



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

Report Nos. 50-491/81-01, 50-492/81-01 and 50-493/81-01

Licensee: Duke Power Company
 P. O. 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, South Carolina

Inspector: *N. Economos* 3/30/81
 N. Economos Date Signed

Approved by: *A. R. Herdt* 4/1/81
 A. R. Herdt, Section Chief Date Signed
 Engineering Inspection Branch
 Engineering and Technical Inspection Division

SUMMARY

Inspected on March 10-12, 1981

Areas Inspected

This routine, unannounced inspection involved 20 inspector-hours on site in the areas of safety-related structures (containment) review of quality records, corrective action on previous inspection findings, radiographic film and work observation.

Results

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

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. T. Moore, Project Manager
- *J. W. Davis, Senior Construction Engineer
- *K. W. Schmidt, Acting Senior QA Engineer
- J. E. Cavender, Corporate Level III Examiner

Other licensee employees contacted included construction craftsmen and inspectors.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on March 12, 1981 with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

This was not inspected during this inspection.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort

A general inspection was performed in and around the reactor building to observe construction activity, housekeeping, control of weld consumables inside containment and construction progress. Through discussions, interviews and observations, the inspector noted the following:

- a. The size of the work force and construction activity is being reduced severely to the point where after a period of four to six weeks it is anticipated that only storage and maintenance work will be performed.
- b. Work on the nuclear service water dam will continue and should be completed in approximately two months.
- c. There are about 2,000 cubic yards of concrete scheduled for pouring after which this activity will stop.

- d. The containment liner will remain on temporary supports instead of being floated and grouted to its permanent position as previously planned. A protective coating will be applied and provisions will be made to permit water drainage.

Within the areas inspected no violations or deviations were identified.

6. Steel Structures and Supports - Observation of Welding Activities Within Containment

The applicable code for fabrication and inspection of the containment liner is the ASME Boiler and Pressure Vessel Code, Section III, Subsection NE (74S76) with code cases 1714 and 1777 applicable. Duke Specification P81S-1144.10-00-0001 contains provisions and/or requirements for welding, repairs, NDE, inspections and tolerances, etc. Procedure M-71 is used to implement process control and documentation. Welding procedures are qualified to Section IX of the ASME Code. In general, vertical and horizontal welds of the liner have been fabricated with the flux cored arc process while attachments including leak channels penetrations, etc., are fabricated with the shielded metal arc process. At the time of this inspection, leak channel weld 1V0924A was in the final fabrication stage. This was the only weld being fabricated at this time.

Following are completed welds selected at random for observation in order to ascertain whether they met procedural and code requirements:

<u>Weld</u>	<u>Type</u>	<u>Location/Orientation</u>
1V0924-A	Leak Chase Channel	Zone 10, Vertical
1H0909	Leak Chase Channel	Zone 9, Horizontal
1V0919	Leak Chase Channel	Zone 9, Vertical
1V0916	Leak Chase Channel	Zone 9, Vertical
1V0921	Leak Chase Channel	Zone 9, Vertical
10917-B	Liner Plate	Zone 9, Vertical
10918-B	Liner Plate	Zone 9, Vertical
10925-B	Liner Plate	Zone 9, Vertical
10926-B	Liner Plate	Zone 9, Vertical

Areas of specific interest included weld reinforcement uniformity and contour surface defects, undercut, arc strikes, spatter, welder identification, cleanliness. In addition, the inspector reviewed selected quality records including: process control sheets (Forms M-71A) for completeness, accuracy, clarity and disposition of repairs, weld consumable certifications and receipt inspection for the following:

<u>TYPE</u>	<u>Ht#/Lot#</u>	<u>Size</u>
E7018	48R	1/8" dia.
	47K	5/32" dia.
	50T	3/32" dia.
E70T-1	H7638	1/16" dia.

Welder performance qualifications, originals and updates were reviewed. The leak channel to plate welds were magnetic particle inspected in accordance with requirements of Procedure NDE-22T, Revision 5, using ASME Section III, ND and NE (74W76) acceptance standards. The procedure was written to comply with ASME Section V (77S77) Article 1 and 7.

Quality records of containment liner plates 10918, 10919, 10925, 10926 and 11019 were reviewed in order to ascertain whether the material was consistent with SA-516 GR 70 requirements and had been properly receipt inspected and released.

Within the areas inspected no violations or deviations were identified.

7. Containment Liner Weld Radiograph Review (Unit 1)

The inspector reviewed selected films of liner plate welds for conformance with procedural and code requirements. Applicable code requirements, see paragraph 6, are implemented through approved site procedure NDE-10A, Revision 4 "General Radiography Practice."

Films reviewed are as follows:

<u>Weld No.</u>	<u>Film No./RT Stations</u>
10917-B	20 thru 29
10918-B	8 thru 16
10925-B	13 thru 20
10926-B	0 thru 7

Within the areas inspected no violations or deviations were identified.

8. Leak Chase Pressure Testing

At the time of this inspection the licensee was conducting leak tests on the liner channels. The tests involved both the "sniffer" and pressure change methods which were being performed in accordance to the following procedures:

- a. NDE-52, Revision 0, Leak Test Halogen Diode (Sniffer) Method

- b. NDE-53, Revision 0, Leak Test Pressure Change. QA Procedure 0-1, Revision 21, Control of Measuring and Test Equipment, establishes requirements for calibration of measuring and testing equipment, e.g., pressure gauges, used in this test.

Within these areas the inspector observed the on-going testing on "A" area which was being delayed because of unfavorable wind conditions and equipment failures and, reviewed related QA records including personnel records, equipment calibrations, and documentation.

Within the areas inspected no violations or deviations were identified.

9. Inspector Followup Items

- a. (Closed) Inspector Followup Item (IFI) 491/80-04-01 - Documentation of Preheat Temperature Checks. Attachment Form 71A to Procedure M-71, Process Control and Inspection of Containment Systems and Liner Plates, has been revised to allow for the documentation of preheat checks as they are performed during weld fabrication.
- b. (Closed) IFI No. 491/80-08-01 - Stud Base Qualification Report. Certification records for stud weldability qualification of Nelson shear connectors from 1/4" to 7/8" solid flux shear connector studs were reviewed for code compliance.