



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

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MAR 27 1980

Report Nos. 50-491/80-04, 50-492/80-04 and 50-493/80-04

Licensee: Duke Power Company  
 Post Office Box 2178  
 Charlotte, NC 28242

Facility Name: Cherokee

Docket Nos. 50-491, 50-492 and 50-493

License Nos. CPPR-167, CPPR-168 and CPPR-169

Inspection at Cherokee Nuclear Plant near Gaffney, SC

Inspector? A. R. Herdt  
 for N. Economos

3/27/80  
 Date Signed

Approved by: A. R. Herdt  
 A. R. Herdt, Section Chief, RCES Branch

3/27/80  
 Date Signed

SUMMARY

Inspection on March 4-7, 1980

Areas Inspected

This routine, unannounced inspection involved 24 inspector-hours on site in the areas of safety-related structures (containment) welding activities, welding material control, welding preheat control, welder qualification and radiographic film review.

Results

No items of noncompliance or deviations were identified.

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

J. T. Moore, Project Manager  
\*C. B. Aycock, Project Engineer  
\*J. W. Willis, Senior QA Engineer  
\*A. R. Hollins, Senior QC Engineer  
E. Herndon, Welding Supervisor  
J. W. Davis, Senior Construction Engineer  
B. Wade, Senior Welder  
T. M. Reynolds, Welding Technical Supervisor

Other licensee employees contacted included construction craftsmen and inspectors.

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on March 7, 1980 with those persons indicated in Paragraph 1 above.

### 3. Licensee Action on Previous Inspection Findings

- a. (Closed) Deficiency 491-492-493/79-12-01; Failure to Include Nonessential Variables in GTAW Specifications. The licensee's letter of response dated August 17, 1979 has been reviewed. Welding process specifications (WPS) and related procedure qualification records (PQR) have been revised to include the nonessential variables which were not addressed previously. This revision was applicable to specifications covering all the processes used on the site.
- b. (Closed) Deficiency 491/79-18-01; Failure to Document Welding Surveillances. The licensee's letter of response dated October 16, 1979 has been reviewed and determined to be acceptable by Region II. Periodic surveillance checks on welding procedure parameters are now being documented on form M-71F in compliance with procedural requirements. The inspector reviewed records generated from October 11, 1979 to present and found them to be in order.
- c. (Closed) Deficiency 491/79-18-02; Failure to Follow Procedure for Control of Welding Filler Metal. The licensee's letter of response dated October 16, 1979 has been reviewed and determined to be acceptable by Region II. Procedure CKP-8 has been revised to allow welders to deposit stubs and damaged electrodes in their assigned buckets and/or pouches during welding. Otherwise all damaged electrodes are to be deposited in approved containers located in strategic locations.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort

a. General Inspection of Construction Site

A general inspection was performed to observe storage conditions in laydown storage areas; housekeeping and control of consumables inside containment and fab shops where nonsafety and other Class E pipe-assemblies were being fabricated. In addition the inspector observed the hydrotesting of a 30 inch service water pipe weld with a newly developed portable device which permits the testing to be done on individual spool pieces soon after fabrication and before erection, using a minimum amount of water. If approved DPC plans to use this device wherever possible.

b. Radiographic Film Review

The inspector reviewed selected radiographic films for Unit 1 containment welds for conformance to procedure and Code requirements. Procedure No. NDE-10, Rev. 4, "General Radiography Practice" is the applicable site procedure. The applicable code for fabrication and inspection of containment is the ASME Boiler and Pressure Vessel Code, Section III, Subsection NE (74S76) with code cases 1714 and 1777 being applicable. Films reviewed for this work were as follows:

<u>Weld No.</u>	<u>Film No/RT Stations</u>
I-10903-B	0 thru 6, 9 thru 12, 20 thru 25
I-10902-B	5 thru 10, 13 thru 20, 22 thru 26
I-10908-B	0 thru 6, 14 thru 20
I-11118-B	0 thru 8, 25 thru 29

Within these areas the inspector noted that because all completed joints were ground flat prior to radiography, many of the films reviewed looked somewhat similar. In discussing this matter with the licensee representative, the inspector expressed his concern and stated that the lack of distinguishing weld characteristics make it difficult to positively identify a certain film with its respective weld location. The inspector and the licensee representative(s) offered several proposals including increased QA surveillance that could be used to provide further objective evidence and thereby improve the present situation. The licensee has agreed to pursue this matter further and

present their proposals to RII on a subsequent inspection. This matter was identified as an inspector followup item (IFI) 491/80-04-03, Containment Weld Radiographs.

No items of noncompliance or deviations were identified.

6. Steel Structures and Supports - Observation of Welding Activities Within Containment (Unit 1)

The applicable Code for containment welding is delineated in paragraph 5.b. Applicable requirements are contained in Duke Specification P81S-1144.10-00-0001, "Specification For Field Welding and Erection of Containment Vessel"; Construction Procedure M-71, Rev. 0, "Process Control and Inspection of Containment Systems and Liner Plate"; Construction Procedure L300, Rev. 5, "Shielded Metal Arc Welding Process Specification" and Construction Procedure L500, Rev. 7, "Flux Cored Arc Welding Process Specification". The inspector observed fitup, root welding and/or intermediate welding of containment Weld Nos. 10917-B, 10918-B, 10939-B, 10940-B, 11016-B, 11013-B, for conformance to procedure and Code requirements. Areas reviewed included conduct of work in accordance with an approved traveler, conformance to procedure parameters and drawings, welding technique including sequence, weld joint geometry and cleanliness, fitup tolerance, control of welding electrodes, condition of welding equipment, periodic checks of welding variables and performance of required inspections. In addition the inspector checked identification on selected containment plate material and reviewed receiving inspection reports and quality records of plate Nos. 10916, 10917, 10918, 10938, 10939, 10940 for compliance with specification P81S-1144.09-00-0001 Rev. 5 and SA-516Gr.-70 requirements.

Within these areas the inspector noted that preheat checks subsequent to that performed and documented at the start of joint fabrication were being performed but because Form M-71F contained no provisions for recording subsequent checks, this activity was not being recorded on these forms. This matter was discussed with cognizant DPC personnel who stated that they were aware of this problem and had taken steps to revise Form M-71F to permit additional entries. The inspector stated and the licensee representatives agreed to also review Form M-4A, applicable to pipe welds, where the same problem may exist and make the appropriate revisions. In that the licensee had identified this problem and had taken corrective action, the inspector stated this matter would be identified as an inspector followup (IFI) item for review and tracking purposes. This was identified as IFI No. 491/80-04-01, Documentation of Preheat Temperatures checks.

No items of noncompliance or deviations were identified.

7. Steel Structures and Supports - Welding Material Control (Unit 1)

The applicable Code for welding material is the ASME Boiler and Pressure Vessel Code, Section III with latest edition and addenda in effect at the time of order. Site requirements are contained in the QA Manual for ASME

Code work, Section E-3, Rev. 9, "Field Procurement of Items and Construction Services"; QA Procedure H-3, Rev. 10, "Identification and Control of W Welding Material"; QA Procedure P-1, Rev. 19, "Receiving Inspection"; QA Procedure P-3, Rev. 9, "Storage Inspection"; Construction Procedure CKD-6, Rev. 1, "Reconditioning of Low Hydrogen Coated Electrodes"; and Construction Procedure CKP-8, Rev. 0, "Supplementary Requirements for the Control of Welding Filler Material." The inspector reviewed the above procedures to determine whether the licensee has established adequate procedures for purchasing, receiving, storing, distributing, identifying, handling, and moisture control during storage and field use. Each of three (3) welding material issue stations were inspected to determine if requirements were being met for storage, issue, identification and reconditioning of welding materials. Welding areas were checked for control of welding filler materials. In addition, the inspector reviewed welding material records to determine whether Code required tests were being performed. Quality Records for the following materials were reviewed:

<u>Welding Consumables</u>	<u>Size (Inches)</u>	<u>Lot/Heat No.</u>
E7018	1/8	48R
E70T-1	1/16	H7638

Within these areas the inspector noted that paragraph 5.6.2 of Procedure H-3 above required electrodes to be kept in containers suitable to minimize moisture and contamination... Presently after electrodes are issued to the craft the electrodes are stored by individuals (welders) in their pouches. The inspector stated that these (pouches) were adequate for the intended use but do not necessarily provide protection against moisture pickup and/or contamination as described in the procedure. The inspector stated that while he had no problem with present controls, he has some difficulty with the words used in the procedure to describe those controls. The licensee representative agreed to review and revise the procedure to reflect field conditions. This was identified as IFI No. 491/80-04-02, Weld Electrode control Procedure Revision.

No items of noncompliance or deviations were identified.

8. Steel Structures and Supports - Welder Qualification (Unit 1)

The applicable code for welder qualification is the ASME Boiler and Pressure Vessel Code, Section IX, latest edition and addenda in effect. Controls are provided in QA Procedures I-1, Rev. 7, "Qualification of Welders and Welding Operators" and L-900, Rev. 9, "Coupon Testing Requirements for Performance and Welding Procedure Qualifications". The inspector reviewed the above procedures to determine whether adequate procedures were available to control initial qualification of welders, requalification, maintenance of qualification(s) and records of these qualifications. The inspector

also reviewed qualification records for the welders of record for Unit 1 containment, Weld Nos. 10917, 10918, 10939, 10940. These records were reviewed for conformance to procedure and Code requirements.

No items of noncompliance or deviations were identified.