



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

Report No.: 50-413/84-100

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

Docket No.: 50-413

License No.: NPF-24

Facility Name: Catawba 1

Inspection Conducted: October 23 - 26, 1984

Inspector: W. P. Ang 11-14-84
W. P. Ang Date Signed

Approved by: W. P. Ang for 11-14-84
J. J. Blake, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, announced inspection entailed 26 inspector-hours on site in the areas of pipe support baseplate designs using concrete expansion anchors (IEB 79-02) and seismic analysis for as-built safety-related piping systems (IEB 79-14).

Results: Of the two areas inspected, one violation was identified in both areas.

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G PDR

REPORT DETAILS

1. Licensee Employees Contacted

*J. W. Hampton, Nuclear Production Manager
G. Greer, QA Manager
R. Priory, Vice President, Engineering
L. Davison, Project QA Manager
R. Miller, Principal Engineer, Design Mechanical
R. Dulin, Senior Engineer
J. Willis, Senior QA Engineer
*C. Hartzell, Compliance Engineer
D. Kinard, Technical Associate, Mechanical Maintenance

NRC Resident Inspectors

*P. K. Van Doorn
P. Skinner

*Attended exit interview by telephone on October 29, 1984.

2. Exit Interview

The inspection scope and findings were summarized on October 29, 1984, by telephone, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below. The licensee acknowledged the inspection findings with no dissenting comment.

Violation 413/84-100-01, Pipe support inspection discrepancies, paragraph 3.b.

Inspector Follow-up Item 413/84-100-02, 10 CFR 50.59 Review form, paragraph 5.

3. Licensee Action on Previous Enforcement Matters

a. (Closed) Unresolved Item 413/84-60-01, Main Steam (MS) Water Hammer.

The unresolved item identified a need for the licensee to complete its NCIR 17592 and 18223 corrective action, 10 CFR 50, Appendix "B", Criterion XVI Review, and complete its NRC reportability evaluation. The licensee's corrective action, Criterion XVI Review and reportability evaluation for NCIR 17592 and 18223, were reviewed and discussed with the licensee. Further telephone discussions were held with the licensee regarding reportability on October 29 and 30, 1984. The licensee concluded that the MS water hammer was not reportable because they did not consider that the nonconformances represented a significant breakdown in the QA program, nor a significant deficiency in final design or construction, nor did significant damage or

significant deviation from performance specifications occur. The licensee committed to, as a minimum, verbally inform the NRC residents regarding deficiencies that have been evaluated to be not reportable but have questionable significance. Licensee action for the unresolved item had been completed. The unresolved item was closed.

b. (Closed) Unresolved Item 413/84-85-01, RHR Pipe Support Disassembly.

The unresolved item noted conditions regarding RHR System Pipe Supports that were potentially affected by repairs on RHR piping noted on CDR 413/84-01 that required further inspection.

- ° Pipe support 1-R-ND-504 had been disassembled and was not installed. The piping system being supported appeared to be in operation during the inspection. The operability evaluation for the affected piping was requested. The licensee indicated that an operability evaluation had been performed, but since this was identified on the last day of the inspection, there was insufficient time to obtain and review the record.

During this inspection, a review of work request No. 1123-PRF-3 showed that an operability evaluation was requested by Nuclear Production, performed by Design Division, and the system was considered to be operable.

- ° Piping supports 1-R-ND-0265 and 506 met drawing requirements but appeared to have had baseplates replaced and/or relocated. The inspector was unable to identify the work in the inspection records. The licensee was requested to provide the records for the work if the baseplates had been replaced or relocated.

During this inspection, the licensee stated that there was no record of the supports being replaced or relocated subsequent to the final construction QC inspection prior to the time that the above conditions were noted. The NRC inspector requested a reinspection of the above noted pipe supports. The results of the reinspection are noted below.

- ° Pipe support 1-R-ND-0152 was found to have a pipe clamp installed 90° from the drawing required orientation. Pipe support 1-R-ND-506 was found to have fasteners longer than the required drawing fasteners and spacers installed to compensate for the extra length. The spring can rod for 1-R-ND-506 was also found to be bent.

During this inspection, the licensee stated that the condition noted on 1-R-ND-0152 had been evaluated by Design Division and found to be technically acceptable. However, the licensee acknowledged that the condition should have been identified and reported for design evaluation by Construction QC. The licensee considered this to be an isolated case.

During this inspection, the licensee stated that the spring can rod for support 1-R-ND-506 had been replaced in accordance with work request 1139MNT. No record for the fastener discrepancies was obtained. As noted above, the NRC inspector requested a reinspection by the licensee's construction QC of pipe supports 1-R-ND-0265 and 1-R-ND-506. The following items were noted by the NRC inspector and the licensee's QC inspector during the reinspection.

- (1) 1-R-ND-506 had been inspected and accepted by both Construction QC and Nuclear Production QC. 1-R-ND-506 was found to have 12 discrepancies from the pipe support drawing and from Construction Procedures (CP) 115 - Installation of Concrete Expansion Anchors and CP-385 - Support/restraint Erection Tolerances. The discrepancies included, but was not limited to, the spring can stop still being installed, the rigid strut end connection being installed 90° from required orientation, unacceptable plate bearing area of a baseplate, violation of minimum edge spacing for welding a baseplate to an embed plate. The Construction QC inspector recorded all the noted discrepancies.
- (2) Pipe support 1-R-ND-0265 had been inspected and accepted by construction QC. Two discrepancies from procedure and drawing requirements were noted. The Construction QC inspector recorded the discrepancies.
- (3) Pipe restraint 1-R-ND-0152, located within a few feet from 1-R-ND-506, had been inspected and accepted by Construction QC. The lugs, piece 5, that restrain the pipe are required to be centered within the structural member, piece 3. The 1 5/8" long lugs were found to be within approximately 1/2" from being fully withdrawn from the structural member piece 3.

The above noted discrepancies appear to be in violation of 10 CFR 50 Appendix B, Criterion V. Unresolved Item 413/84-85-01 was closed and upgraded to Violation 413/84-100-01, Pipe Support Inspection Discrepancies.

c. (Open) Unresolved Item 413/83-51-02, Overlap Modelling Technique.

The unresolved item was left open by RII Inspection Report 50-413/84-85 pending confirmation of the applicability of "Quickpipe" piping analysis method to Catawba Nuclear Station (CNS). On a September 22, 1984, letter, the licensee submitted to RII (copy to NRR) a description of the "Quickpipe" computer program used in the structural analysis for CNS small bore piping systems. The letter further committed to include the description in Revision 12 to the CNS FSAR. The "Quickpipe" computer program was subsequently discussed by DPC with NRR MEB and RII. During the discussions, the licensee further agreed to provide NRR with a copy of the "Quickpipe" user's manual. The licensee's

commitments were further discussed with the licensee during this inspection. Pending submission and approval of the "Quickpipe" description in Revision 12 to the CNS FSAR, the unresolved item was left open.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Pipe Support Baseplate Designs Using Concrete Expansion Anchors (IEB 79-02) and Seismic Analysis for As-built Safety-Related Piping Systems (IEB 79-14).

Paragraph 4.d. of IEB 79-14 requires licensees to describe measures which are in effect which provide assurance that future modifications of piping systems, including their supports, will be reflected in a timely manner in design documents. The licensee's response stated that DPC QA Procedure PR-160, Nuclear Station Modification, provides this assurance. PR-160 and the following procedures were reviewed.

DPC QC Procedure QCP QCF-6, Revision 2, Concrete Expansion Anchor Installation Inspection

CNS Maintenance Procedure (MP) MP/O/A/7650/53, Change 1, Installation of Red Head Concrete Anchors

DPC QCP QCF-8, Revision 1, Piping System Configuration Inspection

DPC QCP QCF-9, Revision 2, Piping Support Installation Inspection (CNS Only)

Support Inspection Instructions Serial No. CN-01

CNS MP/O/A/7650/59, Change 2, Procedure for Installation, Removal and Replacement of Supports/Restraints

The NRC inspector had questions on all the above procedures regarding inspection and documentation requirements. The questions were discussed with the licensee.

(Open) CDR 413/84-01, Reported Cracks on Two Welds in the RHR System.

RII inspection report left this item open pending further testing and corrective action by the licensee. The licensee's testing and corrective action were discussed during this inspection. The licensee reported that the low cycle fatigue vibration experienced at CNS occurs from reverse flow through the 2" RHR crossover Kerotest valves, IND 024A and IND 058B. The licensee stated that the permanent corrective action would be to change out the valves with a valve design suitable for reverse flow. In addition, operating/test procedures were being revised to preclude reverse flow through the Kerotest valves. An interim corrective action was implemented

by installation of tubing to bypass the valves. A 10 CFR 50.59 review was performed for this modification. Although the review failed to recognize that the modification was not required by the FSAR, the remainder of the 10 CFR 50.59 review was properly performed anyway. The discrepancy was discussed with the licensee and was recognized to be potentially the result of a checklist type cursory review. The licensee stated that this potential for cursory reviews had been previously recognized and that this was being corrected by changing the 10 CFR 50.59 review form. The new form will require descriptive responses. Pending revision of the licensee's 10 CFR 50.59 Review Form, this was identified as Inspector Follow-up Item 50-413/84-100-02, 10 CFR 50.59 Review Form. Pending licensee completion of corrective action for the CDR, the item was left open.

The status of the licensee's IEB 79-14 and IEB 79-02 program was discussed with the licensee. The licensee stated that a final report for both Bulletins for Unit 1 will be submitted. The licensee stated that all inspection requirements and design analysis/calculation requirements have been completed.

Pending licensee completion of corrective action for Violation 413/84-100-01 and IEB 79-14, paragraph 4.d procedural requirements, IEB 79-02 and 79-14 were left open.

No violation, other than 413/84-100-01, or deviations were identified.