



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

February 5, 2004

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 TRIENNIAL FIRE  
PROTECTION INSPECTION (FOLLOW UP) REPORT 05000395/2001010**

Dear Mr. Byrne:

On January 21, 2004, the NRC completed an inspection at your Virgil C. Summer Nuclear Station. The enclosed report documents the inspection findings which were discussed on January 21, 2004, with Jeff Archie and other members of your staff. The enclosed report presents the results of this inspection. Following completion of additional review in the Region II office, a final exit was held by telephone with Mr. Jeff Archie and other members of your staff on February 3, 2004.

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.

The inspection was an in-office and on-site inspection of Unresolved Item 05000395/2001009-01. The issue involved a concern with licensee management's philosophy and training regarding when to enter Fire Emergency Procedure (FEP)-4.0 and evacuate the main control room during a fire in the main control room. As documented in Inspection Report 05000395/2001009, this issue was left unresolved pending further NRC review regarding the significance and underlying regulatory requirements associated with this issue.

Based on the results of this review, the inspectors identified no findings of significance.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and 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

DEC

2

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/***

Charles R. Ogle, Chief  
Engineering Branch 1  
Division of Reactor Safety

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

Enclosure: NRC Triennial Fire Protection Inspection (Follow Up) Report 05000395/2001010  
w/Attachment: Supplemental Information

cc w/encl:  
R. J. White  
Nuclear Coordinator Mail Code 802  
S.C. Public Service Authority  
Virgil C. Summer Nuclear Station  
Electronic Mail Distribution

Kathryn M. Sutton, Esq.  
Winston & Strawn LLP  
Electronic Mail Distribution

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

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

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

(cc w/encl cont'd - See page 3)  
 (cc w/encl cont'd)  
 Ronald B. Clary, Manager  
 Nuclear Licensing & Operating  
 Experience (Mail Code 830)  
 South Carolina Electric & Gas Company  
 Virgil C. Summer Nuclear Station  
 Electronic Mail Distribution

Distribution w/encl:  
 K. Cotton, NRR  
 RIDSNRRDIPMLIPB  
 PUBLIC  
 L. Slack, RII EICS

OFFICE	RII:DRS	RII:DRS	RII:DRS	RII:DRP			
SIGNATURE	RA	RA	RA	RA			
NAME	MTHOMAS	KO'DONOHUE	WROGERS	KLANDIS			
DATE	2/3/2004	2/3/2004	2/4/2004	2/4/2004	2/ /2004	2/ /2004	2/ /2004
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
PUBLIC DOCUMENT	YES NO						

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-395

License No.: NPF-12

Report No.: 05000395/2001010

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

Facility: Virgil C. Summer Nuclear Station

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

Dates: January 10, 2002 through January 21, 2004

Inspectors: K. O'Donohue, Fire Protection Team Leader  
W. Rogers, Senior Reactor Analyst

Approved by: Charles R. Ogle, Chief  
Engineering Branch 1  
Division of Reactor Safety

Enclosure

## SUMMARY OF FINDINGS

IR 05000395/2001010; South Carolina Electric & Gas Co.; on 01/10/2002 - 01/21/2004; Virgil C. Summer Nuclear Station; Triennial baseline fire protection inspection - Unresolved Item Significance Determination Review.

The inspection was an in-office and on-site follow up inspection of Unresolved Item 05000395/2001009-01, conducted by regional inspectors and a Senior Reactor Analyst. The inspection identified no findings of significance. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified Finding

No findings of significance were identified

B. Licensee-Identified Violations

None

Enclosure

## Report Details

### 1. REACTOR SAFETY

#### Cornerstones: Initiating Events, Mitigating Systems and Barrier Integrity

#### 1R05 Fire Protection

#### .01 Operational Implementation of Post-Fire Safe Shutdown Capability

##### a. Inspection Scope

The inspectors conducted a walkdown of Fire Emergency Procedure FEP-4.0, Control Room Evacuation Due To Fire, Attachment E, Duties of the Auxiliary Building Operator. The inspectors reviewed the procedure to verify the evacuation of the control room could be accomplished successfully, and that time critical steps could be accomplished in a timely manner.

##### b. Findings

During the walkdown the inspectors noted that per the procedure, charging flow is realigned to provide seal injection flow. However, the procedure failed to provide guidance for evaluating the status of the reactor coolant pump (RCP) seal cooling prior to re-establishing seal injection after it had been lost consistent with the Westinghouse technical guidance. Further, the inspectors determined that FEP-4.0 does not provide direction to re-establish seal injection flow in a timely manner, instead it provides direction to reestablish seal injection flow up to 90 minutes after it has been isolated. The inspectors were concerned that in some scenarios this could result in damage to the RCP seals and an attendant seal loss of coolant accident.

Pending additional NRC review, this is identified as URI 05000395/2001010-01, Fire Emergency Procedure FEP-4.0, Potentially Not Adequate to Ensure RCP Seal Integrity.

### 4. OTHER ACTIVITIES

#### 4OA5 Other

(Closed) Unresolved Item (URI) 05000395/2001009-01: Decision of When To Enter Fire Emergency Procedure FEP-4.0 and Evacuate The Main Control Room Due To A Fire

During the triennial fire protection inspection (NRC Inspection Report 05000395/2001009, dated November 28, 2001), the inspectors identified a finding involving the lack of operator training and concerns associated with the licensee's management philosophy and expectations with regard of when to enter fire emergency procedure FEP-4.0.

Regional inspectors performed an in-office review followed by an on-site inspection on January 21, 2004. During this inspection, interviews and discussions were conducted with operations personnel, and plant walkdowns were performed on portions of FEP-4.0.

Enclosure

Primary Identification Program (PIP) report 0-C-01-1839, which documents the NRC's comments during the triennial fire protection inspection and the licensee's associated corrective actions was also reviewed. The inspectors also reviewed a Control Room evacuation simulator scenario and in-plant Job Performance Measures (JPMs) that were developed as a corrective action for PIP 0-C-01-1839.

Based on interviews with licensed operators and plant management, as well as review of the newly developed training material, the inspectors concluded that the management philosophy is supportive of the licensee's Fire Protection Evaluation Report and FEP-4.0 requirements to prevent or correct on a priority basis any spurious component operations resulting from a fire. No violation of regulatory requirements was identified in this area of the inspectors' original concern.

The inspectors determined that the licensee had included classroom training on when to enter FEP-4.0. However, the inspectors concluded that the licensee's original training on FEP-4.0 was inadequate. Specifically, the training did not include simulator scenarios or JPMs to ensure correct implementation of the classroom instruction. After interviewing operations personnel, and observing operations personnel perform portions of FEP-4.0 in the plant, the inspectors concluded that the original lack of training on FEP-4.0 specifically would have minimal impact on the operators' ability to safely shutdown the plant. This was based on operator plant knowledge and familiarity of the actions required to be performed. Further, review of training developed in response to the initial concern indicated that implementation of FEP-4.0, is adequately addressed with a simulator scenario and applicable JPMs. The inspectors determined that this finding has minimal safety significance that does not meet the NRC's criteria for being greater than minor. Because it has minimal safety significance and it has been documented in the licensee's corrective action program (PIP 0-C-01-1839), this issue is considered minor. URI 05000395/2001009-01 is closed.

#### 4OA6 Meetings, including Exit

The inspector presented the inspection results to Mr. Jeff Archie and other members of licensee management and staff on January 21, 2004. The licensee acknowledged the findings presented.

Subsequent to the onsite inspection a follow-up exit by telephone was held with Mr. Jeff Archie and other members of licensee management on February 3, 2004, to update the licensee on changes to the preliminary inspection findings. The licensee acknowledged the findings. No proprietary information is included in this inspection report.

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee Personnel

J. Archie, General Plant Manager, Nuclear Plant Operations  
M. Browne, Manager, Nuclear Licensing and Operating Experience  
T. Estes, Senior Engineer, Nuclear Licensing and Operating Experience  
D. Gatlin, Manager, Operations  
T. Keckeisen, Fire Protection Supervisor  
G. Loignon, Supervisor, Quality Assurance  
J. Pease, Specialist, Nuclear Licensing and Operating Experience  
T. Price, SRO Operations  
M. Simpson, Operations Training  
R. Sweet, Supervisor, Nuclear Licensing and Operating Experience

#### NRC Personnel

M. King, Resident Inspector  
M. Widmann, Senior Resident Inspector

### **LIST OF ITEMS OPENED AND CLOSED**

#### Opened

05000395/2001010-01	URI	Fire Emergency Procedure FEP-4.0, Potentially Not Adequate to Ensure RCP Seal Integrity (Section 1R05.01)
---------------------	-----	---

#### Closed

05000395/2001009-01	URI	Decision of When to Enter Fire Emergency Procedure FEP-4.0 and Evacuate the Main Control Room Due to a Fire (Section 4OA5)
---------------------	-----	--



## LIST OF DOCUMENTS REVIEWED

### PROCEDURES

Fire Emergency Procedure FEP-1.0, Fire Emergency Procedure Selection, Rev. 10, Change D  
Fire Emergency Procedure FEP-4.0, Control Room Evacuation Due to Fire, Rev. 3, Change D

### OTHER DOCUMENTS

RC-01-1839, Letter from Stephen A. Byrne, Senior Vice President, Nuclear Operations, Virgil C. Summer Nuclear Station, to the U.S. Nuclear Regulatory Commission, dated January 9, 2002  
Virgil C. Summer Nuclear Station Fire Protection Evaluation Report, Amendment 00-01 FSAR Section 9.5.1, Fire Protection System  
Virgil C. Summer Nuclear Station Operating License, Amendment 151  
Design Input Record DI-284001/51, Review for Compliance to 10CFR50, Appendix R, Sections III.G, III.J, and III.L, Revision 1  
CER 0-C-01-1839, NRC Inspection Report 50-395/01-09 comments which require long term corrective actions, plant modifications, or procedure changes  
LOR-FEP, Fire Emergency Procedure Overview, Rev. 1  
LOR-FEP, Fire Emergency Procedure Overview Lesson Plan, Rev. 1  
LOR-FEP-001, Scenario Exercise Guide, Rev. 0  
Job Performance Measure (JPM) No. JPS-086, FEP Procedure Determination, Rev. 0  
JPM No. JPS-086, FEP Procedure Determination, Rev. 0  
JPM No. JPS-087, Classify Emergency Plant Event, Rev. 0  
JPM No. JPS-090, Nuclear Reactor Operator at the Control (NROATC) Actions for FEP-4.0, Rev. 0