

Annual Assessment Meeting Susquehanna Steam Electric Station

Reactor Oversight Program - Year 2002



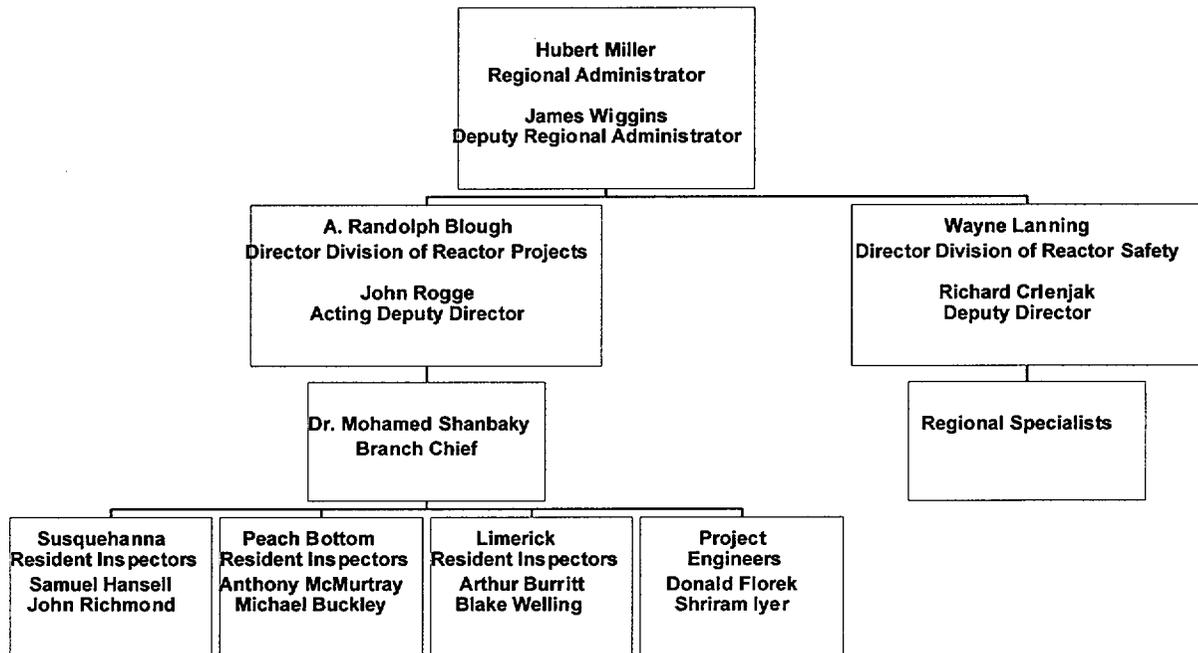
**Nuclear Regulatory Commission - Region I
King of Prussia, PA**

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



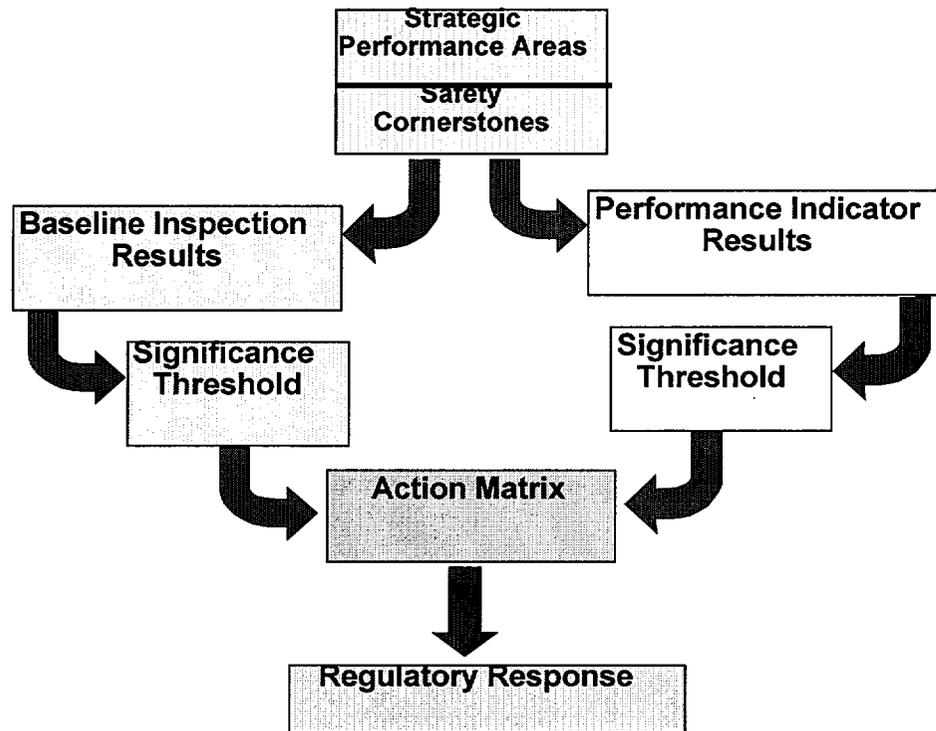
NRC Representatives



- **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

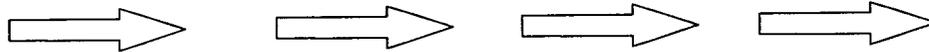


- Scrams with Loss of Normal Heat Removal
 - Unplanned Power Changes
 - Emergency AC Power System Safety System Unavailability
 - Alert and Notification System Reliability
- Performance indicators are the second type of input in the assessment process.

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

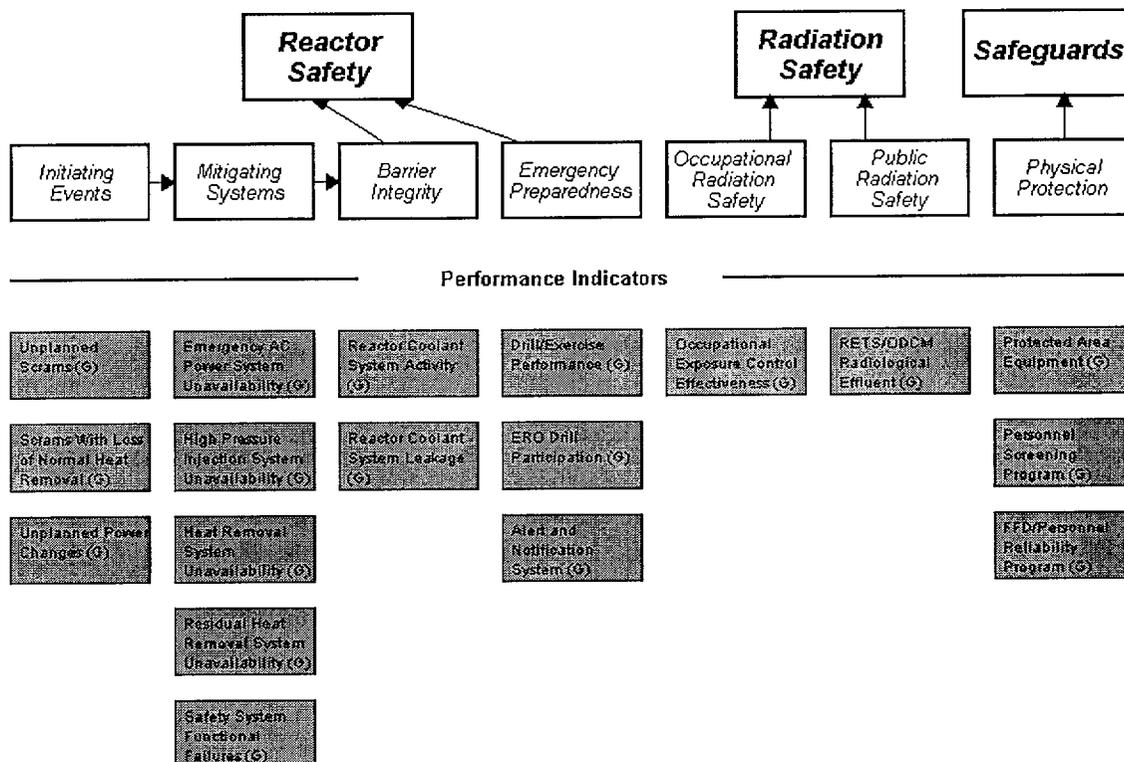


National Summary

- 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

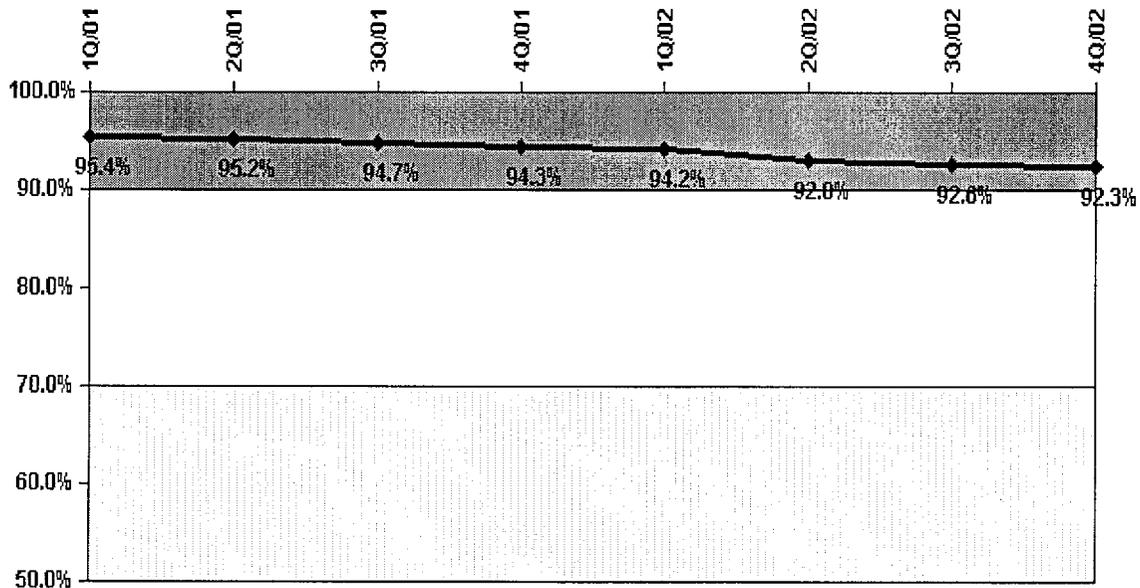
Susquehanna - Performance Indicators



Performance Indicator



Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Susquehanna Inspection Activities



(Jan 1 - Dec 31, 2002)

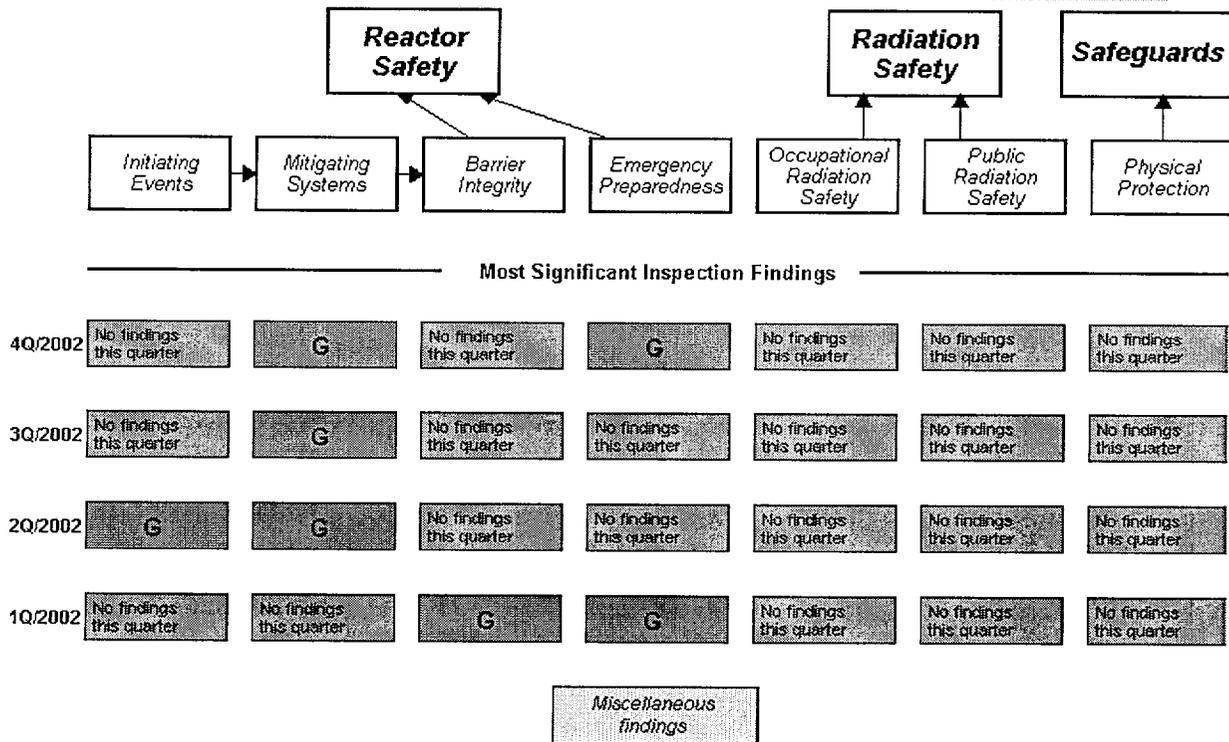
- 3113 hours of inspection related activities
- 2 Resident Inspectors assigned to the site
- 21 Regional Inspector visits
 - ▶ Included 5 team inspections
- Inspection Findings
 - ▶ 16 findings of very low safety significance (Green)

Strategic Performance Areas & Cornerstones

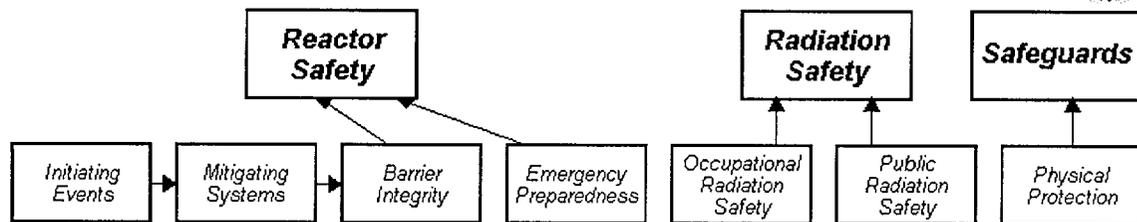


- Reactor Safety
 - ▶ Initiating Events (1 Green findings)
 - ▶ Mitigating Systems (9 Green findings)
 - ▶ Barrier Integrity (2 Green findings)
 - ▶ Emergency Preparedness (4 Green findings)
- Radiation Safety
 - ▶ Occupational Radiation Safety (No finding)
 - ▶ Public Radiation Safety (No findings)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

Susquehanna Unit 1- Inspection Results



Susquehanna Unit 2- Inspection Results



Most Significant Inspection Findings

Quarter	Initiating Events	Mitigating Systems	Barrier Integrity	Emergency Preparedness	Occupational Radiation Safety	Public Radiation Safety	Physical Protection
4Q/2002	No findings this quarter	G	No findings this quarter	G	No findings this quarter	No findings this quarter	No findings this quarter
3Q/2002	No findings this quarter	G	No findings this quarter	No findings this quarter	No findings this quarter	No findings this quarter	No findings this quarter
2Q/2002	No findings this quarter	No findings this quarter	No findings this quarter				
1Q/2002	No findings this quarter	G	G	G	No findings this quarter	No findings this quarter	No findings this quarter

Miscellaneous findings

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)



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**

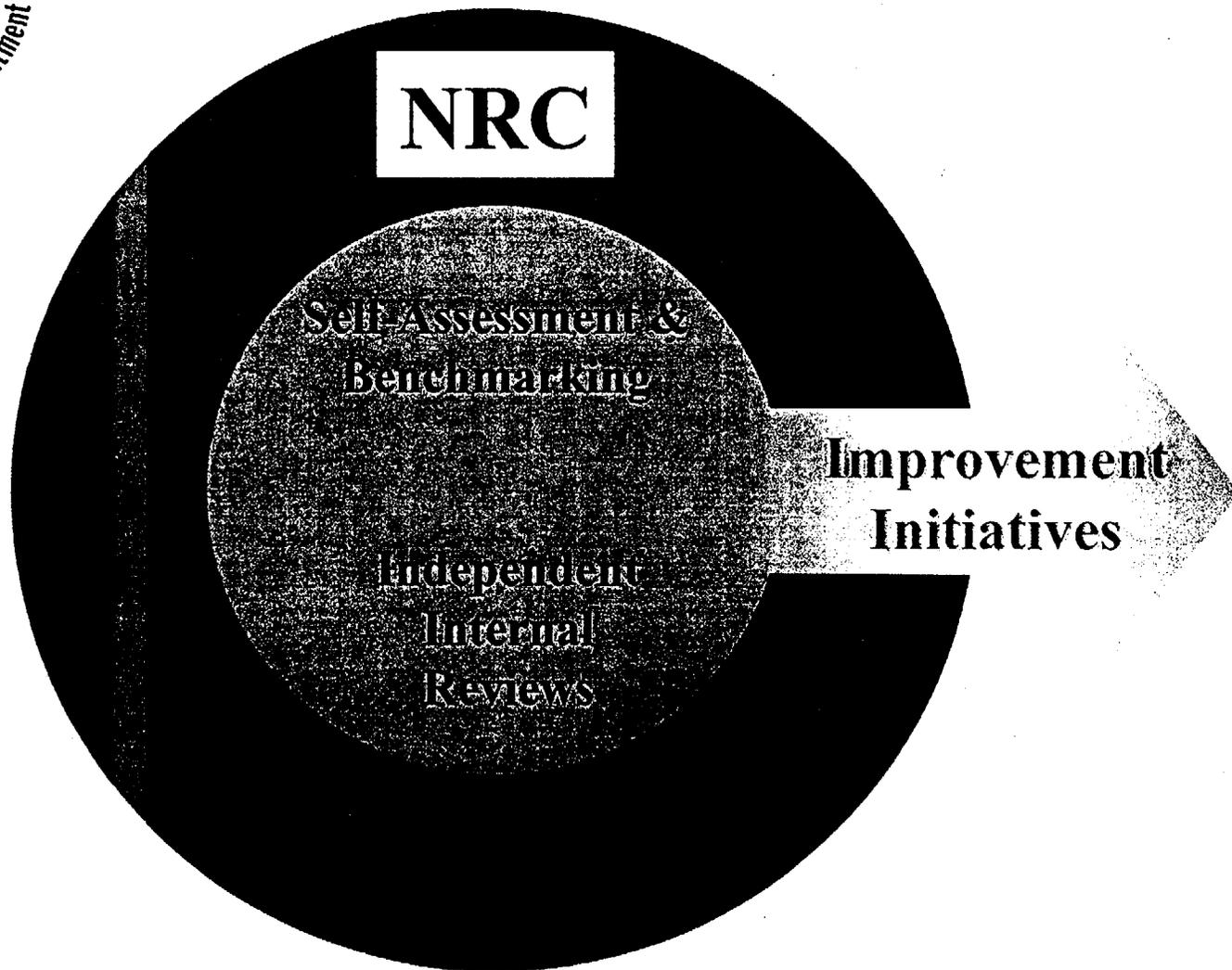


Strategic Objectives

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



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



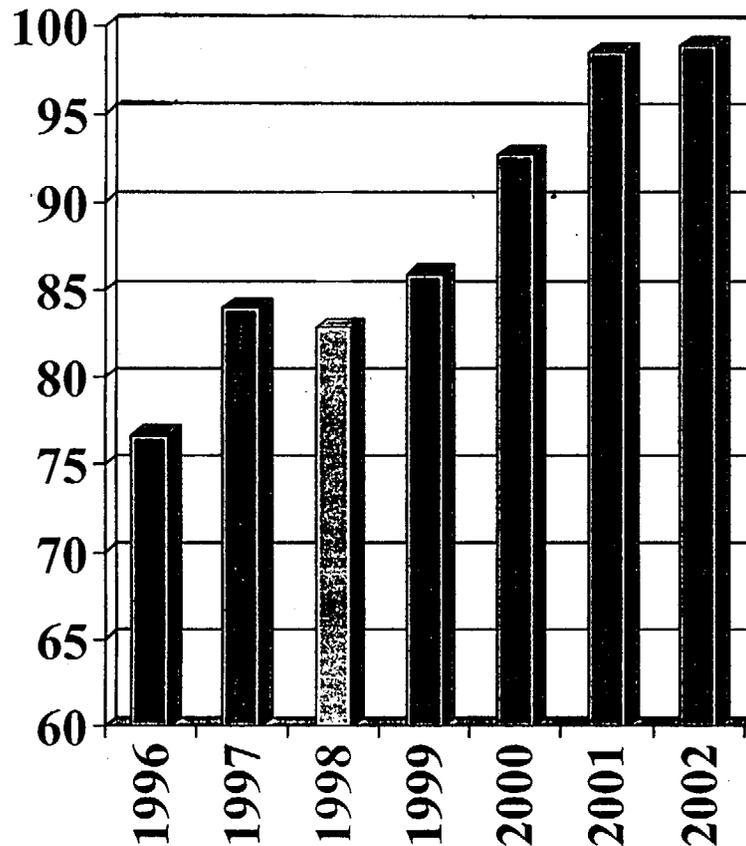
Industry Lessons

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

