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

January 24, 2002

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. 50-395/01-04

Dear Mr. Byrne:

On December 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 January 3, 2002, 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 two issues of very low safety significance (Green).

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of the South Carolina Electric & Gas Company's response to these advisories and Virgil C. Summer Nuclear Station's ability to respond to terrorist attacks with the capabilities of the current design basis threat. From these audits, the NRC has concluded that the Virgil C. Summer Nuclear Station security program is adequate at this time.

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/reading-rm/adams.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. 50-395/01-04

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	50-395
License No.:	NPF-12
Report No.:	50-395/01-04
Licensee:	South Carolina Electric & Gas (SCE&G) Company
Facility:	Virgil C. Summer Nuclear Station
Location:	P. O. Box 88 Jenkinsville, SC 29065
Dates:	September 30 through December 29, 2001
Inspectors:	M. Widmann, Senior Resident Inspector M. King, Resident Inspector Larry Garner, Project Engineer, RII (Section 1R01) M. Scott, Senior Reactor Inspector, RII (Section 1R07)
Approved by:	K. D. Landis, Chief, Reactor Projects Branch 5 Division of Reactor Projects

Attachments: 1. Supplemental Information
2. List of Documents Reviewed

Enclosure

SUMMARY OF FINDINGS

IR 05000395-01-04, on 09/30 -12/29/2001, South Carolina Electric & Gas Co., Virgil C. Summer Nuclear Station. Equipment Alignment and Temporary Plant Modifications.

The inspection was conducted by resident inspectors, a regional project engineer and a senior reactor inspector. The inspection identified two Green findings. The significance of the findings is indicated by their 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.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- Green. A finding was identified for procedures not demonstrating the ability of the backup air supply to maintain service water (SW) valves open to provide cooling to the emergency diesel generators during certain events. This feature is utilized in emergency operating procedures involving loss of AC power and in mitigating Appendix R fire scenarios.

  This finding was determined to be of very low safety significance because the potential for a loss of normal instrument air was reduced due to an installed diesel driven air compressor which backs up the normal electrically driven instrument air compressors. (Section 1R04.2)

- Green. A finding was identified for having installed a backup diesel driven air compressor in the instrument air system without design control documents, i.e., without temporary or permanent plant modification documentation. References to this compressor implied it was "temporary" even though it had been installed in the plant since approximately 1982.

  The finding was determined to be of very low safety significance because no significant adverse impacts had been experienced during the time period it has been installed and its performance was being monitored under the maintenance rule program. (Section 1R23)

B. Licensee Identified Violations

- Three violations of very low safety significance, two Green and one No Color, which were identified by the licensee have been reviewed by the inspectors. The licensee entered these violations in their corrective action program. These violations are listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status

The unit operated at or near 100 percent power for the entire inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed records and performed walkdowns of equipment to verify if the licensee was prepared for cold weather operations. A review of Problem Identification Program reports (PIPs) issued from June 1, 2000, to October 9, 2001, was performed to assess if cold weather protection heat tracing circuits problems were adequately addressed and whether chronic problems exists with this heat tracing. The inspectors reviewed recently completed calibration and test data from Instrument Control Procedure - 240.078, "Time-Trol Heat Trace Control Panel," Attachments I, II, III and IV for refueling water heat trace panels XPN-2005 and 2006 and for reactor makeup water heat trace panel XPN-2008. These records and data were evaluated to determine if the heat tracing circuits were properly calibrated and if identified deficiencies were corrected. The inspectors discussed with operations, engineering and health physics personnel if the plant had experienced any significant cold weather problems while it was shutdown last winter.

Operation Administrative Procedure (OAP)-109.1, "Guidelines for Severe Weather," was evaluated to determine if instructions adequately coordinated cold weather preparations. The inspectors also reviewed OAP-106.1, "Operating Logs," to determine if provisions were in place to monitor snow and ice buildup on building roofs such that their weight would not exceed roof loading values in the Final Safety Analysis Report (FSAR).

The inspectors performed walkdowns to evaluate the physical condition of the accessible portions of the heat tracing and insulation associated with the condensate storage tank instrumentation and the A and B chill water surge tanks. The inspectors also observed an operator simulate use of System Operating Procedure (SOP)-208, "Condensate System," Section B which aligns the condensate system to prevent freezing in the condensate storage tank.

Documents used as references included:

- FSAR 2.3.1.3, "Severe Weather;"
- Electrical Maintenance Procedure (EMP)-120.001, "Heat Tracing;"
- EMP-120.002, "Freeze Protection Heat Tracing Inspection;" and,
- Annunciator Response Procedure (ARP)-002-XPN-6031.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Availability of Redundant Equipment

a. Inspection Scope

To verify if systems / components were correctly aligned, the inspectors used various documents such as plant procedures, drawings and the FSAR. The inspectors also reviewed outstanding maintenance work requests (MWRs) and related PIPs to assess whether the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact mitigating system availability. In addition, the inspectors performed plant walkdowns to evaluate alignment, availability and operability of a train of equipment when the redundant train was removed from service. The following systems / components were inspected:

- Emergency Feedwater (EFW) System (following surveillance testing on A motor driven emergency feedwater pump);
- A train Residual Heat Removal (RHR) System (while B RHR pump was out of service for preventative maintenance); and,
- Motor Driven Emergency Feedwater (MDEFW) trains and both Emergency Diesel Generators (EDGs) (while the Turbine Driven EFW (TDEFW) pump was out of service).

Correct alignment and operating conditions were determined from the applicable portions of the documents listed in Attachment 2.

b. Findings

No findings of significance were identified.

.2 Semiannual Inspection

a. Inspection Scope

The inspectors performed a detailed review and walkdown of the Instrument Air (IA) systems. The documents listed in Attachment 2 were reviewed to determine the correct system lineup and system requirements and to assess overall system performance.

b. Findings

A Green finding was identified for procedures not demonstrating the ability of the backup air supply to maintain service water (SW) valves open to provide cooling to the emergency diesel generators during certain events. This feature is described in Technical Requirements Package (TRP)-28, “Quality Related Instrument Air Components,” Revision 1A, and is utilized in emergency operating procedure (EOP)-6.0, “Loss of All ESF (engineered safety features) AC Power,” Revision 16, and in mitigating Appendix R fire scenarios.

A caution statement in EOP-6.0 states that when a diesel generator is running the service water system must be in operation or XVG-03105A(B)-SW, Diesel Generator A(B) Cooler Fire Service Supply Valves, must be open to supply cooling water. When SW is not available, opening these valves provides fire water to cool the EDGs. The inspectors noted that preventative test procedure (PTP)-104.001, "Emergency Diesel Generator Fire Service Valve Backup Supply Test," Revision 2, was not verifying this feature of the backup air supply system. A procedure revision in March 2001 had deleted a two hour capability test. This condition was entered in the licensee's corrective action program under PIP 0-C-01-2253. The licensee revised the procedure and on January 3 and 16, 2002, successfully demonstrated that the backup air supply would open and maintain these valves open for up to two hours.

The finding was more than minor because if left uncorrected it could become a more significant safety concern because of the increased likelihood that a loss of the backup air system to open and hold the valves open for two hours could go undetected. A loss of this feature could complicate plant recovery during performance of EOP-6.0 or during Appendix R fire scenarios. This finding was determined to be of very low safety significance (Green) because the potential for a loss of normal instrument air was reduced due to an installed diesel driven air compressor which backs up the normal electrically driven instrument air compressors. No violation of NRC requirements was identified. A finding that the diesel driven air compressor was installed as temporary, without design control documents, is discussed in Section 1R23.

1R05 Fire Protection

.1 Routine

a. Inspection Scope

The inspectors reviewed current PIPs, Work Orders (WOs), 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:

- Instrument and Calibration Shop 436' level, degraded fire barrier TR-139 / Fire Permit 01-186 (fire zone CB-8.2) (PIP 0-C-01-2064);
- Battery rooms and HVAC chill water pump rooms (fire zone IB-3, IB-7);
- Control Room (fire zone CB-1);
- Turbine Building (also observed portions of STP-128.021, "Fire Service Water Flow Test," Revision 10) (fire zone TB-1);
- Walkdown of diesel driven fire pump, electric driven fire pump and alternate diesel driven fire pumps; and,
- Chemistry Lab/Count Room Transformer Area, following report of abnormal noise from transformer XTF-8042 (fire zone CB-412).

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).

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Inspection

a. Inspection Scope

The inspectors observed performance of a fire drill conducted on October 29 and a requalification drill held on November 29. The inspectors evaluated the readiness of the licensee's personnel to prevent and fight fires including the following aspects:

- Observe whether protective clothing and self-contained breathing apparatus (SCBA) equipment were properly worn;
- Determine whether fire hose lines were properly laid out and nozzle pattern simulated being tested prior to entering the fire area of concern;
- Verify that the fire area was entered in a controlled manner;
- Review if sufficient firefighting equipment was brought to the scene by the fire brigade to properly perform their firefighting duties;
- Verify that the fire brigade leader's fire fighting directions were thorough, clear and effective, and coordinated with off-site fire team assistance;
- Verify that radio communications with plant operators and between fire brigade members were efficient and effective;
- Confirm that fire brigade members checked for fire victims and fire propagation into other plant areas;
- Observe if effective smoke removal operations were simulated;
- Verify that the fire fighting pre-plans were properly utilized and were effective; and,
- Verify that the licensee pre-planned drill scenario was followed and the drill objectives met the acceptance criteria, and deficiencies were captured in post drill critiques.

The inspectors reviewed PIP 0-C-01-2052 which the licensee issued to address drill objectives that were not met and disqualification of the fire brigade team leader. The inspectors observed the subsequent requalification of the fire brigade team leader on November 29.

Documents used to conduct this inspection are listed in Attachment 2.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors selected two risk important heat exchangers (HXs), the Ultimate Heat Sink (UHS) dam that retains the water for the plant, and portions of the service water (SW) and emergency feedwater (EFW) components for evaluation. Items to be evaluated were: ventilation chiller condensers' (VU) and component cooling water (CCW) HXs' performance; SW 1993 piping video inspections; SW intake video inspection; SW flow balance; EFW flow balance; selected systems' components; and systems' chemistry. Activities were reviewed to determine that: selected heat exchanger test methodology was consistent with accepted industry practices or equivalent; test conditions were appropriately considered; test criteria were appropriate and met; test frequency was appropriate; SW/CCW calculations took into account limiting conditions for worst-case scenarios; and, test results considered test instrument inaccuracies and differences. The inspectors walked down the SW intake structure, CCW and Spent Fuel HXs, VU chillers and EFW valves with a system engineer.

For established acceptance criteria, the inspectors determined if the completed tests or allowed inspections were consistent with accepted industry standards ("Electric Power Research Institute Service Water Heat Exchanger Testing Guidelines," TR-107397) or equivalent (NRC Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment") and as-found results were appropriately dispositioned such that the final condition was acceptable.

The inspectors reviewed: maintenance histories; valve setup, valve as-found conditions, and calibration; operator workarounds; surveillance test procedures; and preventive maintenance program work activities on selected components. The inspectors reviewed SW pump performance tests, EFW flow control valves maintenance, and CCW and chiller transmitters' calibrations. These reviews were evaluated against Inservice Test Inspections design expectations, Technical Specifications, FSAR, and other design documents.

The inspectors reviewed portions of the licensee's effort to control corrosion of the SW piping and potential maintenance rule or operability issues for the systems examined. The inspectors reviewed to determine that chemical treatments and methods used to control biotic fouling corrosion (such as shells and microbiological induced corrosion) were sufficient to ensure required SW performance, that the licensee had entered heat exchanger/sink performance problems into their maintenance rule and corrective action program, and that effective corrective action had been taken. The inspectors discussed chemistry issues with the plant chemist and system engineers.

The inspectors reviewed the reports on the UHS dam inspections. The inspectors were able to partially inspect the UHS dam.

The inspectors reviewed potential common cause problems such as EFW flow control valves, SW isolation valves, and SW piping failures (inspection video tape -1993 train inspection), and component repairs and replacements. The inspectors reviewed the operational occurrences, corrective and routine plant work orders, and periodic (health)

reports available on the above HXs and systems. Documents reviewed during the inspection are listed in Attachment 2.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On October 3, the inspectors observed senior reactor operators' and reactor operators' performance on the plant simulator during licensed operator requalification training. The training scenario, Emergency Plan Drill (EPD)-95-003A, involved a reactor trip due to high reactor coolant pump vibration, a loss of off-site power and failure of the A EDG. 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.

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:

- Leak Detection System Level Switch Failures (PIPs 0-C-01-1179, 1240, 1249 and 2142 and associated failure cause determinations);
- Nonconformance Notice (NCN) 00-0664, desiccant beads found down stream of instrument air dryer;
- NCN 01-0296, control rod G-9 stuck during low power physics testing;
- NCN 01-0756, C service water pump coupling failure;
- PIP 0-C-01-1652, B Engineered Safety Feature (ESF) load sequencer, bad clock card and failed 15 volt direct current power supply; and,

- Root Cause Analysis, 00-1796, “Functional Failures of Pressure Relief Valves” during refueling (RF-12).

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 determinations to determine, as appropriate, whether necessary steps were properly planned, controlled, and executed for emergent and/or scheduled work activities listed below:

- B EDG out of service and EMP-245.001, “Main Generator Alterrex Inspection” IPV-2000 calibration, and diesel fire pump out of service;
- RHR pump A out of service, steamline pressure operated relief valve;
- Reviewed PIP 0-C-01-1896, planning and scheduling deficiency, component cooling water surge tank level switch scheduled for wrong maintenance work week;
- Service water pump A out of service and EMP-245.002, “Main Generator Alterrex Inspection” (WO 112027001); and,
- Service water pump A out of service (breaker problems) and planned preventative maintenance on A MDEFW pump.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

This inspection evaluated whether operator response to an inadvertent start of a motor driven EFW pump during performance of STP-220.004 was appropriate and in accordance with required procedures. The inspectors also reviewed PIP 0-C-01-2127 to ensure that the performance issues associated with event were properly identified and entered in the licensee’s corrective action program.

b. Findings

A licensee identified non-cited violation is discussed in Section 4OA7.

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-01-1268, 1269, 1270 and NCNs 0-C-00-0114 and 0-C-01-0370, non-safety bell crank bearings in Square-D breakers installed in safety related components;
- 0-C-01-1882, fire barrier / pressure seals found degraded during STP-728.035;
- 0-C-01-1992, B EDG fan control switch in wrong position resulting in EDG jacket water low temperature alarm;
- 0-C-01-2148, XVG-03105B-SW failed stroke time test during STP-123.003B, impacting B EDG operability; and,
- 0-C-01-2120, B EDG declared functional with only one air start receiver tank available.

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-225.001A, air receiver tank inlet check valve, XVC-10978A-DG;
- STP-222.002, component cooling pump test following pump oil change and motor electrical checkout;
- WO 0106788, PMT for the 4A fuel oil transfer pump;
- WO 0111253, PMT for XVG-08706A, breaker bell crank bearing replacement per EMSI-01-0370;

- WO 0115070, PMT to replace A EDG output breaker switch CS-DG01 on MCB panel XCP-6117; and
- WO 111766, PMT to replace XVG-03142A, service water pump vacuum breaker isolation valve and VT-2 ASME Section XI Inspection.

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:

- PTP-104.001, “Emergency Diesel Generator Fire Service Valve Backup Air Supply Test,” Revision 2;
- STP-125.002A, “DG A Operability Test,” Revision 0;
- STP-125.002B, “DG B Operability Test,” Revision 0;
- STP-220.001A, “Motor Driven Emergency Feedwater Pump and Valve Test, Revision 6;
- STP-223.002A, “Service Water Pump Test,” Revision 7; and
- STP-506.001, “Pressurizer Heater Capacity Test,” Revision 6.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors assessed whether a temporary diesel driven instrument air compressor, installed for approximately 20 years, adversely affected safety functions of required systems.

b. Findings

A Green finding was identified for having installed a backup diesel driven air compressor in the instrument air system without design control documents, i.e., without temporary or permanent plant modification documentation. References to this compressor implied it was “temporary” even though it had been installed in the plant since approximately 1982.

The licensee has recognized the importance of this diesel driven air compressor for scenarios involving loss of electrical power to the normal air compressors. The licensee

has taken credit for it in their response to Generic Letter 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities," and in the current plant probability risk assessment (PRA). In addition, it was included into the maintenance rule program and was referenced in 25 different EOPs or Abnormal Operating Procedures (AOP).

Although the original modification package was not found, the inspectors reviewed a 1986 modification document (MRF 21014) which made the diesel driven instrument air compressor piping permanent and evaluated locating the compressor near the engineered safety feature (ESF) transformers. This evaluation provided reasonable assurance that the diesel driven air compressor would not increase the probability of occurrence or consequence of an accident, or malfunction of safety-related equipment than that previously evaluated in the FSAR.

The lack of design control documents for the diesel driven air compressor was considered more than minor. Without all the reviews associated with the modification process being complete, there is a lack of assurance that it would perform its function as assumed in the EOPs, AOPs and the PRA. The finding was determined to be of very low safety significance (Green) because no significant adverse impacts had been experienced during the time period it has been installed and its performance was being monitored under the maintenance rule program. The licensee entered this issue into their corrective action program under PIP 0-C-01-2264, "Additional program controls needed to ensure the Sullair diesel air compressor performs as desired." No violation of NRC requirements was identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Safety System Unavailability - Emergency AC Power System

a. Inspection Scope

The inspectors evaluated the accuracy of the "Emergency AC Power System Unavailability" PI through the third quarter year 2001. 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 September 2001.

b. Findings

No findings of significance were identified.

.2 Safety System Unavailability - Safety System Functional Failures (SSFFs)

a. Inspection Scope

The inspectors evaluated the accuracy of the PI through the third quarter year 2001. 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 September 2001.

b. Findings

No findings of significance were identified.

.3 Reactor Coolant System (RCS) Leak Rate

a. Inspection Scope

The inspectors evaluated the accuracy of the PI through the third quarter year 2001 for "RCS Leak Rate." The inspectors reviewed selective samples of station logs, RCS leak rate surveillance test procedures, TS requirements and corrective action program database for the period of January through September 2001. During the inspection period the inspectors observed performance of the surveillance activity (STP-114.002, "Operational Leakage Test," Revision 11) that determines RCS identified leakage rate.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. Steve Byrne and other members of the licensee's staff on January 3, 2002.

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 50-395/01004-01	Technical Specifications 6.8.1.a and Regulatory Guide 1.33, Appendix A, Section 10 requires procedures be implemented covering the control of sampling of radioactive liquids. On December 12, 2001, the licensee identified that a sample valve was not closed, as required by chemistry procedure CP-903, after reactor coolant system (RCS) sampling was completed. Approximately 32 gallons was drained from the RCS during the 2 hours and 10 minutes the valve was open. Automatic RCS makeup

was in service during this time. This issue has been documented in the licensee's corrective action program under PIP 0-C-01-2324. (Green)

(2) NCV 50-395/01004-02 Technical Specifications 6.8.1.a and Regulatory Guide 1.33, Appendix A, Section 1.e, requires procedures be implemented covering the procedure review and approval process. On October 2, 2001, the licensee identified that procedure changes were approved without all the applicable provisions of SAP-139, "Procedure Development, Review, Approval and Control," being met. This issue has been documented in the licensee's corrective action program under PIPs 0-C-01-1700, 1722 and 1925. (No Color)

(3) NCV 50-395/01004-03 Technical Specifications 6.8.1.c requires procedures be implemented covering surveillance and test activities of safety-related equipment. On November 20, 2001, the licensee failed to properly implement surveillance test procedure STP-120.004, in that, the B Motor Driven Emergency Feedwater Pump was started when the procedure required the pump's control switch to be placed in pull-to-lock. This issue has been documented in the licensee's corrective action program as PIP 0-C-01-2127. (Green)

If one or more of these NCVs are denied, provide a response with the basis for the denial, within 30 days of the date of this inspection report, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washingtion, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washingtion, DC 20555-0001; and the NRC Resident Inspector at the Virgil C. Summer Nuclear Station.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

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F. Bacon, Manager, Chemistry Services
L. Blue, Manager, Health Physics Services
M. Browne, Manager, Nuclear Licensing and Operating Experience
D. Gatlin, Manager, Operations
G. Halnon, General Manager, Nuclear Plant Operations
L. Hipp, Manager, Nuclear Protection Services
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A. Rice, Manager, Plant Support Engineering
R. Sweet, Nuclear Licensing Supervisor
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

50-395/01004-01	NCV	failure to follow procedure for chemistry sampling of reactor coolant system (Section 4OA7)
50-395/01004-02	NCV	failure to process procedure revisions in accordance with administrative procedure for procedure review and approval (Section 4OA7)
50-395/01004-03	NCV	failure to follow procedure during surveillance test results in inadvertent start of B motor driven emergency feedwater pump (Section 4OA7)

LIST OF DOCUMENTS REVIEWED

Section 1R04.1

Design Basis Documents (DBD) for Emergency Feedwater, EDG and RHR
Drawing (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
E-302-641, "Residual Heat Removal System," Revision 14
E-302-693, "Safety Injection," Revision 18
FSAR Sections 5.5.7, 6.3, 8.3.1, 9.5.4 and 10.4.9
SOP-115, "Residual Heat Removal," Revision 16
SOP-211, "Emergency Feedwater System," Revision 11F
SOP-306, "Emergency Diesel Generator," Revision 14B
SOP-307, "Diesel Generator Fuel Oil System," Revision 9B
TS Sections 3.4, 3.5.2, 3.5.3, 3.8.1 and 3.7.1.2

Section 1R04.2

Abnormal Operating Procedure (AOP)-220.1, "Loss of Instrument Air" and associated Annunciator Response Procedures (ARP)-001-XCP-606, 607
Current open work orders and closed work orders on IA system for the past year
D-302-271, "Instrument Air," Revision 25
D-302-273, "Reactor Building Instrument Air Services," Revision 11
D-302-274, "Instrument Air Backup," Revision 11
DBD - "Instrument Air and Service Air System," Revision 2A
FSAR 3.11.4, 9.3.1, 9.4, 14.1.3.1
General Test Procedure (GTP)-450, "Compressed Air System Blowdown," Revision 3A
Generic Letter, (GL) 88-14, "Instrument Air Supply System Problems Affecting Safety-Related Equipment," and Licensee response to GL 88-14, dated February 2, 1989
Important to Maintenance Rule System Function Worksheet - "Instrument Air Supply," dated September 12, 2000
Industry Standards ISA-57.3, "Quality Standard for Instrument Air"
LOR-ST-080, Simulator Exercise Lesson Plan for Loss of Instrument Air
Modification Request Form (MRF)-21014, Install Diesel Backup Air Compressor
MRF-20787, Diesel Generator Fire Service Water Valves
NRC Job Performance Measure JPP-143, "Startup and Lineup Sullair Air Compressor," Revision 3
Observed and reviewed data for PTP-104.001, "Emergency Diesel Generator Fire Service Valve Backup Air Supply Test," Revision 2
PIPs associated with Instrument Air System (1998 to present)
Significant Operators Event Report 88-01, Instrument Air System Failures
Station Order, (SO) 01-14, "Instrument Air Dryer Problems"
SOP-121, "Reactor Building Instrument Air Services," Revision 8B
SOP-220, "Station and Backup Instrument Air Systems," Revision 13
TS 3.6.1.1
Technical Requirements Package No. 28, "Quality Related Instrument Air Components," Revision 1A

Virgil C. Summer Nuclear Station, Individual Plant Examination, Miscellaneous Systems Notebook, Volume 1 of 2, Section 2, "Compressed Air Systems" and associated Fault Tree Figures

Section 1R05.2

Fire Protection Procedure (FPP-026), "Fire / Hazmat Response," Revision 2
Fire Pre-Plan for DG-436, 447 (fire zones 1.2, 2.2)
Preventative Maintenance Tracking Sheet (PMTS) 0112631
V.C. Summer FPP-026, Attachment 1, Revision 2, "Drill Planning Guide," Drill Scenario No. 7
V.C. Summer Nuclear Station Critique FPD-01-21 (conducted 10/29/01 and 11/29/01)

Section 1R07

Topographical Survey of V.C. Summer Nuclear Power Plant Cooling Pond, November 3, 1997
V.C. Summer Nuclear Station Service Water Pond Thermal Study, October 1998
NRC Letter: Results of Dam Safety Inspection Related to the Category I Service Water Pond Dams at the Virgil C. Summer Nuclear Station, date September 19, 2000
STP-250.007, Revision 4, Service Water Leak Test Outside the Reactor Building, completed 4/27/99
STP-250.007, Revision 3, Service Water Leak Test Outside the Reactor Building, completed 2/6/96
OAP-106.1, Revision 9, OATC Technical Specification LogSheet
Gilbert Associates, Inc. Drawing 5572, Revision 2G, Component Cooling Heat Exchanger (Details)
MWR 0002930, XHX0001A, Chiller Condenser A, Inspection and Cleaning (Typical)
Design Basis Document, Emergency Feed Water System, Revision 11
CER 01-1012 Root Cause Evaluation on IFS-602A, completed 8/2/01
NCN 01-0511, Root Cause Evaluation on XVB03106B, completed 7/30/01
Preventative Task Sheet 9918344, Loop Calibration IFT04462 [EDG SW Return Header Flow Meter], completed 5/26/00 (Typical)
Preventative Task Sheet 9912002, IFV03531-0-EF [EF Pump Flow Control Valve, calibration and mechanical stop setting], completed 10/12/00 (Typical)
Surveillance Test Task Sheet 9911971, IFT03571 [B steam generator EF supply header flow transmitter], completed 11/8/00 (Typical)
ICP-400.004, Service Water From CC HX (B) Flow IFT4462, Revision 5
Preventative Task Sheet 0012811, HVAC Chiller Condenser B SW Return Header Flow Transmitters, completed 1/08/01
Preventative Task Sheet 0014318, Visual Inspection of A Chiller Condenser, completed 3/22/01
RHR Heat Exchanger Radiological Survey #Q-334, completed 7/6/99
Surveillance Test Task Sheet 9706876, Train B Integrated Safeguards Test, completed 12/8/97
Surveillance Test Task Sheet 9912367, Train A Integrated Safeguards Test, completed 12/13/00
STP-220.11, EFW Flow Balance Verification, Revision 1, completed 2/18/99
Preventative Task Sheet 9918369 [Attachment IP of ES560.211, SW Motor Cooler, completed 1/17/00
STP-0223.002A, Revision 6, Service Water Pump Test (five years of trend data)

Calculation DC04330-061, Revision 2, CCW Heat Loads
Calculation DC04310-038, Determination of Limiting Fouling for CCW HX (2900 MWt), Revision 0
ES-505, Revision 1, Service Water System Corrosion Monitoring and Control Program
Preventative Task Sheet 9913897, Visual Inspection for Clams/Corrosion [at the SW Intake], completed 12/28/00
System Health Reports for second quarter of 2001 [RH, SW, VU, CC]
Service Water System Single Failure Evaluation, Revision 0

Condition Evaluation Reports

C-98-1110, C-98-1112, C-98-1089, C-01-1088, C-01-0742, C-01-1788, C-01-1828

Condition Evaluation Reports Generated During the Inspection

C-01-1885, Current Testing may not Flag a SW Buried Piping Leak Early
C-01-1886, Buried Piping Periodic Inspections and Evaluation