

# 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

Samuel J. Collins  
Regional Administrator

Marc L. Dapas  
Deputy Regional Administrator

Brian E. Holian  
Director Division of Reactor Projects

David C. Lew  
Deputy Director

A. Randolph Blough  
Director Division of Reactor Safety

Marsha K. Gamberoni  
Deputy Director

Paul G. Krohn  
Branch Chief

Regional Specialists

Millstone  
Resident Inspectors  
Max Schneider  
Jamie Benjamin  
Silas Kennedy

Senior Project Engineers  
Scott Barber  
Barry Norris

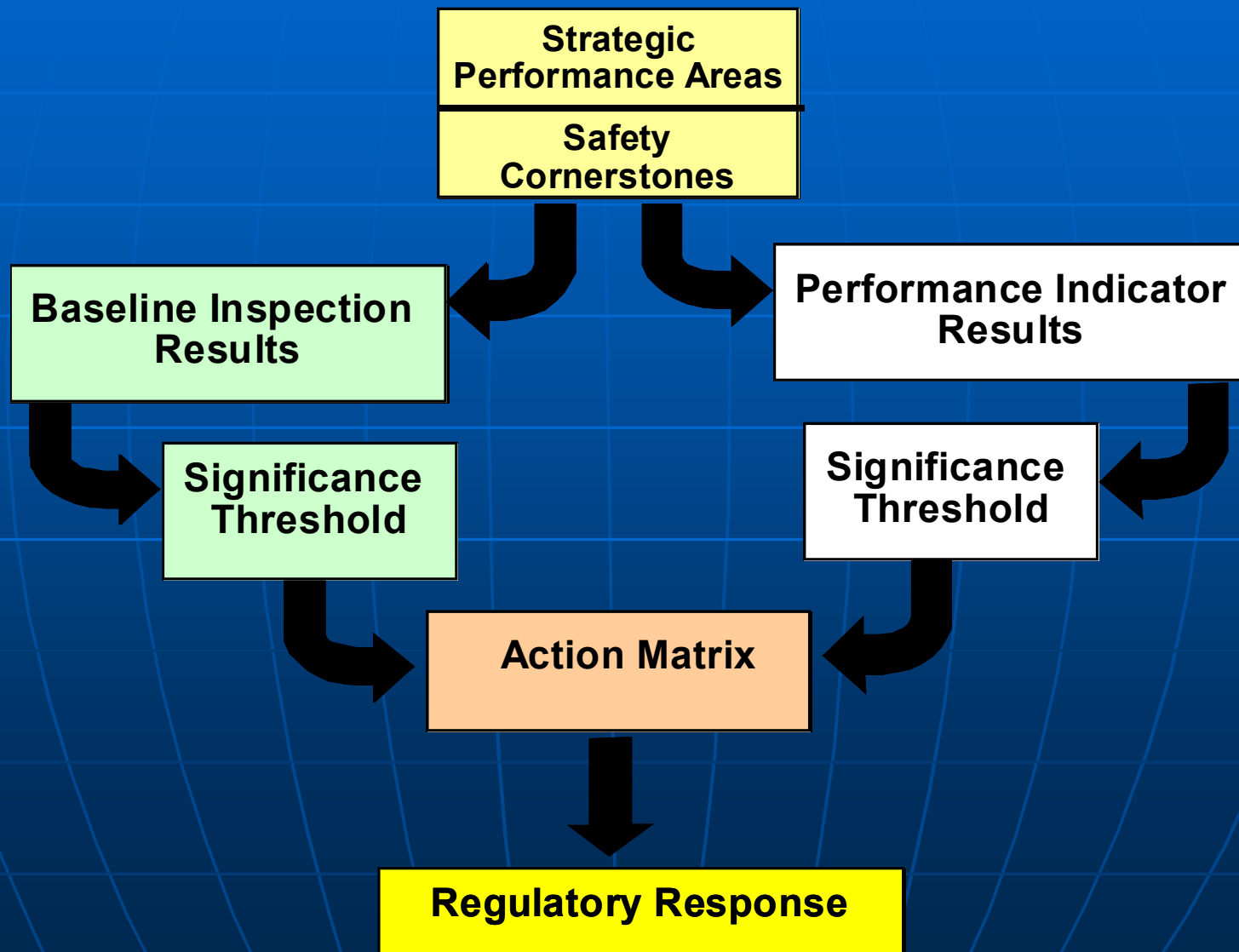
# NRC Representatives

- 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

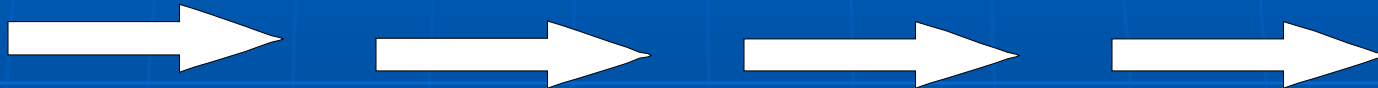
## Performance Indicators

- 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



**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
<u>Total</u>	<u>103</u>

# 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](http://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

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Millstone Nuclear Power Station  
Unit 2 and Unit 3

# END OF THE PRESENTATION



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# 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 allegeders 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
- Millstone Station Whole Body Dose <sup>2</sup>  
(Maximum) Offsite Individual:
  - Airborne Effluents – 0.0261 mrem
  - Liquid Effluents – 0.0017 mrem
  - Onsite RadWaste Storage – 0.1400 mrem

\* Approximate Total: 0.17 mrem

\* Approximate Total <sup>1</sup>: 360 mrem

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[ <sup>1</sup> USNRC Site Access Training Manual, October 1999 ]

[ <sup>2</sup> Millstone Power Station, 2004 Radioactive Effluents Release Report, Vol. 1 ]