



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

Report Nos. 50-413/82-29 and 50-414/82-27

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

Facility Name: Catawba

Docket Nos. 50-413 and 50-414

License Nos. CPPR-116 and CPPR-117

Inspection at Catawba site near Rock Hill, SC

Inspector: W C Liu 11/30/82
W. C. Liu Date Signed

Approved by: J J Blake 12/2/82
J. J. Blake, Section Chief Date Signed
Engineering Inspection Branch
Division of Engineering and Technical Programs

SUMMARY

Inspection on November 16-19, 1982

Areas Inspected

This routine, unannounced inspection involved 27 inspector-hours on site in the areas of safety related pipe support and restraint systems, and construction progress.

Results

In the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. C. Rogers, Project Manager
- *S. W. Dressler, Engineering Manager - Construction
- *G. W. Grier, Corporation QA Manager
- *L. R. Davison, Project QA Manager
- *R. A. Morgan, Sr. QA Engineer
- *C. A. Bell, QA Supervisor
- *M. L. Childers, Engineer Associate
- *D. P. Hensley, QA Technician
- C. L. Ray, Principal Engineer - Support/Restraint
- M. R. Hemphill, QA Engineer
- J. Coleman, QC Mechanical Supervisor
- D. Mason, QA Civil Engineer

Other licensee employees contacted included QC inspectors, technicians, and office personnel.

NRC Resident Inspector

*P. K. VanDoorn

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 19, 1982, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

- a. (Open) Inspector Followup Item, 413/82-29-01 and 414/82-27-01, Hanger Inventory Control, paragraph 6.c.
- b. (Open) Unresolved Item, 413/82-29-02, Identification of Unfastened Concrete Anchors, paragraph 6.c.

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 unresolved item identified during this inspection is discussed in paragraph 6.c.

5. Independent Inspection Effort (92706)

Construction Progress

The inspector conducted a general inspection of site work and work activities and observed equipment protection/storage and housekeeping in the auxiliary building, containment building, and storage areas.

Within the areas examined no violations or deviations were identified.

6. Safety-Related Pipe Support and Restraint Systems (50090B) - Units 1 and 2

a. Review of QA Implementing Procedures

The inspector conducted a general review of QA audit procedures including scope and frequency of audits, audit criteria, and reporting requirements; design and field change procedures; and inspection procedures including documentation that quality requirements of materials and components are met prior to installation. The following QA procedures were reviewed by the inspector:

- Procedure QA-210, "Department Audit Procedure", Rev. 12
- Procedure QA-230, "Department Audit Scheduling and Followup", Rev. 8
- Procedure QA-300, "Construction Surveillance", Rev. 9
- Procedure P-1, "Receiving Inspection", Rev. 21

b. Review of Work Procedures

The applicable code for safety-related support and restraint installation is the ASME Boiler and Pressure Vessel Code, Section III, Subsection NF, 1974 Edition plus addenda through summer 1975. The inspector observed various activities and documents associated with the installation of supports and restraints to determine if code and procedure requirements were being met. The inspector reviewed the following work procedures pertaining to safety-related pipe support and restraint systems to determine whether they were approved by authorized licensee personnel.

<u>Work Procedures</u>	<u>Approved Date</u>
"Procedures Requirements for Fabrication and Erection of Hangers, Supports, and Seismic Controls" (CNS-1206.00-04-0003)	05/11/82
Procedure M-51, "Component Supports"	09/14/82
CP-385, "Support/Restraint Erection Tolerances"	10/19/82
CN-2, "Support Inspection Instructions - Supplementary Instructions for Shock Suppressors, Sway Struts, and Variable and Constant Support Spring Hangers"	06/16/82
CN-3, "Support Inspection Instructions - Cold Setting Inspection"	11/04/82
CN-4, "Support Inspection Instructions - Final Walk Through"	11/02/82

In addition, the inspector reviewed work procedures to assure that the technical adequacy of activities pertaining to safety-related pipe support and restraint systems were being met. This review was performed to insure: that cutting, forming, and machining of pipe support and restraint system material are conducted in a manner which would prevent the impact properties of the material from being reduced below specified values; that bolts, nuts, and washers are tight and secure; and that welding procedures had been reviewed and approved, including heat treatment.

c. Observation of Work and Work Activities

In the area of dynamic pipe supports, the inspector examined six (6) mechanical type snubbers in the warehouse, checking shaft travel for smoothness by pulling and pushing the snubber shaft to simulate normal operation, and by sudden movement to simulate unit activation. Hanger snubbers tested in the warehouse were as follows:

<u>Snubber Model</u>	<u>Hanger No.</u>	<u>Test Results</u>
PSA-3 (Rated Load = 6000#)	1-A-RN-3216 1-R-KC-0458	Acceptable Acceptable
PSA-1 (Rated Load = 1500#)	1-A-VI-4007 1-R-KC-1030	Acceptable Acceptable
PSA- $\frac{1}{4}$ (Rated Load = 350#)	1-A-NI-4018 1-A-NI-4073	Acceptable Acceptable

The inspector observed the performance of the final QC inspection on the following installed hangers:

<u>Hanger No.</u>	<u>Discrepancies</u>
1-R-NS-0104	A specified maximum dimension was exceeded by 1½" (17 3/4" vs. 16¼")
1-R-KC-1020	The center line of the supporting base plate was off by 3/16" from specified dimension.
1-R-NS-1250	Three out of the four concrete anchors did not meet the minimum torque requirements as specified in CP 115.
1-R-KC-0203	Seven out of the eight concrete anchors did not meet the minimum torque requirements as specified in CP 115.

The licensee stated that the above four hangers which were rejected by the QC inspector will be sent back to the responsible craft supervisor for resolution. These hangers will again be subject to QC inspection for final acceptance.

The inspector selected six (6) spring hangers and observed hanger rod size for minimum requirements and examined spring hanger indicators which show the approximate "hot" and "cold" position of the piping system. The following spring hangers were examined.

<u>Hanger Size</u>	<u>Figure & Type</u>	<u>Hanger No.</u>	<u>Results</u>
5	82, B	1-A-NV-3003	Acceptable
5	82, B	1-A-NV-3009	Acceptable
10	98, F	1-R-VN-0003	Acceptable
10	98, F	1-R-VN-0044	Acceptable
13	82, A	1-R-RN-0031	Acceptable
13	82, A	1-R-RN-0046	Acceptable

In the area of component support structures, the inspector performed a visual examination of three (3) hangers (Nos. 1-R-NS-0104, 1-R-KC-1020, and 1-R-KC-0203) to ascertain whether: component support structures were located and installed as specified; the surface of welds met applicable code requirements; materials used in the component support structures were certified by reviewing a certificate of compliance; and the bolting materials were as specified.

The inspector selected two as-built/final design pipe support structural drawings (Hanger Nos. 1-R-VN-0020, Rev. 2 and 1-R-RN-1180, Rev. 2) and compared the drawings with the actual installation. No discrepancies were identified during the observation.

The inspector reviewed twelve hanger drawings corresponding to the six snubbers and six spring hangers that were specially ordered in the warehouse. It was found that three hanger drawings had been deleted. Six other hanger drawings showed either sizes or actual configurations that were different from that identified on hangers in the warehouse. Results of the review are identified as follows:

<u>Hanger No.</u>	<u>Observed in The Warehouse</u>	<u>Required from Drawings</u>	<u>Results</u>
1-A-NI-4018	PSA- $\frac{1}{4}$ Snubber	Deleted	None
1-A-RN-3216	PSA-3 Snubber	Deleted	None
1-A-NV-3003	Size 5 Spring Can	Deleted	None
1-A-VI-4007, Rev. 5	PSA-1 Snubber	Component Support Structures	Inconsistent
1-A-NV-3009, Rev. 3	Size 5, Fig. 82 Type B Spring Can	Size 6, Fig. B-268N Type F Spring Can	Inconsistent
1-R-VN-0003, Rev. 5	Size 10, Fig. 98 Type F Spring Can	Size 10, Fig. 98N Type C Spring Can	Inconsistent
1-R-VN-0044, Rev. 4	Size 10, Fig. 98 Type F Spring Can	PSA-3 Snubber	Inconsistent
1-R-RN-0031, Rev. 5	Size 13, Fig. 82 Type A Spring Can	Size 12, Fig. 82N Type A Spring Can	Inconsistent
1-R-RN-0046, Rev. 5	Size 13, Fig. 82 Type A Spring Can	Size 12, Fig. 82N Type A Spring Can	Inconsistent

With regard to the above results, the inspector indicated that a better procedure is needed for identifying hanger (snubber and spring can, etc.) sizes as a result of drawing changes. This matter will be identified as Inspector Followup Item, 413/82-29-01 and 414/82-27-01, Hanger Inventory Control.

On November 19, 1982, the inspector noted that two columns located at El. 552'-0 pipe chase area in the Containment Building utilized four concrete anchors on each base plate. One of the four concrete anchors did not have a washer and nut, and therefore, was not tight and secure. The same was true for the base plate on the other column. At the time of this inspection it could not be determined whether the base plates had been finally inspected. The licensee indicated that they would look into the matter. Pending further information to be furnished by the licensee, this will be identified as Unresolved Item, 413/82-29-02, Identification of Unfastened Concrete Anchors.

In addition, the inspector reviewed calculations for two hangers (Hanger Nos. 1-R-KC-0203, Rev. 4 and 2-R-KC-0110, Rev. 1) in regard to welding requirements.

Within the areas inspected, no violations or deviations were identified.