# NRC & NEAC Meeting
# Concerning Millstone Station Performance

## Reactor Oversight Program - CY 2005

Nuclear Regulatory Commission - Region I

King of Prussia, Pennsylvania

March 29, 2006

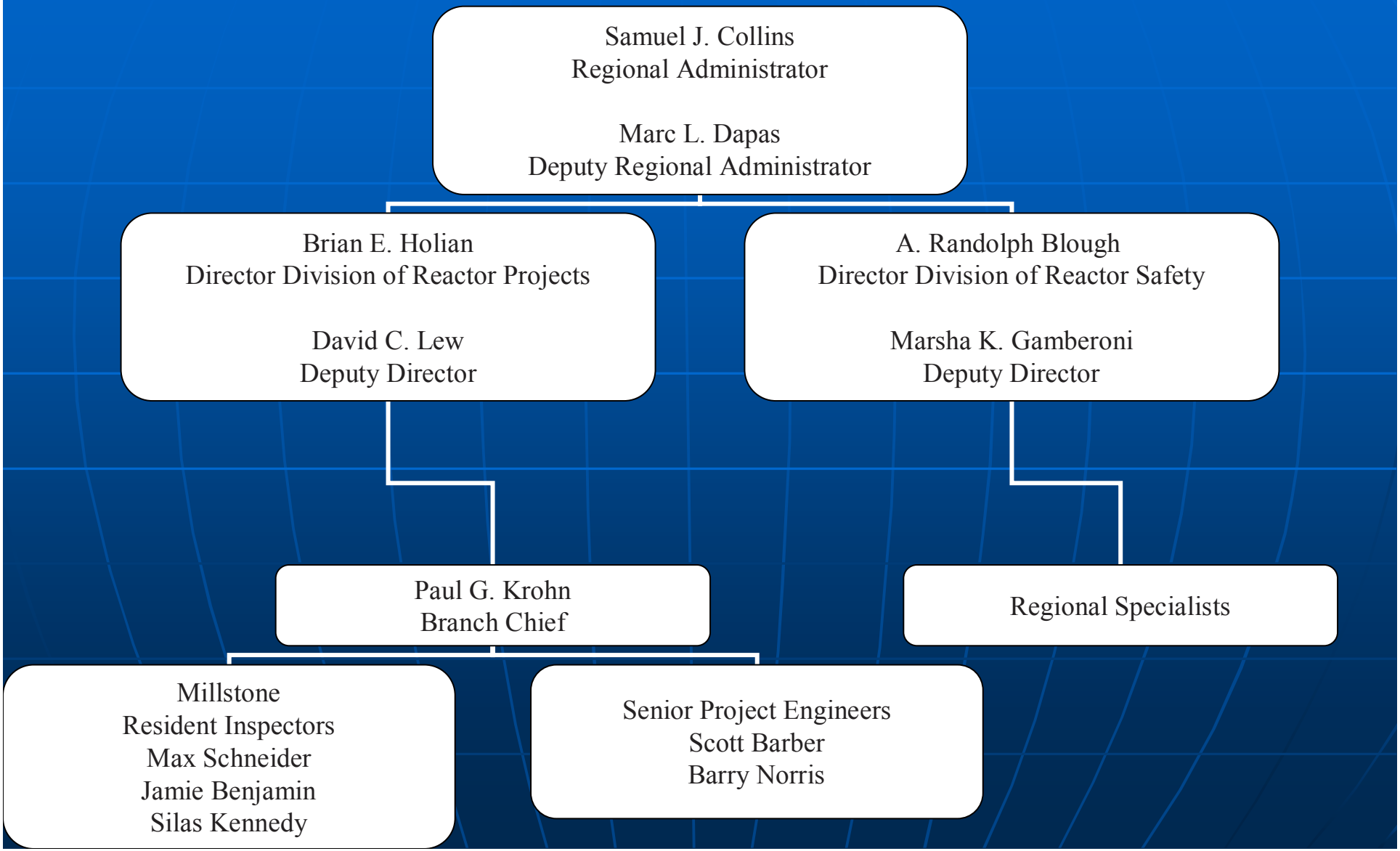
# Purpose of Today's Meeting

- A public forum for discussion of Millstone Station's annual performance for CY 2005
- NRC will address Millstone Station's performance as discussed in the NRC annual assessment letter to Dominion Nuclear Connecticut, Inc.
- NEAC will be given the opportunity to respond to the information, request clarifications, and ask additional questions as needed

# Agenda

- Introduction
- Review of Reactor Oversight Process
- National Summary of Plant Performance
- Discussion of Millstone Station Performance Results
- NEAC Response and Remarks
- NRC and NEAC Closing Remarks
- Break
- NRC available for public questions and comments

# Region I Organization



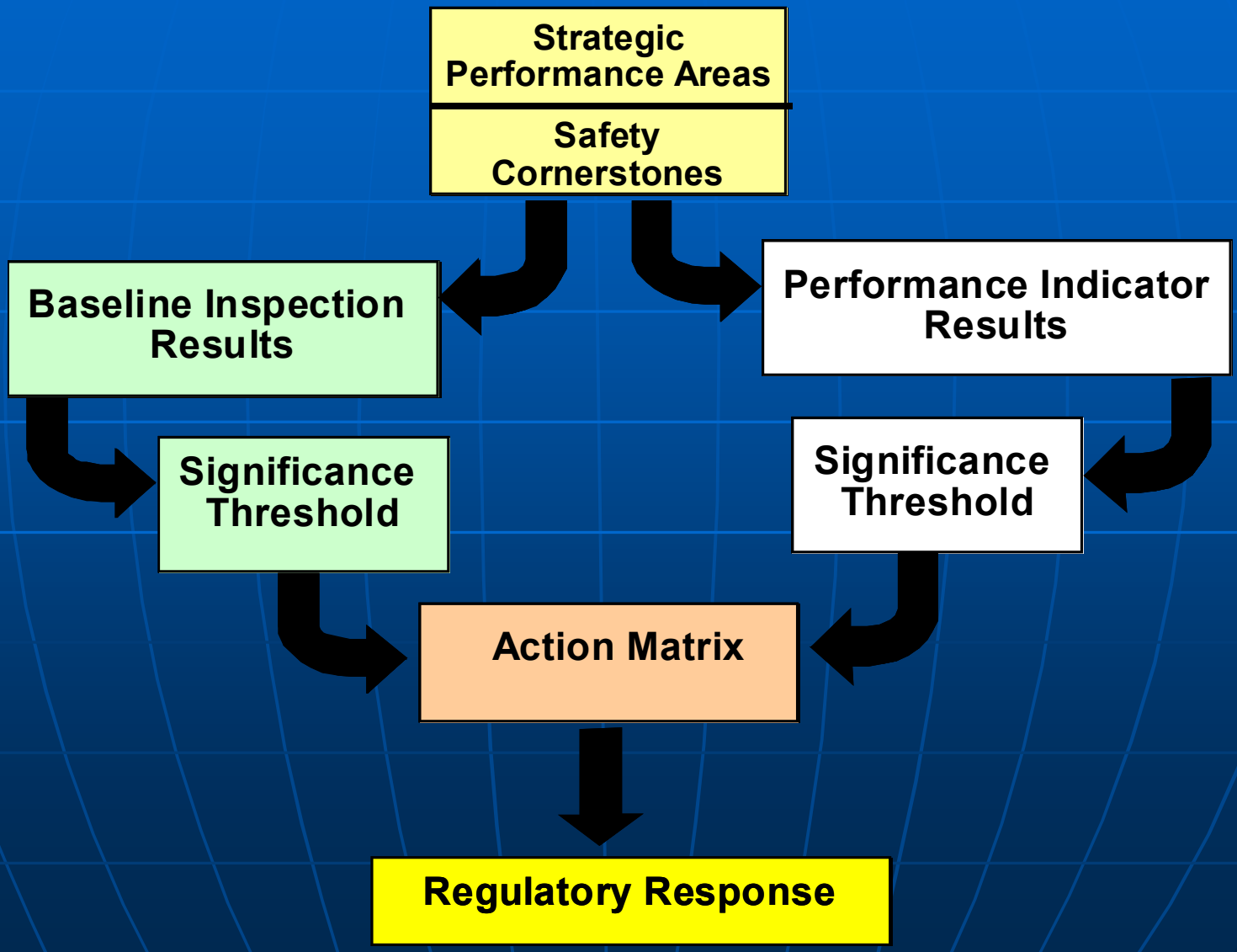
# NRC Representatives

- David C. Lew, Deputy Division Director, DRP
  - (610) 337-5229
- Max Schneider, Senior Resident Inspector
- Jamie Benjamin, Resident Inspector
- Silas Kennedy, Resident Inspector
  - (860) 447-3170
- Paul Krohn, Branch Chief
  - (610) 337-5120
- Scott Barber, Senior Project Engineer
  - (610) 337-5232

# NRC Performance Goals

- Safety: Ensure protection of the public health and safety and the environment
- Security: Ensure the secure use and management of radioactive materials
- Openness: Ensure openness in our regulatory process
- Effectiveness: Ensure that NRC actions are effective, efficient, realistic, and timely
- Management: Ensure excellence in agency management to carry out the NRC strategic objective

# Reactor Oversight Process



# Examples of Baseline Inspections

| | |
|---|---|
| • Equipment Alignment | ~80 hrs/yr |
| • Triennial Fire Protection | ~200 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 | ~90 hrs/yr |
| • Corrective Action Program | ~250 hrs every 2 yrs |
| • Corrective Action Case Reviews | ~60 hrs/yr |

# Significance Threshold

## Performance Indicators

**Green:** Baseline Inspection

**White:** May increase NRC oversight

**Yellow:** Requires more NRC oversight

**Red:** Requires more NRC oversight

## Inspection Findings

**Green:** Very low safety issue

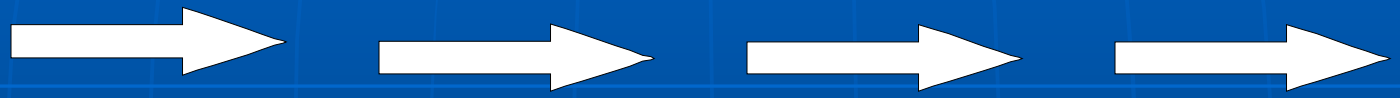
**White:** Low to moderate safety issue

**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 at End of CY 2005

| | |
|---|---|
| Licensee Response | 84 |
| Regulatory Response | 12 |
| Degraded Cornerstone | 4 |
| Multiple/Repetitive Degraded Cornerstone | 3 |
| Unacceptable | 0 |
| Total | 103 |

# National Summary

- Performance Indicator Results (at end of CY 2005)
  - Green 1850
  - White 4
  - Yellow 0
  - Red 0
- Total Inspection Findings (CY 2005)
  - Green 849
  - White 10
  - Yellow 1
  - Red 0

# Millstone Assessment Results

**(Jan. 1 – Dec. 31, 2005)**

- Licensee Response Column
- No safety significant findings or PIs

# Millstone Inspection Activities

(Jan. 1 – Dec. 31, 2005)

- Hours of inspection related activities
  - 5021 hours at Millstone Unit 2
  - 6115 hours at Millstone Unit 3
- Three resident inspectors assigned to the site
  - Jamie Benjamin started at Millstone in June 2005
- Inspections

| | Regional | Team |
|---|---|---|
| Units 2 & 3 | 5 | 1 |
| Unit 2 only | 7 | 0 |
| Unit 3 only | 2 | 2 |

# Millstone Inspection Activities

(Jan. 1 – Dec. 31, 2005)

- Inspection findings
  - 3 findings of very low safety significance (Green) at Unit 2
  - 12 findings of very low safety significance (Green) at Unit 3
  - 2 findings of very low safety significance (Green) common to both units
- Unit 3 refueling outage (09/29 – 10/27/05)
  - no findings related to the outage

# Millstone Inspection Activities

(Jan. 1 – Dec. 31, 2005)

- Unit 2 Triennial Fire Protection team inspection
  - no findings
- Unit 2 reactor head replacement inspection
  - no findings
- Unit 3 safety system design team inspection
  - no findings
- Unit 3 Special Inspection Team
  - 6 findings of very low safety significance (Green)

# Millstone
# Annual Assessment Summary

(Jan. 1 – Dec. 31, 2005)

- Dominion operated Millstone Units 2 & 3 in a manner that preserved public health and safety
- All cornerstone objectives were met
- NRC plans baseline inspections at Millstone for the remainder of the assessment period

# 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
- Paul Krohn, Branch Chief
  - pgk1@nrc.gov

# 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)

# NEAC Response and Remarks

Millstone Nuclear Power Station
Unit 2 and Unit 3

# END OF THE PRESENTATION

Nuclear Regulatory Commission - Region I

King of Prussia, Pennsylvania

March 29, 2006

# Potential Public Interest Issues

## Safety Concerns Brought to the NRC

- NRC has a formal process
- Concerns are reviewed on an individual basis by NRC technical, legal, investigative staff and management
- Issues of immediate concern receive prompt attention by NRC and by nuclear power plant management
- NRC's process requires reviews of all valid safety issues to ensure they are adequately addressed
- NRC implements measures to protect the identity of allegers including not commenting on the existence of a specific allegation

# Potential Public Interest Issues

## Recent Press Articles on Security Issues

- Current NRC policy is to not discuss security matters in a public forum
- NRC will not comment on existence of allegations in this area
- Notwithstanding these policies, we want to assure the public that if safety issues did exist, the NRC would take prompt action to address them

# Potential Public Interest Issues

## Strontium-90 (SR-90)

- Fission process byproduct (29 year half-life)
- Potential sources in the Environment
  - 16,800,000 curies - nuclear weapons testing (UNSCEAR 2001)
  - 212,000 curies - 1986 Chernobyl accident (UNSCEAR 2001)
  - 0.00012 to 0.001 curies - from all 103 operating nuclear power plants
- For nuclear reactor releases, SR-89 (50 day half-life) is always present with SR-90

# Potential Public Interest Issues

## Strontium-90 (SR-90) continued

- Mid 1990's - Release levels of SR-90 were so low that nuclear utilities had difficulty measuring the amounts released
- NRC allowed SR-90 monitoring by using goat milk samples
- Goat milk samples indicated low levels of SR-90 without the presence of SR-89 (indicating not originating from a nuclear power plant)
- Most likely source is from 1950's and 1960's atmospheric nuclear weapons testing

# Potential Public Interest Issues

## Radiation Exposure to the Public from Background Sources and from Millstone Power Station

- Natural Background:
  - Radon – 200 mrem
  - Cosmic – 27 mrem
  - Cosmogenic – 1 mrem
  - Terrestrial – 28 mrem
  - Internal – 39 mrem
- Occupational – 0.9 mrem
- Nuclear Fuel Cycle – 0.05 mrem
- Consumer Products – 5 to 13 mrem
- Environment – 0.06 mrem
- Medical:
  - Diagnostic X-rays – 39 mrem
  - Nuclear Medicine – 14 mrem

* Approximate Total [1]: 360 mrem

- Millstone Station Whole Body Dose [2] (Maximum) Offsite Individual:
  - Airborne Effluents – 0.0261 mrem
  - Liquid Effluents – 0.0017 mrem
  - Onsite RadWaste Storage – 0.1400 mrem

* Approximate Total: 0.17 mrem

---

[ [1] USNRC Site Access Training Manual, October 1999 ]

[ [2] Millstone Power Station, 2004 Radioactive Effluents Release Report, Vol. 1 ]