



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

April 27, 2011

Mr. Thomas D. Gatlin
Vice President - Nuclear Operations
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
P.O. Box 88
Jenkinsville, SC 29065

**SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION - NRC INTEGRATED INSPECTION
REPORT 05000395/2011002**

Dear Mr. Gatlin:

On March 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Virgil C. Summer Nuclear Station. The enclosed inspection report documents the inspection results, which were discussed on April 12, 2011, 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, no findings of significance were identified. However, one licensee-identified violation which was determined to be of very low safety significance (Green) is listed in this report. Because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the NRC's Enforcement Policy. If you contest the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, 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.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) 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/

Gerald J. McCoy, Chief
Reactor Projects Branch 5
Division of Reactor Projects

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

Enclosure: NRC Integrated Inspection Report 05000395/2011002
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) 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/

Gerald J. McCoy, Chief
 Reactor Projects Branch 5
 Division of Reactor Projects

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

Enclosure: NRC Integrated Inspection Report 05000395/2011002
 w/Attachment: Supplemental Information

cc w/encl: (See page 3)

X PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE X NON-SENSITIVE
 X ADAMS: ACCESSION NUMBER: ML111170411 X SUNSI REVIEW COMPLETE

OFFICE	RII:DRP	RII:DRP	RII:DRS	RII:DRP	RII:DRS	RII:DRP	RII:DRS
SIGNATURE	JXZ by email	ETC1 by email	MKM3 by email	JSD	GJM1	MES1	
NAME	JZeiler	ECoffman	M. Meeks	JDodson	GMcCoy	MSchwieg	
DATE	04/25/2011	04/27/2011	04/25/2011	04/19/2011	04/27/2011	04/26/2011	
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

cc w/encl:
Division of Radiological Health
TN Dept. of Environment & Conservation
401 Church Street
Nashville, TN 37243-1532

J. B. Archie
Senior Vice President
Nuclear Operations
South Carolina Electric & Gas Company
Electronic Mail Distribution

Sandra Threatt, Manager
Nuclear Response and Emergency
Environmental Surveillance
Bureau of Land and Waste Management
Department of Health and Environmental
Control
Electronic Mail Distribution

Kathryn M. Sutton, Esq.
Morgan, Lewis & Bockius LLP
Electronic Mail Distribution

Richard Haynes
Director, Division of Waste Management
Bureau of Land and Waste Management
S.C. Department of Health and
Environmental Control
Electronic Mail Distribution

Mark Yeager
Division of Radioactive Waste Mgmt.
S.C. Department of Health and
Environmental Control
Electronic Mail Distribution

Andy T. Barbee
Director
Nuclear Training
South Carolina Electric & Gas Company
Electronic Mail Distribution

Bruce L. Thompson
Manager
Nuclear Licensing (Mail Code 830)
South Carolina Electric & Gas Company
Electronic Mail Distribution

Robert M. Fowlkes
General Manager
Engineering Services
South Carolina Electric & Gas Company
Electronic Mail Distribution

Senior Resident Inspector
Virgil C. Summer Nuclear Station
U.S. NRC
576 Stairway Road
Jenkinsville, SC 29065

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

Robin R. Haselden
General Manager
Organizational Development &
Effectiveness
South Carolina Electric & Gas Company
Electronic Mail Distribution

George A. Lippard, III
General Manager
Nuclear Plant Operations
South Carolina Electric & Gas Company
Electronic Mail Distribution

Moses Coleman
Manager, Health Physics and Safety
South Carolina Electric & Gas Company
Electronic Mail Distribution

Robert L. Justice
Manager
Nuclear Operations
South Carolina Electric & Gas Company
Electronic Mail Distribution

Donald D. Shue
Manager
Maintenance Services
South Carolina Electric & Gas Company
Electronic Mail Distribution

SCE&G

4

Letter to Thomas D. Gatlin from Gerald J. McCoy dated April 27, 2011

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION - NRC INTEGRATED INSPECTION
REPORT 05000395/2011002

Distribution w/encl:

C. Evans, RII

L. Douglas, RII

OE Mail

RIDSNRRDIRS

PUBLIC

RidsNrrPMSummer Resource

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-395

License No.: NPF-12

Report No.: 05000395/2011002

Licensee: South Carolina Electric & Gas (SCE&G) Company

Facility: Virgil C. Summer Nuclear Station

Location: P.O. Box 88
Jenkinsville, SC 29065

Dates: January 1, 2011 through March 31, 2011

Inspectors: J. Zeiler, Senior Resident Inspector
E. Coffman, Resident Inspector
M. Meeks, Operations Engineer (Section 4OA2.2.2 and 4OA7)

Approved by: Gerald J. McCoy, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000395/2011002; 01/01/2011 - 03/31/2011: Virgil C. Summer Nuclear Station; Routine Integrated Inspection Report.

The report covered a 3-month period of inspection by resident inspectors and an announced inspection by a regional operations engineer. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

No findings were identified.

B. Licensee-Identified Violations

A violation of very low safety significance that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking numbers are listed in Section 4OA7 of this report.

Enclosure

REPORT DETAILS

Summary of Plant Status

The unit began the inspection period at full Rated Thermal Power (RTP) and operated at full power until January 17, 2011, when a reactor shutdown to Mode 3 (Hot Standby) was commenced to address a high level alarm that was received for the 'C' reactor coolant pump motor upper oil reservoir. The unit was restarted on January 19 and returned to full RTP on January 21.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

Actual Adverse Weather Conditions

a. Inspection Scope

The inspectors performed an impending adverse weather inspection to review the licensee's overall preparations and protection of employees and risk-significant systems in response to a period of high winds and a tornado warning issued for the area on March 1, 2011. The inspectors reviewed the licensee response actions and weather reports during the period and verified the licensee had implemented applicable sections of operations administrative procedure (OAP)-109.1, Revision (Rev.) 3B, "Guidelines for Severe Weather," and emergency planning procedure (EPP)-015, Rev. 17, "Natural Emergency." Following the adverse weather conditions, the inspectors walked down site outside areas, including the service water cooling pond, to ensure that debris had not been introduced that could adversely affect the safe operation of the plant.

b. Findings

No findings were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors conducted three partial equipment alignment walkdowns which are listed below, to evaluate the operability of selected redundant trains or backup systems with the other train or system inoperable or out of service (OOS). Correct alignment and operating conditions were determined from the applicable portions of drawings, system operating procedures (SOPs), and technical specifications (TS). The inspections included review of outstanding maintenance work orders (WOs) and related condition reports (CRs) to verify that the licensee had properly identified and resolved equipment alignment problems that could lead to the initiation of an event or impact mitigating system availability. Documents reviewed are listed in the Attachment.

Enclosure

- 'B' emergency diesel generator (EDG) while the 'A' EDG was OOS for scheduled preventive maintenance
- 'A' EDG and turbine driven emergency feedwater pump while 'B' EDG was OOS for scheduled preventive maintenance
- 'A' and 'C' service water (SW) pumps while the 'B' SW pump was OOS for scheduled preventive maintenance

b. Findings

No findings were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors reviewed recent CRs, WOs, and impairments associated with the fire protection system. The inspectors reviewed surveillance activities to determine whether they supported 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 observed the control of transient combustibles and ignition sources. The inspectors conducted routine inspections of the following five areas (respective fire zones also noted):

- Auxiliary building (AB) 374 foot elevation (fire zones AB-1.1, 1.2, and 1.3)
- Control building (CB) 412/425 foot elevation cable spreading rooms (fire zones CB-1.1, 1.2, 2 and 5)
- EDG rooms 'A' and 'B' (fire zones DG-1.1/1.2 and DG-2.1/2.2)
- AB switchgear room 412 foot elevation (fire zone AB 1.10)
- AB switchgear room 463 foot elevation (fire zone AB-1.29)

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors conducted one heat sink performance sample. The inspectors witnessed and/or reviewed aspects of the heat performance tests conducted by the licensee March 8, 2011, on the 'B' component cooling water (CCW) heat exchanger and March 21 on the 'A' CCW heat exchanger. The inspectors discussed the test results with the system engineer, reviewed SW and CCW system health reports, verified CCW heat exchanger backflush compensatory measures were being conducted at the recommended frequency, and verified that CCW heat exchanger performance issues were entered into the licensee's CAP.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program

Quarterly Resident Inspector Observations

a. Inspection Scope

On February 28, 2011, the inspectors observed the performance of senior reactor operators and reactor operators on the plant simulator during licensed operator regualification training. The scenario involved a dropped control rod from 25 percent power, followed by a loss of coolant accident as a result of a control rod ejection from the top of the reactor vessel (LOR-SA-006). The inspectors assessed overall crew performance, communications, oversight of supervision, and the evaluators' critique. The inspectors verified that any significant training issues were appropriately captured in the licensee's CAP.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors evaluated two equipment issues described in the CRs listed below to verify the licensee's effectiveness with the corresponding preventive or corrective maintenance associated with structures, systems, and components (SSCs). The inspectors reviewed Maintenance Rule (MR) implementation to verify that component and equipment failures were identified, entered, and scoped within the MR program. Selected SSCs were reviewed to verify proper categorization and classification in accordance with 10 CFR 50.65. The inspectors examined the licensee's 10 CFR 50.65(a)(1) corrective action plans to determine if the licensee was identifying issues related to the MR at an appropriate threshold and that corrective actions were established and effective. The inspectors' review also evaluated if maintenance preventable functional failures (MPFFs) or other MR findings existed that the licensee had not identified.

The inspectors reviewed the licensee's controlling procedures, i.e., engineering services procedure (ES)-514, Rev. 5, "Maintenance Rule Implementation," and station administrative procedure (SAP)-0157, Rev. 0A, "Maintenance Rule Program," to verify consistency with the MR requirements.

- CR-10-03177, 'A' EDG room cooling fan XFN-75A tripped on overload condition
- CR-11-00343, 'A' reactor makeup pump tripped immediately on manual start

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated, as appropriate, for the five selected work activities listed below: (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of risk; (3) that, upon identification of an unforeseen 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 characterization to determine, as appropriate, whether necessary steps were properly planned, controlled, and executed for the planned and emergent work activities.

- Work Week 2011-04: risk assessment for scheduled maintenance activities associated with the following: diesel fire pump; AB electrical switchgear room cooling fans; emergent plant shutdown/restart for corrective maintenance to repair the 'C' reactor coolant pump (RCP) motor upper oil reservoir level alarm system; emergent replacement of solid state protection system loop 'B' temperature comparator card; and replacement of reactor coolant drain tank valve and flow transmitter
- Work Week 2011-07: risk assessment for scheduled maintenance activities associated with the following: 'A' EDG (Yellow risk); emergent work on the AB steam pressure barrier door (DRAB/304A); and main generator and Alterrex preventive maintenance
- Work Week 2011-09: risk assessment for scheduled maintenance activities associated with the following: turbine driven emergency feedwater (TDEFW) pump; 'B' EDG minor maintenance activities (Yellow risk); 'B' centrifugal charging pump and associated components; and 'B' spent fuel pool cooling pump, valve, and instrument minor maintenance
- Work Week 2011-10: risk assessment for scheduled maintenance activities associated with the following: 'B' motor driven emergency feedwater (MDEFW) pump; AB electrical switchgear room cooling fans; 'B' SW pump and associated components (Yellow risk); diesel fire pump; switchyard electrical relay work activities (Yellow risk); and 'B' reactor building spray pump
- Work Week 2011-12: risk assessment for scheduled maintenance activities associated with the following: 'A' MDEFW pump; new switchyard relay building modification (Yellow risk); and 'A' SW and SW booster pump (Yellow risk)

b. Findings

No findings were identified.

1R15 Operability Evaluationsa. Inspection Scope

The inspectors reviewed four operability evaluations listed below, 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) that the licensee considered other degraded conditions and their impact on compensatory measures for the condition being evaluated; and, (5) the impact on TS limiting conditions for operations and the risk significance in accordance with the significance determination process. Also, the inspectors verified that the operability evaluations were performed in accordance with SAP-209, Rev. 0E, "Operability Determination Process," and SAP-999, Rev. 5, "Corrective Action Program."

- CR-11-00203, 'C' reactor coolant pump motor upper oil reservoir high level alarm
- CR-11-00336, Centrifugal charging pump 'B' auxiliary oil pump tripped on 'B' phase thermal overload
- CR-11-00642, K1 relay auxiliary contacts would not drop out during testing due to an installation error
- CR-11-01094, Wrong bulbs installed in EDG local control panels

b. Findings

No findings were identified.

1R18 Plant Modificationsa. Inspection Scope

For the one equipment change listed below that was considered a temporary modification, the inspectors witnessed aspects of the implementation and evaluated the change for adverse effects on system availability, reliability, and functional capability. This temporary modification allowed the temporary installation of special portable heaters in the 'B' EDG room in order to provide additional room heating around the engine to reduce the heat loss from the engine jacket water system. Documents reviewed, as applicable, included associated 10 CFR 50.59 reviews, Engineering Technical Work Records, engineering design calculations, WOs and implementation packages, corrective action documents, applicable sections of the UFSAR, TS, and design basis information.

- CR/Non-Conforming Condition (NC) 10-04747 Disposition #1 Repair, "Room DB-36-03 Temporary Heaters

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the six maintenance activities listed below, the inspectors reviewed the associated post-maintenance testing (PMT) procedures and either witnessed the testing and/or reviewed test records to assess whether: (1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) test acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were properly controlled; (7) test equipment was removed following testing; and, (8) equipment was returned to the status required to perform its safety function. The inspectors verified that these activities were performed in accordance with general test procedure (GTP)-214, Rev. 5A, "Post Maintenance Testing Guideline."

- WO 1100934: PMT following replacement of solid state protection system comparator card for loop 'B' temperature
- WOs 1017456, 1100799, and 1101766: PMT following major preventive maintenance overhaul of the 'A' EDG
- WO 1100295: PMT following reseal of control room pressure boundary breach for pulling new cables for the reactor coolant pump vibration monitoring system
- WOs 0906994, 0908000, 1000155, and 1013911: PMT following scheduled preventive maintenance on 'B' SW pump
- WOs 1012499, 1013385, and 1014738: PMT following scheduled preventive maintenance on the 'A' SW booster pump
- WOs 1013890, 1014748, and 1015820: PMT following scheduled preventive maintenance on the TDEFW pump

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

a. Inspection Scope

The inspectors performed the inspection activities described below for the scheduled short duration outage in Hot Standby (Mode 3) to investigate a high level alarm on the 'C' RCP motor upper oil reservoir and make repairs to the oil reservoir housing vent tubing that was found bent. The outage began on January 17, 2011 and ended on January 20. Documents reviewed are listed in the Attachment to this report.

- The outage work plan was reviewed to ensure that appropriate risk controls, defense-in-depth, and TS requirements were considered in the configuration of important plant safety equipment, and outage personnel resource scheduling took into consideration fatigue management requirements.
- Portions of the plant shutdown were observed to ensure that TS and licensee procedural requirements were met for controlling key safety functions and plant configuration changes, and that defense-in-depth was maintained commensurate with the licensee's outage risk control and reactivity management plans.
- The inspectors reviewed and observed personnel containment entries to verify that the licensee controlled the entries and work activities in accordance with the appropriate TS and licensee procedural requirements for maintaining containment integrity, foreign material exclusion, security access, and radiological controls.
- The inspectors conducted several containment building walkdowns during and following the completion of licensee work activities to ensure that items were not left in containment that might contribute to emergency core cooling system sump screen blockage.
- The inspectors observed reactor restart, mode changes, and changing plant configurations to verify that TS, license conditions, and other requirements, commitments, and administrative procedure prerequisites were met during these activities.
- The inspectors reviewed various problems that arose during the outage to verify that the licensee was identifying problems related to outage activities at an appropriate threshold and entering them into the CAP.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed and/or reviewed the six surveillance test procedures (STPs) listed below to verify that TS or risk significant surveillance requirements were followed and that test acceptance criteria were properly specified to ensure that the equipment could perform its intended safety function. The inspectors verified that proper test

Enclosure

conditions were established as specified in the procedures, that no equipment preconditioning activities occurred, and that acceptance criteria were met.

In-Service Tests:

- STP-220.001A, Rev. 9, “Motor Driven Emergency Feedwater Pump and Valve Test” (‘B’ pump)

Reactor Coolant System Leakage Tests:

- STP-114.002, Rev. 12B, “Operational Leakage Calculation”

Other Surveillance Tests:

- STP-503.003B, Rev. 3, “Functional Test of Train ‘B’ SW to EF Cross Connect Circuits”
- STP-345.040, Rev. 11, “Engineered Safety Feature Actuation Slave Relay Test for Train ‘A’ XPN-7011”
- STP-125.008, Rev. 6G, “Diesel Generator A 24 Hour Load Test”
- STP-125.009, Rev. 8G, “Diesel Generator B 24 Hour Load Test”

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

.1 Simulator Licensed Operator Requalification Training Evolution

a. Inspection Scope

On February 28, 2011, the inspectors reviewed and observed the performance of a simulator-based licensed operator requalification training evolution (LOR-SA-006) that required implementation of emergency preparedness actions for the declaration of an Alert. The training scenario involved a dropped control rod from 25 percent power, followed by a loss of coolant accident as a result of a control rod ejection from the top of the reactor vessel. The inspectors assessed emergency procedure usage, emergency plan classifications, notifications, and protective action recommendation development. The inspectors evaluated the adequacy of the licensee’s conduct of the training and critique performance and verified that, as appropriate, performance weaknesses were captured in the licensee’s operator training program or CAP.

b. Findings

No findings were identified.

.2 Quarterly Emergency Preparedness Training Drilla. Inspection Scope

On March 23, 2011, the inspectors reviewed and observed the performance of a quarterly licensee emergency preparedness training drill (EPP-09-01B) that involved a simulated earthquake and subsequent reactor vessel fuel damage from loose parts followed by reactor coolant system leakage in excess of makeup capability. The inspectors assessed the emergency procedure usage, emergency plan classifications, notifications, and protective action recommendation development. The inspectors evaluated the adequacy of the licensee's conduct of the drill and critique performance. The inspectors verified that the drill critique identified drill performance weaknesses and entered these items into the licensee's CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

40A1 Performance Indicator (PI) Verification

Cornerstone: Initiating Events

a. Inspection Scope

The inspectors verified the accuracy of the licensee's PI submittals listed below for the period January 1, 2010, through December 31, 2010. The inspectors used the performance indicator definitions and guidance contained in NEI 99-02, Revision 6, "Regulatory Assessment Performance Indicator Guideline," and licensee procedure SAP-1360, Rev. 1, "NRC and INPO/WANO Performance Indicators," to check the reporting of each data element. The inspectors sampled licensee event reports (LERs), operator logs, tagout records, plant risk records, plant status reports, CRs, and performance indicator data sheets to verify that the licensee had properly reported the PI data. Also, the inspectors discussed the PI data with the licensee personnel associated with the performance indicator data collection and evaluation.

- Unplanned Scrams per 7000 Critical Hours
- Unplanned Power Changes per 7000 Critical Hours
- Unplanned Scrams with Complications

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished by either attending daily screening meetings that briefly discussed major CRs, or accessing the licensee's computerized corrective action database and reviewing each CR that was initiated.

b. Findings

No findings were identified.

.2 Annual Sample Review

a. Inspection Scope

The inspectors conducted more in-depth reviews of the two issues listed below to evaluate the effectiveness of the licensee's corrective actions for important safety issues.

1) Operating Experience Smart Sample (OpESS) FY 2010-01, "Recent Inspection Experience for Components Installed Beyond Vendor Recommended Service Life"

The inspectors performed searches of the licensee's corrective action database for the previous 5 years to identify aging concerns that were similar to those listed in OpESS FY 2010-01. From the results of this search, inspectors selected CR-08-01513 and performed an in-depth review of the associated corrective actions, with a focus on procedures for establishing shelf life criteria and preventive maintenance for components.

CR-08-01513 discussed a past Part 21 detailing the life expectancy of electrolytic capacitors found in several Woodward diesel generator components, evaluated the impact on installed Woodward components, and listed several necessary corrective actions. The inspectors assessed whether the issue was properly identified; documented accurately and completely; adequately considered extent of condition; and identified appropriate and timely corrective actions. Inspectors also selected four sets each containing a Woodward 2301a governor and a DRU (Digital Reference Unit), examining the applicable procurement procedures, purchase

Enclosure

orders, refurbishment documentation and shelf life criteria. Documents reviewed by the inspectors included:

- CR-08-01513, Evaluate age of capacitors for Woodward Governor electronic controls
- CR-08-03760, OE26873, Evaluate DG erratic KW output event at Cooper Nuclear Station for applicability to VC Summer
- 10CFR21 Report of Defects and Non-Compliance – Engine Systems, Inc., Report No. 10CFR21-0082, Rev. 2, “Woodward Electronic Controls with Electrolytic Capacitors”
- SLC-49, Rev. 0, “Woodward Governor Components for the Colt Emergency Diesel Generator systems at VCS”
- ES-324, Rev. 3C, “Establishment of Shelf Life Criteria”
- SAP-1286, Rev. 7A, “Procurement of Materials”

2) Licensee corrective actions associated with NRC Violation (VIO) 05000395/2010004-001, Failure to Notify the Commission of a Change in Medical Status

The inspectors reviewed the implementation of licensee corrective actions associated with VIO 05000395/2010004-01, which was documented in CR-10-03348. The inspectors performed a detailed review of a random sample of licensed operator medical records and associated documentation, in order to assess the effectiveness of programmatic enhancements. The inspectors also reviewed updated procedures governing licensed operator medical status, as well as a sample of condition reports related to licensed operator medical issues. Documents reviewed by the inspectors included:

- Licensed Operator Medical Files: 5-6 years of history each (15 records reviewed)
- SAP-1160, Rev. 9, “Medical Requirements for Special Duties”
- CR-11-00256, Licensed Operator may not have complied with license condition
- CR-11-00304, Licensed Operator medical restriction not identified following 2008 EKG
- CR-11-00305, Issues identified during audit of licensed operators’ medical examinations
- CR-11-00367, Fitness for Duty (FFD) violation involving a licensed operator
- Letter from Mr. T. Gatlin to NRC, “VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1; DOCKET NO. 50-395; OPERATING LICENSE NO. NPF-12; REPLY TO NOTICE OF VIOLATION EA-10-204; NRC INSPECTION REPORT 05000395/2010004,” dated November 22, 2010

b. Findings

No findings were identified.

Enclosure

4OA5 Other Activities

Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

Quarterly Resident Inspector Exit Meeting

On April 12, 2011, the resident inspectors presented the integrated inspection results to Mr. Thomas Gatlin and other members of the licensee staff. The licensee acknowledged the results of these inspections. The inspectors confirmed that inspection activities discussed in this report did not contain proprietary material.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section 2.3.2 of the NRC Enforcement Policy, for being dispositioned as an NCV.

- 10CFR 55.25 states "If, during the term of the license, the licensee develops a permanent physical or mental condition that causes the licensee to fail to meet the requirements of § 55.21 of this part, the facility licensee shall notify the Commission, within 30 days of learning of the diagnosis, in accordance with § 50.74(c). For conditions for which a conditional license (as described in §55.33(b) of this part) is requested, the facility licensee shall provide medical certification on Form NRC 396 to the Commission (as described in § 55.23 of this part)." Contrary to this, the licensee identified that they did not notify the Commission within 30 days after a licensed operator was diagnosed with a permanent physical medical condition as required by 10 CFR 55.25. This was identified in the licensee's CAP as CR 11-00304 and 11-00031. This finding was of very low safety significance because the licensed operator performs non-licensed shift technical advisor duties and has been inactive during the time in question.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Archie, Senior Vice President, Nuclear Operations
A. Barbee, Director, Nuclear Training
L. Bennett, Manager, Plant Support Engineering
L. Blue, Manager, Nuclear Training
M. Browne, Manager, Quality Systems
M. Coleman, Manager, Health Physics and Safety Services
G. Douglass, Manager, Nuclear Protection Services
M. Fowlkes, General Manager, Engineering Services
D. Gatlin, Vice President, Nuclear Operations
M. Harmon, Manager, Chemistry Services
R. Haselden, General Manager, Organizational / Development Effectiveness
R. Justice, Manager, Nuclear Operations
G. Lippard, General Manager, Nuclear Plant Operations
D. Shue, Manager, Maintenance Services
W. Stuart, Manager, Design Engineering
B. Thompson, Manager, Nuclear Licensing
R. Williamson, Manager, Emergency Planning
S. Zarandi, General Manager, Nuclear Support Services

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

None

Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures and Drawings

OAP-106.1, Rev. 15, Operating Rounds
SOP-211, Rev. 13B, Emergency Feedwater System
SOP-306, Rev. 18, Emergency Diesel Generator
D-302-085, Rev. 43, Emergency Feedwater (Nuclear)
SOP-117, Rev. 21G, Service Water System
D-302-221, Rev. 27, Service Water Cooling

Section 1R20: Refueling and Other Outage Activities

Procedures

GOP-4B, Rev. 0I, Power Operation (Mode 1 – Decending)
GOP-5, Rev. 11E, Reactor Shutdown from Startup to Hot Standby (Mode 2 to Mode 3)
GOP-3, Rev. 13A, Reactor Startup from Hot Standby to Startup (Mode 3 to Mode 2)
GOP-4A, Rev. 1D, Power Operation (Mode 1 – Ascending)
GTP-702, Rev. 15K, Surveillance Activity Tracking and Triggering
Reactor Engineering Procedure (REP)-109.002, Rev. 10, Inverse Count Rate Ratio Plot
REP-109.002, Rev. 11A, Calculation of Estimated Critical Conditions
STP-109.001, Rev. 9F, Reactor Building Closeout Inspection
STP-134.001, Rev. 12D, Shutdown Margin Verification

Condition Reports Initiated for NRC Identified Issues

CR-11-00306, Source range instrument scaler timer had outdated calibration sticker
CR-11-00337, Failure to log/track 24-hour TS LCO for missed TS surveillance
CR-11-00471, Operator failed to follow alarm response procedure actions for EDG low jacket water temperature alarm
CR-11-00531, Failure to rescreen CR following maintenance rule evaluation review
CR-11-00552, Missing step in emergency feedwater to service lineup procedure
CR-11-00761, Fire protection surveillance test procedures fail to test all Appendix R isolation contacts
CR-11-00942, Fire barrier trace TR5014 had Kaowool partially detached from the wall
CR-11-00949, Latch on Intermediate Building door DRIB/102 found degraded
CR-11-00974, Diesel Generator Building fire door DRDB/307 lower latch found degraded
CR-11-01094, Operator failure to follow OAP-100.6 guidance for replacing EDG local control panel light bulbs and several incorrect bulbs have previously been installed
CR-11-01113, CAP electronic database software upgrade incorrectly defaulted new maintenance rule field to “NO” for all CRs generated prior to update implementation
CR-11-01252, CR action items closed to work orders do not have same completion dates to reflect priority for implementation
CR-11-01278, Control Building steam propagation & fire door CBDR/102 failed to latch when closed
CR-11-01381, Emergency procedure guidance inconsistent with FSAR 3.7.4.4 for earthquake response
CR-11-01438, Upper oil housing vent line tubing on ‘C’ SW pump motor found bent and unrestrained

LIST OF ACRONYMS

AB	Auxiliary Building
ADAMS	Agency Document Access and Management System
CAP	Corrective Action Program
CB	Control Building
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
DG	Diesel Generator
EDG	Emergency Diesel Generator
EF	Emergency Feedwater
EKG	Electrocardiogram
EPP	Emergency Plan Procedure
ES	Engineering Services Procedure
FFD	Fitness For Duty
GOP	General Operating Procedure
GTP	General Test Procedure
IMC	Inspection Manual Chapter
IR	Inspection Report
LER	Licensee Event Report
MDEFW	Motor Driven Emergency Feedwater
MPFF	Maintenance Preventable Functional Failure
MR	Maintenance Rule
MSPI	Mitigating System Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NUREG	Nuclear Regulatory
OAP	Operations Administrative Procedure
OOS	Out of Service
OpESS	Operating Experience Smart Sample
PARS	Publicly Available Records
PI	Performance Indicator
PM	Preventive Maintenance
PMT	Post-Maintenance Testing
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
REV.	Revision
RTP	Rated Thermal Power
SAP	Station Administrative Procedure
SCE&G	South Carolina Electric and Gas
SDP	Significance Determination Process
SOP	System Operating Procedure
SSC	System, Structures, and Components
STP	Surveillance Test Procedure
SW	Service Water
TDEFW	Turbine Driven Emergency Feedwater
TS	Technical Specification

UFSAR
VIO
WO

Updated Final Safety Analysis Report
Violation
Work Order