



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

Report Nos. 50-259/79-31, 50-260/79-31 and 50-296/79-31

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

Facility Name: Browns Ferry Nuclear Plant

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

Inspection at Browns Ferry Site near Decatur, Alabama

Inspector: DSP Price  
D. S. Price

24 OCT 79  
Date Signed

Approved by: H. C. Dance  
H. C. Dance, Section Chief, RONS Branch

10/20/79  
Date Signed

#### SUMMARY

Inspection on October 2-5, 1979

#### Areas Inspected

This routine unannounced inspection involved 32 inspector-hours onsite in the areas of core thermal power calculations, core power limits, component calibrations, test instrument calibrations, radioactive discharges, and plant operations.

#### Results

Of the six areas inspected, no apparent items of noncompliance or deviations were identified.

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## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. L. Harness, Assistant Plant Superintendent
- \*R. G. Cockrell, Reactor Engineer
- \*R. T. Smith, Quality Assurance Supervisor
- \*R. Cole, QA Site Representative, Office of Power
  - A. Clement, Head Chemical Engineer
  - D. C. Mims, Chemical Engineer
  - W. C. Thomison, Assistant Results Supervisor
  - R. S. Perry, Quality Assurance Engineer
  - J. E. Stone, Instrument Engineer Foreman

Other licensee employees contacted included 8 technicians, 2 operators and 3 office personnel.

#### NRC Resident Inspector

\*R. F. Sullivan

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on October 5, 1979, with those persons indicated in Paragraph 1 above.

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Core Thermal Power Calculations

The inspector reviewed the licensee's method of verifying the accuracy of his on-line computer core thermal power calculations. The method used by the licensee is an off-line computer program-COPWAR. This program is run



during start-up testing following refueling as required by Browns Ferry Refuel Test Instruction -13. The following test results were reviewed for adequacy:

Unit 1 dated January 22, 1979, 0.98% error  
Unit 2, dated June 3, 1979, 0.34% error  
Unit 3, dated November 27, 1978, 0.31% error

No items of noncompliance or deviations were identified.

6. Core Power Limits

The inspector reviewed the following process computer printouts to ascertain that the plant was operating within its core power distribution limits:

Unit 1 Core Performance Log, P-1, October 2, 1979, time 1347

Unit 1 Thermal Data in Fuel Assembly, OD-6 options 1, 3 and 4, October 2, 1979, time 1347

Unit 2 Core Performance Log, P-1, October 2, 1979, time 1400

Unit 2 Thermal Data in Fuel Assembly, OD-6 options 1, 3 and 4, October 2, 1979, time 1400

It was verified that the following core parameters were not exceeding the referenced Technical Specification (TS) limit:

Linear Heat Generation Rate - TS 3.5.J  
Minimum Critical Power Ratio - TS 3.5.K  
Average Planar Linear Heat Generation Rate - T. S. 3.5.I

No items of noncompliance or deviations were identified.

7. Component Calibrations

The inspector, observed the performance of the following Unit 1 component calibrations to verify their conformance with local procedures:

Average Power Range Monitor Output Signal Calibration - Surveillance Instruction (SI) 4.1.B-2. Residual Heat Removal (RHR) Pump Discharge Pressure - Surveillance Instruction 4.2.B-20.

It was noted that section 1 of SI 4.2.B-20 gives the required trip level for the RHR pump discharge pressure as 90.5 to 110.5 psig. Section 5.1 of this procedure requires the technician to verify that the as found data is less than 90.5 psig or greater than 110.5 psig. The inspector was informed by the Assistant Plant Superintendent that a procedural change would be initiated to correct this inconsistency.



During the performance of SI 4.2.B-20 the inspector observed some difficulty, by the technicians in interpreting test instrument data. The problem was discussed with the technicians, their foreman, and plant management.

No items of noncompliance or deviations were identified.

8. Test Instrument Calibration

The inspector selected the following test devices and verified that their calibration frequency and accuracy had been met and that the accuracy was traceable to the off-site calibration standard used:

Simpson 260 multimeter, number 259379  
Pressure Indicator PI-LI, number 000043

No items of noncompliance or deviations were identified.

9. Radioactive Discharges

The inspector reviewed the licensee's records of radioactive effluent releases for the period September 16-22, 1979. The review verified that release approvals had been obtained where appropriate and that the discharge limits and sampling requirements of Technical Specification 3.8 had been met. Calibration records for discharge monitors and automatic discharge isolation valves were also reviewed to verify that this equipment was operable during the period under review.

The inspector witnessed the preparations for a discharge from the Laundry Drain Tank on October 3, 1979. This included the required sampling and analysis of drain tank liquid.

SI 4.8.A.1&2, Release Procedure - Liquid Effluents, instructs the laboratory analyst to analyze a sample of the effluent per Radwaste Liquid Analysis Batch Release Procedure, RLM 1137 section IV. The correct reference for their analysis is RLM 1137 section III. The inspector was informed by plant management that a revision to SI 4.8.A.1&2 was presently being written which would correct this discrepancy. Three sampling/analysis errors by the analyst were noted. One, which was observed by the lead laboratory analyst and corrected prior to sample count, involved the failure to add unstandardized iodine carrier solution to the liquid sample prior to buildown. Two other errors not noted by licensee personnel involved a short flush time for one sample, and an improper rinse technique for the buildown beaker. These errors were brought to the attention of licensee management.

The inspector had no further questions.

10. Plant Operation

At approximately 0805 on October 4, 1979 a fire occurred in the Unit 3 Main Turbine Oil Tank. The fire was extinguished within about 10 minutes by

spray from portable carbon dioxide fire extinguishers. The response by plant personnel to the fire appeared good to the inspector. Subsequent investigation revealed the cause of the fire to be a short in the circuitry of a heater internal to the oil tank.

The inspector had no further questions.

