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

Report No.: 50-370/83-02

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242

Docket No.: 50-370

License No.: CPPR-84

Facility Name: McGuire

Inspection at McGuire site near Charlotte, North Carolina, and Duke Power Company Design Office at Charlotte, North Carolina

Inspector: W. P. Ang — 1-24-83
W. P. Ang — Date Signed

Approved by: J. J. Blake — 1/26/83
J. J. Blake, Section Chief — Date Signed
Engineering Program Branch
Division of Engineering and Operational Programs

SUMMARY

Inspection on January 4-7, 1983

Areas Inspected

This routine, unannounced inspection involved 25 inspector-hours on site and at the Duke Power Company Design Office in the areas of seismic analysis for as-built safety-related piping systems (IEB 79-14); and pipe support baseplate designs using concrete expansion anchors (IEB 79-02).

Results

Of the two areas inspected, one apparent violation was found in one area.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. T. Moore, Project Manager
*M. S. Starnes, Senior Construction Engineer
D. L. Rehn, Principal Engineer, CE/Structural Analysis
*R. D. Ruth, Senior QA Engineer
*G. B. Robinson, QA Engineer
*F. S. Bulgin, QC Supervisor
B. L. Peele, Senior Design Engineer
*E. M. Couch, Construction Engineer
J. H. Underwood, Supervising Design Engineer

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on January 7, 1983, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings below. The licensee acknowledged the inspection findings with no dissenting comment. The status and action necessary for close-out of IEB's 79-02 and 79-14 were discussed.

(Closed) Inspector Follow-up Item 370/82-37-01, Refueling Water System Diagram Clarification, paragraph 5.

(Open) Inspector Follow-up Item 370/82-37-02, Inspection for Clearances and Interferences, paragraph 5.

(Closed) Inspector Follow-up Item 370/82-37-03, Piping Walkdown Records Clarification, paragraph 5.

(Closed) Violation 370/83-02-01, Failure to Follow Piping Inspection Procedure, paragraph 5.

(Open) Unresolved Item 370/83-02-02, Discrepancy Between Inspection Records and Piping Analysis, paragraph 5.

3. Licensee Action on Previous Enforcement Matters

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 System (IEB 79-14)

A follow-on inspection to the NRC RII inspection documented on report number 50-370/82-37 was performed to verify licensee compliance with IEB 79-14 requirements and licensee commitments.

Inspector Follow-up Item (IFI) 370/82-37-01 identified a need for clarification of the refueling water system flow diagram in the area of the 24 inch discharge line from the refueling water storage tank. Rev. 11 of drawing MC-1571-1.0 was reviewed. It was noted that a change was made to the drawing in the area of the refueling water storage tank. The location of the expansion joint on the 24-inch discharge line was changed to reflect the as-built and as-analyzed condition. The inspector had no further questions regarding IFI-370/82-37-01 and closed the IFI.

IFI 370/82-37-02 noted a need for a review of the licensee's program for verification of required piping clearances. Construction Procedure (CP)-177, Revision 5, "Method of Reporting and Resolving Piping Interference Problems," was reviewed and its requirements were discussed with the licensee. It did not appear that adequate controls had been established to assure that all piping systems requiring inspection had been inspected and that all discrepancies had been evaluated and resolved. The licensee agreed to establish the scope of the clearance verification requirements. In addition, the licensee agreed to verify that all items requiring clearance inspection have been inspected, all results have been forwarded to design engineering and evaluated, and all unacceptable clearance/interference conditions requiring corrective action have been corrected. Pending completion of licensee action, the IFI was left open.

IFI 370/82-37-03 noted a 6 inch discrepancy between math model FW-350 pipe member number 422 and the piping inspection, M8, records. Licensee inspection, subsequent to the NRC inspection, confirmed the condition and resulted in the issuance of nonconforming item report number (NCIR) 14,439. Revision 9 of piping drawing MC-2414-04-41.00 requires 6" IPS RHR piping at elevation 721 to be 4' 1-7/8" from column GG-60 to the centerline of its 45° elbow. The piping was inspected and accepted to this revision of the drawing. Contrary to the above, the actual length of the 6" RHR piping at elevation 721 between column GG-60 and its 45° elbow was 4' 6-1/4".

Design engineering technical evaluation and resolution of the problem was provided on NCIR 14,439 and stated that the condition was technically acceptable. The noted condition appeared to be an isolated case in that no other similar conditions were noted by the NRC inspector. Consequently, since the condition is technically acceptable, corrective action had been initiated prior to this inspection, and since the condition appears to be an isolated case, no further licensee response was requested. However, this item will be recorded as violation 370/83-02-01, Failure to Follow Piping Inspection Procedure; no response required. IFI 370/82-37-03 was closed.

A portion of piping between the containment spray heat exchanger 2B and containment spray pump 2B, shown on math model 2NS-351, was sampled and inspected for compliance with IEB 79-14 requirements and licensee commitments. The piping stress analysis was also sampled and inspected. The following pipe supports of the math model and applicable design calculations were sampled and inspected:

- NS5107, NS5108, NS5116, NS5117

The containment spray piping between elevation 742'3" and 722" 3' East of column line 59 and 21" North of column line JJ was analyzed to be a straight vertical line. The as-built condition reflected on piping drawing MC2414-19.42-00, rev. 7, was not a straight vertical pipe since it included two 45° elbows on the vertical run. The licensee was unable to provide a record of a design evaluation and acceptance of the noted condition during the NRC inspection. Pending further licensee efforts to obtain the noted evaluation and subsequent NRC inspection, this was identified as Unresolved Item 50-370/83-02-02, Technical Evaluation and Disposition of Discrepancy Between As-Built and Analyzed Condition.

The piping seismic stress analysis for the diesel generator 2B 30-inch exhaust line shown on math model VN-351, was sampled and inspected. The stress report, seismic response spectra and math model for the pressurizer spray line, math model NC-203, and pressurizer safety and relief line, math model NC-202, were also sampled and inspected for compliance with licensee commitments and IEB 79-14 requirements. No additional violations or deviations were identified.

Pending licensee completion of IEB 79-14 requirements, IEB 79-14 was left open.

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

A follow-on inspection to the NRC RII inspection documented on report number 50-370/82-37 was performed to verify licensee compliance with IEB 79-02 requirements and licensee commitments. Concrete expansion anchor installation and applicable design calculations were inspected. It was noted that the licensee was still performing design reviews on pipe support and concrete expansion anchor calculations. Pending licensee completion of IEB 79-02 requirements and licensee commitments, the bulletin was left open.