Annual Assessment Meeting
Susquehanna Steam Electric Station

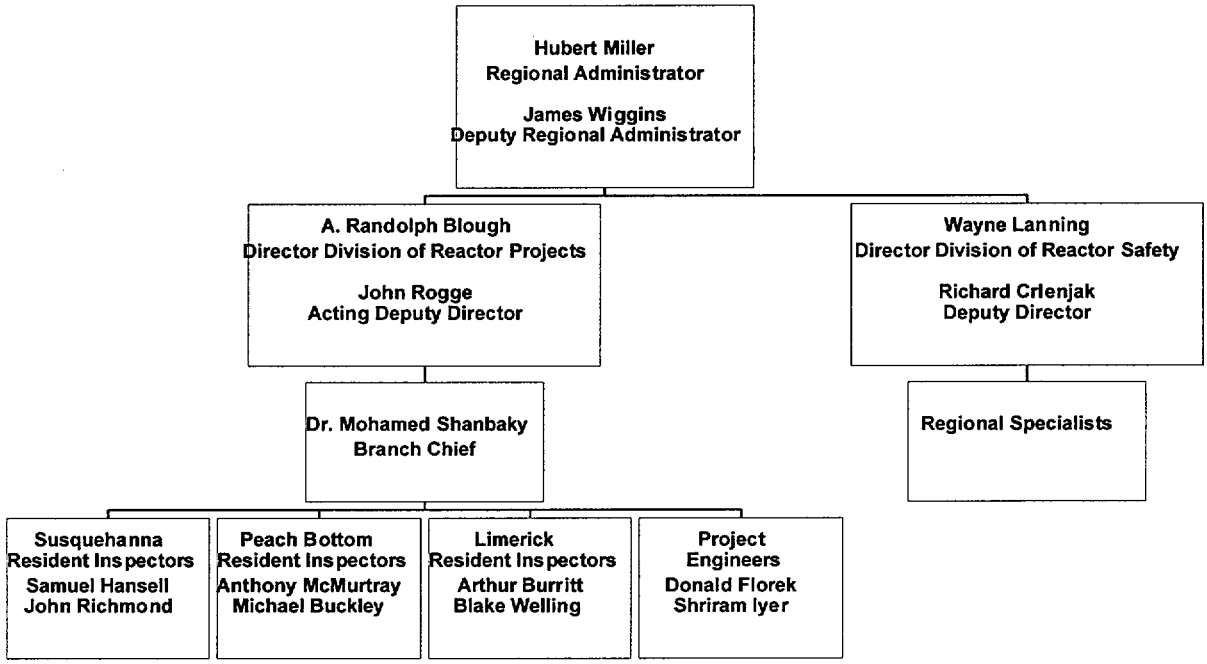
Reactor Oversight Program - Year 2002

Nuclear Regulatory Commission - Region I
King of Prussia, PA

Agenda

- Introduction
- Review of Reactor Oversight Process
- National Summary of Plant Performance
- Discussion of Plant Performance Results
- NRC Security Update
- PPL Response and Remarks
- Break
- Public Comments and Questions

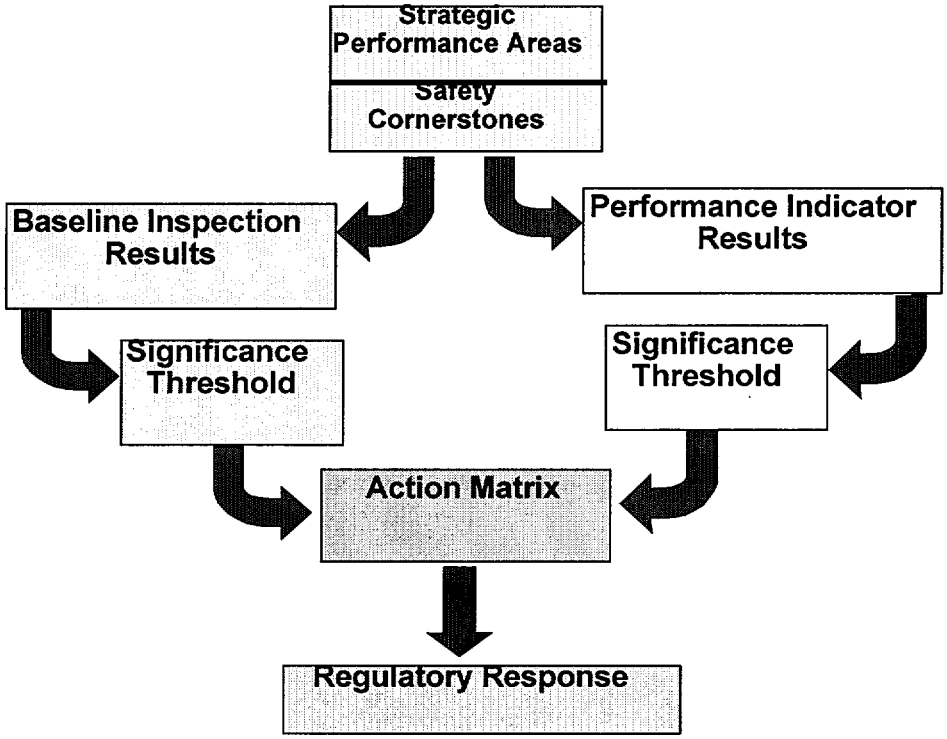
Region I Organization



NRC Representatives

- Randolph Blough, Director, DRP
  - 610-337-5229 / ARB@nrc.gov
- Dr. Mohamed Shanbaky, Chief - Branch 4
  - 610-337-5209 /MMS1@nrc.gov
- Samuel Hansell, Senior Resident Inspector
  - 570-542-2134 / SLH1@nrc.gov
- John Richmond, Resident Inspector
  - 570-542-2134 / JER@nrc.gov
- Richard Guzman, Project Manager, NRR
  - 301-415-1030 / RVG@nrc.gov
- Shriram Iyer, Project Engineer - Branch 4
  - 610-3376943 / SGI@nrc.gov

Reactor Oversight Process (ROP)



Examples of Baseline Inspections

- Equipment Alignment ~92 hrs/yr
- Triennial Fire Protection ~200 hrs every 3 yrs
- Operator Response ~125 hrs/yr
- Emergency Preparedness ~80 hrs/yr
- Radiation Release Controls ~100 hrs every 2 yrs
- Worker Radiation Protection ~100 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: 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

Examples of Performance Indicators

- Scrams with Loss of Normal Heat Removal
- Unplanned Power Changes
- Emergency AC Power System Safety System Unavailability
- Alert and Notificationn System Reliability

Performance indicators are the second type of input in the assessment process.

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 ROP Cycle 3

Licensee Response	75
Regulatory Response	24
Degraded Cornerstone	2
Multiple/Repetitive Degraded Cornerstone	1
Unacceptable	0
Total Plants	102

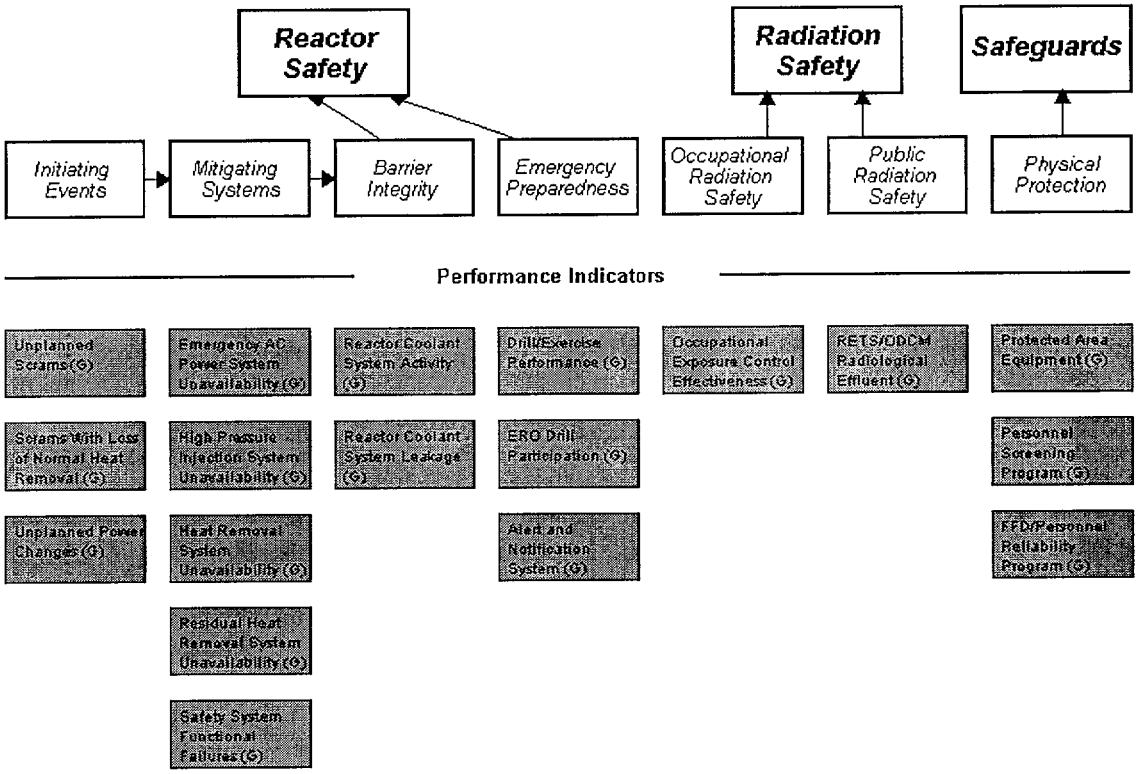
*Davis-Besse is in IMC 0350 process

National Summary

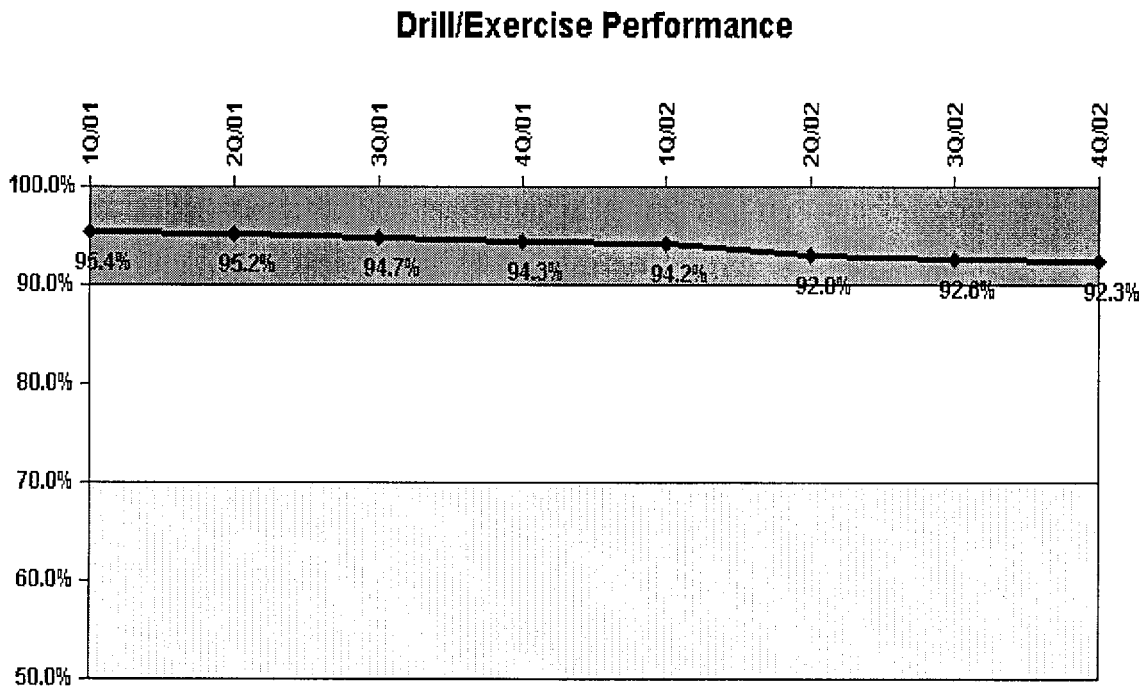
- Performance Indicator Results (at end of ROP Cycle 3)
  - **Green** 1835
  - **White** 5
  - **Yellow** 0
  - **Red** 0

- Total Inspection Findings (ROP Cycle 3)
  - **Green** 783
  - **White** 30
  - **Yellow** 1
  - **Red** 2

Susquehanna - Performance Indicators



Performance Indicator



Thresholds: White < 90.0% Yellow < 70.0%

Susquehanna Inspection Activities

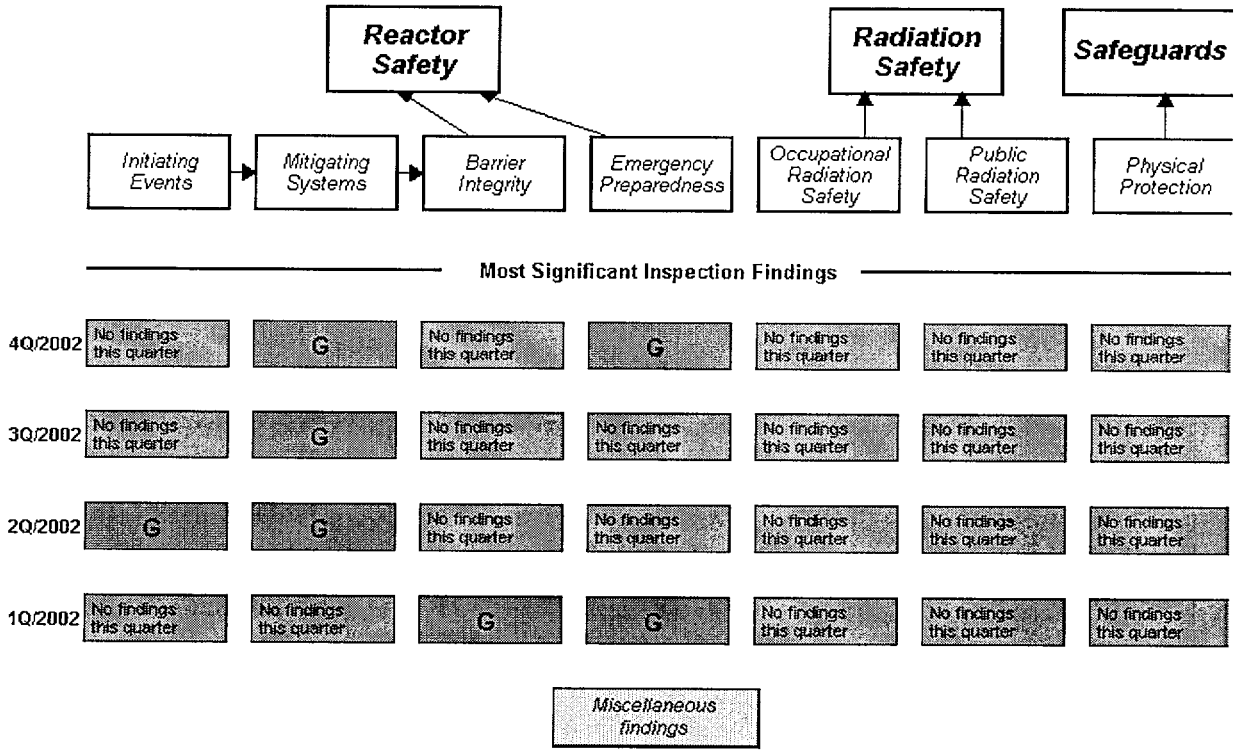
(Jan 1 - Dec 31, 2002)

- 3113 hours of inspection related activities
- 2 Resident Inspectors assigned to the site
- 21 Regional Inspector visits
  - Included 5 team inspections
- Inspection Findings
  - 16 findings of very low safety significance (Green)

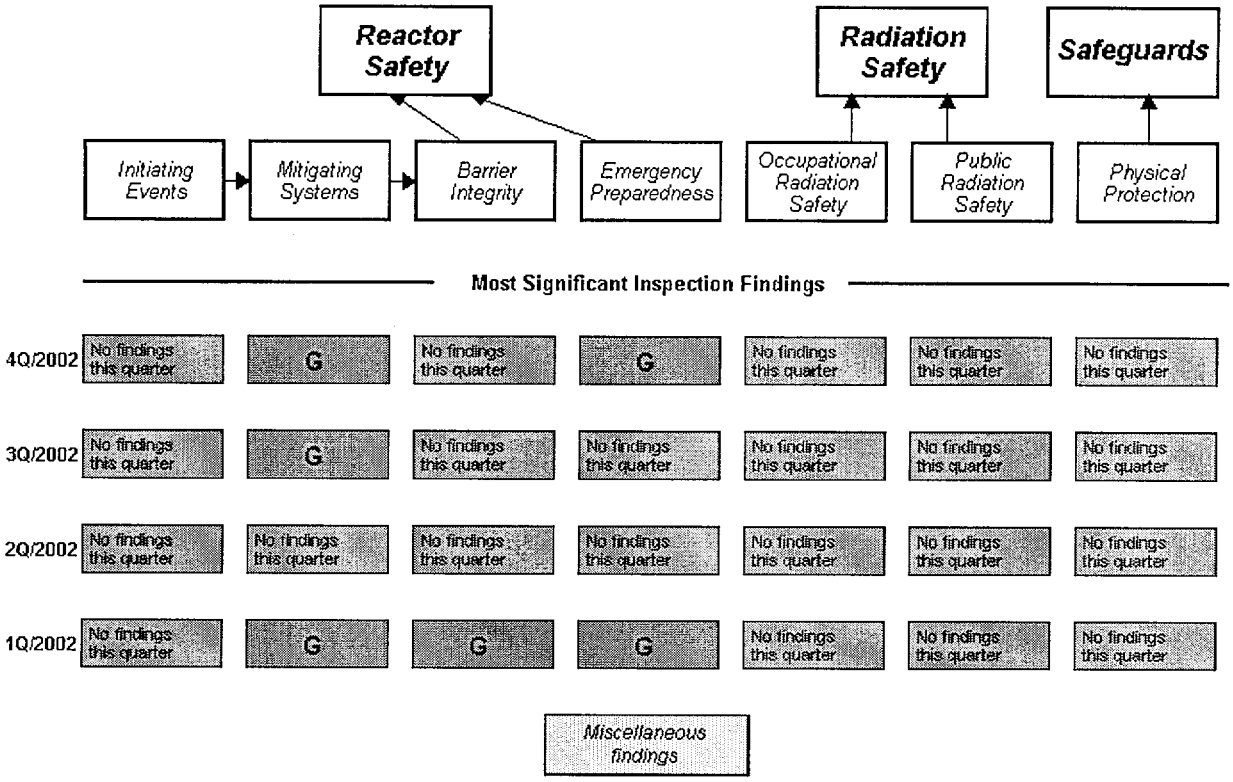
Strategic Performance Areas & Cornerstones

- Reactor Safety
  - Initiating Events (1 Green findings)
  - Mitigating Systems (9 Green findings)
  - Barrier Integrity (2 Green findings)
  - Emergency Preparedness (4 Green findings)
- Radiation Safety
  - Occupational Radiation Safety (No finding)
  - Public Radiation Safety (No findings)
- Safeguards
  - Physical Protection (No findings)

Susquehanna Unit 1- Inspection Results



Susquehanna Unit 2- Inspection Results



Substantive Cross-Cutting Issue

- One Substantive Cross-Cutting Issue
- Common Performance Theme
- Significant Number of Findings (8 Green findings)
- Operator Human Performance Cross-Cutting Area
- Implementation of Procedures
- PPL's Corrective Action

Non- SDP Enforcement Action

- Severity III Violation - January 13, 2003
- No Civil Penalty
- Certificate of Compliance requires Helium gas
- Dry Cask filled with mixture of Helium gas and Argon gas
- Discovered by PPL
- Corrective Actions
- Actions to prevent recurrence completed

Susquehanna Assessment Results Summary (Jan 1 - Dec 31, 2002)

- Operated Safely
- Met all Cornerstone objectives
- Currently in "Licensee Response" column of Action Matrix
- Graded in the "Regulatory Response" column of the Action Matrix for first three quarters of 2002
- NRC will conduct Baseline Inspections in 2003

NRC Security Program Update

- NRC has issued Orders (February 2002):
  - Increased Patrols
  - Augmented Security Capabilities
  - Added Barriers and Posts
  - Enhanced Personnel Screening for Access
  - Enhanced Security Awareness
- Office of Nuclear Security and Incident Response Formed (April 2002)
- Threat Advisory and Protective Measure System (August 2002):
  - NRC established a five level threat advisory and protective measure system based on Homeland Security Advisory System

NRC Security Program Update (continued)

- Access Authorization Order (January 7, 2003)
- Force-on-Force Exercises (February 2003)
- Training Order (TBD)
- Fatigue Order (TBD)
- Design Basis Threat (TBD)

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)

PPL Susquehanna, LLC

One Team One Commitment

NRC Annual Assessment Meeting

March 31, 2003

PPL Susquehanna Team

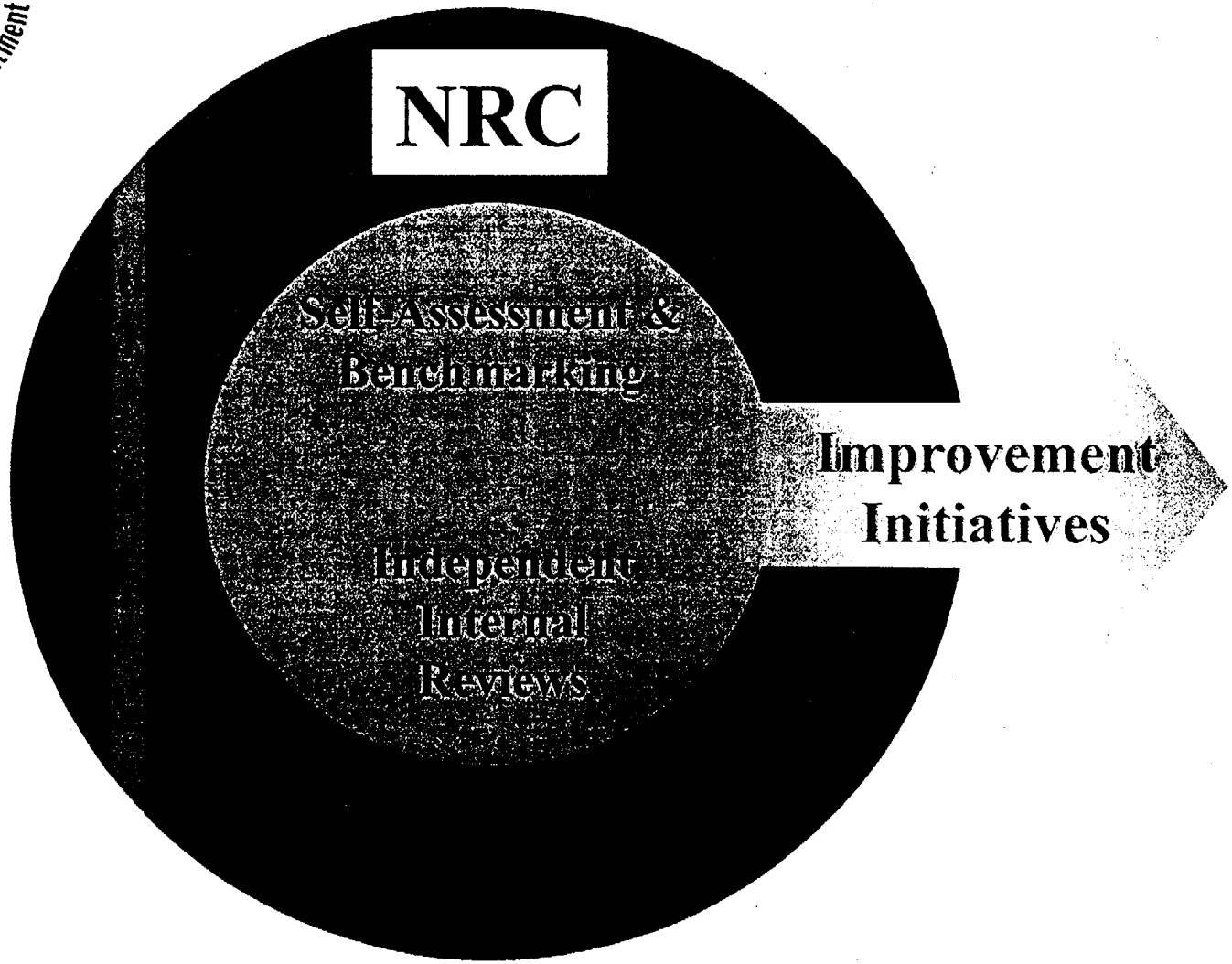
- **Jim Miller** — **President-PPL Generation**
- **Bryce Shriver** — **Senior VP and Chief Nuclear Officer**
- **Rich Anderson** — **Vice President - Nuclear Operations**
- **George Jones** — **Vice President - Special Projects**
- **Bob Saccone** — **General Manager - Nuclear Engineering**
- **Al Wrape** — **General Manager - Nuclear Assurance**
- **Terry Harpster** — **General Manager - Plant Support**

Strategic Objectives

- **Exemplary Safety Performance**
- **Operational Excellence**
- **Excellent Financial Performance**
- **Exceptional Teamwork and Commitment**

PPL Susquehanna, LLC
One Team One Commitment

Continuous Improvement



PPL Susquehanna

Road Map to Success

Operational Focus

- Conduct of Operations
- Corrective Action
- Work Management
- Work Standards
- Training
- Equipment Reliability

2003 Improvement Initiatives

- Unit 2 - 11 RIO
- Human Performance
- Radiation Protection
- Work Management
- Regulatory Performance
- Organizational Effectiveness

Emergency Preparedness

- **We are assuring on-shift staffing meets Plan requirements, resolving the 'White' finding**
- **Timely activation of the Emergency Operations Facility is consistently achieved, resolving a longstanding issue**
- **Drills and actual events demonstrate solid performance, with strong off-site agency support**
- **Additional actions are being taken to achieve excellent performance**
- **Lessons are being extended to other regulatory programs**

Dry Fuel Storage

- **Use of wrong inert gas was a significant human performance error**
- **Self-identified and reported**
- **No health or safety impacts**
- **Effective corrective actions restored canister to its design configuration**
- **Review identified human performance lessons that are being applied station-wide**

Human Performance

- An adverse human performance trend was identified with procedure adherence and use
  - self-assessment broadened our understanding of the issue scope
- We recognize the need to accelerate improvement efforts
- Actions in-progress address all aspects of this issue:
  - programmatic improvements
  - supervisory oversight
  - individual worker focus
- Our indicators are showing some improvement in Operations performance

Security

Changes recognize the new threat environment:

- ⇨ **Physical barriers & detection**
- ⇨ **Security staffing and training**
- ⇨ **Access authorization**
- ⇨ **Interface with government agencies**

NRC and industry are working together on upgraded requirements, integrating Emergency & Security response

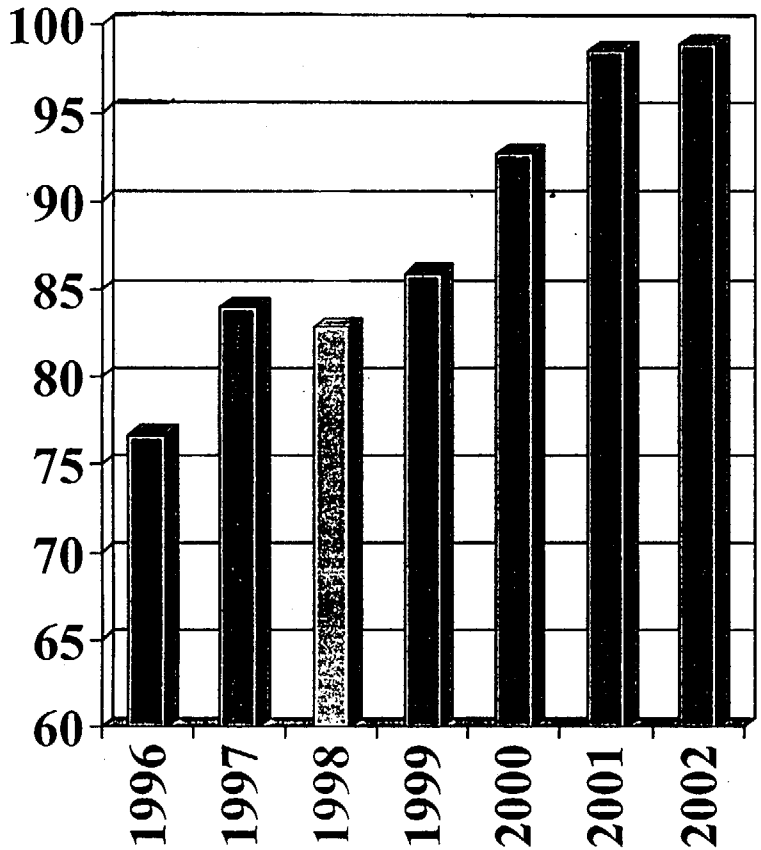
PPL Susquehanna, LLC
One Team One Commitment

Industry Lessons

Excellent Nuclear Performance Requires:

- **Leadership & worker commitment to safety**
- **Integration of safety into processes & programs**
- **Strong interface with the NRC, Industry & Public**
- **Rigorous oversight and independent assessment**

Station Performance Index



Index Parameters

- Safety System Performance
- Fuel Reliability
- Industrial Safety
- Radiation Exposure
- Unplanned Shutdowns
- Chemistry Performance
- Station Availability

PPL Susquehanna, LLC

One Team One Commitment