September 14, 2000

Mr. G. Rainey, President
PECO Nuclear
Nuclear Group Headquarters
Correspondence Control Desk
P.O. Box 160
Kennett Square, Pennsylvania 19348

SUBJECT: NRC'S PEACH BOTTOM REPORT 05000277/2000-008, 05000278/2000-008

Dear Mr. Rainey:

On August 19, 2000, the NRC completed an inspection at the Peach Bottom Atomic Power Station. The enclosed report presents the results of the inspection. The results of the inspection were discussed during an exit meeting on August 24, 2000, with Mr. Jay Doering and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspections consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC identified one finding related to the August 7, 2000, Unit 3 automatic reactor shutdown that was evaluated under the significance determination process as having very low safety significance (Green). In addition, the NRC has determined that one Severity Level IV violation occurred related to the identification and resolution of problems on leakage of contaminated reactor coolant system water caused by cracking of instrument root valve packing gland followers. Because of its very low safety significance, the violation is not cited. The violation and finding were entered into your corrective action program, and are discussed in the summary of findings and in the body of the attached inspection report. If you contest this non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis of your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Peach Bottom facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

If you have any questions, please contact me at 610-337-5233.

Sincerely,

/RA/

Curtis J. Cowgill, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos.: 05000277, 05000278,
License Nos.: DPR-44, DPR-56

Enclosure: NRC Inspection Report No. 05000277/2000-008, 05000278/2000-008

cc w/encls:
J. Hagan, Senior Vice President, Nuclear Operations
J. Doering, Vice President, Peach Bottom Atomic Power Station
G. Johnston, Plant Manager, Peach Bottom Atomic Power Station
J.A. Hutton, Director, Licensing, PECO Nuclear
G. Hunger, Chairman, Nuclear Review Board
R. Boyce, Director, Nuclear Quality Assurance
A. F. Kirby, III, External Operations - Delmarva Power & Light Co.
A. A. Winter, Manager, Experience Assessment
J. W. Durham, Sr., Senior Vice President and General Counsel
H. C. Kresge, Manager, External Operations, Connectiv
N. J. Sproul, Manager, Financial Control & Co-owner Affairs, Connectiv
R. McLean, Power Plant Siting, Nuclear Evaluations
D. Levin, Acting Secretary of Harford County Council
R. Ochs, Maryland Safe Energy Coalition
J. H. Walter, Chief Engineer, Public Service Commission of Maryland
Mr. & Mrs. Dennis Hiebert, Peach Bottom Alliance
Mr. & Mrs. Kip Adams
Commonwealth of Pennsylvania
State of Maryland
TMI - Alert (TMIA)

Distribution w/encls: (via ADAMS)
Region I Docket Room (with concurrences)
A. McMurtray SRI - NRC Resident Inspector
H. Miller, RA
J. Wiggins, DRA
C. Cowgill, DRP
D. Florek, DRP
D. Cullison, DRP
C. O'Daniell, DRP
D. Holody, ORA
W. Borchardt, OE
J. Shea, OEDO
E. Adensam, NRR
J. Clifford, NRR
J. Boska, NRR
D. Thatcher, NRR
C. See, NRR

DOCUMENT NAME: C:\IR 00-08 rev 2.wpd
To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

OFFICE	RI/DRP		RI/DRP
NAME	DFlorek/DF		CCowgill/CC
DATE	09/14/00		09/14/2000

OFFICIAL RECORD COPY

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket Nos.	05000277 05000278
License Nos.	DPR-44 DPR-56
Report Nos.	05000277/2000-008 05000278/2000-008
Licensee:	PECO Energy Company Correspondence Control Desk P.O. Box 160 Kennett Square, PA 19348
Facility:	Peach Bottom Atomic Power Station Units 2 and 3
Inspection Period:	July 1, 2000 through August 19, 2000
Inspectors:	A. McMurtray, Senior Resident Inspector M. Buckley, Resident Inspector J. Richmond, Resident Inspector (Susquehanna) H. Gray, Senior Reactor Engineer D. Cullison, Project Engineer H. Williams, Senior Operations Engineer
Approved by:	Curtis J. Cowgill, Chief Projects Branch 4 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000277/2000-008, 05000278/2000-008, on 07/01-08/19/00; PECO Energy Company; Peach Bottom Atomic Power Station; Units 2&3. Miscellaneous, Identification and Resolution of Problems.

The report covered a six-week period of resident inspection. The inspection identified one green issue and one non-cited violation with no color. The significance of issues is indicated by their color (GREEN, WHITE, YELLOW, or RED) and was determined by the Significance Determination Process (See Attachment 1).

Cornerstone: Initiating Events

- Green. On August 7, Unit 3 automatically shutdown from 100% power when a one inch instrumentation rack root valve packing gland follower failed and caused a false reactor low level signal input into the reactor protection system. This failure occurred when the packing gland follower broke into two pieces allowing leakage of contaminated reactor coolant system water from the instrumentation piping. This leak was immediately isolated by actuation of the excess flow check valve in the instrumentation piping line. Unit 3 also experienced closure of Groups II and III primary containment isolation valves due to the false reactor low level signal. This event was of very low safety significance since the excess flow check valve functioned as designed and stopped the leak and all mitigating systems functioned as designed. (Section 4OA3)

Cross Cutting: Identification and Resolution of Problems

No Color. PECO failed to determine the cause of the May 28, 2000 cracking of the packing gland follower which caused leakage of contaminated reactor coolant system water outside of primary containment, a significant condition adverse to quality, and take corrective actions to prevent repetition. The lack of corrective actions from the May 28, 2000 cracking of the packing gland follower contributed to the repetitive event on August 7. The August 7 cracking of the packing gland follower resulted in leakage of contaminated reactor coolant outside of primary containment and an automatic reactor shutdown and primary containment isolation valve closures. The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50, Appendix B, Criterion XVI. This issue is documented in PECO's corrective action program as PEP 10011575. (Section 4AO2)

TABLE OF CONTENTS

Report Details

SUMMARY OF PLANT STATUS

UNIT 2

Unit 2 began this inspection period at 100% power, in end-of-cycle coastdown. At the end of the inspection period, Unit 2 was at 86% power.

UNIT 3

Unit 3 began this inspection period at 100% power. On August 7, 2000, a reactor automatic shutdown occurred when an instrumentation rack root valve packing gland follower failed and caused a false reactor low level signal input into the reactor protection system. Following troubleshooting and repairs, the unit was restarted on August 9 and reached 100% power on August 11.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignments

a. Inspection Scope

The inspectors performed partial walkdowns of the Unit 3 reactor building ventilation and instrument nitrogen systems while the systems were being returned to normal alignment following the August 7 reactor scram. The inspectors also performed a partial system walk down of the E2, E3, and E4 emergency diesel generators during the E1 emergency diesel generator 24-hour endurance test. The inspectors verified that local control switches and breakers were correctly positioned and that fans, dampers, valves and compressors were properly aligned. The inspectors also checked overall system availability. The inspectors used the following drawings to verify required alignments during these walkdowns:

Plant Drawing No.	Title
6280-M-391, Rev. 30	Primary & Secondary Containment Isolation Control Diagram
6280-M-388, Rev. 33	Reactor Building Ventilation Flow Diagram
6280-M-333, Rev. 54	Instrument Nitrogen P&I Diagram
6280-E-1670, Rev. 29	Electrical Schematic Diagram Instrument Nitrogen Compressor

b. Issues and Findings

There were no findings identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors performed walkdowns of the following plant areas to assess control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures:

- Emergency Diesel Generator Building, including the E1 through E4 diesel rooms, cardox room, and ventilation rooms
- Unit 2 Battery rooms
- Unit 2 Emergency Switchgear rooms
- Unit 2 Recirculation Pumps Motor/Generator room
- Unit 3 Battery rooms
- Unit 3 Emergency Switchgear rooms
- Unit 3 Recirculation Pumps Motor/Generator room
- Main Control room
- Cable Spreading room

b. Issues and Findings

There were no findings identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors verified that the licensee's maintenance, testing, inspection and evaluation of results were adequate to ensure proper heat transfer for the following heat exchangers:

- Heat exchanger for the high pressure coolant injection system equipment area with normal service water and emergency service water (ESW) as the cooling water sources.
- Emergency diesel generator (EDG) air intake, jacket water, and lube oil coolers with ESW as the cooling water source.

- Residual heat removal heat exchanger with high pressure service water as the cooling water source.

The inspectors reviewed heat exchanger test methodology, frequency of testing, test conditions, acceptance criteria and trending of results. The inspection, cleaning and maintenance methods used to evaluate the emergency and high pressure service water systems reliability were reviewed with system managers and technical specialists. This was to verify that the methods used for inspection and cleaning were consistent with expected degradation and that the final condition of the heat exchangers was acceptable. Selected test calculations of component performance data were reviewed to verify the test results reflected heat exchanger condition and that operation was consistent with design. The inspectors assessed the trending of the measured data for the components inspected and the licensee's proposed actions for results not within the acceptance criteria. The raw water intake conditions, including depth plots of the external river, internal bays, and the debris screens, were reviewed. Also, a sample of deficiencies related to the extent of biofouling, debris fouling, and chemical control were reviewed to verify the licensee entered the problems into the corrective action program and provided appropriate corrective action.

b. Issues and Findings

PECO recently identified a problem regarding the ineffective cooling of the emergency diesel generators (EDG) under certain river water temperature conditions due to cross flow between the EDG air intake cooler and the EDG jacket water cooler. River water is used to provide cooling water to the EDGs. The EDG cooling water cross flow issue was initially identified in 1991 by the EDG manufacturer in a 10 CFR Part 21 report. Recent testing of one EDG at Peach Bottom, using extensive instrumentation, found there was a river temperature range where the EDGs may not be able to meet the full EDG load for certain demand conditions. During the inspection, PECO established that the EDGs would remain operable during the expected river temperatures of the summer with the EDG coolant cross flow valves closed. PECO temporarily closed these valves as a compensatory measure. Additional testing, data evaluation and calculations were in progress at the end of this inspection to establish the EDG heat exchanger parameters and extent of potential past degradation. This item is unresolved pending completion of the licensee's evaluation and NRC review to determine if there were past EDG operability issues. **(URI 5000277/2000-008-01; 05000278/2000-008-01)**

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed the following to identify deficiencies and discrepancies in training, and to evaluate licensed operator performance and evaluator's critiques:

- A crew simulator exercise and observed the evaluator's critique.

- Equipment operator classroom training on a new electrical disconnect switch that must be opened during a station blackout.

b. Issues and Findings

There were no findings identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors interviewed appropriate facility personnel and reviewed documentation to determine whether the selected systems met maintenance rule requirements with respect to; scoping, risk significance, performance criteria, goals, characterization of failures, and corrective action programs. The following systems were reviewed for Units 2 and 3:

- Electrohydraulic Control and Turbine Supervisory Instruments (system 1D)
- Containment Atmosphere Dilution (system 7C)
- Reactor and Recirculation (This is four systems: piping system 02, recirc pump and valves 2A, recirc M/G set lube oil 2C, and recirc M/G set 2D)
- Reactor Pressure Vessel Instrumentation (system 2B)

b. Issues and Findings

There were no findings identified.

1R13 Maintenance Risk Assessments and Emergent Work

a. Inspection Scope

The inspectors reviewed PECO's risk evaluation and contingency plans for selected planned and emergent work activities to verify that appropriate risk evaluations were performed and to assess PECO's management of overall plant risk. The inspectors attended planning meetings and discussed the risk management aspect of the activities with operators, maintenance personnel, system engineers, and work coordinators for the following issues:

- Unit 2 Auxiliary Transformer Troubleshooting and Testing Activities, in Conjunction with Problems Associated with the Unit 3 Startup Transformer (Action Requests (A/Rs) A1274818, A1274801 and A1275272)
- Troubleshooting and Repair for the Late Initiation of the 30% Recirculation Pumps Runback After the Unit 3 Scram (A/R A1278271)
- Unit 3 High Pressure Coolant Injection System Steam Line Drain Trap Bypass Valve Packing Leak (A/R A1250153 and Work Order C0193655)

- Unit 3 “C” High Pressure Service Water Discharge Check Valve Repair (A/R A1272991 and Work Order C0194215)

- Unit 2 ‘A’ Reactor Recirculation Motor-Generator Output Voltage and Amperes Fluctuations (A/Rs A1273195 and A1273757 and Temporary Plant Alteration (TPA) 00-01041)

b. Issues and Findings

There were no findings identified.

1R14 Personnel Performance During Non-Routine Evolutions

a. Inspection Scope

The inspectors reviewed the performance of operations personnel in response to the Unit 3 automatic reactor shutdown and the Groups II and III primary containment isolations. The automatic shutdown and isolations occurred when the packing gland follower on an instrumentation rack root valve failed and caused a false reactor low level signal input into the reactor protection system and primary containment isolation system logics. The reactor was placed in Hot Shutdown (Mode 3) following the scram.

b. Issues and Findings

There were no findings identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed three operability evaluations to ensure that the required Technical Specification actions were satisfied and the component or system remained available so that no unrecognized increase in risk occurred. The inspectors discussed the evaluations with cognizant engineering personnel and control room supervisors. The following evaluations were reviewed:

- Failure of the DC Power Supply for the Unit 2 Emergency Core Cooling System Instrumentation Rack, INV-2-02-3-402A (A/R A1275055)

- Unit 3 High Pressure Service Water (HPSW) System with the 3'C’ Pump Discharge Valve Partially Open (A/R A1272991 and PEP I00011591)

- Unit 2'A’ Residual Heat Removal Loop Full Flow Test Valve Torque Capability with Revised Voltage Calculations (A/R A1274368)

b. Issues and Findings

There were no findings identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed and observed portions of the following post-maintenance testing:

Unit 3 HPSW 3'C' Pump Discharge Check Valve (CHK-3-32-502) after internal repairs (ST-O-34-32-301-3, Revision 17, "HPSW Pump, Valve and Flow Functional and Inservice Test")

b. Issues and Findings

There were no findings identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed and observed portions of the following surveillance tests, and compared test data with established acceptance criteria to verify the system demonstrated the capability of performing its intended safety functions and its operational readiness.

- ST-O-052-701-2, Revision 7, "E1 Diesel Generator 24 Hour Endurance Test"
- ST-0-010-306-3, Revision 19, "Unit 3 'B' RHR Loop Pump, Valve, Flow, and Unit Cooler Functional and Inservice Test"
- ST-O-052-414-2, Revision 12, "E4 Diesel Generator Fast Start and Full Load Test"
- RT-O-032-300-3, Revision 8, "Unit 3 HPSW Pump, Valve and Flow Functional Test"

b. Issues and Findings

There were no findings identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope (71151)

The inspectors reviewed the accuracy and completeness of the supporting data for the following licensee Performance Indicators:

- Unplanned Scrams per 7000 Critical Hours
- Scrams with Loss of Normal Heat Removal
- Safety System Unavailability - RHR System
- Reactor Coolant System Specific Activity
- Reactor Coolant System Leak Rate

The records reviewed included operating logs, chemistry and surveillance test logs, clearance activities, monthly operating reports, Licensee Event Reports (LERs), and A/Rs as applicable.

b. Issues and Findings

There were no findings identified.

40A2 Identification and Resolution of Problems

a. Inspection Scope

While performing the inspection procedures during this report period, the inspectors evaluated whether or not station personnel were identifying problems and placing them into their corrective action systems.

b. Issues and Findings

Failure of the 3'C' High Pressure Service Water (HPSW) Discharge Check Valve to Remain Fully Closed

On July 2 and July 10, 2000, equipment operators found the Unit 3'C' HPSW pump discharge check valve partially open. The equipment operators re-closed the valve both times. On August 4, the inspectors found the valve not fully closed. Operations personnel initiated A/R A1272991on July 2 but PECO did not fully evaluate this condition until the condition was again identified on August 4. Subsequently, Engineering personnel evaluated this condition and determined that it did not impact operability of the HPSW pump and repaired the check valve during this inspection period. Engineering personnel entered PEP I0011591into their corrective action program to document the delay in addressing this issue.

Packing Gland Follower Failures on Root Isolation Valves

On August 7, the failure of a packing gland follower on a one inch instrument root isolation valve caused a Unit 3 automatic reactor shutdown and Groups II and III primary containment isolation valve closures. Details of this event are documented in Section 4OA3.

Two previous packing gland follower cracking incidents had occurred on similar valves at the facility during the past eighteen months. The most recent packing gland follower cracking event occurred on a similar Unit 3 root isolation valve on May 28, 2000, and resulted in the leakage of contaminated reactor coolant system water outside of the primary containment. Leakage of contaminated reactor coolant system water outside of the primary containment is a significant condition adverse to quality. The identification of this significant condition adverse to quality was not adequately documented in PECO's corrective action system, and as a result, the cause of the condition was not determined, corrective action was not taken to prevent repetition, and generic concerns with potential packing gland follower cracking on other valves were not addressed. In May, the gland follower cracked and separated into two pieces in a similar manner to the failure that occurred at the start of the August 7 event. PECO's lab personnel determined that the crack in the gland follower that caused the August 7 scram had originated at the top of the flange and had been present for a considerable time. This crack would have been visible if an inspection of the valve had been performed prior to the packing gland follower failure.

10 CFR 50, Appendix B, Criterion XVI requires, in part, in the case of significant conditions adverse to quality, measures to assure that the cause of the condition is determined and corrective action taken to preclude repetition. Contrary to the above, PECO failed to determine the cause of the May 28, 2000 cracking of the packing gland follower which caused leakage of contaminated reactor coolant system water, a significant condition adverse to quality, and take corrective actions to prevent repetition. The lack of corrective actions from the May 28, 2000 cracking of the packing gland follower contributed to the repetitive event on August 7, and was a violation of 10 CFR 50, Appendix B, Criterion XVI. The August 7 cracking of the packing gland follower resulted in leakage of contaminated reactor coolant outside of primary containment, an automatic reactor shutdown, and primary containment isolation valve closures. This finding is in the cross cutting area of problem identification and is related to the Green finding discussed in Section 4AO3 in this report. This Severity Level IV violation is being treated as a Non-Cited violation, consistent with Section VI.A of the Enforcement Policy, issued on May 1, 2000 (65 FR 25368). This issue is documented in PECO's corrective action program as PEP 10011575. **(NCV 05000278/2000-008-02)**

4OA3 Event Follow-Up - Unit 3 Automatic Reactor Shutdown

a. Inspection Scope (71153)

On August 7, Unit 3 automatically shutdown from 100% power when a one inch instrumentation rack root valve packing gland follower failed and caused a false reactor low level signal input into RPS. This failure occurred when the packing gland follower

broke into two pieces allowing packing leakage of contaminated reactor coolant system water from the instrumentation piping. This leak was immediately isolated by actuation of the excess flow check valve in the instrumentation piping line. Unit 3 also experienced Groups II and III primary containment isolation valve closures due to the false reactor low level signal.

The inspectors observed plant parameters and status following the automatic reactor shutdown and reviewed strip charts for key reactor parameters. The inspectors also reviewed Check-Off List (COL) GP-18, Revision 31, "Scram Review Procedure Check List" and discussed the automatic reactor shutdown with several operations and engineering managers and staff. The inspectors verified that no significant anomalies to plant parameters occurred during or following the shutdown.

b. Issues and Findings

The EPRI Technical Report No. 100380, "Pipe Failures in U. S. Commercial Nuclear Power Plants" dated July 1992, noted that the frequency of instrument line breaks outside of containment was 3.52E-05/year. Had the excess flow check valve failed to close, the packing gland follower failure would have resulted in a small break loss of coolant accident outside of primary containment. This event was of very low safety significance (Green) since the excess flow check valve functioned as designed and stopped the leak and all mitigating systems functioned as designed.

4OA5 Other

.1 Performance Indicator Data Collecting and Reporting Process Review

a. Inspection Scope (TI 2515/144)

The inspectors reviewed the licensee's performance indicator data collecting and reporting process and determined whether the data collecting and reporting methods for current PI data are consistent with the guidance contained in NEI 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guideline" for the following indicators:

- Unplanned Power Changes per 7000 Critical Hours
- Safety System Unavailability - RHR System and Safety System Functional Failures
- Emergency Response Organization Drill Participation
- Occupational Exposure Control Effectiveness
- Protected Area Security Equipment Performance Index

b. Issues and Findings

The inspectors identified that procedure LR-CG-15-16, Revision 0, "Emergency Response Organization Drill Participation" did not identify all of the key emergency response organization members as described in NEI 99-02. Specifically, no communicators were identified in the list of key emergency response organization members. Although the communicators were not listed in LR-CG-15-16, NRC

emergency preparedness inspectors verified during this inspection period that the communicators were being appropriately counted in the performance indicator.

The inspectors also noted that many of the licensee's performance indicator procedures did not identify many of the key descriptions, clarifications, notes, or special precautions described in NEI 99-02. Therefore, the performance indicator owners and reviewers were required to read the applicable sections of NEI 99-02 to ensure that the performance indicators were being defined, calculated, and reported correctly. The lack of this key information in the licensee's procedures could become a challenge for new performance indicator owners or reviewers.

There were no findings identified.

4OA6 Meetings

.1 Exit Meeting Summary

The inspectors presented the results of the inspection to Mr. J. Doering and members of PECO's management on August 24, 2000. PECO management acknowledged the findings presented.

LIST OF ACRONYMS USED

A/R	action request
COL	check-off list
EDG	emergency diesel generator
ESW	emergency service water
HPSW	high pressure service water
LER	licensee event report
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
PEP	performance enhancement program
RHR	residual heat removal
RPS	reactor protection system

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000277(278)/2000-008-01	URI	Previous Operability Concerns with the Emergency Diesel Generators due to Heat Exchanger Crossflow (10 CFR Part 21 Issue)

Opened/Closed

05000278/2000-008-02	NCV	Corrective Action Violation Involving Corrective Actions for a Previous Root Isolation Valve Packing Gland Follower Failure

Discussed

None

ATTACHMENT 1

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.