May 22, 2001

EA-01-079

South Carolina Electric & Gas Company
ATTN: Mr. Stephen A. Byrne
Vice President, Nuclear Operations
Virgil C. Summer Nuclear Station
P. O. Box 88
Jenkinsville, SC 29065

SUBJECT: ERRATA LETTER FOR VIRGIL C. SUMMER NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT NO. 50-395/00-07

Dear Mr. Byrne:

This errata letter refers to the inspection report issued on April 30, 2001, for your Virgil C. Summer Nuclear Station. The EA number on the report cover letter was listed as EA-01-074 and should have been EA-01-079. Please replace the previously issued cover letter with the enclosed cover letter. We regret any inconvenience.

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).

Sincerely,

/RA/

Kerry D. Landis, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket No.: 50-395
License No.: NPF-12

Enclosure: Integrated Inspection Report No. 50-395/00-07 Cover Letter

cc w/enclosure: See page 2

cc w/encl:

R. J. White
Nuclear Coordinator Mail Code 802
S.C. Public Service Authority
Virgil C. Summer Nuclear Station
Electronic Mail Distribution

J. B. Knotts, Jr., Esq.
Winston and Strawn
Electronic Mail Distribution

Henry J. Porter, Assistant Director
Div. of Waste Mgmt.
Dept. of Health and Environmental Control
Electronic Mail Distribution

R. Mike Gandy
Division of Radioactive Waste Mgmt.
S. C. Department of Health and Environmental Control
Electronic Mail Distribution

Gregory H. Halnon, General Manager
Nuclear Plant Operations (Mail Code 303)
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
Electronic Mail Distribution

Melvin N. Browne, Manager
Nuclear Licensing & Operating Experience (Mail Code 830)
Virgil C. Summer Nuclear Station
Electronic Mail Distribution

April 30, 2001

EA-01-079
SDP/EA-00-238

South Carolina Electric & Gas Company
ATTN: Mr. Stephen A. Byrne
Vice President, Nuclear Operations
Virgil C. Summer Nuclear Station
P. O. Box 88
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT NO. 50-395/00-07

Dear Mr. Byrne:

On March 31, 2001, the NRC completed an inspection at your Virgil C. Summer Nuclear Station. The enclosed report documents the inspection findings which were discussed on March 30, 2001, with you and other members of your staff.

The inspection examined 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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because this issue has been entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny the Non-Cited Violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Virgil C. Summer Nuclear Station.

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

Enclosure

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

April 30, 2001

EA-01-074
SDP/EA-00-238

South Carolina Electric & Gas Company
ATT.: Mr. Stephen A. Byrne
Vice President, Nuclear Operations
Virgil C. Summer Nuclear Station
P. O. Box 88
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT NO. 50-395/00-07

Dear Mr. Byrne:

On March 31, 2001, the NRC completed an inspection at your Virgil C. Summer Nuclear Station. The enclosed report documents the inspection findings which were discussed on March 30, 2001, with you and other members of your staff.

The inspection examined 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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because this issue has been entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny the Non-Cited Violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Virgil C. Summer Nuclear Station.

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).

Sincerely,

/RA/

Kerry D. Landis, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket No.: 50-395
License No.: NPF-12

Enclosure: Integrated Inspection Report No. 50-395/00-07

Attachments: (1) Supplemental Information
(2) NRC's Revised Reactor Oversight Process

cc w/encl:

R. J. White
Nuclear Coordinator Mail Code 802
S.C. Public Service Authority
Virgil C. Summer Nuclear Station
Electronic Mail Distribution

J. B. Knotts, Jr., Esq.
Winston and Strawn
Electronic Mail Distribution

Henry J. Porter, Assistant Director
Div. of Waste Mgmt.
Dept. of Health and Environmental Control
Electronic Mail Distribution

R. Mike Gandy
Division of Radioactive Waste Mgmt.
S. C. Department of Health and Environmental Control
Electronic Mail Distribution

Bruce C. Williams,General Manager
Nuclear Plant Operations (Mail Code 303)
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
Electronic Mail Distribution

Melvin N. Browne, Manager
Nuclear Licensing & Operating Experience (Mail Code 830)
Virgil C. Summer Nuclear Station
Electronic Mail Distribution

Distribution w/encl:
K. Cotton, NRR
RIDSNRRDIPMIIPB
OEMAIL
PUBLIC

PUBLIC DOCUMENT (circle one): YES NO

OFFICE	RII	RII	RII	RII	RII	RII	RII
SIGNATURE	lg	mw	mk	df	gk	mcng see email	odm
NAME	LGarner	MWidmann	MKing	DForbes	GKuzo	WRogers	ODeMiranda
DATE	4/30/2001	4/27/2001	4/27/2001	4/27/2001	4/26/2001		4/27/2001
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\Sum 00-07.wpd

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	50-395
License No.:	NPF-12
Report No.:	50-395/00-07
Licensee:	South Carolina Electric & Gas (SCE&G) Company
Facility:	Virgil C. Summer Nuclear Station
Location:	P. O. Box 88 Jenkinsville, SC 29065
Dates:	December 24, 2000 through March 31, 2001
Inspectors:	M. Widmann, Senior Resident Inspector M. King, Resident Inspector D. Forbes, Health Physicist, RII (Sections 2OS1, 2OS2, 4OA1.1, 4OA1.2) G. Kuzo, Senior Health Physicist, RII (Sections 2OS3.1, 2OS3.2, 2OS3.3)
Accompanying Personnel:	R. Hamilton, Health Physicist, RII
Approved by:	K. D. Landis, Chief, Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 50-395/00-07**,** on 12/24/2000 - 03/31/2001, South Carolina Electric & Gas Company, Virgil C. Summer Nuclear Station. Maintenance Rule Implementation, Event Follow-Up and Licensee Identified Violations.

The inspection was conducted by resident inspectors and two regional health physicists. The inspection identified one inspector identified Green finding, which was a non-cited violation. The significance of the finding is indicated by the color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process."

A. <u>Inspector Identified Violation</u>

Cornerstone: Initiating Events

- Green. The inspectors identified a non-cited violation for failure to include the turbine runback circuitry within the scope of the Maintenance Rule monitoring program as required by 10 CFR 50.65. The turbine runback circuitry is a non-safety related system that mitigates an over-power delta temperature or over-temperature delta temperature transient which would otherwise result in a reactor trip. The turbine runback circuitry was discovered to be failed and would have been unable to performed its function if called upon.

  The finding was of very low safety significance because the safety-related reactor protection system also mitigates an over-power delta temperature or over-temperature delta temperature transient. (Section 1R12)

B. <u>Licensee Identified Violations</u>

- Violations of very low significance which were identified by the licensee have been reviewed by the inspectors. The licensee has captured these issues in their corrective action program. These violations are listed in Section 4OA7 of this report.

Report Details

The unit began the inspection period with the reactor core fully offloaded to the spent fuel pool while repairs continued on the A reactor coolant loop hot leg. Inspection activities related to the hot leg crack and repairs are documented in NRC Special Inspection Report No. 50-395/00-08 (ADAMS Ascension Number: ML010740293 or at the NRC Website, http://www.nrc.gov/NRC/REACTOR/SUMMER/index.htm, under the NRC Inspection Team and Reports link).

On February 11, core reload commenced and the unit entered Mode 6. After completion of post maintenance testing of the hot leg repair and steam generator hot gap measurements, the unit proceeded to Mode 3 on February 22 and returned to Mode 5 on February 25 as planned. The unit proceeded to Mode 4, and entered Mode 3 on February 26. The unit entered Mode 2, began critical operation and commenced low power physics testing on February 28. On March 1, while in Mode 2, operators manually tripped the reactor due to two control rods remaining inserted when withdrawing shutdown bank B during low power physics testing. The reactor was restarted on March 2 with Mode 1 being obtained on March 3. On March 9, unit power was decreased from 97 percent to 88 percent to support maintenance on the C train main feedwater pump. On March 10, after achieving approximately 99 percent reactor power, power was reduced to approximately 90 percent due to secondary system control issues. After the completion of maintenance and scheduled surveillance testing on various components, the unit achieved 100 percent power on March 11. The unit remained at or near 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

.1 Availability of Redundant Equipment

a. Inspection Scope

The inspectors verified through plant walkdowns that with a train of equipment removed from service that the opposite train of equipment was correctly aligned, available and operable. The inspectors also reviewed outstanding Maintenance Work Requests (MWR) and related Problem Identification Program (PIPs) reports to verify that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact mitigating system availability. The following redundant systems / components were inspected:

- A Emergency Diesel Generator (EDG) (while the B EDG was out of service during the refueling outage 12 (RFO-12))
- Emergency Feedwater (EFW) backup source from Service Water (SW) (including visual inspections of the internals of cross-connection header isolation valves)
- Spent Fuel Pool Cooling (during full core off-load, including breaker alignment and electrical supply walkdowns)
- A Motor Driven EFW Pump and the Turbine Driven Emergency Feedwater (TDEFW) Pump (when the B EFW Pump was out of service in Mode 1)

Correct alignment and operating conditions were determined from the applicable portions of the following drawings, station operating procedures (SOPs) and Final Safety Analysis Report (FSAR) and Technical Specifications (TSs) sections:

- SOP-123, “Spent Fuel Cooling,” Revision 11H
- SOP-211, “Emergency Feedwater System,” Revision 11H
- SOP-306, “Emergency Diesel Generator,” Revision 14B
- SOP-307, “Diesel Generator Fuel Oil System,” Revision 9B
- D-302-085, “Emergency Feedwater (Nuclear),” Revision 40
- D-302-351, “Diesel Generator - Fuel Oil,” Revision 8
- D-302-353, “Diesel Generator - Miscellaneous Services,” Revision 9
- D-302-651, “Spent Fuel Cooling,” Revision 38
- FSAR Sections 8.3.1, 9.1
- TS Sections 3/4 7.1.2, 3/4.8.1, 3/4.9.10
- Design basis documents for EDGs, emergency feedwater and spent fuel pit cooling

b. Findings

No findings of significance were identified.

.2 Semiannual Inspection

a. Inspection Scope

The inspectors performed a detailed review and walkdown to determine if the Component Cooling (CC) system was properly aligned and to identify discrepancies that could adversely impact the system’s function. The following documents were reviewed to determine the correct system lineup and system requirements:

- FSAR Section 9.2.2, “Component Cooling Water System”
- TS Sections 3/4.7.3, “Component Cooling Water System”
- Design Basis Document (VCSNS-DBD), Component Cooling Water System
- Procedure: SOP-118, “Component Cooling Water,” Revision 14F
- Emergency Operating Procedures involving the CC system
- Annunciator Response Procedures for various CC system related annunciators
- Abnormal Operating Procedure, (AOP)-118.1, “Total Loss of Component Cooling Water,” Revision 2
- CC equipment listed in Technical Work Record, TWR-10288, “Critical Equipment Risk Ranking,” dated March 6, 2001
- Drawings: D-302-611, “Component Cooling,” Revision 32
  D-302-612, “Component Cooling Inside Reactor Building,” Revision 23
  D-302-613, “Component Cooling System Non-Essential Equipment Cooling,” Revision 19
  D-302-614, “Component Cooling Systems to NSSS Pumps,” Revision 13

In addition, the inspectors reviewed outstanding MWRs, related PIP items and temporary system modifications, as applicable, to verify that the licensee had properly identified and resolved equipment problems that could impact operability or the operator’s ability to implement abnormal or emergency procedures. The inspectors also evaluated availability of support systems (SW, heating ventilation and air conditioning, and electrical lineups) which were necessary for CC system operability.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors reviewed current PIPs, Work Orders (WO), and impairments associated with the fire suppression system. The inspectors reviewed the status of ongoing surveillance activities to determine whether they were current to support the operability and availability of the fire protection system. The inspectors assessed the material condition of the active and passive fire protection systems and features, and verified proper control of transient combustibles and ignition sources.

The inspectors conducted routine inspection of the following areas:

- Relay Room (fire zone CB-6)
- Component Cooling Water Pump Areas (fire zones IB-25.1.1 and 25.1.2)
- Control Room (fire zone CB-17.1)
- A and B Diesel Generator Rooms (fire zones DG 1.1, 1.2, 2.1 and 2.2)
- Reactor Building (fire zone RB-1), while hot work was on going

The majority of these areas are important to safety based on the licensee’s fire risk analysis (Individual Plant Examination for External Events (IPEEE) External Fires Request for Additional Information (RAI), dated January 1999).

On March 27, the inspectors observed conduct of an unannounced fire drill in the 1DA switchgear room (fire zone IB-20) and the drill critique that followed. The inspectors observed the activities to verify that the drill was properly conducted and drill objectives were met.

The inspectors also observed Surveillance Test Procedure, (STP)-170.005, “Fire Switch Functional Test for XSW1DB-07, XSW1DB1-04, and XSW1DB2-04," Revision 3B which demonstrates the operability of the 10 CFR 50, Appendix R (Fire Protection Program), local / remote transfer and local switches on a refueling outage frequency. In addition, the inspectors reviewed the data records and surveillance procedures that ensure the reliability of the diesel driven fire pump batteries and associated battery charger:

- STP-505.001, “Fire Protection Diesel Monthly Battery Test,” Revision 3A
- STP-505.002, “Fire Protection Diesel Battery Quarterly Specific Gravity Test,” Revision 4
- STP-505.003, “18 month FP Diesel Battery Test,” Revision 3A.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On March 14, the inspectors observed senior reactor operators and reactor operators on the plant's simulator during licensed operator training. The training involved a security event (simulated intruders disabling service water and the condensate storage tank, LOR-ST-009) and the resultant loss of secondary heat sink and emergency procedure recovery actions. The observed training was being used for performance indicator input for emergency classification (see Section 1EP6). The inspectors assessed overall crew performance, communication, oversight of supervision and the evaluators' critique. The inspectors also compared the simulator board configuration with actual control room board configuration for consistency, especially with recent modifications in the actual control room.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule (MR) Implementation

a. Inspection Scope

The inspectors sampled portions of selected performance-based problems associated with structures, systems or components (SSCs), to assess the effectiveness of maintenance efforts. Reviews focused, as appropriate, on: (1) scoping in accordance with the MR (10 CFR 50.65); (2) characterization of failed SSCs; (3) safety significance classifications; (4) 10 CFR 50.65 (a)(1) or (a)(2) classifications; and (5) the appropriateness of performance criteria for SSCs classified as (a)(2) or goals and corrective actions for SSCs classified as (a)(1).

The inspectors reviewed the licensee's implementation of the MR to determine if maintenance preventable functional failures may have existed that the licensee did not capture in their program or if other MR findings existed. Equipment issues described in the PIPs listed below were reviewed:

- A and B EDG governor issues (PIP 0-C-00-1876)
- Turbine runback circuit out of service last cycle (PIP 0-C-01-0003)
- A and B EDG motor operated controller issues affecting generator voltage control (PIP 0-C-01-0033)
- Seismic monitor out of service due to water intrusion (PIP 0-C-01-0071)
- Impact of (a)(1) monitoring on TDEFW discharge isolation valve mispositioning (PIP 0-C-00-1235)

The inspectors also reviewed the licensee's decision to not perform MR monitoring of their systems during the extended defueled condition (October 17, 2000 to February 11, 2001) to determine if this decision was consistent with the intent of the program.

b. Findings

A green finding, a non-cited violation, was identified for failure to include the turbine runback circuit within the scope of the MR. The licensee identified in PIP 0-C-01-0003 that the turbine runback circuitry was failed due to a bad voltage comparator.

The inspectors reviewed this problem and discovered that this circuitry was not being monitored under the MR. The turbine runback circuitry is a non-safety related system that mitigates an over-power delta temperature or over-temperature delta temperature transient which would otherwise result in a reactor trip. A monitoring program for this circuitry would help ensure that it would remain able to perform its intended function. Thus, this issue had a credible impact on safety, in that, if it had gone uncorrected the likelihood the circuitry would not be available when needed would have been increased.

Using the Significance Determination Process, the inspectors determined that this finding was of very low safety significance (Green) because the safety-related reactor protection system also mitigates an over-power delta temperature or over-temperature delta temperature transient.

Requirements for monitoring the effectiveness of maintenance at nuclear power plants, (Maintenance Rule), 10 CFR 50.65(b)(2) requires, in part, that the scope of the monitoring program in paragraph (a)(1) shall include non-safety related structures, systems, and components that are relied upon to mitigate transients. The licensee's failure to include the turbine runback circuitry within the scope of their MR monitoring program is a violation of 10 CFR 50.65(a)(1). This NRC identified violation is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy and is identified as NCV 50-395/00007-01. This condition has been captured in the licensee corrective action program under PIPs 0-C-01-0003 and 0-C-01-0123.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the licensee's assessments of the risk impacts of removing from service those components associated with emergent work items. The inspectors evaluated the selected SSCs listed below for: (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of risk; (3) that, upon identification of an unforseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and (4) that emergent work problems were adequately identified and resolved. The inspectors evaluated the licensee's work prioritization and risk determination to determine, as appropriate, whether necessary steps were properly planned, controlled, and executed for emergent work activities listed below:

- A reactor coolant system (RCS) hot leg repairs, Engineering Change Request (ECR) 50340
- A EDG troubleshooting of governor issues, MWR 0017503
- B EDG motor operator controller failure issues, failed diodes / blown fuse, PIP 0-C-01-0033
- Main feed regulator valve B IFV-03331, repair, MWR 0101141
- Impact of TDEFW pump surveillance tests (STP-200.008A and 220.011) during unit start-up
- B motor driven EFW pump out of service due to suction check valve XVC01013B-EF failing STP-120.004

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

This inspection evaluated operator response to non-routine plant evolutions to ensure they were appropriate and in accordance with procedures. The inspectors also evaluated performance problems to ensure that they were entered into the corrective action program. The following events or evolutions were reviewed:

- B reactor coolant pump seal leak-off issues (PIP 0-C-01-0282)
- Rod G-9 in shutdown bank B stuck at zero steps (PIP 0-C-01-0297)
- Manual reactor trip due to rods G-9 and L-5 stuck at zero steps during low power physics testing (PIP 0-C-01-0296)
- Secondary transients due to loss of deaerator (DA) flow, lifting DA safety relief valve and subsequent power reduction to 90 percent power to reseat the valve (PIP 0-C-01-0353).

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk significant mitigating systems to assess, as appropriate, (1) the technical adequacy of the evaluations; (2) whether operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred; (3) whether other existing degraded conditions were considered; (4) where compensatory measures were involved, whether the compensatory measures were in place, would work as intended, and were appropriately controlled; and (5) the impact on TS Limiting Conditions for Operations (LCOs) and the risk significance in accordance with the SDP. The inspectors reviewed the following PIPs, issues and evaluations:

- PIPs 0-C-00-1881, 1883 and 1905, A and B EDG governor issues
- PIPs 0-C-00-1887, 0-C-01-0033, A and B EDG motor operator controller issues
- Review of fire protection technical work record of TW-13 Kaowool and ESL 235 XB conduit not being triple wrapped
- Review of calculation number DC00040-074 for ECR 50340 for the unit entering Mode 4 and Mode 3 with reactor building scaffolding in place for A Hot Leg inspection

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (PMT)

a. Inspection Scope

For the post maintenance tests listed below, the inspectors reviewed the test procedure and witnessed either the testing and/or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable:

- STP-124.001, PMT for control room air handling system (emergency ventilation) following intake dampers (XVB00003B/4B-AH and XDP23B) adjustments.
- STP-125.004A, PMT for A EDG following MOC-2 replacement
- STP-125.017, PMT for A EDG following governor replacement
- STP-310.006, PMT for power range nuclear instrumentation N-41 following meter failure / repair
- STP-345.039, PMT for B reactor trip breaker following spring failure repair
- STP-405.005, PMT for residual heat removal (RHR) inlet relief valves (XVR08708A/B-RH) following repair

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope

The inspectors reviewed the following activities related to the RFO-12 for conformance to applicable procedural and technical specification requirements, and witnessed selected evolutions:

- decay heat system operations
- inventory control and measures to provide alternative means for inventory addition
- reactivity controls including locked valve dilution controls

- refuel handling operations (inspection, insertion, and tracking of fuel assemblies through core reload)
- full core off-load spent fuel cooling system operations
- monitoring of containment integrity controls
- reactor heatup, startup and power ascension activities

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the surveillance tests listed below, the inspectors examined the test procedure and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable:

- STP-105.016, "Charging Pump and Diesel Generator Slave Relay Testing," Revision 7C
- STP-125.004B, "Diesel Generator B Load Rejection Test," Revision 0B
- STP-146.002, "Reactor Makeup Water System Refueling Alignment Verification," Revision 4
- STP-170.005, "Fire Switch Functional Test for XSW1DB-07, XSW1DB1-04, and XSW1DB2-04," Revision 3B
- STP-220.008A, "Turbine Driven Emergency Feedwater Pump Full Flow Test," Revision 2C
- STP-345.037, "Solid State Protection System Actuation Logic and Master Relay Test for Train A," Revision 15A

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

On March 14, the inspectors evaluated a licensed operations crew's performance during simulator based training activities. The inspectors evaluated emergency procedure use, including proper emergency plan classification, and whether the activity was appropriate to include in the performance indicator statistics. The inspectors also attended and provided feedback during the crew's post training critique.

On March 22, the inspectors observed an emergency drill conducted to train on the integrated capabilities of the emergency response organizations and a major portion of the Virgil C. Summer Nuclear Station Emergency Plan. This drill was also considered as one of the required health physics and radiological monitoring drills. Participation of the state and local governments was limited to receiving emergency notifications and the associated forms per their request. The inspectors observed various aspects of the drill in the simulator control room, operations support center, technical support center and emergency operations facility. The inspectors assessed emergency procedure usage, including proper emergency plan classification, notifications and protective area recommendations to ensure the licensee was properly identifying and entering any problems into its corrective action program. This inspection evaluated the licensee's conduct of the drill and critique performance and determined whether the drill was of appropriate scope to be included in the performance indicator statistics.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiological Significant Areas

a. Inspection Scope

The inspectors reviewed radiological access controls and verified their implementation during RFO-12. Health Physics technician job coverage was observed, and personnel dosimetry results were reviewed and discussed in detail with dosimetry management. Licensee activities were reviewed against Final Safety Analysis Report (FSAR), TS, and 10 CFR Part 20 requirements.

b. Findings

No findings of significance were identified.

2OS2 As Low As Is Reasonably Achievable (ALARA) Planning and Controls

a. Inspection Scope

The inspectors reviewed the plant collective exposure history, current exposure dose trends, and the year 2000 annual site dose goal to determine if the licensee was implementing ALARA practices as required by 10 CFR 20.1101(b) and the Corporate ALARA Plan, Revision 9. During plant walkdowns, the inspectors observed job site implementation of ALARA controls. The inspectors observed and discussed the use of temporary shielding, Radiation Work Permits, and discussed with health physics personnel internal exposure goals and practices for RFO-12. ALARA planning and controls for six refueling outage high dose jobs, including the A hot leg piping weld repair, were reviewed and discussed with cognizant personnel. The inspectors also reviewed ALARA procedures including:

- Health Physics Procedure (HPP)-153, "Administrative Exposure Limits," Revision 13

- HPP-401, “Issuance, Termination And Use Of RWPS And SRWPS,” Revision 14
- Refueling 12 Outage ALARA Plan, September 5, 2000
- A RCS Hot Leg Piping Inspection and Repair ALARA Plan, November 10, 2000
- ALARA Committee Meeting Minutes, RFO-12 A Hot Leg Repair, November 12, 2000

b. Findings

No findings of significance identified.

2OS3 Radiation Monitoring and Protection Equipment

.1 Portable Radiation Survey Instruments

a. Inspection Scope

For a March 21, 2001, “at power” containment entry, the inspectors evaluated availability and operability of personnel radiation survey instruments. Instrument calibration adequacy was verified and performance of response checks was observed. Data were evaluated and response checks verified for the following instruments: RO-2 Ion Chamber Serial Number (SN) 607, RO-20 Ion Chamber SN 3160, PNR-4 “Rem Ball” SN 4277, and Teletector SN 19713 that was staged for ready use.

The certification and re-calibration documentation for the gamma radiation sources used to calibrate and functional check the instruments was evaluated for traceability to National Institute of Standards and Technology (NIST) or former National Bureau of Standards (NBS) reference standards.

Observations within this program area were evaluated against applicable requirements in 10 CFR Part 20 and details documented in TS and the FSAR.

b. Findings

No findings of significance were identified.

.2 Area Radiation Monitors

a. Inspection Scope

Current calibration data, maintenance records, problem identification reports and selected alarm set-points for the following area radiation monitors were reviewed and discussed in detail:

- RMG-01, Control Room
- RMG-03, Sampling Room
- RMG-07, Containment High Range Radiation Monitor (CHRM)
- RMG-08, Fuel Handling Bridge
- RMG-14, Incore Instruments

Availability and operability of the Post Accident Sampling System (PASS) equipment and instrumentation were evaluated. The inspectors directly observed the installed PASS equipment, and reviewed and discussed performance of surveillances and calibration data conducted in accordance with Chemistry Procedure (CP)-906, "Post Accident Sample System Preventative Maintenance Program," Revision 10, and CP-903, "Operation Of The Nuclear Sample System Under Normal Conditions," Revision 16. Status of PASS equipment within the MR was evaluated based on maintenance records reviewed and discussions with the responsible system engineer.

The installed area radiation monitoring equipment, and associated program implementation were evaluated against the FSAR, TS, and procedural requirements. In addition, the CHRM and PASS equipment specifications and programs were evaluated against applicable guidance specified in NUREG 0737, "Clarification of TMI Action Plan Requirements," and Regulatory Guide 1.97, "Instrumentation for Light Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."

b. Findings

No findings of significance were identified.

.3 Respiratory Protection Equipment

a. Inspection Scope

The licensee's respiratory protection program activities for use of supplied air and self-contained breathing apparatus (SCBA) by workers entering airborne radiation areas or areas categorized as immediately dangerous to life and health (IDLH) were reviewed and evaluated. Semi-annual breathing-air quality certification data for the plant breathing air and SCBA fill-station compressors were reviewed, discussed and evaluated for calendar year 2000 and year-to-date 2001. During the week of March 19, 2001, the inspectors toured the licensee's air bottle refill station, and evaluated SCBA equipment located in selected storage and emergency respirator equipment lockers, including the control room. Control room operators and other emergency response personnel were interviewed to assess the adequacy of staged SCBA and associated personal equipment, e.g., mask type and sizes, and eye glass inserts. The status of licensee's respiratory protection program training, fit test, and medical qualifications of approximately 10 on-shift staff selected from control room operators and health physics technicians who could potentially be required to use SCBA equipment was evaluated.

The following Station Administrative Procedure (SAP) and Health Physics Procedures (HPPs) associated with the respiratory protection program were reviewed, discussed and evaluated during the inspection:

- SAP-500, "Health Physics Manual," Revision 11
- SAP-504, "Respiratory Protection Program," Revision 1
- HPP-154, "Issuance and Control of Respiratory Protective Equipment," Revision 11

- HPP-163, “Qualification Process for the Use of Respiratory Protection Equipment,” Revision 9
- HPP-602, “Fit Testing,” Revision 13
- HPP-633, “Inspection, Maintenance and Storage of Respiratory Protective Devices,” Revision 3

The Condition Evaluation Reports (CERs) associated with the respiratory protection program activities documented within the following PIPs were reviewed to assess the licensee’s ability to identify, characterize, prioritize, and resolve identified issues:

- PIP 0-C–00-0419, SCBA Cylinder Found Empty
- PIP 0-C–00-1691, Wrong Respirator Type Issued
- PIP 0-C–01-0042, Respirator Issued with Fit Test Expired

The program was evaluated against the FSAR, TS, procedural requirements and NRC Information Notices 98-20 and 99-05. Additionally, compliance with 10 CFR 20, Subpart H, “Respiratory Protection and Controls to Restrict Internal Exposure in Restricted Areas,” and 10 CFR 20, Appendix A, “Assigned Protection Factors for Respirators,” was verified.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Occupational Exposure Control Effectiveness PI

a. Inspection Scope

The inspectors interviewed cognizant personnel and reviewed records to determine whether the submitted PI statistics were calculated in accordance with the guidance contained in NEI 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 0. The following PIP reports, issued between January 1, 2000, and January 1, 2001, were reviewed:

- PIP 0-C-00-0468
- PIP 0-C-00-0954
- PIP 0-C-00-1098
- PIP 0-C-00-1691
- PIP 0-C-00-1720
- PIP 0-C-01-0002
- PIP 0-C-01-0062

b. Findings

No findings of significance were identified.

.2 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual PI

a. Inspection Scope

The inspectors interviewed cognizant personnel and reviewed records to determine whether the submitted PI statistics were calculated in accordance with the guidance contained in NEI 99-02. The following PIP reports, issued between January 1, 2000, and January 1, 2001, were reviewed:

- PIP 0-C-00-0304
- PIP 0-C-00-1036
- PIP 0-C-00-1266

b. Findings

No findings of significance were identified.

.3 Safety System Unavailability - Residual Heat Removal System Unavailability PI

a. Inspection Scope

The inspectors verified the accuracy of the PI through the fourth quarter year 2000. The inspectors reviewed selective samples of station logs, removal and restoration logs, Licensee Event Reports (LERs), and corrective action program database and discussed system unavailability tracking with the system engineer and PI coordinator for the period of January through December 2000.

b. Findings

No findings of significance were identified.

.4 Reactor Coolant System (RCS) Specific Activity PI

a. Inspection Scope

The inspectors verified the accuracy of the PI through the fourth quarter of year 2000. The inspectors reviewed selective samples of station logs, RCS specific activity surveillance test records, TS requirements and corrective action program database for the period of January through December 2000. The inspectors also observed a chemistry technician obtain and analyze an RCS sample on March 20.

b. Findings

No findings of significance were identified.

.5 Safety System Functional Failures (SSFF) PI

a. Inspection Scope

The inspectors verified the accuracy of the PI through the fourth quarter year 2000. The inspectors reviewed LERs and corrective action program databases and discussed SSFFs with the PI coordinator and licensing manager for the period of January through December 2000.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

.1 (Closed) Apparent Violation (AV) 50-395/00006-03: Failure to install a steam generator vent line support. This AV was previously discussed in NRC Inspection Report 50-395/00-06, Section 4OA3.4, which closed LER 50-395/2000009-00, "Main Steam System Support Found Missing." The licensee identified that inside the reactor building a B steam generator 3/4 inch vent valve line did not have a tie-back seismic support. Steam generators A and C vent lines have the seismic supports installed.

A review of this issue through the significance determination process indicated that a credible impact on safety existed and would result in an increase in the frequency of initiating transients for main steam. Phase I evaluation indicated the issue does contribute to the likelihood of a primary or secondary loss of coolant accident initiators. Therefore, a more detailed Phase III evaluation was necessary to determine the safety significance of this issue.

The dominate accident sequence was selected as an earthquake causing the vent line failure. Over a number of hours containment atmospheric pressure would increase to the safety injection set point. The high head safety injection pumps would supply water to the RCS. If operators fail to secure the injection pumps, a relief valve on the primary side will open and then potentially stick open. This small break loss of coolant accident would be mitigated until the transfer to high pressure recirculation (piggyback) which is assumed to fail. The possibility that plant operators would terminate the sequence is credible based upon readily available instrumentation and alarms to recognize a containment pressure increase and availability of containment coolers which can be supplied by the service water system when the normal industrial cooling water system cooling capacity is exceeded. Such actions would successfully maintain containment pressure below the safety injection set point. Regulatory requirements specify that the vent line should withstand a design bases earthquake of 0.1g or an acceleration of approximately 100 cm/sec/sec. After considering the failure probability of the crew to take appropriate actions and the frequency of occurrence of a spectrum of earthquakes for the plant, it was concluded that this issue represented a condition of very low safety significance (see Section 4OA7).

.2 (Closed) LER 50-395/2000010-00: Inadequate surveillance of ASME code components. ASME Section XI, subparagraph IWA-5242(a), as modified by Relief Request number

NRR 00-259, require visual leakage inspection of components with pressure retaining bolted connections with insulation removed. Five Code Class 1 check valves in the safety injection system were not included in the Inservice Test (IST) program and thus were not individually being visually inspected with the insulation removed.

Upon discovery of the surveillance program error the applicable procedures were revised to include the missing components. The inspectors verified that the five check valves were properly inspected, with no problems identified, prior to the end of the RFO-12. Previously, the licensee had performed a visual inspection of the pressurized system with the insulation installed. However, with insulation not removed, early detection of leakage that could be indicative of future possible check valve failure could have gone undetected. Thus, an initiating event frequency for a loss of coolant accident could have increased without detection. However based on the RFO-12 inspection results, this issue represented a condition of very low safety significance (see Section 4OA7).

.3 (Closed) LER 50-395/2000011-00: Diesel generator fuel oil storage. This LER documents that the design calculation for the EDG fuel oil storage requirements did not consider optional loads that would be added to the EDG per the Emergency Operating Procedures.

The licensee identified that the volume of available fuel contained within the storage tanks had a reduced margin from 10 percent margin to 5.2 percent margin above the required TS amounts based on ANSI N195-1976. Several methods for augmenting the existing fuel supplies would have existed during loss of off-site power events. The licensee has completed corrective actions for this condition including correction of design base calculations, and an associated TS change which was approved by the NRC (Amendment No. 150, dated February 2, 2001). The TS change maintains a 2 percent margin above the minimum required volume during Modes 1 through 4, and a 10 percent margin during Modes 5 and 6. The licensee has also upgraded non-safety class fuel crossties to Safety Class 2b per ECR-50335 to increase the assurance that this line will be available as a contingency should it ever need to be utilized. The licensee also revised procedures to allow refilling of the EDG fuel oil storage tanks through a cross-tie from the number 2 fuel oil storage tank which contains approximately 500,000 gallons of fuel oil.

Based on the above information this issue did not represent an actual or credible impact on safety. The EDGs were operable and sufficient quantities of fuel oil were available to operate the diesels for the required TS seven days. Although this issue has been corrected, it constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the Enforcement Policy.

.4 (Closed) Apparent Violation (AV) 50-395/000005-01: Apparent violation TS 6.8.1.a and c for failure to follow procedures to return the TDEFW manual discharge isolation valve to the open position and improperly performing independent verification.

(Closed) AV 50-395/000005-02: Apparent violation for not complying with TS 3.7.1.2 action statement to restore the TDEFW to operable status in 72 hours.

These AVs were issued in NRC Integrated Inspection Report 50-395/00-05 and were associated with the TDEFW pump being isolated for approximately 48 days while at power. Based upon the information the licensee presented at a December 7, 2000, regulatory conference, the NRC determined that the licensee's failure to properly position and independently verify the TDEFW pump discharge isolation valve in accordance with procedures required by Technical Specification (TS) 6.8.1 resulted in the failure to comply with TS 3.7.1.2 for TDEFW pump operability. The failure to adhere to these regulatory requirements was cited as one violation in a December 28, 2000, letter to the licensee. This event was described in the letter as low to moderate safety significance (White). The two AVs are considered closed. For future inspection and tracking proposes, the violation is identified as VIO 50-395/00007-04.

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. S. Byrne and other members of the licensee's staff on March 30, 2001. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee Identified Violations

The following findings of very low significance were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

	NCV Tracking Number	Requirement Licensee Failed to Meet
(1)	NCV 50-395/00007-02	10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that design basis requirements be correctly translated into specifications, drawings, procedures and instructions. Contrary to those requirements the seismic design basis of the plant was not translated into specifications, drawings, procedures and instructions, in that, a support was never designed to prevent failure of the B steam generator vent valve line during a seismic event. This item is documented in the licensee's corrective action program as PIPs 0-C-00-1019 and 0-C-00-1359.
(2)	NCV 50-395/00007-03	Technical Specification (TS) 4.0.5 requires, in part, surveillance requirements for inservice testing (IST) of ASME Code Class 1 components. The applicable Code required that these components with pressure retaining bolted connections be visually inspected for leakage with the insulation removed. Contrary to these requirements,

on October 18, 2000, the licensee discovered that five such Code Class 1 check valves were not being visually inspected for leakage with the insulation removed. This item is documented in the licensee's corrective action program as PIP 0-C-00-1479 and is the subject of Licensee Event Report 50-395/2000010-00.

Attachment 1

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Archie, Manager, Planning & Scheduling
F. Bacon, Manager, Chemistry Services
S. Bailey, Supervisor, Plant Support Engineering
L. Blue, Manager, Health Physics and Radwaste
M. Browne, Manager, Nuclear Licensing and Operating Experience
R. Clary, Manager, Plant Life Extension
C. Fields, Manager, Quality Systems
G. Gatlin, Manager, Operations
G. Halnon, General Manager, Engineering Services
L. Hipp, Manager, Nuclear Protection Services
T. McAlister, Supervisor, Quality Control
G. Moffatt, Manager, Design Engineering
K. Nettles, General Manager, Nuclear Support Services
A. Rice, Manager, Plant Support Engineering
R. White, Nuclear Coordinator, South Carolina Public Service Authority
B. Williams, General Manager, Nuclear Plant Operations
G. Williams, Manager, Maintenance Services

NRC

W. Rogers, Senior Reactor Analyst, RII

ITEMS OPENED AND CLOSED

Opened

50-395/00007-04	VIO	failure to follow procedures results in the TDEFW pump being inoperable for approximately 48 days during power operation due to its manual discharge valve being closed (Section 4OA3.4)

Opened and Closed

50-395/00007-01	NCV	failure to include the turbine runback circuitry within the scope of the Maintenance Rule monitoring program (Section 1R12)
50-395/00007-02	NCV	failure to install steam generator vent line support (Section 4AO7)
50-395/00007-03	NCV	failure to include five check valves in the in-service test (IST) program (Section 4OA7)

Closed

50-395/00006-03	AV	failure to install a steam generator vent line support (Section 4OA3.1)
50-395/2000010-00	LER	inadequate ASME code visual examination for pressure retaining components (Section 4OA3.2)
50-395/2000011-00	LER	diesel generator fuel oil storage (Section 4OA3.3)
50-395/00005-01	AV	apparent violation TS 6.8.1.a and c for failure to follow procedures to return the TDEFW manual discharge isolation valve to the open position and improperly performing independent verification (4OA3.4)
50-395/00005-02	AV	apparent violation for not complying with TS 3.7.1.2 action statement to restore the TDEFW to operable status in 72 hours (4OA3.4)

LIST OF ACRONYMS

ALARA	As Low As Is Reasonably Achievable
AOP	Abnormal Operating Procedure
ASME	American Society of Mechanical Engineers
AV	Apparent Violation
CB	Control Building
CC	Component Cooling
CER	Condition Evaluation Report
CFR	Code of Federal Regulations
CHRM	Containment High Range Monitor
CP	Chemistry Procedure
DA	Deaerator
DG	Diesel Generator
ECR	Engineering Change Request
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
FP	Fire Protection
FSAR	Final Safety Analysis Report
HPP	Health Physics
IB	Intermediate Building
IR	Inspection Report
IST	Inservice Test Program
LCO	Limiting Conditions for Operations
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
MR	Maintenance Rule
MWR	Maintenance Work Request
NCV	Non-Cited Violation

NPF	Nuclear Power Facility [Type of license]
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
NSSS	Nuclear Steam Supply System
NUREG	NRC Technical Report Designation
PASS	Post Accident Sampling System
PI	Performance Indicator
PIP	Problem Identification Program
PMT	Post Maintenance Testing
RB	Reactor Building
RCS	Reactor Coolant System
RFO	Refueling Outage
RHR	Residual Heat Removal
RII	Region II [NRC]
RWPS	Radiation Work Permits
SAP	Station Administrative Procedure
SCBA	Self-Contained Breathing Apparatus
SCE&G	South Carolina Electric and Gas
SDP	Significance Determination Process
SFPC	Spent Fuel Pool Cooling
SN	Serial Number
SOP	Station Operating Procedure
SRA	Senior Reactor Analyst
SRWPS	Standing Radiation Work Permits
SSCs	Structures, Systems or Components
SSFF	Safety System Functional Failures
STP	Surveillance Test Procedure
SW	Service Water
TDEFW	Turbine Driven Emergency Feedwater
TS	Technical Specification
TWR	Technical Work Record
VIO	Violation
WO	Work Order

Attachment 2

NRCs 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.