



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

Report Nos.: 50-325/89-10 and 50-324/89-10

Licensee: Carolina Power and Light Company  
P. O. Box 1551  
Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324

License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection Conducted: May 8 -12, 1989

Inspector:

*R. P. Carrion*  
R. P. Carrion

13 JUNE '89

Date Signed

Approved by:

*J. J. Blake*  
J. J. Blake, Chief  
Materials and Process Section  
Engineering Branch  
Division of Reactor Safety

6/14/89

Date Signed

#### SUMMARY

##### Scope:

This routine, unannounced inspection was in the areas of issues related to IEB 79-02 and 79-14, and the Mark I Containment, Plant Unique Analysis Report (PUAR). More specifically, the six items identified in Report No. 50-325, 324/88-36 were addressed. Also, the inspector told the licensee what he would address 50-325/82-19-01 and 50-325, 324/87-18-02, which appear to be the same issue, and 50-325, 324/88-BU-02, which appears to be an erroneous entry, as well as 50-324/80-29-01.

##### Results:

In the areas inspected, violations or deviations were not identified.

Based on current status and licensee commitments, including schedules and manpower forecasts, IEB 79-14 is closed. Also, work has been completed and the final report for IEB 79-02 is being prepared. The suppression pool issues appear to be a question of documentation and will remain open pending review of the appropriate documentation.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*C. F. Blackmon, Manager of Operations
- \*J. M. Brown, Resident Engineer (NED)
- \*A. G. Cheatman, Manager - E&RC  
R. Cowen, Structural Engineer
- \*W. J. Dorman, Supervisor - Quality Assurance
- \*K. E. Enzor, Director - Regulatory Compliance
- \*J. L. Harness, General Manager
- \*R. E. Helme, Manager - Technical Support  
D. Hunt, Technical Support Engineer  
J. A. McKee, Quality Control Supervisor
- \*W. G. Monroe, Principal Engineer (NED)
- \*M. J. Pastva, Sr. Specialist Invest - Regulatory Compliance  
R. M. Poulk, Project Specialist - Regulatory Compliance  
D. Simkins, Lead Structural Engineer
- \*R. B. Starkey, Manager - Brunswick Nuclear Plant  
A. M. Worth, Engineering Supervisor - Technical Support

Other licensee employees contacted during this inspection included operators, and administrative personnel.

#### NRC Resident Inspectors

- \*W. Levis, Resident Inspector

\*Attended exit interview

### 2. Licensee Action on Previous Enforcement Matters

(Closed) IEB 79-14, Seismic Analysis for As-Built Safety-Related Piping Systems (25529).

The objective of this Bulletin is to verify that the seismic analysis applies to the actual installed configuration of safety-related piping. Two piping verification walkdowns have been performed. One was done shortly after the Bulletin was originally issued. Later modifications were incorporated due to new loads, design changes, or other requirements. The Quality Control Department conducted inspections of the modified systems only because there was no requirement for inspection of the non-modified systems. Afterwards, the Quality Assurance Department conducted a surveillance (86-004) to verify the As-Built pipe support drawings. Various discrepancies were noted in the piping systems which had not been modified (nor inspected by QC). In early 1988, management decided to conduct a second verification walkdown, on the piping systems

which had not been modified after the original IEB 79-14 verification walkdown. This walkdown was done by teams of two field engineers and was not inspected by QC nor audited by QA. In September 1988, an NRC inspector randomly selected 33 pipe supports on five isometric drawings. Eighteen supports were from the original walkdown effort on which no modifications had been made, and on which the As-Built Phase II Piping System Walkdown Verification Program had been completed (that is, without QC/QA Reverification or Audit). Fifteen supports were the modified supports, which had been QC inspected after the modifications were completed. Discrepancies were noted on 7 of the 33 supports 1 of the 5 isometric drawings.

These results prompted management to undertake one more all-inclusive effort to reconcile the As-Built piping and supports with their respective drawings and calculations. Entitled "UE&C Piping Design Turnover Program", it consists of two phases, the first of which has been completed. Phase I was basically a preparation phase in support of Phase II. It involved the identification of UE&C pipe stress and pipe support calculations of record, packaging to place the calculation packages in a readily useable form, transmittal of the calculations to CP&L, transfer of piping and pipe support design responsibility to CP&L, and CP&L generation of pipe stress isometric drawings as required to match the UE&C calculations. Phase II will involve selected walkdowns to define the As-Built configuration of the plant, updating calculations to reflect the As-Built configuration of the plant, enhancement of calculations to resolve identified problems, and updating drawings to reflect the As-Built configuration of the plant.

This program is designed to document piping and pipe support criteria used by UE&C to design BSEP; assemble piping and pipe support calculation packages which represent the As-Built configuration of the plant, satisfy regulatory commitments, and can be used by CP&L personnel for emergency evaluations or future plant modifications; transfer piping and pipe support documentation from UE&C to CP&L; transfer piping and pipe support design responsibility from UE&C to CP&L.

A detailed plan was been devised to assure that the measurements taken by the walkdown teams are accurate and that their information is properly reflected on their respective drawings and calculations. This program is currently scheduled to be completed by late 1992.

With the licensee commitment to this program and considering numerous past walkdowns, as well as NRC inspections which did not uncover any major discrepancies, IEB 79-14 is hereby closed for both Units 1 and 2.

3. Action on Previous Inspection Findings (92701)
  - a. (Open) UNR 50-325, 324/88-36-01, Suppression Pool Temperature Monitoring System Adequacy.

The Suppression Pool Monitoring System had been installed before the Mark I Containment Long Term Modification Program was initiated but it did not meet the requirements outlined in NUREG-0661, Mark I Containment Long Term Program, or NUREG-0783. Plant Modification No. 81-251 was implemented to meet those requirements. During the 88-36 inspection, the licensee was unable to present documentation showing NRC approval of the modified installation. During the current inspection, the licensee presented a letter, dated March 1984, from the NRC (Division of Licensing, Washington, D.C.), which states in part, "Where deviations from the Acceptance Criteria specified in NUREG-0661 have been taken, they have been found acceptable." The letter was referring to Revision 0 of the Brunswick Plant Unique Analysis Report (PUAR) dated October 1, 1982. However, the only copy of the PUAR available was Revision 1, dated December 23, 1985. The inspector wanted to assure that no changes were introduced in Revision 1 concerning the Suppression Pool Temperature Monitoring System which were not addressed in the NRC acceptance letter. Pending a comparison of Revisions 0 and 1 of the PUAR, UNR 50-325, 324/88-36-01 remains open.

- b. (Open) IFI 50-325, 324/88-36-02, Final Summary Report For IEB 79-02; (Open) IFI 50-325, 324/88-36-03, Hilti Anchor Bolt Allowable Review and Justifications per IEB 79-02, NRC Information Notices 86-94 and 88-25. The inspector discussed these two open items with two members of the licensee's engineering staff. The final summary report is being prepared and will address the Hilti Anchor Bolt issues as well as those of the original IEB 79-02. Pending completion of the report, these two items, IFI 50-325, 324/88-36-02 and IFI 50-325, 324/88-36-03, remain open.
- c. (Open) UNR 50-325, 324/88-36-04, Accuracy of As-Built Phase II Piping System Walkdown Verification; (Open) IFI 50-325, 324/88-36-05, QA Auditing of the Supports in As-Built Phase II Piping System Walkdown Verification Program and the Modified Systems with QC Inspections. The inspector spoke to the Principal Engineer (NED) and the Quality Control Supervisor who outlined the plan to be used in the "UE&C Piping Design Turnover Program", which will be used to evaluate some 7330 pipe supports and walkdown about 5500. To reduce discrepancies discovered by the QA audit, the walkdown verification program has been reviewed and modified. The walkdown teams will consist of two members, a QC inspector and a field engineer. These teams will work together to review all support drawings per isometric before conducting a walkdown. Upon completion of a walkdown, both members will transfer the field data onto individual legible drawings, verify the data to ensure its accuracy, sign the drawings to indicate their agreement, and turn the drawings in for processing/record purposes. Engineering will maintain all field copies and make all modifications/revisions to the drawings. The updated drawings will be sent to QC for review to assure accurate incorporation of walkdown information. Upon receiving QC concurrence, Engineering will sign

off the drawing as being complete. The Quality Assurance Department will then conduct audits to assure the accuracy of the program. Engineering will evaluate the updated drawings for potential impact to the calculations. This entire program is scheduled to be completed by late 1992, assuming the worst-case scenario. Therefore, these two items, UNR 50-325, 324/88-36-04 and IFI 50-325, 324/88-36-05, remain open and will be periodically monitored to confirm the status of the program.

- d. (Closed) UNR 50-325, 324/88-36-06, Discrepancies Between As-Built Drawings and As-Installed Conditions in Piping Systems. One piping isometric and seven pipe support drawings were found to have discrepancies. All eight items have been addressed and are in various states of being incorporated into their drawings and modifying their respective calculations, as required. The positive action taken by the licensee to correct the discrepancies indicates that they will be completed in a timely manner. Therefore, UNR 50-325, 324/88-36-06 is closed.

#### 4. Review of Open Items

The Open Items listed in the summary were reviewed to determine their status. The review revealed the following:

- ° 50-325, 324/88-BU-02 is in reference to Westinghouse - designed PWR plants and should not appear on the list.
- ° 50-324/80-29-01 is an incorrect item number. The correct number is 50-324/80-29-02 and was closed by Report No. 50-324/87-18.
- ° 50-325/82-19-01 is an incorrect item number. The correct number is 50-325/82-31-01 and was closed by Report No. 50-325/87-18.
- ° 50-325, 324/87-18-02 is currently open.

Steps have been taken to accurately update the status of the above referenced items.

#### 5. Exit Interview

The inspection scope and results were summarized on May 12, 1989, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed below. Although reviewed during this inspection, proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

(Open) UNR 50-325, 324/88-36-01, Suppression Pool Temperature Monitoring Systems Adequacy.

(Open) IFI 50-325, 324/88-36-02, Final Summary Report for IEB 79-02.

(Open) IFI 50-325, 324/88-36-03, Hilti Anchor Bolt Allowable Review and Justifications per IEB 79-02, NRC Information Notices No. 86-94 and 88-25.

(Open) UNR 50-325, 324/88-36-04, Accuracy of As-Built Phase II Piping System Walkdown Verification.

(Open) IFI 50-325, 324/88-36-05, QA Auditing of the Supports in As-Built Phase II Piping System Walkdown Verification Program and the Modified Systems with QC Inspections.

(Closed) UNR 50-325, 324/88-36-06, Discrepancies Between As-Built Drawings and As-Installed Conditions in Piping Systems.