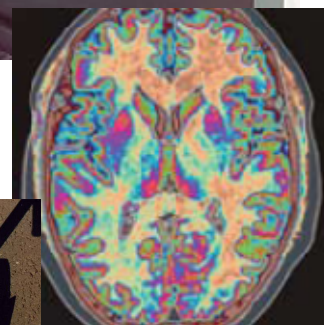


TOTAL GENERATION: 4,053 billion kilowatthours



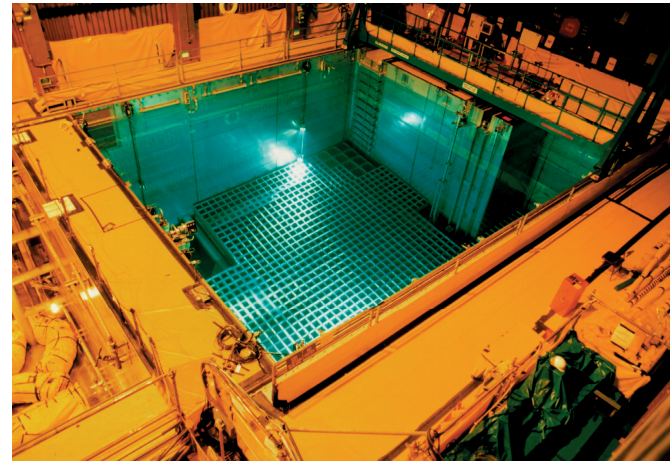
Nuclear Materials Facts

- Nuclear materials are used in medicine for cancer treatment and diagnosis
- Nuclear materials are widely used in industry, such as in density gauges, flow measurement devices, radiography devices and irradiators
- Approximately 22,000 licenses are currently issued for academic, industrial, medical, and other uses of nuclear material



Nuclear Waste Facts

- Nuclear fuel spends 4-6 years in the reactor until it cannot be used anymore
- Fuel is removed from the reactor and placed in large water pools that ensure adequate cooling and shielding
- After time in the pool fuel can be moved to gas-filled steel and concrete casks that continue to ensure adequate cooling and shielding
- If a license application is submitted, NRC would review the application and regulate a geologic repository



NRC Primary Functions



- Establish Rules and Regulations
- Evaluate license applications and issue licenses if appropriate
- Provide oversight through *inspection* of facilities, *enforcement* of regulatory violations, and *evaluation* of industry operational experience
- Conduct research to provide technical support for regulatory decisions
- Respond to events and emergencies at licensed facilities



NRC Regulatory Functions



What We Regulate

- Nuclear Reactors
 - Commercial power, research, test, and new reactor designs
- Nuclear Material
 - Reactor fuel, radioactive material for medical, industrial, and academic uses
- Nuclear Waste
 - Transportation, storage, disposal, and facility decommissioning
- Nuclear Security
 - Facility physical security

What We **DON'T** Regulate

- Nuclear Weapons
- Military Reactors
- Space Vehicle Reactors
- Naturally Occurring Radon or X-rays

*These are regulated
by other federal agencies*

How NRC Regulates



- Oversight and Inspection
 - Full-time Resident Inspectors at each nuclear plant and fuel facility
 - Regional Inspection Specialists
- Assessment
 - Inspection results are assessed to provide a comprehensive picture of facility performance
 - NRC adjusts inspection effort
- Enforcement
 - NRC Issues Findings and Violations
 - Investigation of allegations of wrong-doing
- Emergency Response
 - NRC Inspectors are on-call 24/7 to respond to events at any nuclear plant and fuel facility

NRC Performance Goals



Safety

Ensure adequate protection of public health and safety and the environment

Security

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

Ensuring Nuclear Safety



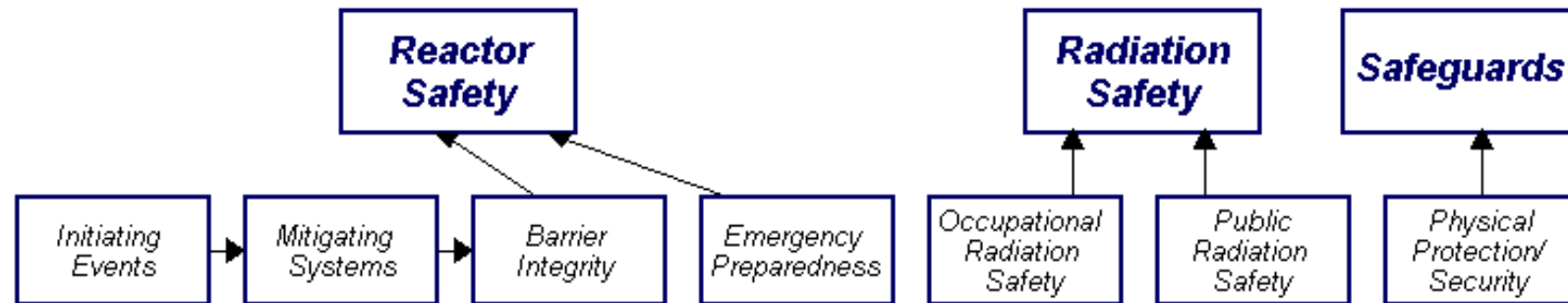
- Defense-in-Depth design philosophy
 - Safety systems must be fully independent and redundant
 - Multiple physical barriers
 - Routine testing of licensee Emergency Plans
- Ensure Compliance with Regulations and License
 - NRC inspectors perform daily on-site inspections
 - Reporting requirements for certain plant issues and safety data
- Maintenance Programs
 - Equipment reliability, unavailability, and failures are tracked and verified
- Continuing Training
 - Nuclear Plant Operators are required to undergo continuing training to retain their Operating License

Ensuring Nuclear Security

- Well-armed and well-trained security forces
- Surveillance and perimeter patrols
- State-of-the-art site access equipment and controls
- Physical barriers and detection zones
- Intrusion detection systems and alarm stations

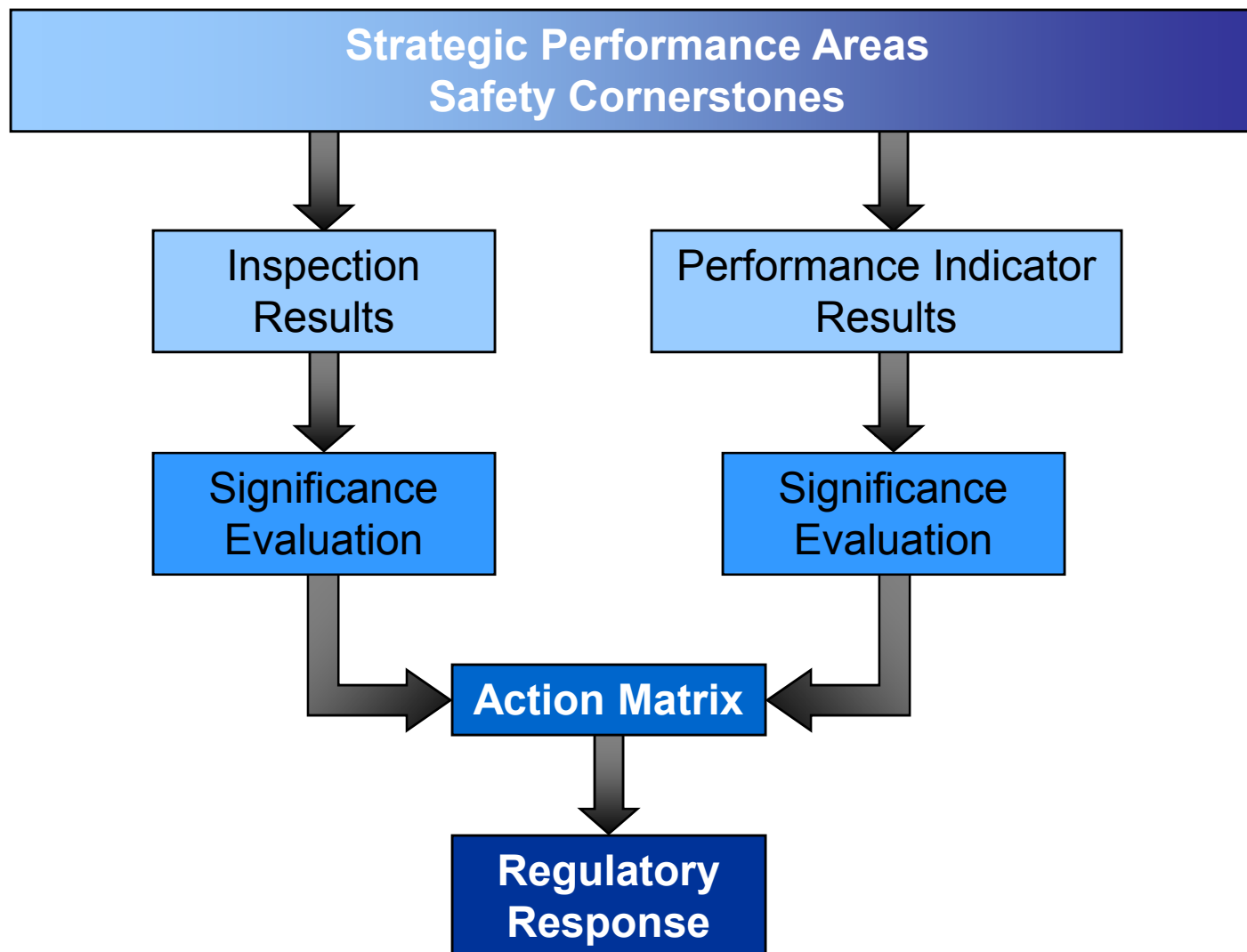


Reactor Oversight Process



- 3 Strategic Performance Areas are divided into 7 Cornerstones of Safety
- Inspection Findings and Performance Indicators are assigned to a Cornerstone
- Inspection Findings can be assigned a cross-cutting aspect (a causal factor for the issue)
 - Human Performance
 - Problem Identification and Resolution
 - Safety Conscious Work Environment
- Numerous findings with a common cross-cutting aspect results in a “Substantive Cross-Cutting Issue”

Reactor Oversight Process



Baseline Inspections



- Routine inspection effort performed, as a minimum, at all reactor sites
- Includes daily unannounced resident inspector activities and periodic regional team inspections
- Over 2,000 person-hours of direct inspection effort annually
- Major focus areas
 - Reactor safety
 - Radiation safety
 - Emergency preparedness
 - Security

Beyond Baseline Inspections



- ***Special Inspections***

- Inspection response to unusual or unexpected plant issues
- Conducted during an ongoing event or soon after
- Focus on the licensee's evaluation and response to ongoing plant issues

- ***Supplemental Inspections***

- Inspection response to White, Yellow, and Red inspection results and performance indicators
- Conducted upon completion of licensee actions to address the issue
- Focus on the licensee's evaluation of the issue and adequacy of corrective actions

Significance Threshold



Inspection Findings and Performance Indicators

Green

Implement Baseline Inspection program

White

Yellow

Red



Increasingly intrusive supplemental inspections to ensure causes are determined and corrected

Significance Definitions

Green:

Very Low safety significance

White:

Low to Moderate safety significance

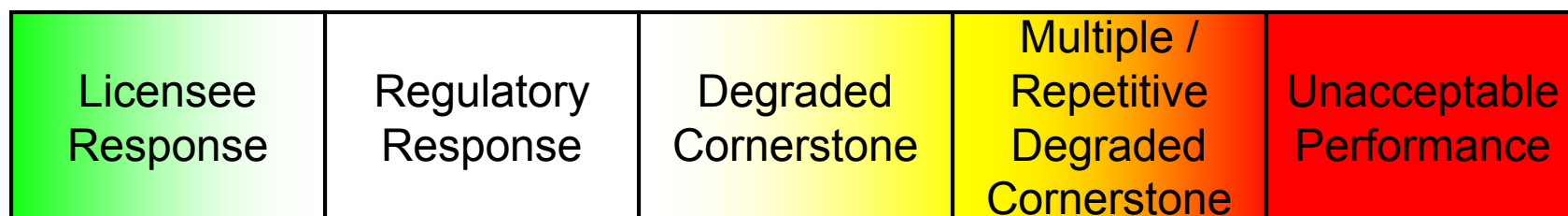
Yellow:

Substantial safety significance

Red:

High safety significance

Action Matrix

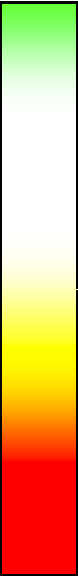


- Increased safety significance of findings and performance indicators results in movement to the right
- Movement to the right results in:
 - NRC supplemental inspections
 - Increased management involvement
 - Increased regulatory actions

National Plant Performance



Action Matrix Status at End of CY 2008

	Licensee Response	86
	Regulatory Response	14
	Degraded Cornerstone	3
	Multiple/Repetitive Degraded Cornerstone	1
	Unacceptable Performance	0
TOTAL (reactors)		104

National Plant Performance



Performance Indicator Results (end of CY 2008)

Green:	1762
White:	6
Yellow:	0
Red:	0

Total Inspection Findings (CY 2008)

Green:	776
White:	17
Yellow:	0
Red:	0

Prairie Island Inspection Activities



January 1 - December 31, 2008

- Over 2,860 person-hours of direct inspection
 - 14 Non-Cited Violations (NCV)
 - 1 White Finding with an associated Violation
 - 1 additional Inspection Finding with no associated violation
- August 4- October 6 : Special Inspection
 - Inspection Report 2008008
 - Conducted in response to the 11 turbine-driven auxiliary feedwater pump (TDAFWP) trip after 40 seconds of operation following a reactor trip on July 31, 2008
 - 1 White Violation
- November 17 - December 05: 50.59 Inspection
 - Inspection Report 2008007
 - 1 Severity Level IV NCV

January 1 - December 31, 2008

- Feb 12- Mar 28: Unit 1 scheduled refueling outage
- July 31: Unit 1 reactor trip due to the yellow train of RTS instrumentation being out of service for testing and the red channel failing meeting the 2 of 4 channel logic which caused the reactor trip
- Aug 3 : Unit 1 declared a Notice of Unusual Event (NOUE) due to a high toxic level condition in the turbine building sump area
- Sep 19 – Oct 31: Unit 2 scheduled refueling outage

Prairie Island Assessment Results



Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Unit 1	Licensee Response	Licensee Response	Licensee Response	Regulatory Response
Unit 2	Licensee Response	Licensee Response	Licensee Response	Licensee Response

- Plant performance for the 4th quarter at Prairie Island Unit 1 was within the Regulatory Response column (Column 2) of the Action Matrix based on one inspection finding in the Mitigating Systems cornerstone being classified as having low to moderate safety significance (White).
- Plant performance for all four quarters of the CY2008 assessment period for Unit 2 was within the Licensee Response Column (Column 1) of the Action Matrix.
- A transportation issue, classified White, was assigned earlier this month and will be included for CY 2009 for both units.

Prairie Island Assessment Results



- Substantive Cross-Cutting Issue:
 - None

- CY 2008 Regulatory Actions:
 - 14 Non-Cited Violations (NCV)
 - 1 White Finding with an associated Violation
 - 1 additional Inspection Finding with a Severity Level IV violation

Prairie Island Assessment Summary



January 1 - December 31, 2008

- Northern States Power Company, Minnesota operated Prairie Island in a manner that preserved public health and safety.
- Prairie Island Unit 1 was within the Regulatory Response column of the NRC's Action Matrix based on one inspection finding in the Mitigating Systems cornerstone being classified as White.
 - Supplemental inspection (95001), in addition to the baseline inspection, will be performed for Unit 1.
- Baseline inspections will be performed at Unit 2.

Contacting the NRC



- For general information or questions:
 - www.nrc.gov
 - Select “About NRC” then “Locations” to contact Region III
- To report a safety concern:
 - (800) 695-7403
 - Allegation@nrc.gov
- To report an emergency:
 - (301) 816-5100 (collect calls accepted)

Reference Sources



- Reactor Oversight Process
 - Select “Nuclear Reactors” then “Operating Reactors” from NRC website menu
- Public Electronic Reading Room
 - Link on the left menu of NRC homepage
- Public Document Room
 - 1-800-397-4209 (Toll Free)
- Region III Public Affairs
 - Viktoria Mitlyng (630) 829-9662
 - Prema Chandrathil (630) 829-9663

Licensee Remarks



Northern States Power Company, Minnesota
Representatives



Prairie Island Annual Assessment Meeting

Closing Comments



Prairie Island Annual Assessment Meeting

CY2008 Reactor Oversight Program

Questions and Comments from members of the public

Information on the NRC and our assessment processes is available at this meeting. We encourage you to take copies of this information home with you.