UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report No. 50-395/80-02

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

Facility Name: V. C. Summer

Docket No. 50-395

License No. CPPR-94

Inspection at Summer Site, near Columbia, South Carolina

Inspectors: RJ Hardwick fr for
T. D. Gibbons — Date Signed 2/26/80

RJ Hardwick fr for
R. J. Hardwick, Jr. — Date Signed 2/26/80

RJ Hardwick fr for
N. Merriweather — Date Signed 2/26/80

Accompanying Personnel: T. E. Conlon

Approved by: E Gordon
T. E. Conlon, Section Chief, RCES Branch — Date Signed

SUMMARY

Inspection on January 8-11, 1980

Areas Inspected

This routine, unannounced inspection involved 98 inspector-hours onsite in the areas of Electrical Components and systems work, work activities and quality records, Instrumentation components and systems termination work, work activities, quality records, and licensee identified items.

Results

Of the areas inspected, no items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Licensee Employees

*J. F. Algar, Site Manager
*D. A. Nauman, Group Manager QA and Security
*D. Moore, Director of Surveillence Systems
*E. Evans, QA Engineer
*A. A. Smith, Site QA Coordinator
M. E. Frick, Relay Engineer
B. Hinson, Instrumentation Supervisor
D. A. Wicker, QA Surveillance Specialist

Other Organizations

*J. Harvey, Construction Manager, Daniel Construction Company (DCC)
*A. A. Hartman, Electrical Resident Engineer, Gilbert Associates, Incorporated (GAI)
*R. J. Weseles Electrical Resident Engineer, GAI
R. Molchan, Instrumentation and Control (I&C) Resident Engineer, GAI
H. Crisp, DCC, I&C Supervisor
E. Suddeth, DCC, I&C General Foreman

NRC Resident Inspector

*J. L. Skolds

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on January 11, 1980 with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item 395/79-18-03: Cable installation instruction guidelines for cable tray installation in cable spreading areas. The licensee stated that an amendment to the Final Safety Analysis Report (FSAR) has been submitted. This amendment requests that cable trays for redundant equipment in "Cable Spreading Areas" are allowed to be separated by a minimum horizontal distance of one foot and a minimum vertical distance of three feet without fire resistant barriers. This item will be reviewed on subsequent inspections.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraph 8.

5. Licensee Identified Item [10 CFR 50.55(e)]

(Open) Licensee Identified Item 395/80-02-01: 480 Volt Motor Termination Taping. The Electrical Construction Guidelines for Cable Installation, drawing number S-200-912, Figure 2, specifies the method for electrically insulating 480 volt motor terminations. This method requires a layered wrap of a Bishop Biseal No. 3 tape (B/M Item EK-i6), a friction tape (B/M Item Ek-i4a), and a vinyl electrical tape (B/M Item Ek-i5b). On April 9, 1979, a QC inspector determined that a Bishop Biseal No. 3 tape not in accordance with the guidelines was being used. This condition was documented on Nonconformance Notice (NCN) No. 770E. On September 18, 1979, the licensee identified to Region II the concerns with 480 volt motor termination taping. In a letter dated September 27, 1979, the licensee reported that four motors had the potential of having unqualified tape used for terminations, and that NCN No. 770E was dispositioned to reterminate the suspected motors and remove the unqualified tape from the field.

During this inspection, the inspector was informed that Ammendment No. 5 dated October 15, 1979 to NCN No. 770E had been issued identifying four additional circuits which could have used the unqualified Bishop Biseal No. 3 tape. Also, the inspector was informed that during the accomplishment of corrective action for NCN 770E, another NCN (NCN No. 884E, dated September 19, 1979) was issued documenting the use of incorrect friction tape. Additionally, an addendum to NCN 884E, dated January 8, 1980, was issued documenting five motor operated valves as having improper taping on the "white wire" of the three wire motor leads. The "white wire" was taped with vinyl electrical tape (Scotch 33) only.

The licensee is currently re-evaluating 480 volt motor electrical terminations.

6. Independent Inspection Effort

The inspector observed the termination of cable connectors in electrical penetration assembly XRP-17 (manufactured by D. G. O'Brien, Inc.) to assure compliance with the following Instruction Manuals (IM):

IM 1054, Electrical Penetration Assembly Type R31E5029G01 through G04 Low Voltage Power

IM 1055, Electrical Penetration Assembly Type R31E5030G01 through G05 Instrumentation and Control

IM 1056, Electrical Penetration Assembly
Type R31E5031G01 through G03 Medium Voltage Power

The licensee has identified several problems with assembly and terminating connectors in the penetrations. These problems were identified in QA audit report number 12-79-24. This will be an inspector followup item to assure that licensee's corrective action is adequate. This item will be identified as inspector followup item 395/80-2-03, Termination Requirements for Electrical Penetration Assemblies.

Within the areas examined there were no items of noncompliance or deviations identified.

7. Inspector Follow-Up Items

(Open) Inspector Follow-Up Item 395/79-18-04: Safety-related cable separation in the inverter cabinets. A discussion of this problem with the licensee indicated that one method of the several methods of providing a fire resistant barrier being considered had been selected. However, the actual installation of the fire barrier in the inverter cabinets has not been accomplished. NRC will review this item on subsequent inspections.

8. Instrumentation (Cables and Termination I) - Observation of Work and Work Activities

The inspector selected the following safety related instrument cables for examination to assure that the requirements of FQCP 7.1.1 and 7.1.2 were being complied with in the areas of cable storage, handling, identification, issue control, cable size, type, protection, separation, termination, location, routing and nondestructive tests.

	Cable Number	Description
a.	CSU-1A	Level Transmitter (LT) 106, Boric Acid Tank No. 1
b.	CSU-3E	LT 161, Boric Acid Tank No. 1
c.	CSU-2D	LT 108, Boric Acid Tank No. 2
d.	RCU-25A	FT 424, Loop 2 Reactor Coolant Flow
e.	RCU-27A	FT 434, Loop 3 Reactor Coolant Flow
f	RCU-23A	FT-414, Loop 1 Reactor Coolant Flow

The inspector observed that cable number CRR-1A had been installed in the Process Control Cabinet (identified as XPN7004-X1) with no minimum separation requirements inside the cabinet. The licensee stated that the design had been approved based on a Westinghouse Report, WCAP8892-A, entitled "Westinghouse 7300 Series Process Control System Noise Tests" which speaks to separation of protection and control field wiring into and through the cabinets. The FSAR was revised on March 1978 to allow redundant class IE cables internal to the process cabinets to disregard minimum separation requirements. The WCAP report does not address the separation requirements

for redundant class IE circuits inside cabinets. This will be identified as unresolved item 395/80-2-2, Separation Requirements for Redundant Class IE Circuits Internal to Process Control Cabinets.

This item will be referred to NRC headquarters for further evaluation.

Within the areas examined, no items of noncompliance or deviation were identified.

9. Instrumentation (Cables and Terminations I) - Review of Quality Records

The inspector selected 16 cables for a quality record review. The cables selected include the six cables identified in paragraph 8 and the following RC-D-11A, RC-D-14B, RC-D-13B, SW-U-41A, SW-U-43A, SW-U-51B, RC-U-84A, RC-U-1A, RC-U-2A, and RC-U-24A. The cable records were examined to assure that the requirements of the QAM were complied with in the areas of receiving inspection, certified test reports, installations, size, type of cable, routing separation, protection, identification, cable pulling and terminations.

Within the areas examined there were no items of noncompliance identified.

10. Electrical (Components and Systems I) - Observation of Work and Work Activities

The inspector selected the air starting equipment and the auxiliary electrical panels for Emergency Diesel Generator 1B for examination to assure that the FSAR and vendor instructions were complied with in the areas of receiving inspection, storage, identification, handling, placement, location, protection, separation, inspection, qualification of inspectors, and post installation protection. It was noted that the licensee had a vendor service engineer checking the unit for startup.

Within the areas examined there were no items of noncompliance identified.

11. Electrical (Components and Systems I) - Review of Quality Records

The inspector examined the quality records for the equipment identified in paragraph 10 to assure that the FSAR and QAM requirements were complied with in the areas of receipt inspection, vendor test reports, vendor code certificate, installation inspection, and post installation protection.

Within the areas examined there were no items of noncompliance identified.

12. Electrical (Components and Systems II) - Review of Quality Records

The relay coordinator study is conducted in accordance to procedure ES-00-6-04 Revision 0, dated October 24, 1978, "Development of Safety Relay Settings for V. G. Summer Nuclear Station". The inspector examined the study to assure that the procedure was followed, that a review was made and that

corrective action was taken and documented. The relay settings developed in the study were verified on the relay trip setting records for 7.2KV bus number 1DA.

Within the areas examined there were no items of noncompliance identified.

13. Instrumentation (Cable and Terminations II) - Review of Quality Records

The inspector selected 14 cables for a quality records review to assure that the requirements of the QAM were complied with in the areas of receiving inspection, certified test reports, installations, size and type of cable, routing, separation, protection, cable and raceway identification, cable pulling and terminations. The cables selected were AH-U-61A, AH-U-62A SF-U-42D, SF-U-43B, SF-U-44E, RC-U-83A, RC-U-26A, RC-U-28A, RC-U-41A, RC-U-42A, RC-U-43A, RC-U-44A, RC-U-45A and RC-U-46A.

Within the areas examined there were no items of noncompliance identified.

14. Instrumentation (Components and Systems I) - Observation of Work and Work Activities

The inspector selected the pressurizer pressure and containment pressure instruments as indicated below for examination.

Pressurizer Pressure Instruments

PT 455	Serial No. 347
PT 456	Serial No. 348

Containment Pressure Instruments

PT 951	Serial No. 752-2546
PT 952	Serial No. 752-2547

The instruments were inspected for component identification, location, physical protection, separation, independence of sensing lines and conformance with installation procedures. Associated instrumentation cabinet installation and anchoring were observed. QC installation inspection records were examined for the work completed. No instrument test or functional checks had been performed at this time.

Within the areas examined, no items of noncompliance or deviations were identified.

15. Instrumentation (Components and Systems I) - Review of Quality Records

The inspector selected the instruments identified in paragraph 14 for records examination. The records for storage, handling and identification,

and installation QC inspection were reviewed in detail. The Westinghouse QC releases and site receiving inspection records for each component were reviewed.

Three nonconformance notices (NCN) were selected for review; numbers 1142, 1158 and 1159. All were reviewed for current status, adequacy, legibility, and QC personnel review.

The inspector reviewed the records of the following QA audits.

Audit Number	Subject
107932 (dated 10/01/79)	Instrumentation Tubing Slope and Separation
II-4-5 (dated 10/25/79)	Nuclear Operations and Start-Up Instrumentation and Control

Deficiencies identified during the audits were documented in accordance with the QA manual. Corrective actions for the deficiencies were either being accomplished or being evaluated.

Within the areas examined, there were no items of noncompliance or deviations identified.