



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

MAY 12 1980

Report No. 50-369/80-04

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

Facility Name: McGuire Nuclear Station

Docket No. 50-369

License No. CPPR-83

Inspection at McGuire Nuclear Station near Charlotte, North Carolina

Inspector: W. P. Ang *AR Herdt* 5/8/80
 Date Signed

Approved by: A. R. Herdt *AR Herdt* 5/8/80
 Date Signed
 A. R. Herdt, Section Chief, RCES Branch

SUMMARY

Inspection on April 16-18, 1980

Areas Inspected

This routine, unannounced inspection involved 18 inspector-hours on site in the areas of pipe support baseplate designs using concrete expansion anchor bolts (IEB 79-02); and seismic analysis for as-built safety-related piping systems (IEB 79-14).

Results

Of the areas inspected, one item of noncompliance was identified in two are. (Infraction - Failure to follow penetration and support installation requirement - paragraphs 5 and 6).

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DETAILS

1. Persons Contacted

Licensee Employees

- *J. C. Rogers, Project Manager
- *G. W. Grier, Project Engineer
- *E. B. Miller, Senior QA Engineer
- *M. Starnes, Senior QC Engineer
- *J. Goodman, QC Engineer
- *G. B. Robinson, QA Engineer

Other licensee employees contacted included 4 construction craftsmen and 2 technicians.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 16, 1980 with those persons indicated in Paragraph 1 above. Subsequent to the inspection on May 2, 1980, the licensee was informed of the item of noncompliance in paragraphs 5 and 6 as well as the inspector followup item in paragraph 5.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts (IEB 79-02)

On July 9, 1979 and August 20, 1979, the licensee provided a response to IE Bulletin 79-02. An inspection was performed to verify licensee compliance with IEB 79-02 requirements and licensee commitments. The following procedures provides the licensee's requirements for inspection of concrete expansion anchors:

Construction Procedure (CP) No. 308 R19 - Installation of Red-Head Concrete Anchor.

QA Procedure M-15 R10- Installed Pipe Support Inspection

QA Procedure M25 R3 - Concrete Anchor Installation Inspection

Duke Power Company Specification MCS-1196.02-00-003 - Specification for Field Inspection of Installed Self Drill Concrete Expansion Anchors in Selected Nuclear Safety-Related/Seismic Piping Systems. Torque-Tension experimental data provided to the licensee by ITT Phillips were used by the licensee as the basis for the correlation of their required installation and inspection torque values.

The following supports were randomly selected and inspected for compliance with IE Bulletin 79-02 requirements and licensee commitments:

- 1-MCA-ND-H24
- 1-MCA-ND-H23
- 1-MCA-ND-H76
- 1-MCA-ND-H26S

The inspection records for support 1-MCA-ND-H26S were not available during the inspection. Three of five self-drill expansion anchor bolts of support 1-MCA-ND-H76 were determined to be torqued to less than the CP-308 required installation torque value of 40-45 ft-lbs. This appears to be in noncompliance of 10 CFR 50, Appendix B, Criterion V and shall be identified as an example of Infraction 369/80-04-01, "Failure to Follow Penetration Support Installation and Inspection Requirements".

The licensee response to IE Bulletin 79-02 indicated that safety factors of 2 and 3 were used for the faulted and upset load conditions for McGuire concrete expansion anchor bolts. The licensee was informed that this did not comply with IEB 79-02 requirements. The licensee agreed to study this conflict and arrange for a resolution of this conflict by meeting with the NRC staff. The inspector identified this item as an inspector followup item 369/80-04-02, "Safety Factors for the Faulted and Upset Load Conditions". Pending resolution of the item noted above and completion of IEB 79-02 requirements, the bulletin shall be left open.

6. Seismic Analysis for As-Built Safety-related Piping Systems (IEB 79-14)

On November 1, 1979, the licensee provided a response to IE Bulletin 79-14. An inspection was performed to verify licensee compliance with IEB 79-14 requirements and licensee commitments. The following procedures were reviewed:

QA Procedure M-15 R10 - Installed Pipe Support Inspection

QA Procedure M-8 - Piping System Installation Inspection

Duke Engineering Department Procedure MCSRD 9.0 - McGuire 1 and 2 As-Built Piping Analysis Impact Review Procedure

Portions of the piping and supports shown on the following drawings were randomly selected and inspected:

System NC 07 - Drawing MC-1414-03.20-05 Rev. 5 - Reactor Coolant System RTD Loops - Reactor Building

Support MCR-INC-710
Support MCR-INC-711
Support MCR-INC-712

System NDA - Drawing MC-1414.04-43-00 Rev. 4 - Residual Heat Removal System - Auxiliary building

Support 1-MCA-ND-H24
Support 1-MCA-ND-H23
Support 1-MCA-ND-H76

The inspector noted the following discrepancies:

- a. The math model drawing for MCA-1414-03 20-05 shows 28" spacing between supports INC-711 and INC-712. The inspector noted that the actual installation is 20". The licensee agreed to study the above noted hanger spacing problem and to clearly document the inspections that were performed by visual estimation and the accuracy of this estimation.
- b. In addition to the item noted in paragraph 5, hanger ND H76 also was noted to have a pipe to hanger spacing of approximately 1/4" where the drawing requires 1/8" maximum.
- c. Penetration M381 shown on drawing MC 1678-4 Rev. 18 is required by note 5 of that drawing to have a minimum pipe to sleeve clearance of 1/8". Actual clearance near the bottom was approximately 1/16" and 0 at the bottom.

The above items appear to be additional examples of the noncompliance identified by 369/80-04-01 in paragraph 5 above.

The current as-Built records for the above noted piping and supports are marked up copies of the drawings. The licensee stated however that these drawings will be formally issued As-Built drawings with all the inspection notations incorporated at a later date.

Pending resolution of all the above items and completion of IEB 79-14, the bulletin shall be left open.