



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

Report Nos. 50-259/79-13, 50-260/79-13, and 50-296/79-13

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

Facility Name: Browns Ferry Nuclear Plant

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: *R. F. Sullivan* 7/10/79
 R. F. Sullivan Date Signed

Accompanying Personnel: H. C. Dance (6/12-13/79)

Approved by: *H. C. Dance* 7/10/79
 H. C. Dance, Section Chief, RONS Branch Date Signed

SUMMARY

Inspection on April 30 - June 15, 1979 (Resident Inspector not at site May 3-14).

Areas Inspected

This routine inspection involved 139 resident inspector-hours in the areas of plant operation, plant tours, reportable occurrences, organization, IE Bulletin followup, Unit 2 refueling, plant physical protection, maintenance and radiation area controls.

Results

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

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DETAILS

1. Persons Contacted

Licensee Employees

J. G. Dewease, Plant Superintendent
H. L. Abercrombie, Assistant Plant Superintendent
J. B. Studdard, Operations Supervisor
R. Hunkapillar, Assistant Operations Supervisor
J. A. Teague, Maintenance Supervisor, Electrical
M. A. Haney, Maintenance Supervisor, Mechanical
R. G. Metke, Results Section Supervisor
J. L. Harness, Quality Assurance Supervisor
J. R. Pittman, Maintenance Supervisor, Instrument
G. T. Jones, Outage Director
S. G. Bugg, Health Physics Supervisor
W. C. Thomison, Assistant Results Supervisor
A. L. Burnett, Shift Engineer
J. D. Glover, Shift Engineer
R. Cole, QA Site Representative, Office of Power

Other licensee employees contacted included licensed Senior Reactor Operators and Reactor Operators, auxiliary operators, craftsmen, technicians, public safety officers, QA personnel and engineering personnel.

2. Management Interviews

Management interviews were conducted on May 2, 18, 25, June 1, 8, 15, 1979, with the Plant or Assistant Plant Superintendent and selected members of his staff. The inspector summarized the scope and findings of his inspection activities. The licensee was informed that no items of noncompliance or deviations were identified.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

No unresolved items were identified during this inspection.

5. Plant Operations

The inspector kept informed on a daily basis of the overall plant status and any significant safety matters related to plant operations. Daily discussions were held with plant management and various members of the operations staff. Frequent visits were made to the shift engineers office and control rooms to review current reactor operating status. Special visits to specific locations in the protected areas were made as deemed



advisable to observe activities or to verify system or component status. Selected portions of the daily journals and operations data sheets were reviewed on at least a weekly basis during the report period.

The inspector made general plant tours on the following dates: May 2, 14, 18, 25 and on June 6 and 13. Selected areas of the turbine building, reactor buildings and the outside areas were visited. Observations included witnessing work activities in progress, status of operating and standby safety systems, valve positions, snubber condition, instrument readings and recordings, annunciator alarms, housekeeping, radiation area controls and vital area controls.

Informal discussions were held with operators and other personnel on work activities and status of safety systems. Shift change of operators in the control room was witnessed by the inspector on May 22, 25 and June 6, 1979.

On the morning of May 29, 1979 the inspector witnessed a startup of the Unit 2 reactor in which a high notch worth was encountered resulting in a reactor period of 29 seconds. With the Intermediate Range Monitors still on the most sensitive scale the operator inserted rods to make the reactor sub-critical as directed by the shift engineer in charge. The rod withdrawal sequence had been modified on May 27 to avoid high notch worths but the previously approved sequence was used for this May 29 startup. The next approach to critical was made using the modified sequence resulting in the initial period of 91 seconds at 12:33 P.M. which was also witnessed by the inspector.

Initial critical following completion of the recent Unit 2 refueling outage was made on May 26, 1979 in which high notch worth was encountered resulting in a 5.5 second period. This was reported to NRC as a prompt report (BFRO-50-260/79-11). A short period of 15.5 seconds was encountered on May 27 when again making the reactor critical. Following this the rod sequence was modified to minimize high notch worths. Two subsequent reactor startups were made without encountering high notch worths and having periods of 54 and 88 seconds respectively.

Failure to use the modified sequence on the May 29, 1979, 9:10 A.M., startup was of concern to the IE Regional Office and a Reactor Inspector specialist in core physics was dispatched to the site on May 30 to review in more detail circumstances relating to the high notch worth problem. Results of his review were reported in IE Report No. 50-259/79-16, 50-260/79-16, and 50-296/79-16. An item of noncompliance was identified in the referenced report.

Further IE review on the subject of high notch worths is underway.

6. Organizational Changes

Recent organizational changes announced at the Browns Ferry facility include:



Appointment of W. C. Thomison, Assistant Plant Results Section Supervisor effective May 6, 1979

Effective May 20, 1979 the Maintenance Section was split into three separate maintenance sections with the following appointments:

- M. A. Haney, Mechanical Maintenance Section Supervisor
- J. R. Pittman, Instrument Maintenance Section Supervisor
- J. A. Teague, Electrical Maintenance Section Supervisor

Each of the above maintenance supervisors had supervised their respective functional areas prior to the organizational change.

The inspector had no questions unanswered on qualifications of the above appointments. The Plant Superintendent stated that a Technical Specification Change with a revised organization chart had been forwarded to Chattanooga for submission to NRC.

7. Reportable Occurrence Review

The below listed licensee event reports were reviewed to determine if the information provided met NRC reporting requirements. The determination included adequacy of event description and corrective action taken or planned, existence of potential generic problems and the relative safety significance of the events.

<u>LER No.</u>	<u>Date</u>	<u>Event</u>
259/79-7	5/2/79	Initiation logic for one zone of sprinkler system inoperative
260/79-4	5/7/79	Exhaust radiation monitor failed surveillance test
260/79-5	5/17/79	Shutdown board D battery had broken terminal
296/79-4	5/7/79	Heat detector alarm inoperative

Corrective action indicated on the above events was determined to be adequate. No items of noncompliance or deviation were identified.

8. Unit 2 Refueling Outage

The refueling outage commenced April 27, 1979 and initial critical following refueling was May 26, 1979.

The inspector witnessed fuel handling operations on the refueling floor including use of procedures, data sheets and reporting of fuel movements to the control room. The inspector observed portions of Refuel Test Instruction-4,



Shutdown Margin Check on May 16. The inspector reviewed the Master Refueling Test Instruction preceeding and following startup to ascertain that criteria were being satisfied and that required reviews and approvals were made.

The inspector did not identify any items of noncompliance or deviations.

9. Unreviewed Safety Question Determination

During the Unit 2 refueling outage a stainless steel washer was dropped in the open reactor vessel and was not recovered.

The inspector reviewed the TVA safety evaluation which concluded that operating the reactor with the washer in the vessel was safe and did not introduce an unreviewed safety question as described in 10 CFR 50.59. The evaluation concluded that the presence of the washer would not interfere with control rod motion. The potential effect of fuel channel flow blockage and recirculation pump damage was also considered with the conclusion that the consequences would be no more severe than for previously analyzed accidents.

The inspector had no further questions following his review of the TVA evaluation.

10. IE Bulletin 79-08, Events Relevant to Boiling Water Power Reactors Identified During Three Mile Island Incident

The inspector performed a followup review of the licensees response to the subject Bulletin. This review included examination of records as well as independent verification of the content and adequacy of maintenance procedures and surveillance instructions dealing with plant engineered safety features. The Browns Ferry staff had previously conducted its review of procedures as required by the Bulletin and had made many revisions which were approved by the Plant Operations Review Committee. The revisions consisted primarily of adding clear statements that upon job completion the systems must be returned to normal configuration and that the Shift Engineer must be promptly notified.

The inspector found that the Mechanical Maintenance procedures lacked uniformity in format and many had not been revised for a number of years. No significant deficiencies were noted but the requirements for obtaining prior approvals to perform the work and for proper notification upon completion took various forms and lacked clarity. On June 15 the Assistant Plant Superintendent stated that another review of the Mechanical Maintenance procedures would be made within two weeks for items discussed in the Bulletin and a more general review for consistency in format would be completed within six months. The inspector indicated that he would identify this as an open item (79-13-01) for later followup.

The inspector also reviewed the special training given to operators and other plant personnel relating to lessons learned from the Three Mile Island accident. The inspector examined the lesson plan and attendance records and verified that all licensed operators attended the short course.

In addition the inspector interviewed a total of 12 licensed operators, which included personnel from each of the five rotating shifts, relative to the special training.

The inspector had no further questions on the TVA action taken and planned as discussed in the response to the Bulletin. Other independent observations and verification by IE Inspectors on matters relating to the Bulletin were described in IE Reports No. 50-259/79-14, 50-260/79-14, 50-296/79-14, 50-259/79-15, 50-260/79-15, and 50-295/79-15.

11. Plant Physical Protection

During the course of his routine inspection duties, the inspector included observations of certain plant physical protection activities. These encompassed personnel badging, searching, personnel escort, vehicle search and escort, and physical barriers. No items of noncompliance or deviations were identified.