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

October 18, 2001

EA 01-150
EA 01-259

South Carolina Electric & Gas Company
ATTN: Mr. Stephen A. Byrne
Senior 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. 50-395/01-03

Dear Mr. Byrne:

On September 29, 2001, the NRC completed an inspection at your Virgil C. Summer Nuclear Station. The enclosed report documents the inspection findings which were discussed on October 1, 2001, with Mr. Greg Halnon 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, consistent with Section VI.A.1 of the NRC's Enforcement Policy this Severity Level IV violation is being treated as a non-cited violation. If you deny this 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 DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Virgil C. Summer Nuclear Station.

Since September 11, 2001, your staff has assumed a heightened level of security based on a series of threat advisories issued by the NRC. Although the NRC is not aware of any specific threat against nuclear facilities, the heightened level of security was recommended for all nuclear power plants and is being maintained due to the uncertainty about the possibility of additional terrorist attacks. The steps recommended by the NRC include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination

with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.

The NRC continues to interact with the Intelligence Community and to communicate information to you and your staff. In addition, the NRC has monitored maintenance and other activities which could relate to the site's security posture.

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. 50-395/01-03

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	50-395
License No.:	NPF-12
Report No.:	50-395/01-03
Licensee:	South Carolina Electric & Gas (SCE&G) Company
Facility:	Virgil C. Summer Nuclear Station
Location:	P. O. Box 88 Jenkinsville, SC 29065
Dates:	July 1 through September 29, 2001
Inspectors:	M. Widmann, Senior Resident Inspector D. Rich, Acting Senior Resident Inspector M. King, Resident Inspector R. Hamilton, Health Physicist, RII (Sections 2OS1, 2OS2, 4OA1.7, 4OA1.8) G. Kuzo, Senior Health Physicist, RII (Sections 2OS1, 2OS2, 4OA1.7, 4OA1.8) L. Miller, Operations Engineer (Section 1R11.2) K. O'Donohue, Operations Engineer (Section 1R11.2) G. Salyers, Emergency Preparedness Inspector (Sections 1EP1, 1EP4, 4OA1.4, 4OA1.5, 4OA1.6) W. Sartor, Senior Emergency Preparedness Inspector (Sections 1EP1, 1EP4, 4OA1.4, 4OA1.5, 4OA1.6)
Approved by:	K. D. Landis, Chief Reactor Projects Branch 5 Division of Reactor Projects

Attachment: Supplemental Information

Enclosure

SUMMARY OF FINDINGS

IR 05000395-01-03, on 07/01-09/29/2001, South Carolina Electric & Gas Co., Virgil C. Summer Nuclear Station. Operability Evaluation.

The inspection was conducted by resident inspectors, two regional health physicists, two operations engineers, and two emergency preparedness inspectors. The inspection identified one Green finding, which was a non-cited violation. The significance of most findings is indicated by its color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at *http://www.nrc.gov/NRR/OVERSIGHT/index.html.*

Inspector Identified Finding

Cornerstone: Initiating Events

Green. The inspectors identified a non-cited violation that involved the licensee's failure to perform a 10 CFR 50.59 evaluation for a procedure change that provided an alternate method to supply reactor makeup water to the reactor coolant system.

The issue was determined to be of very low safety significance (Green) because although the procedure change was approved for use from August 26 until September 24, the licensee never used the new procedure section and the licensee subsequently completed a 50.59 evaluation which determined that a license amendment was not required. (Section 1R15)

Report Details

The unit began the inspection period at approximately 85 percent power following a planned shutdown to repair a disconnect switch in the plant switchyard. Power was increased to 98 percent on July 1 and held there pending repairs to level transmitters on both reheater drain tanks. Power was restored to 100 percent on July 10.

On July 21, the unit was taken off-line with the reactor remaining critical at approximately 2 percent power to repair the main generator breaker air system. On July 24, repairs were completed and the unit was returned to 100 percent power.

On September 4, the unit commenced a downpower to 90 percent power for repair of the A feedwater pump warm-up line. Repairs were completed and the unit returned to 100 percent power on September 6. 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

a. Inspection Scope

To verify that systems / components were correctly aligned, the inspectors reviewed various documents including plant procedures, drawings and the Final Safety Analysis Report (FSAR). The inspectors also reviewed outstanding maintenance work requests (MWRs) and related Problem Identification Program reports (PIPs) to verify that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact mitigating system availability. In addition, the inspectors conducted plant walkdowns to determine whether the opposite train of equipment was correctly aligned, available and operable when a train of equipment was removed from service. The following systems / components were verified:

- B Emergency Diesel Generator (EDG) (while the A EDG was out of service for preventative maintenance)
- A Reactor Building (RB) spray pump train (while B RB spray pump train was out of service)
- Emergency Feedwater (EFW) pumps and associated valve lineups (following scheduled surveillance testing on the A motor driven EFW pump).

Correct alignment and operating conditions were determined from the applicable portions of the following drawings (Ds), system operating procedures (SOPs), FSAR, and Technical Specifications (TSs):

- SOP-116, “Reactor Building Spray System,” Revision 13D
- SOP-211, “Emergency Feedwater System,” Revision 11F
- SOP-306, “Emergency Diesel Generator,” Revision 14B

- SOP-307, “Diesel Generator Fuel Oil System,” Revision 9B
- FSAR Sections 6.2, 8.3.1, 9.5.4 and 10.4.9
- TS Sections 3.6.2.3, 3.8.1 and 3.7.1.2
- D-302-351, “Diesel Generator - Fuel Oil,” Revision 8
- D-302-351, “Diesel Generator - Miscellaneous Services,” Revision 9
- D-302-085, “Emergency Feedwater (Nuclear),” Revision 40
- D-302-661, “Reactor Building Spray System,” Revision 31

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 assessed implementation of controls for transient combustibles and ignition sources.

The inspectors conducted routine inspection of the following areas:

- Main control board and control room areas (fire zone CB-17.1), (including review of PIP-0-C-1078, smoke observed from emergency lighting panel DPN-8015B)
- Turbine building (fire zones TB-1)
- Auxiliary building switchgear room (fire zone AB-1)
- Auxiliary building hallway (fire zone AB-1.10.2) for fire pre-plan covering APN-4105 pressurizer backup heater Group 2 power supply panel)
- 1DA / 1DB safeguards 7.2 kV switchgear rooms (fire zones IB-20 and 22.2)
- Component Cooling Water (CCW) pump and emergency feedwater pump areas (fire zones IB-25.1.1, 1.5 and IB-25.2)

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, dated January 1999].

The inspectors also observed Preventive Test Procedure (PTP)-114.007, “Wet Sprinkler System Water Flow Test,” Revision 9A, as part of fire zone TB-1 walkdown. The data was reviewed to verify that the procedure acceptance criteria were met.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors assessed whether the licensee was maintaining the leak detection capability to detect an internal flooding event to protect safety-related components and systems located on the bottom floor of the auxiliary and intermediate buildings as described in FSAR Section 7.6.5, "Leak Detection Systems," and Section 10.4.7.2, "Safety Evaluation." These areas contain major components of the Reactor Building Spray, Residual Heat Removal, and Emergency Feedwater Systems. Specifically, the inspectors: (1) conducted a walkdown of the auxiliary building sump and the A, B and C intermediate building sumps to assess the material condition of the sump pumps and associated level switches; (2) evaluated the last three sump level switch calibration records, which include alarm functional testing, for adverse trends; and (3) reviewed the preventive and corrective maintenance work orders performed in the past three years on the sump level switches and pumps to determine that repetitive problems, if any, were being properly addressed.

The inspectors examined the electrical pull boxes embedded in the immediate building floor to determine if they were properly sealed to prevent water intrusion during a flooding event. In addition, the last inspection results of five electric pull box (PB-NI-36, 37, 38, 39 and 46) associated with nuclear instrumentation were reviewed to evaluate the effectiveness of corrective actions to prevent ground water intrusion into one of these pull boxes.

The inspectors performed a walkdown of the outside storm drain system (inside the protected area) to verify that the drains were not blocked by debris and grading directed runoff into the drainage system.

In addition to the records referenced above, the following procedures and PIPs were utilized during this inspection:

- Instrument Control Procedure (ICP)-240.033, "Level Switch Calibration Generic Procedure"
- Mechanical Maintenance Procedure (MMP)-320.002, "Maintenance and Rework of Chempump Model Pumps"
- MMP-320.023A, "Generic Maintenance of Goulds Sump Pumps"
- Civil Maintenance Procedure (CMP)-700.012, "Embedded Pull Box Inspection"
- 0-C-01-0120, Auxiliary Building B Sump Pump running with no water in sump
- 0-C-01-0156, Auxiliary Building B Sump Pump cavitating due to level switch setting
- 0-C-01-1004, Leak detection switch ILS01903 will not actuate high level alarm
- 0-C-01-1060, Visual dam inspection found standing water on crest road between the south and east dams.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On August 7, the inspectors observed senior reactor operators' and reactor operators' performance on the plant simulator during annual licensed operator requalification training. The training scenario involved a heater drain transient, loss of charging and a steam generator tube rupture (LOR-SA-046R). The inspectors evaluated if training included risk-significant operator actions and implementation of emergency classification and the emergency plan. The inspectors assessed overall crew performance, communications, supervision oversight and the evaluators' critique.

b. Findings

No findings of significance were identified.

.2 Regional Specialist Biennial Review

a. Inspection Scope

The inspectors reviewed facility operating history since the last requalification program inspection for indications of operator weaknesses. The inspectors also reviewed the annual written examination and evaluated its effectiveness in providing a basis for assessing operator knowledge of material covered in the requalification training program. Examination quality, licensee effectiveness in integrating industry, plant and student feedback into the requalification training program, and examination development methodology were evaluated for compliance with criteria contained in the licensee's procedures. The inspectors observed annual dynamic simulator examinations (four scenarios) for four operator teams to assess the adequacy of the licensee's evaluation of operator knowledge and abilities. During these observations, the inspectors assessed licensee evaluator effectiveness in identifying operator performance deficiencies that required supplemental or remedial training. The inspectors also evaluated and observed portions of the walkthrough examination administered during this requalification segment, to assess evaluator performance.

The inspectors reviewed and discussed manual operator actions, previously identified as significant in event mitigation, to ensure the licensee had incorporated this training into the requalification program. The inspectors also reviewed training developed as part of the licensee's corrective action program.

The inspectors reviewed and evaluated the licensee's remedial training program for adequate and appropriate training development. The inspectors also reviewed licensee documentation to ensure compliance with 10 CFR 55.59, "Requalification," and 10 CFR 55.53, "Conditions of Licenses."

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). This review focused on the Service Water System.

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:

- 0-C-00-0562, LCV00115D-0-CS, motor operated valve motor failure
- 0-C-01-0017, XSW1A 7.2 kV bus normal incoming breaker failed to close
- 0-C-01-1012, IFS00602A residual heat removal (RHR) pump A flow switch failure
- 0-C-01-0291, XDP-0111A damper failed to fully position during Surveillance Test Procedure (STP)-125.010
- 0-C-01-0643 and 0718, fuel handling building low supply air flow and failure of damper XDP0235B.

b. Findings

No findings of significance were identified.

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 planned and emergent work activities listed below:

- B Service Water (SW) pump and booster pump out of service for preventive maintenance
- A EDG standby jacket cooling pump being worked with train C SW pump out of service (MWR 0115199)
- A EDG out of service with flow transmitter FT-113A also out of service
- C SW pump and B instrument air compressor out of service
- B EDG out of service for preventive maintenance with pressurizer Group 2 backup heaters out of service and control room evacuation panel surveillances in progress.

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 the required 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:

- Failure of a power supply for several annunciator panels (PIP 0-C-01-0995)
- Feedwater speed controller erratic during shutdown resulting in departure from nucleate boiling limit being briefly exceeded (PIP 0-C-01-1105).

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

Significance Determination Process (SDP). The inspectors reviewed the following PIPs, issues and evaluations:

- 0-C-00-1248, fuel assembly hydrogen absorption concern
- 0-C-01-1528, diesel generator A jacket water heater failure
- Technical Specification Relocation (TSR)-1021, "ECCS Subsystem Operability," Revision 1
- Engineering Information Request (EIR)-80486, supporting reactor makeup off-normal section being added to SOP-106, "Reactor Makeup Water System," Revision 9C

The inspectors assessed EIR-80486 and Revision 9C to SOP-106 for compliance with 10 CFR 50.59, "Changes, Tests and Experiments," and with the descriptions and functions in FSAR Section 1.2.3.8.8, "Chemical and Volume Control System (CVCS)," Section 9.3.4, "Chemical and Volume Control System," Section 9.3.4.2.3, "Reactor Makeup Control System," and Section 3.1.2.4, "Fluid Systems."

b. Findings

The inspectors identified one non-cited violation evaluated as having very low safety significance (Green) which involved the licensee's failure to perform a 10 CFR 50.59 evaluation for a procedure change.

During the inspection period, the licensee had experienced degraded conditions on both reactor makeup water pumps which were documented in PIPs 0-C-01-0968, 1233, 1247, 1273, 1428, 1443 and 1470. These included a shorted pump motor winding and failures to start due to breaker problems. To address the possibility that both reactor makeup water pumps could become unavailable at the same time, SOP-106 was revised on August 26, 2001, to include a new section, "Operation of the Reactor Makeup System with the Reactor Makeup Pumps Out of Service." The change provided an alternate method for blended makeup flow to the volume control tank using demineralized water pumps via the vacuum degasifier. The inspectors identified that during the 10 CFR 50.59 screening process, the licensee failed to recognize that the procedure change adversely affected how FSAR described design functions are performed or controlled and thus they failed to perform the evaluation required by 10 CFR 50.59. Specifically, due to the constant flow rate of the demineralized water pumps, automatic makeup and changes in dilution or borations were not able to be varied as described in FSAR Section 9.3.4.2.3. Furthermore, as described in FSAR Section 3.1.2.4, the reactor makeup pumps can be powered from the onsite EDGs, whereas, the demineralized water pumps are not powered from this onsite source.

The failure to perform a 50.59 evaluation is considered more than minor because there was a reasonable likelihood that a procedure change of this complexity may have required a license amendment prior to implementation. In addition, this procedure change, if implemented, had the potential to increase the frequency of an initiating event or transient. Failure to perform a 50.59 evaluation is of concern to the NRC because of the potential for impacting our ability to perform certain regulatory functions. In this

case, the licensee failed to ensure that a license amendment was not necessary before implementing a procedure change. The issue was determined to be of very low safety significance (Green) because although the procedure change was approved for use from August 26 until September 24, the licensee never used the new procedure section and the licensee subsequently completed a 50.59 evaluation which determined that a license amendment was not required. This finding was assessed in accordance with Section IV.A of the Enforcement Policy.

The Code of Federal Regulations 10 CFR 50.59 (d)(1) requires, in part, that the licensee shall maintain records of changes in procedures made pursuant to paragraph (c). These records must include a written evaluation which provides the bases for the determination that the change does not require a license amendment. On August 26, the licensee failed to perform a written evaluation to provide the bases for the determination that procedure change, SOP-106, Revision 9C, did not require a license amendment. This NRC identified Severity Level IV 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 50-395/01003-01. This condition has been entered in the licensee's corrective action program under PIP 0-C-01-1471.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the following items to determine whether the functional capability of the related system or human reliability in responding to an initiating event was affected by the listed operator workarounds. The inspectors specifically considered whether the workaround affected the operators' ability to implement abnormal or emergency operating procedures for the modes of operation involved.

- Boric Acid Flow Meter, IFT-113, not showing correct boric acid amount, PIP 0-C-01-1229
- Reactor Makeup Contingency Plans per SOP-106, Revision 9C procedure change
- Semi-annual review of all licensee identified operator workarounds for cumulative effects.

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:

- Electrical Maintenance Procedure EMP-300.12, "Agastat Relay Calibration/Replacement," Revision 11, PMT for motor driven EFW pump A breaker agastat 74Y relay (WO 9915713)
- MWR 111721 PMT for replacing failed bistable, ILB00115C, volume control tank comparator
- PMT for IFT-113A, boric acid blending flow transmitter repair / adjustment per SOP-106, "Reactor Makeup Water System," Revision 9, Section III, Automatic Makeup Control
- PMT for N-43 replacement of digital micro-ampmeter, per STP-302.040, "NIS Power Range (N43) Operational Test," Revision 11
- STP-125.002A, "Diesel Generator A Operability Test," Revision 0, PMT for various EDG A preventive maintenance items
- STP-506.001, "Pressurizer Heater Capacity Test," Revision 6, PMT for replacement of train A fuses for pressurizer heater backup Group 2 (WO 0111005).

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-102.002, "NIS Power Range Balance," Revision 8, (Section 6.1, using the Fivecals Method)
- STP-105.016, "Charging Pump and Diesel Generator Slave Relay Testing," Revision 7
- STP-212.002, "Reactor Building Spray Pump Test," Revision 4
- STP-215.001A, "Reactor Building Personnel Airlock Test," Revision 8
- STP-225.001A, "Diesel Generator Support Systems Pump and Valve Test," Revision 6A
- STP-345.037, "Solid State Protection System Actuation Logic and Master Relay Train A Test," Revision 15A.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed a temporary modification implemented by MWR 0113000 which opened panel doors and provided an external cooling fan to cool the pressurizer back-up heater fuse contacts. The inspectors assessed the impact of the temporary modification on the safety functions of required systems and on risk-significant SSC parameters, such as, availability, reliability and functional capability.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the Virgil C. Summer Nuclear Plant biennial, full-participation 2001 emergency response exercise to determine whether they were designed to suitably test major elements of the licensee's emergency plan.

During the period July 16 - 20, 2001, the inspectors observed and evaluated the licensee's performance in the exercise, as well as selected activities related to the licensee's conduct and self-assessment of the exercise. The exercise was conducted on July 18 from 8:00 a.m. to 12:30 p.m. Licensee activities inspected during the exercise included those occurring in the control room simulator, Technical Support Center (TSC), Operational Support Center (OSC), and the Emergency Operations Facility (EOF). The NRC's evaluation focused on the risk-significant activities of event classification, notification of governmental authorities, onsite protective actions, offsite protective action recommendations, and accident mitigation. The inspectors also evaluated command and control, the transfer of emergency responsibilities between facilities, communications, adherence to procedures, and the overall implementation of the emergency plan. The inspectors attended the post-exercise critique to evaluate the licensee's self-assessment process, as well as, the presentation of critique results to plant management.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspector reviewed Revision 43 to the Radiation Emergency Plan (REP) against the requirements of 10 CFR 50.54(q) to determine whether any of those changes decreased REP effectiveness.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

On August 7, the inspectors observed the performance of a simulator drill that was included in the performance indicator statistics. The inspectors assessed emergency procedure usage, emergency plan classification, notifications and the licensee's identification and entrance of any problems into their corrective action program. This inspection evaluated the adequacy of the licensee conduct of the drill, critique performance and determined whether the drill was of appropriate scope to be included in the performance indicator statistics. The inspectors reviewed issues affecting the performance indicator data to verify if they were appropriately captured.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas

a. Inspection Scope

During the week of August 6, 2001, access controls for radiologically significant areas were evaluated and their implementation observed for the tasks conducted in accordance with the following Radiation Work Permits (RWPs):

- RWP 01-00215, Remove Pressure Vessel from Auxiliary Building (AB) - 436 Truck Bay to Ground Shield
- RWP 01-00216, RB Entry to Replace LLT-00296.

Evaluations included administrative and engineering controls for high radiation, locked-high radiation (LHRA), and very high radiation areas (VHRA). Pre-job briefings, work-in-progress, and health physics technician job coverage were observed. Radiation surveys were observed and results reviewed and discussed. Electronic dosimetry

setpoints were assessed and personnel dosimetry results were reviewed and discussed in detail. In addition, the inspectors reviewed, discussed, and assessed the 2001 calendar year to date implementation of selected VHRA and LHRA key controls as specified in Health Physics Procedure (HPP)-160 and Station Administrative Procedure (SAP)-140.

Licensee activities were reviewed against 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 evaluated the licensee's performance in establishing and implementing occupational radiation exposure goals. The RWPs with the highest doses were evaluated for actual versus expected man hours and exposures.

The inspectors evaluated various aspects of the licensee's ALARA program including:

- performance in establishing and implementing occupational radiation exposure goals
- methodology for estimating RWP doses both online and during outage
- source term data and efforts to reduce source term
- online and outage doses
- dosimetry records for declared pregnant female radiation workers
- program provisions for declared pregnant female radiation workers
- radiation protection work controls for utilizing system and plant configurations to minimize radiation exposure (i.e., use of water filled systems for shielding and going to plant mode 3 versus staying in mode 2 to avoid neutron exposure)
- shutdown chemistry initiatives to reduce exposure
- ALARA Committee composition and level of visibility within the organization.

The inspectors evaluated various licensee documents including ALARA Committee Meeting Minutes for the first and second quarters 2001, Station procedures for ALARA Committee, Use of RWPs, Issuance and termination of RWPs, Radiological survey requirements and controls of reactor building and incore pit, and temporary shielding. Evaluated several radiation protection related corrective action documents for content, common apparent cause and corrective actions taken.

Licensee activities were reviewed against FSAR, TSs, 10 CFR Part 20 requirements, and licensee procedures.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Unplanned Power Changes per 7000 Critical Hours PI (Cornerstone: Initiating Events)

a. Inspection Scope

The inspectors assessed the accuracy of the PI for "Unplanned Power Changes per 7000 Critical Hours" through the second quarter of 2001. The inspectors reviewed selective samples of station logs, NRC inspection reports, licensee event reports, monthly operating reports, and corrective action program database for the period of June 2000 through June 2001.

b. Findings

No findings of significance were identified.

.2 Safety System Unavailability, High Head Injection System PI (Cornerstone: Mitigating Systems)

a. Inspection Scope

The inspectors assessed the accuracy of the PI for "High Head Injection System" through the second quarter of 2001. The inspectors reviewed selective samples of station logs, the licensee's 10 CFR 50.65 maintenance rule database, monthly operating reports, corrective action program database and restoration and removal logs for the period of March 2000 through June 2001.

b. Findings

No findings of significance were identified.

.3 Safety System Unavailability Heat Removal System, Auxiliary Feedwater (AFW) System PI (Cornerstone: Mitigating Systems)

a. Inspection Scope

The inspectors assessed the accuracy of the PI for "Safety System Unavailability Heat Removal System, Auxiliary Feedwater (AFW) System" through the second quarter of 2001. The inspectors reviewed selective samples of station logs, the licensee's 10 CFR 50.65 maintenance rule database, monthly operating reports, corrective action program database and restoration and removal logs for the period of March 2000 through June 2001.

b. Findings

No findings of significance were identified.

.4 Emergency Response Organization (ERO) Drill/Exercise Performance PI (Cornerstone: Emergency Preparedness)

a. Inspection Scope

Licensee records were reviewed to determine whether the submitted PI statistics (through the second quarter of 2001) were calculated in accordance with the guidance contained in Section 2.4 (Emergency Preparedness Cornerstone) of Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0. The inspectors assessed the accuracy of the PI for ERO drill and exercise performance over the past eight quarters through review of annual examination records.

b. Findings

No findings of significance were identified.

.5 ERO Drill Participation PI (Cornerstone: Emergency Preparedness)

a. Inspection Scope

Licensee records were reviewed to determine whether the submitted PI statistics (through the second quarter of 2001) were calculated in accordance with the guidance contained in Section 2.4 (Emergency Preparedness Cornerstone) of Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0. The inspectors assessed the accuracy of the PI for ERO drill participation during the previous eight quarters through review of the training records and training sign-in sheets for randomly selected individuals from the 71 total key personnel assigned to positions in the ERO as of the end of the second quarter of 2001.

b. Findings

No findings of significance were identified.

.6 Alert and Notification System Reliability PI (Cornerstone: Emergency Preparedness)

a. Inspection Scope

Licensee records were reviewed to determine whether the submitted PI statistics (through the second quarter of 2001) were calculated in accordance with the guidance contained in Section 2.4 (Emergency Preparedness Cornerstone) of Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 0. The inspectors assessed the accuracy of the PI for the alert and notification system reliability through review of the total tests and successful tests data summary sheets for the weekly silent tests, monthly growl tests, and the annual full cycle test conducted from July 1, 2000 to June 30, 2001.

b. Findings

No findings of significance were identified.

.7 Occupational Radiation Safety PI (Cornerstone: Occupational Radiation Safety)

a. Inspection Scope

The Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone were reviewed for the period January 1, 2001, through August 6, 2001. The inspectors reviewed data reported to the NRC, and sampled and evaluated applicable PIPs and selected Health Physics Program records. The reviewed records included health physics shift supervisor logs, exposure investigation reports, and internal exposure evaluations.

b. Findings

No findings of significance were identified.

.8 Radiological Control Effluent Release Occurrences PI (Cornerstone: Public Radiation Safety)

a. Inspection Scope

The inspectors reviewed and discussed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from January 1, 2001, through August 6, 2001. The inspectors reviewed data reported to the NRC and evaluated applicable PIPs and selected radiological quarterly liquid and gaseous effluent release data, process radiation monitor out-of-service data, and abnormal release results.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

(Closed) Apparent Violation (AV) 50-395/01008-01: Failure to perform a safety evaluation required by 10 CFR 50.59. The AV was documented in NRC Special Inspection Report No. 50-395/01-08 (ADAMS accession number ML011830334). The AV was dispositioned as a Severity Level III violation (Supplement I) by letter entitled "Notice of Violation (Virgil C. Summer Nuclear Station - NRC Special Inspection Report No. 50-395/01-08)," dated August 31, 2001 (ADAMS accession number ML012490594). The violation was assigned the same tracking number, 50-395/01008-01.

(Closed) Violation (VIO) 50-395/01008-01: Severity Level III - Failure to perform a safety evaluation required by 10 CFR 50.59. In the Notice of Violation enclosed to our August 31, 2001, letter, the NRC stated that "information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and to prevent recurrence, and the date when full compliance was achieved is already adequately addressed on the docket." Based on NRC review of your corrective actions, as documented in our letter, no civil penalty was proposed. No further NRC follow-up is planned.

4OA6 Meetings

Pre-decisional Enforcement Conference

On August 17, 2001, an open pre-decisional enforcement conference was conducted at the NRC Region II office in Atlanta, Georgia, to discuss apparent violation 50-395/01008-01, its root cause and corrective actions (see Section 4OA3).

Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. Halnon, General Manager of Nuclear Plant Operations, and other members of the licensee's staff on October 1, 2001. A re-exit was held on October 11 to disposition an issue associated with the failure to perform a 10CFR50.59 evaluation (see Section 1R15) that was characterized on October 1 as needing further NRC review.

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

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Archie, General Manager, Engineering Services
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
C. Fields, Manager, Quality Systems
D. Gatlin, Manager, Operations
G. Halnon, General Manager, Nuclear Plant Operations
L. Hipp, Manager, Nuclear Protection Services
V. Kelly, Coordinator, Emergency Services
G. Moffatt, Manager, Design Engineering
K. Nettles, General Manager, Nuclear Support Services
A. Rice, Manager, Plant Support Engineering
A. Torres, Manager, Planning/Scheduling and Project Management
R. White, Nuclear Coordinator, South Carolina Public Service Authority
G. Williams, Manager, Maintenance Services

ITEMS OPENED AND CLOSED

Opened and Closed

50-395/01003-01	NCV	Failure to perform evaluation required by 10 CFR 50.59, improper screening (Section 1R15)
50-395/01008-01	VIO	Severity Level III - Failure to perform a safety evaluation required by 10 CFR 50.59 (Section 4OA3)

Closed

50-395/01008-01	AV	Failure to perform a safety evaluation required by 10 CFR 50.59 (Section 4OA3)