



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

Report No. 50-395/82-25

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

Facility Name: V. C. Summer

Docket No. 50-395

License No. CPPR-94

Inspection at Summer site near Winnsboro, SC

Inspector: W. P. Ang

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4/8/82  
Date Signed

Approved by: A. R. Herdt

A. R. Herdt, Section Chief  
Engineering Inspection Branch  
Division of Engineering and Technical Programs

4/8/82  
Date Signed

#### SUMMARY

Inspection on March 23-26, 1982

#### Areas Inspected

This routine, announced inspection involved 24 inspector-hours on site in the areas of seismic analysis for as-built safety related piping systems (IEB 79-14); and pipe support baseplate designs using concrete expansion anchor bolts.

#### Results

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

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*O. S. Bradham, Station Manager
- \*D. W. Dixon, Group Manager, Production Engineering QC and Construction
- \*J. M. Woods, Construction Site Manager
- \*C. A. Price, Manager, Nuclear Engineering
- \*D. Moore, Manager, QA
- \*M. W. Clunts, Manager, Construction QC
- \*P. V. Fant, Director, Station QC
- \*G. Moffat, Nuclear Engineer
- \*K. W. Nettles, Senior Engineer
- \*G. Putt, Mechanical Maintenance Supervisor

#### Other Organizations

##### Gilbert Associates, Incorporated (GAI)

- \*H. A. Bamberger, Resident Engineer
- C. N. Rentschler, Piping Verification Manager
- D. R. Kerchner, Project Piping Analyst
- W. Brooks, Engineer

- G. Grecco, Teledyne Site Representative
- G. Pugh, EDS Site Representative

#### NRC Resident Inspector

- \*J. Skolds

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on March 26, 1982, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed the inspection findings listed below. No dissenting comments were received from the licensee.

(Open) Unresolved Item 82-25-01: Overlap Modeling Technique for Seismic Analysis, paragraph 5.

(Open) Inspector Followup Item 82-25-02: Miscellaneous IEB 79-14, Outstanding Items, paragraph 5.

(Closed) Inspector Followup Item 81-16-01: Skewed Bolts, paragraph 6.

3. Licensee Action on Previous Inspection Findings

Not inspected.

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. One new unresolved item identified during this inspection is discussed in paragraph 5.

5. Seismic Analysis for As-Built Safety Related Piping Systems (IEB 79-14)

On March 12, 1982, the licensee submitted the final response to IE Bulletin 79-14. A follow-on inspection to NRC/RII report number 50-395/81-16 was performed to verify compliance with IEB 79-14 requirements and licensee commitments. The licensee had completed the majority of piping system as-built verification and was in the process of resolving identified discrepancies. The piping system seismic analysis was being finalized. Safety injection system isometric SI-03 was randomly selected and inspected. Piping verification, pipe support/restraint inspection (SIH-382, 384 and 385) and valve weight and orientation documentation was inspected and compared with the actual installation. Based on the inspection of the actual installation, documentation and discussions with the licensee, the following items were identified and are included under inspector follow-up item 82-25-02, "Miscellaneous IEB 79-14 outstanding items":

- a. Engineering Change Notice (ECN) 1944 identifies requirements for penetrations. It was also being used to comply with IEB 79-14 requirements. However, ECN 1944 did not list all applicable penetrations. For example, it did not include requirements for chart analyzed piping that could affect piping or pipe support analysis. The licensee agreed to review the listing of penetrations and assure that all applicable IEB 79-14 penetration requirements are complied with.
- b. Changes are still being made to piping and pipe support/restraint drawings. Some inspections are still being performed. Concurrently, final as-built piping analysis is also being performed. No final review was procedurally required to assure that the final analysis reflected final inspection and drawing information. The licensee agreed to review, with the assistance of GAI, all IEB 79-14 analysis to assure that they are based on the latest available inspection and drawing information.
- c. It was noted during the documentation review, that documentation retrieval was cumbersome due to the diverse sources of inspection information. Hanger inspections were filed as SCE&G QC hanger inspection records; valve information was obtained from receiving inspection and installation records; piping walkdown records were filed separately. All IEB 79-14 documentation was not compiled on a stress

problem or isometric drawing (ISO) package basis; no cross-reference list existed onsite to assure that all required inspection and documentation had been completed on a stress problem or ISO basis. The licensee agreed to look into the noted condition to assure completeness of inspections and documentation for IEB 79-14 requirements.

- d. Item 4.d of IEB 79-14 requires that measures to assure future modifications of piping systems, including their supports be reflected in design documents. A review of maintenance and QC procedures for future plant operation was performed. Mechanical maintenance procedure MMP-305.002 - Removal and Reinstallation of Existing Restraints, and QC procedure QCP-M6 - Inspection of Pipe Supports and Components, contained many good requirements and inspection points such as match marking to assure realignment of support components. However, neither procedure contained a final QC verification that all affected portions of the disassembled pipe support/restraints had been reinstalled in accordance with their corresponding drawing or other design requirements. It was further noted that no procedure was available for reinstallation, new installations, and inspection of concrete expansion anchors. The licensee stated that all the above noted work was still being performed by construction using existing construction procedures. The inspector acknowledged the current plant status but reminded the licensee that the procedures would be required prior to maintenance department work on the safety-related pipe supports and restraints.

NRC/RII report 50-395/81-16 noted that GAI was in the process of verifying the conservatism of its cold spacing criteria for pipe supports/restraints. It was further noted that the verification was being performed using 2% damping for SSE although the licensee's FSAR had not been changed to reflect this. Amendment 26 of the licensee's FSAR revised the damping values and now calls for 2% damping for SSE. GAI had completed and verified the conservatism of its cold spacing criteria on GAI report number 2343. The inspector had no further questions on this item.

NRC/RII report 50-395/81-16 requested documentation of GAI's piping analysis overlap modeling technique in the IEB 79-14 response. This criteria was documented on the licensee's March 12, 1982 IEB 79-14 response. The criteria varied from the recommendations of NUREG 51357 and was identified as unresolved item 82-25-01, "Overlap Modeling Technique for Seismic Analysis".

Pending licensee completion of IEB 79-14 requirements, the Bulletin shall remain open.

No violations or deviations were identified.

6. Pipe Support Baseplate Designs Using Concrete Expansion Anchor Bolts (IEB 79-02)

On March 12, 1982, the licensee submitted the final response to IE Bulletin 79-02. A follow-on inspection to NRC/RII report 50-395/81-16 was performed to verify compliance with IEB 79-02 requirements and licensee commitments.

Inspector followup item 81-16-01 noted that 10° bolt skewness was allowed but its resultant safety factor reduction was not verified by design calculations to meet IEB 79-02 requirements. A GAI review was performed and documented on a GAI September 30, 1981 internal memorandum, file code 36.NRC. The review concluded that bolt safety factors would not be reduced below IEB 79-02 requirements. The inspector had no further questions on this item. This item was closed.

No violations or deviations were identified.