



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

Report No.: 50-413/84-60

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

Docket No.: 50-413

License No.: CPPR-116

Facility Name: Catawba

Inspection Date: May 15 - 18, 1984

Inspection at Catawba site near Rock Hill, South Carolina

Inspector: W. P. Ang

W. P. Ang

6-4-84

Date Signed

Approved by: J. J. Blake  
J. J. Blake, Section Chief  
Engineering Branch  
Division of Reactor Safety

6/4/84

Date Signed

#### SUMMARY

##### Area Inspected

This routine, unannounced inspection involved 23 inspector-hours on site in the areas of seismic analysis for as-built safety-related piping (IEB 79-14) and pipe support baseplate designs using concrete expansion anchors (IEB 79-02).

##### Results

No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

- \*R. L. Dick, Vice President, Construction
- \*E. M. Couch, Project Administrator
- \*T. B. Bright, Engineering Manager
- \*L. R. Davison, Project QA Manager
- \*R. M. Dullin, Senior Design Engineer
- T. A. Barron, QA Engineer, Hangers
- \*T. H. Robertson, Construction Engineer
- \*R. E. Pratt, Jr., Design Engineer
- \*R. W. Casler, Assistant Operating Engineer

NRC Resident Inspector

- \*P. K. VanDoorn

### 2. Exit Interview

The inspection scope and findings were summarized on May 18, 1984 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 comments.

Unresolved Item 413/84-60-01, Potential "D" SG MS Header Water Hammer, 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. A 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) and Pipe Support Baseplate Designs Using Concrete Expansion Anchors (IEB 79-02)

A follow-on inspection to the NRC RII inspection documented in Inspection Report No. 50-413/84-34 was performed to verify licensee compliance with IEB 79-14 and IEB 79-02 requirements and licensee commitments. On February 29, 1984, and December 15, 1983, the licensee submitted its final response to IEB 79-14 and IEB 79-02, respectively.

Pipe supports installed inside containment were visually inspected for completeness and general construction discrepancies during a walk through of the containment. Pipe supports utilizing mechanical snubbers were inspected

for defective PSA snubbers as identified by Construction Deficiency Report 50-413/83-16. No violations or deviations were identified.

(Closed) Inspector Follow-up Item (IFI) 413/82-29-01. The IFI identified a need for better control of deleted or changed pipe support parts in the warehouse. An inspection of the pipe support storage warehouse was performed. Deleted and changed pipe support parts had been segregated and clearly marked. Nonconforming parts had also been segregated and clearly marked. The licensee also pointed out that normal QC inspection of pipe support installation verifies installation in accordance with applicable drawing requirements. The IFI was closed.

A defective size 10 PSA snubber, serial number 6034, was observed in the nonconforming material bin in the pipe support material storage warehouse. The snubber casing had bulged out at the end and the snubber could not be stroked by hand. Subsequent follow-up to determine the cause of the damage to the 15 KIP snubber revealed that it was replaced as part of the corrective action for nonconforming item report (NCIR) 17592. The NCIR noted that on November 15, 1983, Steam Production had reported an "abnormal occurrence" in the Main Steam (MS) system in the exterior doghouse and was concerned of possible damage to pipe supports. Subsequent inspection by Hanger Technical Support (Construction) identified damage to seven pipe supports including three pipe supports with pulled concrete expansion anchors. During rework on one additional pipe support, not included in NCIR 17592, two linear indications were observed in the pipe support's NF welds and were reported on NCIR 18223. The defects were subsequently attributed to the same occurrence that caused NCIR 17592. The control room log for November 14 and 15, 1983, was reviewed. No annotation regarding the abnormal occurrence was observed.

The NRC inspector discussed the "occurrence" with plant operations personnel. The operations personnel indicated that the "D" loop MS PORVs were to be tested. The MS header drain valves were closed due to an inoperable level indicator switch. The MS headers were attempted to be drained by manually opening alternate drain valves. After draining and during the subsequent test an apparent water hammer occurred.

The NRC inspector inspected pipe supports 1-R-SM-1536, 1541, 1630, 1653, 1654 and 1655 to determine completion of corrective action to the NCIR 17592 supports. Based on the inspection of the supports, the review of the NCIRs, the review of the control room log and discussions with the licensee's design, construction and operations personnel, the inspector had the following observations that require confirmation:

- a) The requirements for draining the steam lines were met.
- b) The control room and shift supervisor logging requirements were met.
- c) The Steam Production Department nonconforming condition requirements were met.

- d) The Steam Production Department NRC reportability requirements were met.
- e) The bounds of the water hammer had been identified (ex. MS header from SG"D" to MSIV).
- f) The affected piping system (including piping, fittings, valves, welds, penetrations, pipe supports) have been completely inspected for damage. Discussions with construction and design personnel indicate that an undocumented walkdown by design division was performed. Some pipe insulation, not all, had been removed for the walkdown. NCIR 18223 indicates that not all damage had been identified by NCIR 17592. Also, damaged snubber serial number 6034 was not observed by the NRC inspector on either NCIR 17592 or 18223.
- g) The appropriate Steam Production corrective action to procedures, plant conditions etc. have been accomplished.
- h) The appropriate construction department corrective action to all damaged portions of the piping system have been accomplished.
- i) The construction department NRC reportability requirement have been met. NCIR 17592 Form Q-1D indicated that the problem was not significant and would not have affected safety of operation had it not been corrected since it was identified during testing. The NRC resident inspectors were not aware of the occurrence and may not have been informed by the licensee.
- j) The appropriate preventative action had been taken. The NCIR 17592 Form R-6A number 646 was assigned to Design Division in December 1983 and had not been completed.

Due to time limitation and slight delays in obtaining various documentation, the NRC inspector was unable to confirm items a) through j) above. Pending confirmation on the above noted items, this was identified as Unresolved Item 413/84-60-01, Potential "D" SG MS Header Water Hammer. Pending licensee completion of IEB-79-02 and IEB 79-14 requirements and licensee commitments, the bulletins were left open. No violations or deviations were identified.

#### 6. Licensee Identified Items

- a. (Closed) Item 413/82-07, "Overtorquing of Concrete Expansion Anchors" (10 CFR 50.55(e)). The final report was submitted on March 16, 1984. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives, reviewed supporting documentation, and observed representative samples of work to verify that the corrective actions identified in the report have been completed. This item was closed.

- b. (Closed) item 413/83-16, "Defective Mechanical Snubbers" (10 CFR 50.55(e)). The final report was submitted on May 17, 1984. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives, reviewed supporting documentation, and observed representative samples of work to verify that the corrective actions identified in the report have been completed. This item is closed.

No violations or deviations were observed.