



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W.  
 ATLANTA, GEORGIA 30323

Report No.: 50-395/84-35

Licensee: South Carolina Electric and Gas Company  
 Columbia, SC 29218

Docket No.: 50-395

License No.: NPF-12

Facility Name: V. C. Summer

Inspection Conducted: November 26 - December 1, 1984

Inspectors: J. L. Mathis 12/14/84  
 J. L. Mathis Date Signed

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 J. L. Mathis Date Signed

Approved by: Frank Jape 12/14/84  
 F. Jape, Section Chief Date Signed  
 Engineering Branch  
 Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 99 inspector-hours on site in the areas of plant tour, procedure review, surveillance testing and followup on previously identified inspection findings.

Results: A violation was identified - failure to establish a continuous fire watch for fire barrier door CB-401 - paragraph 5.

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## REPORT DETAILS

### 1. Licensee Employees Contacted

- \*O. S. Bradham, Director, Nuclear Plant Operations
- \*J. G. Connelly, Deputy Director - OPS and Maintenance
- \*O. W. Dixon, Vice President, Nuclear Operations
- \*A. R. Koon, Jr., Associate Manager Regulatory Compliance
- \*K. Woodward, Manager Operations
- \*B. C. Williams, Supervisor of Operations
- M. Blue, Nuclear Licensing
- R. M. Campbell, Jr., ISEG Engineer
- J. W. Derrick, Associate Manager Maintenance Engineer
- M. Fowlkes, Regulatory Interface Engineer
- J. Shepp, Shift Supervisor
- W. Heggins, Shift Supervisor

Other licensee employees contacted included two technicians, four operators, one mechanic, three security force members, and three office personnel.

NRC Resident Inspector

- \*C. W. Hehl, Resident Inspector

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on November 30, 1984, with those persons indicated in paragraph 1 above. The licensee acknowledged the finding contained herein. The licensee also provided the inspectors commitments to perform an independent review of procedures by January 31, 1985.

Violation (395/84-35-01): Failure to establish a continuous fire watch for fire barrier door CB-401 - paragraph 5.

Unresolved Item (395/84-35-02): Adequacy of review of engineering and test procedures - paragraph 6.

### 3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

#### 4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraph 6.

#### 5. Plant Tour (71302)

The inspectors conducted plant tours periodically during the inspection interval to verify that monitoring equipment was recording as required, equipment was properly tagged, operations personnel were aware of plant conditions, and plant housekeeping efforts were adequate. The inspectors also determined that appropriate radiation controls were properly established, critical clean areas were being controlled in accordance with procedures, excess equipment or material was stored properly and combustible materials and debris were disposed of expeditiously. During tours the inspectors looked for the existence of fluid leaks, piping vibrations, pipe hanger and seismic restraint settings, various valve and breaker positions, equipment caution and danger tags, component positions and status, adequacy of fire fighting equipment, appropriate notations and radiation posting and instrument calibration dates.

On November 29, 1984, during the backshift testing for diesel generator load rejection, the inspector enroute to the control room determined that fire door CB-401 to the cable spreading area, was open. This door is usually locked and requires a key to unlock it from the shift supervisor. The inspectors immediately called security. The inspectors, by observation and direct interview, verified that the physical security plan was being implemented in accordance with the Station Security Plan. The on-duty operations shift supervisor was informed of this finding and informed us that the door was not to a vital area and there existed administrative control.

Technical Specification 3.7.10 requires that all fire barrier assemblies separating safety-related fire areas or separating portions of redundant systems important to safe shutdown within a fire area and all sealing devices in fire-related assembly penetrations (fire doors, fire windows, fire dampers, cable and piping penetration seals and ventilation seals) must be maintained functional or a fire watch established. The failure to provide a fire watch for the non-functional fire barrier between the cable spreading area and stairwell is considered to be a violation. This is identified as Violation (395/84-35-01): Failure to establish a continuous fire watch for fire barrier door CB-401.

## 6. Review of Test Procedures (72300)

The inspectors reviewed the Station Administrative Procedure (SAP), SAP-139 which establishes in part the requirements for the development, review, approval and control of procedures at Summer. The inspectors reviewed selected surveillance and reactor engineering test procedures and held discussions with the licensee to verify that:

- Administrative controls have been established for the review, approval and periodic updating of procedures
- Responsibilities have been assigned in writing to assure that test procedures will be reviewed, updated and approved as required (including 50.59 considerations)
- Controls have been established in Station Administrative Procedures, for the preparation of procedures which include:
  - a. Format and content,
  - b. Issuing new procedures and revised procedures,
  - c. Control and disposal of outdated procedures,
  - d. Control of temporary changes to procedures,
  - e. Controls to ensure that the same organization which approved the original document approves the revised document unless otherwise designated,
  - f. Technical adequacy with regard to technical specification requirements
- The licensee's administrative controls include provisions for assuring that procedure revisions or changes are distributed to the responsible organizations.

The following list of the procedures were reviewed during this inspection period:

- SAP-139, Procedure Development, Review, Approval and Control
- Surveillance Test Procedure (STP)-125.004, Diesel Generator Load Rejection Test
- STP-125.005, Integrated Safeguards Test
- STP-125.006, Diesel Generator Refueling Operability Test
- STP-142.004, Manual Reactor Trip Operational Test

- STP-209.001, Incore vs. Excore Axial Offset Evaluation
- STP-209.002, Incore vs. Excore Axial Offset
- STP-203.001, Target Axial Flux Difference Update
- Reactor Engineering Procedure (REP) - 107.001, Controlling Procedure for Refueling and Refueling Startup Testing
- REP-107.005, Movable Incore Detector System Checkout

The results of this review identified several concerns with the content of these procedures. These identified discrepancies are as follows:

- STP-125.005, Integrated Safeguards Test. Various valves were identified in the procedure body which were not included on the required attachments and some of the valves required to be tested were not included in the test procedure. Various typographical errors were noted. Component nomenclature in the body of the procedure did not agree with that specified in the associated attachments. The inspectors noticed that the operations group were required to submit numerous changes to this procedure prior to commencing the test, in order to correct discrepancies which would allow them to obtain the correct data as required by Technical Specifications.
- STP-125.006, Diesel Generator Refueling Operability Test. Test equipment (recorders) did not appear to have sufficient capability to handle all required inputs. The test data sheet contained typographical error.
- STP-142.004, Manual Reactor Trip Operational Test. The initial conditions did not reflect the required specification as outlined in Technical Specification 4.3.1, Table 3.3.1, Item 6.C which requires at least two channels of the Source Range Instrumentation System operable when "the reactor trip system breakers in the closed position and the control rod drive system capable of rod withdrawal."
- STP-203.001, Target Axial Flux Difference Update. Initial conditions should reflect the percent power level this test is to be conducted at or above as outlined in Technical Specification 4.2.11.
- REP-107.005, Movable Incore Detector System Checkout. Level 1 Acceptance Criteria should include the Technical Specification requirement that at least two detector thimbles are operable per core quadrant T.S. 3.3.3.2.b.

The inspectors informed the plant manager that the NRC staff felt that these items were the result of the method in which Summer performed reviews of these procedures.



As described by licensee personnel and outlined in the applicable SAP, Summer did meet the requirements of this document; however, the licensee committed to perform an independent review of procedures at V. C. Summer. This review would involve procedures which had been performed or rewritten within the past six months. The results of this review would be submitted to the NRC no later than January 31, 1985.

As a result of these reviews and discussions, the inspectors informed the licensee that this item would be identified as an Unresolved Item (URI) - URI 395/84-35-02, Adequacy of review of engineering and test procedures.

#### 7. Startup Test Witnessing (61701)

During this inspection the inspectors witnessed startup tests being conducted and reviewed the associated test procedures (identified in paragraph 6).

These tests were witnessed to observe overall test personnel performance, verify that an approved procedure was available and in use, test equipment being used was properly installed and calibrated, and changes to the procedures were documented in accordance with administrative procedures.

- STP-125.004, Diesel Generator Load Rejection Test. The licensee conducted this test to demonstrate compliance with Technical Specification 3.8.1, surveillance requirements 4.8.1.1.2.d.2 and 4.8.1.1.2.d.3.

The inspectors verified that the precautions, test equipment, test frequency, initial conditions, procedure part and attachments would collect the necessary data for the identified purpose.

During this test, the licensee identified a problem with the method for collecting data from the test equipment installed. The visicorder which was used to record diesel generator frequency was not capable of recording at high enough speed. The licensee corrected this problem by placing a high speed recorder in series with the originally installed test equipment and collected the necessary data. These changes were accomplished in accordance with established procedures.

- STP-125.005, Integrated Safeguards Test. This procedure demonstrated compliance with Technical Specification by initiating safety injection and a blackout condition in accordance with the following surveillance requirements: 4.8.1.1.2.d.5, 4.8.1.1.2.d.6, 4.8.1.1.2.d.8, 4.8.1.1.2.d.10, 4.8.1.1.2.d.12, 4.6.2.3.b.1, 4.6.2.3.b.2, 4.6.3.c.2, 4.6.3.c.3, 4.6.4.2.a, 4.6.4.2.b, 4.5.2.e.1, 4.5.2.e.2, 4.7.1.2.c.1, 4.7.4.b, 4.7.4.c, 4.7.6.e.2, 4.7.6.e.3, 4.6.2.1.c, 4.5.2.e.1, 4.6.2.2.c, 4.3.2.1 and 4.8.4.2.a.

This test was witnessed to verify that the objectives of this test could be met using the test methods outlined.

During the conduct of this test the licensee identified several problems with equipment performance.

- When Test No. 1 was initiated by simulating a loss of offsite power in conjunction with an engineering safety features actuation test signal (ESFA), the diesel generator B failed to start within 10 seconds as required. However, the diesel started approximately 35 seconds later with the diesel generator breaker closing and assuming its normal emergency requirements when the ESFA signal was initiated. The licensee identified this problem and took immediate corrective actions to locate, repair and retest (if required) this section of the test. The cause of this problem appeared to be that one of the valve indicators on the control room main control board was grounded while the emergency start switch for the diesel generator was also grounded out. This condition created a power flow through the switch to the relay contacts for the diesel start circuitry which would not allow these contacts to drop out of the circuit, starting the diesel generator.

Operations personnel conducted this test and subsequent problem resolutions in a professional manner.

The collected test data will be reviewed in a future inspection. The only concern raised by the inspectors for this test was in regard to review of the test procedure, which is addressed in paragraph 6 of this report.

- STP 125.006, Diesel Generator Refueling Operability Test, demonstrated compliance with Technical Specification 3.8.1, Electrical Power Systems A.C. Sources, per surveillance requirements 4.8.1.1.2.d.4, 4.8.1.1.2.d.7, 4.8.1.1.2.d.9, 4.8.1.1.2.d.11 and 4.8.1.1.2.d.13.

The inspectors witnessed portions of STP 125.006 which included the following:

- a. Within 5 minutes after completing the 24 hour test, performance of surveillance requirement 4.8.1.1.2.d.4.b
- b. Simulating a loss of offsite power and degraded voltage by itself
- c. The diesel generator lockout features prevented the diesel generators starting only when required
- d. Fuel transfer pump transferring fuel from each fuel storage tank to the day tank of each diesel via the installed cross connection lines.

In addition to the identified test witnessing, the inspectors witnessed I&C personnel perform the required test equipment hookup and verification of the selected test.

Of the areas inspected, no violations or deviations were identified.

8. Followup On Previously Identified Inspection Finding - Unit 1

(Closed) Inspector Followup Item 395/84-28-01, Inadequate procedure for drag testing racks. The inspector reviewed PTP-130.003, Spent Fuel Storage Racks Drag Test. PTP-130.003 provided the acceptance criteria for drag testing new racks in accordance with GTP-309. The following acceptance criteria were included in PTP-130.003:

- a. Spent fuel storage racks maximum drag force is less than 50 lbs.
- b. Spent fuel storage racks retest drag force is  $\pm 5$ lbs of GTP-309 data using the oversized dummy fuel assembly or
- c. Spent fuel storage rack retest drag force is no greater than (+0 lbs.) of GTP-309 data using the dummy fuel assembly.
- d. If spent fuel storage racks positions drag test results exceed 7.2 or 7.3 the entire cell must be retested.

The inspector considers this item closed.