



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

Report Nos. 50-413/81-20 and 50-414/81-20

Licensee: Duke Power Company
P. O. Box 2178
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. P. Kleinsorge
W. P. Kleinsorge

October 9, 1981
Date Signed

Approved by: A. R. Herdt
for A. R. Herdt, Section Chief
Engineering Inspection Branch
Engineering and Technical Inspection Division

10/9/81
Date Signed

SUMMARY

Inspection on September 22-25, 1981

Areas Inspected

This routine, unannounced inspection involved 33 inspector-hours on site in the areas of licensee action on previous inspection findings, reactor coolant pressure boundary piping (Unit 2), safety related structures (Units 1 and 2) and containment structures (Unit 2).

Results

Of the four areas inspected, no violations or deviations were identified in three areas; one violation was found in one area (Violation - 413, 414/81-20-01: "Inadequate Measures to Control Welding Filler Materials" - paragraph 7a(1)(a)). No deviations were found.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. C. Rogers, Project Manager
- *S. W. Dressler, Sr., Construction Engineer
- *R. G. Rouse, QA Technician
- *W. T. McClure, QA Technician

Other licensee employees contacted included construction craftsmen, technicians, and office personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on September 25, 1981 with those persons indicated in paragraph 1 above. The inspectors described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

Violation 413, 414/81-20-01: "Inadequate Measures to Control Welding Filler Materials" - paragraph 7a(1)(a)

Unresolved Item 414/81-20-02: "Weld Discrepancies on Vendor Supplied Structures" - paragraph 5a

Unresolved Item 413, 414/81-20-03: "AWS Acceptance Criteria Conflict" - paragraph 5b

3. Licensee Action on Previous Inspection Findings

(Closed) Violation 413, 414/81-10-02: "Inadequate Measures to Control Preservation of Safety Related Materials"

Duke letter of response dated July 24, 1981 has been reviewed and determined to be acceptable by Region II. The inspector held discussions with the project manager and examined the corrective actions as stated in the letter of response. The inspector concluded that Duke had determined the full extent of the subject noncompliance, performed the necessary survey and follow-up actions, to correct the present conditions and developed the necessary corrective actions to preclude recurrence of similar circumstances. The corrective actions identified in the letter of response have been implemented.

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. New unresolved items identified during this inspection are discussed in paragraph 5a and 5b.

5. Independent Inspection Effort (Units 1 and 2)

The inspector conducted a general inspection of the Unit 1 and 2 containments, auxiliary building, fuel buildings, and electrode issue stations to observe construction progress and construction activities such as welding, material handling and control, housekeeping and storage.

- a. With regard to the above inspection the inspector accompanied by a representative of the licensee on September 23, 1981, noted a number of weld discrepancies on structured steel "B Frame" in the Unit 2 containment. At the time of this inspection, the extent of the discrepancies or their acceptability to the code of record (AWS D1.1) could not be determined. The frame was fabricated by Southern Engineering Company. The licensee documented the above in NCI No. 12892 and indicated that they would look further into the matter. The inspector stated that the above would be an unresolved item identified as 414/81-20-02: "Weld Discrepancies on Vendor Supplied Structures."
- b. With regard to the above inspection, the inspector noted that Duke Procedure L-80, Revision 11, "Visual Workmanship Standards for Welds" does not reflect the prohibition on piping porosity, in complete penetration groove welds, in butt joints transverse to the direction of computed tensile stress, as stated in AWS D1.1-Rev. 2-77 paragraph 8.15.1.7. At the time of this inspection, the affect of the above acceptance criteria omission on previously inspected items could not be determined. The licensee indicated that they would look further into the matter. The inspector stated the above would be identified as unresolved item No. 413, 414/81-20-03: "AWS Acceptance Criteria Conflict."

Within the areas examined no violations or deviations were identified.

6. Reactor Coolant Pressure Boundary Piping (Unit 2)

The inspectors observed non-welding and welding work activities for reactor coolant pressure boundary (RCPB) piping. The applicable code for installation of RCPB piping is the ASME B and PV code, 1974 edition plus addenda through summer 1974.

a. Observation of Non Welding Activities

The following piping "runs" were inspected for compliance with installation specifications or plans.

<u>FROM</u>	<u>WELD NO.</u>	<u>TO</u>	<u>PLAN</u>
2		10	CN-2NI-55
9		13	CN-2ND-67
2		6	CN-2ND-67
13		20	CN-2ND-66
2		6	CN-2ND-66
2		7	CN-2NI-91

b. Review of Non Welding Quality Records

The inspector selected various reactor coolant pressure boundary piping components (e.g., pipe, fittings and welded-in components) for review of pertinent records to determine conformance with procurement, storage and installation specifications and QA/QC site procedures.

Records of the following items were selected for review to ascertain whether they (records) were in conformance with applicable requirements relative to the following areas: material test reports/certifications; vendor supplied NDE reports; NSSS quality releases; site receipt inspection; storage; installation; vendor nonconformance reports.

<u>HEAT NO</u>	<u>ITEM</u>
P-8462	12" L.R. 81° ELL.
52390	12" L.R. 90° ELL.
52389	12" L.R. 90° ELL.
42415	8" L.R. 90° ELL.
MH-5-426	8" Pipe
25994	12" Pipe
25998	12" Pipe
743016	6" Pipe
RW143170	6" L.R. 90° ELL.
25996	12" Pipe

c. Observation of Welding Activities

The inspector observed field welding of reactor coolant pressure boundary piping at various stages of weld completion.

- (1) The inspector examined weld joints of pipe to pipe/fitting (PPF) and pipe to component (PC) where welding was beyond the root pass to determine; weld/welder identification, qualified welder/weld procedure, periodic checks of welding variables, use of specified weld material, proper interpass temperature and where applicable pre-heat and post-weld heat treatment and physical appearance of weld (e.g. starts, stops, undercut and surface imperfections). The following weld joint was examined.

<u>JOINT NO.</u>	<u>UNIT</u>	<u>SIZE</u>	<u>SYSTEM</u>
N1-55-10	2	10" X 1.000"	Safety Injection

- (2) The inspector observed activities at weld material issue stations to determine adequacy of; weld material storage/segregation, oven temperatures, issue records and return of unused weld material. Also, the inspector observed work areas for uncontrolled weld material.
- (3) The inspector examined the following weld where nondestructive testing (NDE) was in process to determine surface suitability, specified NDE being performed and with qualified personnel:

<u>JOINT NO.</u>	<u>UNIT</u>	<u>SIZE</u>	<u>SYSTEM</u>
NC-43-11	2	12" X 1.125"	Reactor Coolant

d. Review of Quality Records

- (1) The following completed weld records were reviewed in the areas of visual and dimensional inspections, weld history, preheat and interpass temperature, NDE, weld repair, welder qualification, and inspector qualification, as applicable to each weld:

<u>WELD NO</u>	<u>ISO</u>	<u>SIZE</u>
2	2ND-67	12"
3	2ND-67	12"
10	2ND-67	12"
11	2ND-67	12"
3	2NI-91	8"
4	2NI-91	8"
5	2NI-91	8"
5	2NI-66	12"
6	2NI-66	12"
13	2NI-66	12"
14	2NI-66	12"
3	2NI-55	6"
4	2NI-55	6"
6	2NI-55	6"
7	2NI-55	6"

- (2) The inspector reviewed records of the following QA audits relative reactor coolant pressure boundary pipe welding:

AUDIT NO

MWN-4-8-81

MWN-4-7-81

MWN-4-6-81
 MWN-4-5-81
 MWN-4-4-81
 MWN-4-3-81
 MWN-4-2-81
 MWN-4-1-81

Within the areas examined, there were no violations or deviations identified.

7. Safety-Related Structures (Units 1 and 2)

The inspector observed field welding activities associated with safety-related structures and supports outside containment during various stages of weld completion. Observations were made in order to determine whether the requirements of applicable specifications, standards, work and/or inspection procedures are being met for the activities involved and in the following stages of weld completion:

a. Observation of Welding Activities

- (1) The inspector examined weld joint fitup, prior to welding, to determine whether weld identification/location, joint preparation and alignment and QC verification are in conformance with existing requirements.

<u>STRUCTURE SUPPORT</u>	<u>UNIT</u>	<u>WELD NO.</u>	<u>DRAWING</u>
Fuel Pool Heaters Supports	1	-	CN-1214-8.01 R1
Pipe Support	1	-	1-A-NV-3202
Pipe Support	1	-	1-A-RN-8711
Pipe Support	1	-	1-A-NB-3683
Manway Davit	1	-	CN-1220-77 R0
Spent Fuel Pool Liner Plate	2	X-23	CNFO-1438.31-32E
Spent Fuel Pool Liner Plate	2	X-24	CNFO-1438.31-32E
Spent Fuel Pool Liner Plate	2	114-L	CNFO-1438.31-32E
Spent Fuel Pool Liner Plate	2	34R	CNFO-1438.31-32E

- (a) With regard to the above inspection, the inspector, on September 23, 1981, noted that the welding filler material issue station had issued three welders Type E-10018 electrodes in lieu of Type E-7018 electrodes. The Welding filler material issue authorizations (Form H-3B) indicated that Type E-7018 was issued. The E-10018 electrodes went undetected by the issue station personnel, and the three welders. The inspector identified the electrode type substitution at the work station of the welder of record for pipe support 1-A-NV-3202. The licensee was able to account for all the improperly issued type E-10018 electrodes. The licensee further determined that none of the Type E-10018 electrodes had been used on production work. The above is Documented in NCI 12892.

The above indicates that the licensee does not have adequate measures to control welding filler materials. Failure to establish measures to control special processes including welding is in violation of 10 CFR 50 Appendix "B" Criterion IX. This violation will be identified as 413, 414/81-20-01: "Inadequate Measures to Control Welding Filler Materials."

- (b) The inspector examined weld joints where welding was in progress to determine whether weld identification, weld procedures, welder qualification, weld material, defect removal (if applicable), specified NDE and periodic checks of welding variables were in conformance with existing requirements.

<u>STRUCTURE</u> <u>SUPPORT</u>	<u>UNIT</u>	<u>WELD NO.</u>	<u>DRAWING</u>
Fuel Pool Heaters Supports	1	-	CN-1214-8.01 R1
Pipe Support	1	-	1-A-NV-3202
Pipe Support	1	-	1-A-RN-8711
Pipe Support	1	-	1-A-NB-3683
Manway Davit	1	-	CN-1220-77 R0
Spent Fuel Pool Liner Plate	2	X-23	CNFO-1438.31-32E
Spent Fuel Pool Liner Plate	2	X-24	CNFO-1438.31-32F
Spent Fuel Pool Liner Plate	2	114-L	CNFO-1438.31-32E

Spent Fuel Pool 2 34R CNFO-1438.31-32E
Liner Plate

- (3) Observation of weld material control included: identification, segregation, oven temperatures, issue slips and control of unused material at issue stations and work areas.
- (4) During observation of welding activities there were a sufficient number of qualified inspection personnel at the work site.

b. Review of Quality Records

The inspector review records of the following QA audits relative to welding of safety related structures and supports.

AUDIT NO

MWN-4-8-81
MWN-4-7-81
MWN-4-6-81
MWN-4-5-81
MWN-4-4-81
MWN-4-3-81
MWN-4-2-81
MWN-4-1-81

Within the areas examined, there were no violations or deviations identified, except as noted in paragraph 7a(1)(a).

8. Containment Structures (Unit 2)

Observation of Welding and Welding Work Activities

The inspector observed field welding activities associated with steel containment structure and steel supports for major equipment within the containment at various stages of weld completion. The applicable code for the below listed welding is AWS-D1.1-80.

- a. The inspector observed welding activities where joint fitup and alignment were complete (but welding had not been started) to determine conformance with applicable specifications and procedures in the areas of; weld identification, joint fitup and alignment and evidence of QC verification.

STRUCTURAL SUPPORT

Structure Frame A
Platform 2PC

DRAWING

CN-1073-01
CN-1081-14

- b. The inspector observed welding activities where welding was in progress to determine conformance with specifications and procedures in the areas of; weld identification, specified weld procedures, qualified welders, specified weld material, specified purge (if applicable); repair procedures, specified NDE being performed and periodic checks of welding variables.

STRUCTURAL SUPPORT

DRAWING

Structure Frame A
Platform 2PC

CN-1073-01
CN-1081-14

- c. Observation of weld material control included; identification, segregation, oven temperatures, issue slips and control of unused material at issue stations and work areas.
- d. During observation of welding activities there appeared to be a sufficient number of qualified inspection personnel at the work site.

Within the area examined, there were no violations or deviations identified.