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

Report Nos. 50-259/81-25, 50-260/81-25 and 50-296/81-25

Licensee: Tennessee Valley Authority
500A Chestnut Street Tower II
Chattanooga, TN 37401

Facility Name: Browns Ferry

Docket Nos. 50-259, 50-260 and 50-296

License Nos. DPR-33, DPR-52 and DPR-68

Inspection at Browns Ferry site near Athens, Alabama

Inspector: E H Brooks 9-17-81
E. H. Brooks Date Signed

Approved by: H. T. Whitener /for 9-18-81
P. T. Burnett, Acting Section Chief Date Signed
Engineering Inspection Branch
Engineering and Technical Inspection Division

SUMMARY

Inspection on September 2-8, 1981

Areas Inspected

This routine, announced inspection involved 39 inspector-hours onsite in the areas of containment integrated leakage rate testing.

Results

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

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. Bynum, Assistant Plant Manager
K. Clark, CILRT Director
C. Miller, CILRT Test Section
J. Denny, CILRT Test Section

NRC Resident Inspectors

R. Sullivan, Senior Resident Inspector
*G. Paulk, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on September 8, 1981 with those persons indicated in paragraph 1 above. The inspector stated that the integrated leakage rate test results appeared to be acceptable.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Containment Integrated Leakage Rate Test

This CILRT was performed by the licensee as required by Appendix J to 10CFR50 due to modifications to the containment suppression pool. Coincident with modification of the suppression pool a new access hatch was installed in the torus. The containment was subjected to a full pressure test at peak accident pressure of 64 psia. The previous CILRT was performed in February 1980 at a reduced pressure of ½ peak accident pressure.

Surveillance Instruction 4.7.A.2, Primary Containment Integrated Leak Rate Test Units 1, 2, or 3 including the latest revisions dated 8/11/81 was provided by the licensee and was reviewed by the inspector.

The inspector noted and discussed with the licensee the fact that some systems identified as necessary to maintain safe shutdown of the reactor but which could be exposed to containment atmosphere after a design basis

accident are not vented and drained. The NRC position in this matter is that if venting and draining of any system potentially jeopardizes the maintenance of a safe shutdown condition, then those systems shall not be vented and drained; however, in this event, the local leakage rates (Type C) for the isolation valves in these systems shall be added to the upper 95% confidence limit of the ILRT before determining the acceptability of the test. This matter was previously identified for review by licensee management and future inspection (259/80-08-01)

The licensee stated that the isolation valves in the above systems are locally leakage rate tested but the leakage rates are not included in the ILRT test results. This matter is identified as an open item (259/81-25-01).

During the period of September 2-8, the inspector conducted the following reviews and inspections:

a. Inspected compressor to containment lineup and preparations for initiating containment pressurization.

b. Confirmed removal of all pressure sources from the containment.

c. Reviewed containment integrated leakage rate test (type A) instrument calibration records and verified that all instruments have been calibrated within the last 6 months to standards traceable to the National Bureau of Standards (NBS).

d. Reviewed valve lineup/sign-off checklists in preparation for the CILRT to assure that isolation valves are positioned to demonstrate design basis accident conditions.

e. Inspected installation and NDE of new torus access hatch.

f. Reviewed log book of activities prior to and during ILRT.

g. Reviewed local leakage rate test results of the following primary containment penetations:

Penetrations	Leakage Rate, SCFH
Equipment Hatch-1	0.0031
Equipment Hatch-2	0.0037
Personnel airlock	20.6378
CRD flange	0.0002
Torus Hatch (X200A)	0.0002
Torus Hatch (X200B)	0.0002
Torus Hatch (newly installed)	0.0
Drywell Head	0.0115

The above test results are notable since most of the above penetrations are locally leak tested at full pressure with pressure applied only between flange double seals, and are only fully exposed to ½ peak accident pressure during regular CILRT as permitted by Appendix J. However the penetrations were subjected to peak accident pressure during this test.

Containment pressurization was initiated September 5 at 1815 hours, and a pressure of 64.7 psia. was achieved at 1100 hours on September 6 at which time the compressors were stopped and isolated from the containment. During the stabilization period the containment and penetrations were surveyed for local leakages. The drywell head was bubble tested ("snooped") and no leaks were found.

The start of a 24 hour test was initiated at 1500 hours on September 6 and continued with no major perturbations occuring in the leakage throughout the 24 hour test.

Based on the absolute test method, mass-point analysis, the leakage rates and acceptance criteria are as follows:

Calculated leakage rate	0.16530%/day
Upper 95% Confidence limit	0.17065%/day
Maximum Allowable leakage rate	2.0%/day
75% of Maximum Allowable Leakage rate	1.5%/day
Leakage SCFH	88.01

A verification leak rate test was performed to confirm the accuracy of the Type A test. As required by Appendix J the difference between the Type A test and the verification test was within 25 percent of maximum allowable leakage rate at the calculated peak containment pressure.