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

Byron Station Annual Assessment Meeting

Reactor Oversight Program - 2009

Nuclear Regulatory Commission - Region III

Byron, Illinois

June 2, 2010

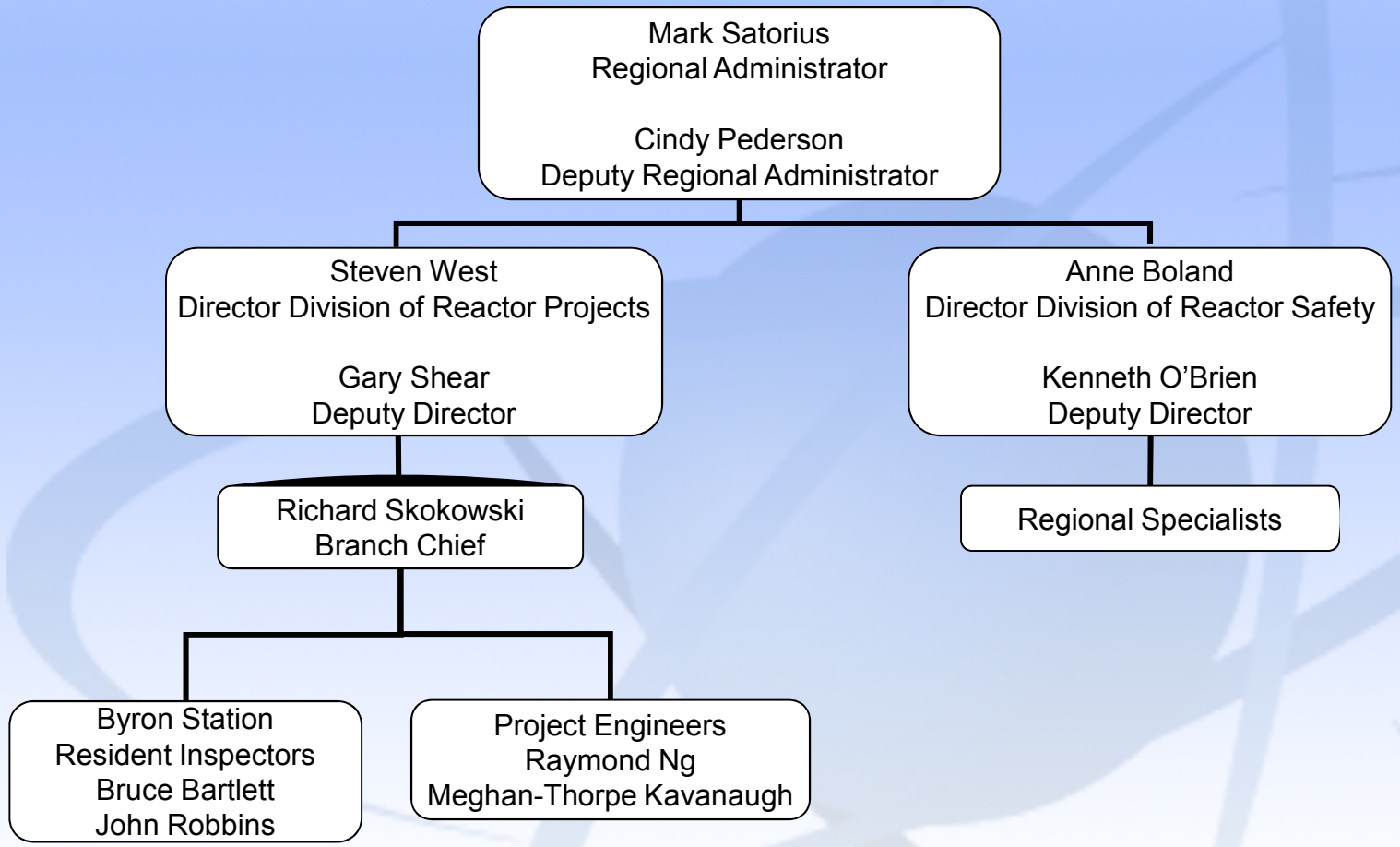
Purpose of Today's Meeting

- A public forum for discussion of the licensee's performance in 2009
- NRC will address the performance issues identified in the annual assessment letter
- Licensee will be given the opportunity to respond and inform the NRC of new or existing programs to maintain or improve performance

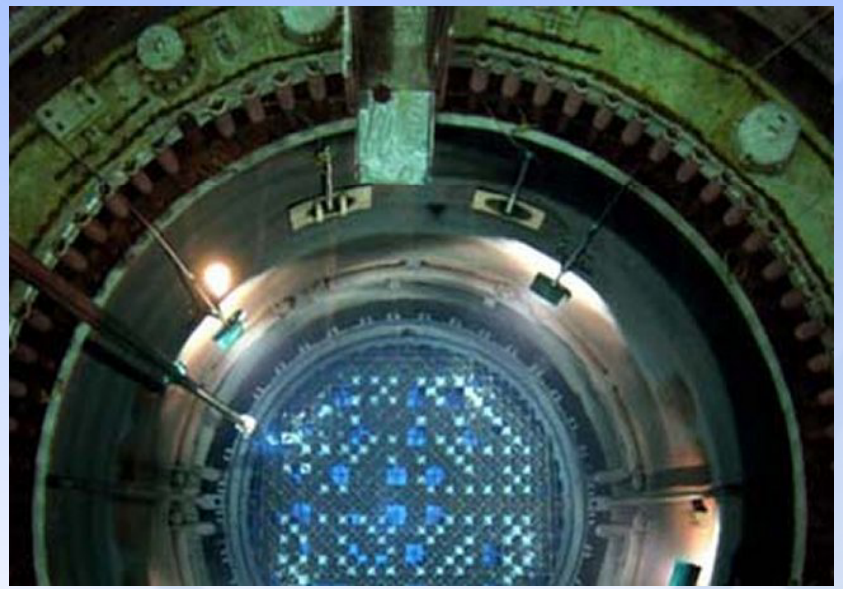
Agenda

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

Region III Organization



Our 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.

Some Nuclear Facts

- **104 nuclear power plants supply about 20 percent of the electricity in the U.S.**
- **Nuclear materials are used in medicine for diagnosis and cancer treatment.**
- **Nuclear materials are widely used in industry, such as in density gauges, flow measurement devices, radiography devices, and irradiators.**

The NRC Regulates

- Nuclear reactors - commercial power reactors, research and test reactors, new reactor designs
- Nuclear materials - nuclear reactor fuel, radioactive materials for medical, industrial, and academic use
- Nuclear waste – transportation, storage and disposal of nuclear material and waste, decommissioning of nuclear facilities
- Nuclear security – physical security of nuclear facilities and materials from sabotage or attacks

What We Don't Do

- **Regulate nuclear weapons, military reactors, or space vehicle reactors**
- **Own or operate nuclear power plants**
- **Regulate some radioactive materials, such as X-rays and naturally occurring radon**

How We Regulate

- Establish rules and regulations
- Issue licenses
- Provide oversight through inspection, enforcement, and evaluation of operational experience
- Conduct research to provide support for regulatory decisions
- Respond to events and emergencies

Assurance of Plant Safety

- Require "defense-in-depth"
- Require long-term maintenance of equipment
- Require continual training of operators
- Verify compliance with regulations

What We Do – Nuclear Waste

- The NRC regulates:
  - Storage of spent reactor fuel in fuel pools or dry storage casks, and
  - Any national spent fuel storage site, such as the proposed Yucca Mountain site.

What We Do – Nuclear Security

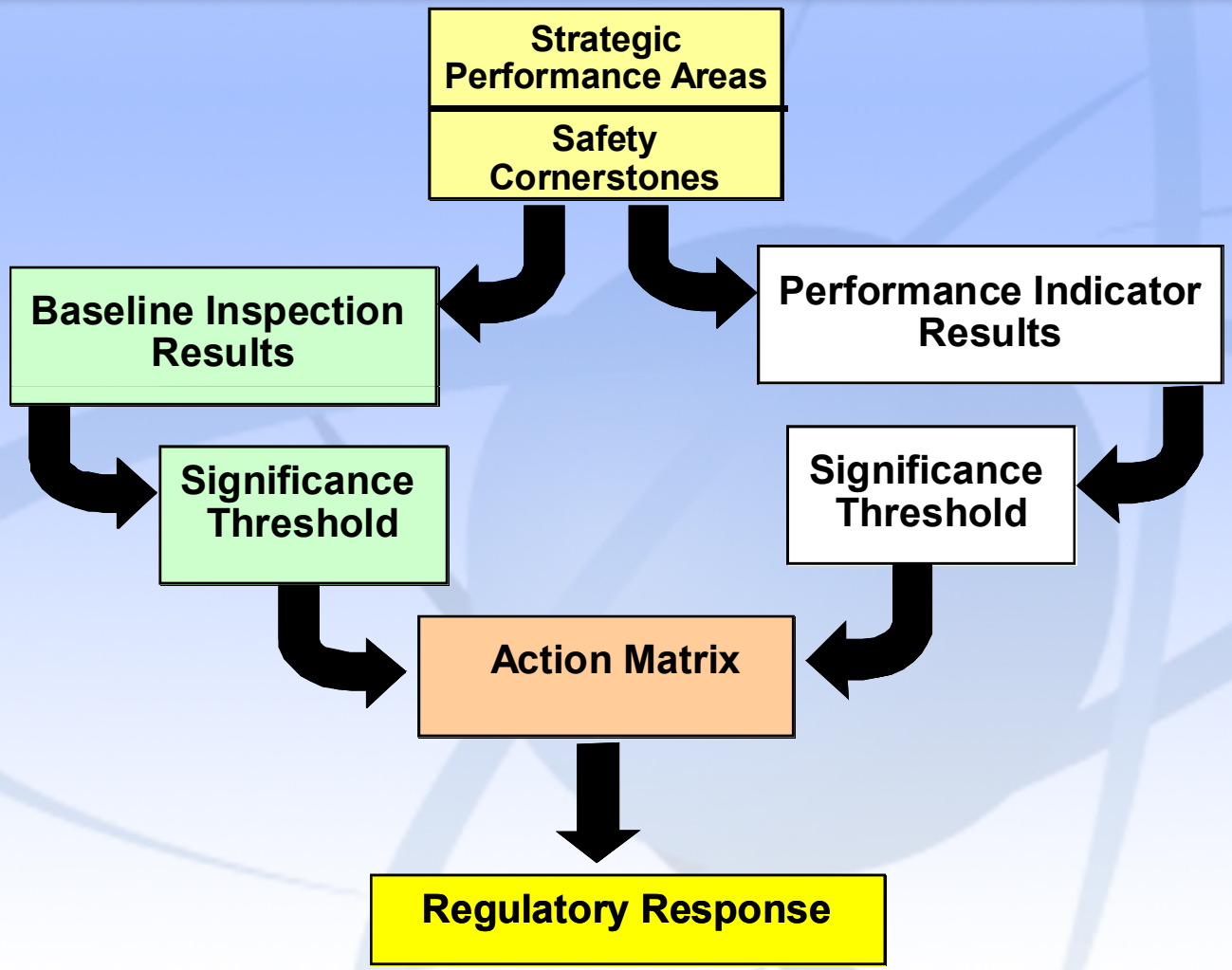
- **NRC Requires:**
  - Well-armed and well-trained security forces,
  - Surveillance and perimeter patrols,
  - State-of-the-art site access equipment and controls,
  - Physical barriers and detection zones, and
  - Intrusion detection systems and alarm stations.

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.**

Reactor Oversight Process



Examples of Baseline Inspections

• Equipment Alignment	~80 hrs/yr
• Triennial Fire Protection	~250 hrs every 3 yrs
• Operator Response	~125 hrs/yr
• Emergency Preparedness	~80 hrs/yr
• Rad Release Controls	~110 hrs every 2 yrs
• Worker Radiation Protection	~95 hrs/yr
• Corrective Action Program	~250 hrs every 2 yrs
• Corrective Action Case Reviews	~60 hrs/yr

Significance Threshold

Performance Indicators

Green: Only Baseline Inspection
White: Increases NRC oversight
Yellow: Increases NRC oversight
Red: Increases NRC oversight

Inspection Findings

Green: Very low safety issue
White: Low to moderate safety issue
Yellow: Substantial safety issue
Red: High safety issue

Action Matrix Concept

Licensee Response	Regulatory Response	Degraded Cornerstone	Multiple/Rep. Degraded Cornerstone	Unacceptable Performance

Increasing Safety Significance

Increasing NRC Inspection Efforts

Increasing NRC/Licensee Management Involvement

Increasing Regulatory Actions

National Summary of Plant Performance

Status as of 12/31/2009

Licensee Response	79
Regulatory Response	24
Degraded Cornerstone	1
Multiple/Repetitive Deg. Cornerstone	0
Unacceptable	0
Total	104

National Summary

- Performance Indicator Results (total for CY 2009)
  - Green 7039
  - White 18
  - Yellow 0
  - Red 0
- Total Inspection Findings (total for CY 2009)
  - Green 879
  - White 7
  - Yellow 0
  - Red 0

Byron Assessment Results

January 1 - December 31, 2009

- Byron Units 1 and 2 were within the Licensee Response column for the last three quarters of 2009.
- Byron Units 1 and 2 were within the Regulatory Response column for the first quarter of 2009 due to a White Finding in the Mitigating Systems Cornerstone identified in the first quarter of 2008.
- The White Finding was related to the Essential Service Water piping degradation.
- The supplemental inspection for the White finding was completed in January of 2009 with no finding.

Safety Significant Findings or PIs

January 1 - December 31, 2009

- All inspection findings were of very low safety significance.
- All performance indicators required no additional NRC oversight.

Byron Inspection Activities

January 1 - December 31, 2009

- The supplemental inspection for the White finding related to the Essential Service Water piping degradation was completed in January 2009 with no finding.
- The White finding was subsequently closed at the end of first quarter 2009.

Byron Inspection Activities

January 1 - December 31, 2009

- 95001 Supplemental Inspection (January 20 to 23)
- Component Design Bases Inspection (February 23 to March 27)
- Biennial EP Exercise Inspection (July 27 to 31)
- Biennial PI&R Inspection (August 10 to September 1)
- Scheduled Unit 1 Refueling Outage (September 13 to October 8)
- ISFSI Inspection (Multiple dates throughout 2009)

Byron Station
Annual Assessment Summary

January 1 - December 31, 2009

- Exelon operated Byron Station Units 1 & 2 in a manner that preserved public health and safety.
- All cornerstone objectives were met.
- The White finding was closed in the first quarter of 2009 after the supplemental inspection was completed.

Byron Station
Annual Assessment Summary

January 1 - December 31, 2009

- **Substantive cross-cutting issue**
  - Decision Making component in Human Performance
  - Initially identified in the 2008 Mid-Cycle assessment
  - Closed in the 2009 Mid-Cycle assessment
- **NRC plans baseline inspections at Byron Station for 2010.**

Licensee Response and Remarks

Daniel Enright
Site Vice President
Exelon Nuclear

Open to the Public

- **The NRC places a high priority on keeping the public and stakeholders informed of its activities.**

- **At www.nrc.gov, you can:**
  - **Find public meeting dates and transcripts;**
  - **Read NRC testimony, speeches, press releases, and policy decisions; and**
  - **Access the agency's Electronic Reading Room to find NRC publications and documents.**

Contacting the NRC

- Report an emergency
  - (301) 816-5100 (call collect)
- Report a safety concern
  - (800) 695-7403
  - Allegation@nrc.gov
- General information or questions
  - www.nrc.gov
  - Select "What We Do" for Public Affairs

NRC Representatives

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- NRC Region III Office Switchboard
  - (630) 829-9500 (800) 522-3025

Reference Sources

- Reactor Oversight Process
  - http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html
- Public Electronic Reading Room
  - http://www.nrc.gov/reading-rm.html
- Public Document Room
  - 1-800-397-4209 (Toll Free)