

830 Power Building

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

August 15, 1977

Centrafile

*50-259
260
296*

Mr. Norman C. Moseley, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 1217
230 Peachtree Street, NW.
Atlanta, Georgia 30303

Dear Mr. Moseley:

This is in response to F. J. Long's July 25, 1977, letter, RII:RFS 50-259/77-9, 50-260/77-9, 50-296/77-9, which transmitted for our review an IE Inspection Report (same number). We have reviewed that report and do not consider any part of it to be proprietary.

Very truly yours,

J. E. Gilleland for
J. E. Gilleland
Assistant Manager of Power

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N.W. SUITE 1217
ATLANTA, GEORGIA 30303

JUL 25 1977

In Reply Refer To:

RII:RFS

50-259/77-9

50-260/77-9

50-296/77-9

Tennessee Valley Authority
Attn: Mr. Godwin Williams, Jr.
Manager of Power
830 Power Building
Chattanooga, Tennessee 37401

Gentlemen:

This refers to the inspection conducted by Mr. R. F. Sullivan of this office on July 5-8, 1977, of activities authorized by NRC Operating License Nos. DPR-33, DPR-52 and DPR-68 for the Browns Ferry Unit 1, 2 and 3 facilities, and to the discussion of our findings held with Mr. J. G. Dewease at the conclusion of the inspection.

Areas examined during the inspection and our findings are discussed in the attached inspection report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were disclosed.

We have examined actions you have taken with regard to previously identified inspection findings. These are discussed in the attached inspection report.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the attached inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be proprietary, it is necessary that you submit a written application to this office requesting that such information be withheld from public disclosure. If no proprietary information is identified, a written statement to that effect should be submitted. If an application is submitted, it must fully identify the bases for which information is claimed to be proprietary. The application should be prepared so that

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JUL 25 1977

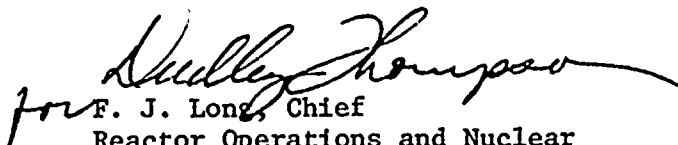
Tennessee Valley Authority

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information sought to be withheld is incorporated in a separate paper and referenced in the application since the application will be placed in the Public Document Room. Your application, or written statement, should be submitted to us within 20 days. If we are not contacted as specified, the attached report and this letter may then be placed in the Public Document Room.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Very truly yours,


for F. J. Long, Chief
Reactor Operations and Nuclear
Support Branch

Attachment:

RII Inspection Report Nos.
50-259/77-9, 50-260/77-9
and 50-296/77-9

cc w/attachment:

Mr. J. G. Dewease
Plant Superintendent
Box 2000
Decatur, Alabama 35602



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N.W. SUITE 1217
ATLANTA, GEORGIA 30303

Report Nos.: 50-259/77-9, 50-260/77-9 and 50-296/77-9

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

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

Licensee: Tennessee Valley Authority
830 Power Building
Chattanooga, Tennessee 37401

Facility Name: Browns Ferry Units 1, 2 and 3

Inspection at: Browns Ferry site

Inspection conducted: July 5-8, 1977

Inspectors: R. F. Sullivan
H. A. Wilber
E. O. Porter

Reviewed by:

H. C. Dance
H. C. Dance, Chief

Reactor Projects Section No. 1

Reactor Operations and Nuclear Support Branch

7/19/77
Date

Inspection Summary

Inspection on July 5-8, 1977 (Report Nos. 50-259/77-9, 50-260/77-9 and 50-296/77-9)

Areas Inspected: Routine, unannounced inspection of reportable occurrences, licensee action on IE Circulars and Bulletins, organization changes, welding practices, in-plant quality assurance program, followup on unresolved items and use of jumpers. The inspection involved 81 total inspector-hours on site by three NRC inspectors.

Results: No items of noncompliance or deviations were disclosed.

DETAILS I

Prepared by:

R. F. Sullivan
R. F. Sullivan, Reactor Inspector
Reactor Projects Section No. 1
Reactor Operations and Nuclear
Support Branch

7/19/77
Date

H. A. Wilber
H. A. Wilber, Reactor Inspector
Reactor Projects Section No. 1
Reactor Operations and Nuclear
Support Branch

7/19/77
Date

Dates of Inspection: July 5-8, 1977

Reviewed by:

H. C. Dance
H. C. Dance, Chief
Reactor Projects Section No. 1
Reactor Operations and Nuclear
Support Branch

7/19/77
Date

1. Persons Contacted

*J. G. Dewease, Plant Superintendent
*H. L. Abercrombie, Assistant Plant Superintendent
R. Hunkapiller, Assistant Operations Supervisor
*J. A. Teague, Assistant Maintenance Supervisor
*T. G. Campbell, Outage Director
*P. L. McCrary, Shift Engineer
J. D. Glover, Shift Engineer Training
*J. Butler, QA Engineer
R. S. Peery, QA Engineer
C. L. Smith, Public Safety, Lieutenant
J. Brazelle, Public Safety, Lieutenant
J. L. Harness, Health Physics Supervisor
*R. Cole, QA Site Representative, Office of Power
J. R. Hilding, Outage QA Supervisor

*Denotes those present at the Exit Interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (259/77-6, 260/77-6, 296/77-6): Certain items which are reviewed individually by each member of the Nuclear Safety Review Board may not satisfy the objective of quorum review.

The inspector determined that the practice has been implemented to place all items, even though some may have been reviewed by members on an individual basis, on the agenda for scheduled meetings so that members have the opportunity for group discussion on each item with quorum participation. The first such meeting which implemented this revised procedure was conducted June 23, 1977.

3. Unresolved Items

No new unresolved items were identified during this inspection.

4. Exit Interview

The inspectors met with TVA representatives denoted in paragraph 1 at the conclusion of the on-site inspection July 8, 1977, to summarize the scope and findings of the inspection.

5. Review of Reportable Occurrences

The inspector reviewed in-office the below listed Reportable Occurrence reports to ascertain that NRC reporting requirements were being met and to determine the appropriateness of corrective action taken and planned. Selected reports, as identified, were further reviewed at the site to verify corrective action and determine compliance with Technical Specifications and other regulatory requirements. The review included examination of Plant Operations Review Committee minutes, log books, internal correspondence and discussions with various staff members.

*BFRO 259/7713, April 21, 1977, Blowdown due to failure of a main steam relief valve to reseal following operation

BFRO 259/7714, May 2, 1977, During testing the reactor isolation cooling system failed to reach rated flow

*BFRO 259/7715, May 9, 1977, High pressure coolant injection turbine steam supply valve failed to open during test

BFRO 259/7716, May 12, 1977, During testing the auxiliary oil pump in the high pressure coolant injection system failed to start

*BFRO 259/7717, May 20, 1977, Fuel pool water not sampled on 8 hour basis during period that demineralizers were out of service

*BFRO 259/7718, 260/779, May 26, 1977, Re-analysis revealed that the value used for the minimum critical power ratio limit should be 1.29 rather than 1.25

*BFRO 296/777, May 18, 1977, Failure of the oxygen sensor in the torus to calibrate properly

*Reports which were further reviewed at site

Questions developed by the inspector during the review of the above reports were satisfactorily resolved by various members of the plant staff. The inspector noted that the licensee had identified and subsequently taken corrective action on two items which were in variance with Technical Specifications.

6. Review of Annual Report

An in-office review was made of the TVA annual report to NRC for the calendar year 1976 relative to the operation of Browns Ferry Units 1, 2 and 3. There were no inconsistencies identified by the inspector with respect to the reporting requirements of the Technical Specifications.

7. Organization Changes

TVA appointed Mr. J. G. Dewease to the position of Browns Ferry Nuclear Plant Superintendent effective June 19, 1977. His previous position had been Assistant Plant Superintendent. The inspector reviewed Mr. Dewease's qualifications for his current assignment with respect to the requirements in the Technical Specifications and noted no deficiencies.

8. IE Bulletin and Circulars

The inspector reviewed the licensee's action on one Bulletin and nine Circulars. The review included discussions with the licensee personnel and record reviews. The following are the findings of the inspector:

a. IEB 77-01 "Pneumatic Time Delay Relay Setpoint Drift"

The licensee's response was within the prescribed time period of the Bulletin and internal records supported the statements given in the response to NRC dated May 31, 1977.

- b. IEC 76-07 "Inadequate Performance by Reactor Operating and Support Staff Members"

The licensee's response of March 14, 1977 was within the prescribed time period of the Circular and the contents of the letter were supported by internal records. The inspector verified that the licensee had implemented a program of apprising shift personnel of incidents that could have an effect on Browns Ferry's operation.

- c. IEC 77-01 "Malfunctions of Limitorque Valve Operators"

The inspector verified that the Circular had been received and was reviewed by the licensee. A section letter is being prepared and the Circular will be reviewed during supplemental training of operators.

- d. IEC 77-03 "Fire Inside A Motor Control Center"

A licensee representative stated that the stab connections of the circuit breakers had been inspected and the remainder of the recommended action of the Circular was under review.

- e. IEC 77-04 "Inadequate Lock Assemblies"

The inspector discussed this Circular with a member of the Public Safety group at the plant who stated that the Circular had been reviewed and determined to have no application at the Browns Ferry site.

- f. IEC 77-05 "Fluid Entrapment in Valve Bonnets" and IEC 77-06 "Effects of Hydraulic Fluid on Electrical Cables"

The inspector could find no record that these two Circulars had been received at the site. This was corrected before the inspector left the site and the licensee had initiated reviews of the applicability of the Circulars by surveying valves for 77-05 and cable tray locations for 77-06.

- g. IEC 77-07 "Short Period During Reactor Startup"

The inspector discussed this Circular with the Shift Engineer-Training and verified that the subject material was being discussed with all operating personnel.

h. IEC 77-08 "Failure of Feedwater Sample Probe"

The inspector reviewed internal records and verified that design changes had been proposed to replace the probes at the first refueling outage of each unit. The Shift Engineer-Training stated that the effects of a broken probe on various systems had been presented to the operating personnel during the weekly information program.

i. IEC 77-09 "Improper Fuse Coordination in BWR Standby Liquid Control System Control Circuits"

The inspector reviewed Drawing No. 45N779-3 Revision 11 and verified that the power for the motor controls and for the squib valves was from the 250DC system and the fuses in the pump motor breaker closing circuit were not in series with the fuses on the squib valve detonating circuit. The concerns defined in the circular are not applicable to the Browns Ferry units.

9. Operational QA Program

The inspector reviewed the licensee's actions on the items identified in IE Report Nos. 259, 260, 296/77-7 Details II Paragraph 5(c)(1) and (2). No resolution had been reached on Corrective Action Report 77-1. Internal Corrective Action Report 25 has a resolution date of November 18, 1977, for the consolidation of the requirements and other information in Surveillance Instruction 4.8.B.1.a.

Survey QT-3-QAS-77-22 addressed welder recertification; outstanding items on this survey were closed out on June 24, 1977. Survey MA-1A-QAS-77-13 covered the calibration of RCIC instrumentation; the calibration program for 10 additional instruments will be implemented by August 1, 1977.

10. Plant Tour

The inspector toured the control rooms of all three units to observe status of equipment on the control boards and the three reactor buildings to observe snubber position, valve positions and general housekeeping. The inspector identified no discrepancies in the areas observed.

11. Jumpers In Safety Related Systems

The inspectors reviewed the latest (June 27, 1977) revision to Standard Practice, BFA-25 Temporary Conditions, which made further clarification in the use of jumpers in safety related systems. The revision clearly states that use of jumpers in operable safety related systems must have Plant Operations Review Committed approval. The inspector had no further questions on this item.

DETAILS II

Prepared by:

E. G. Porter
E. G. Porter, Metallurgical Engineer
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

7-21-77
Date

Dates of Inspection: July 5-8, 1977

Reviewed by:

A. R. Herdt
A. R. Herdt, Chief
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

7/21/77
Date

1. Persons Contacted

Tennessee Valley Authority - Browns Ferry (BF)

- *J. G. Dewease, Plant Superintendent
- *H. L. Abercrombie, Assistant Plant Superintendent
- *T. G. Campbell, Outage Director
- D. A. Whitehead, Mechanical Engineer
- G. B. Livingston, Construction Engineer, Unit Supervisor
- L. C. Marshall, Assistant Construction Engineer
- G. E. Hunt, Construction, NDE Inspector
- S. E. Linginfelter, Quality Assurance Engineer
- C. R. McWherter, Quality Assurance Engineer
- *R. T. Smith, Principal Mechanical Engineer, Maintenance
- *J. P. Butler, Quality Assurance Engineer

*Denotes those present at exit interview.

2. Licensee Action on Previous Inspection Findings

Unresolved Item 77-7/II-1 Welding Control - Fire Protection System

Licensee actions on six corrective action reports (CAR's) involving welding discrepancies in fabrication of the fire protection system were reviewed. Four of the CAR's had been dispositioned and closed out. Two were still open pending completion of work and required actions. These CAR's were identified as follows:

CAR

Status

77-3

Dispositioned and closed

77-4	Dispositioned and closed
77-5	Open pending completion of work plans and QA review.
77-6	Dispositioned and closed
77-10	Dispositioned and closed
77-12	Open pending completion of corrective actions

A review of work plans 6026, 6027, 6028 and 6041 showed that the piping was to be fabricated in accordance with TVA Procedure G-28, Revision 4, "Construction Specification For Construction of Piping Systems For Boiling Water Reactor Nuclear Power Plants," Class M. Inspection and testing is called for to be in accordance with G-28 schedule T5 which in turn states that inspection shall be to ANS B31.1.0 Code for Power Piping, 1967 Edition, and applicable material specifications.

Discrepancies to the code requirements as noted in the above CAR's were evaluated and dispositioned by TVA design engineering as indicated above. The inspector reviewed the dispositions and noted that they were hardware oriented and asked what had been done to correct the basic problem, i.e., failure to follow procedure. The licensee stated that meetings had been held with management personnel concerning the problem and that a training session concerning welding control and use of plant instructions had been held. Documentation concerning the training session and subsequent management followup was examined by the inspector.

Disposition of the CAR's and corrective actions appeared to be adequate. Since the hydrostatic leak testing of the lines has been completed successfully, this item is closed.

3. Unresolved Items

No new unresolved items were identified during this portion of the inspection.

4. Independent Inspection Effort

The inspector made a tour of the containment building and also checked three weld rod issue stations; one within containment and two outside of containment to verify conformance to cleanliness and specification requirements. Storage and issue of welding electrodes

including issue records, oven temperature control, electrode segregation and identification were examined. No items of noncompliance or deficiencies were noted in the areas examined.

5. Welding

During the inspection, conducted to ascertain whether the licensee's controls and procedures associated with welding involved in maintenance or plant modifications of safety-related systems was in accordance with Regulatory requirements and approved codes and standards, it was learned that there were two distinct systems in operation. One involving plant modifications/additions, and one for maintenance work. Quality assurance for the modification/addition work is the responsibility of the TVA Office of Engineering Design and Construction and is carried out in accordance with the BF "Construction Quality Assurance Manual." The second system (used for maintenance work) is the responsibility of the TVA Office of Power and carried out in accordance with the "The Operational Quality Assurance Manual." Welding control used by both of these groups was inspected and is discussed below.

a. Construction - Modifications/Additions

Two welding procedures used for fabrication of the fire protection system, (Details Weld Procedure No. GTSM-11-03B dated February 28, 1975, and Detail Weld Procedure No.

GT-11-0-1A dated August 13, 1975) were examined and found to conform to code requirements.

Welding material is controlled through incorporation of BF Specification MAI-2, "Welding Material Control For Construction Modification/Addition Work," dated February 22, 1977.

Procurement of welding electrode for construction is not handled through the Browns Ferry site. Electrodes are obtained from one of the other TVA sites which actually purchases the material. Mill certifications are received with the material and controlled by BF from that point on in accordance with MAI-2.

Inspection records maintained from the time of issuance of MAI-2 were reviewed for monthly inspections of storage areas, and daily temperature checks. Issue records were also reviewed. It was noted that prior to revision of MAI-2 the welders were required to return used stubs of electrodes as well as whole electrodes, thus accounting for use of all welding electrodes.



MAI-2, Attachment 5 (later revised to Attachment 4) did not require return of electrode stubs. This seems to reduce control of weld rod material and the inspector questioned the reason for the change. The reason was not immediately apparent and licensee's management agreed to review the procedure and reevaluate the desirability of requiring a stub count. Their decision will be reviewed during a subsequent RII inspection.

No items of noncompliance were noted in the areas examined.

b. Maintenance

Welding programs required for maintenance or repair of safety-related systems are established and carried out in accordance with the TVA Operational Quality Assurance Manual and the applicable code requirements.

Two welding procedures (Weld Procedure GT-11-0-1 and Weld Procedure SM-11-0-1) were examined and found to conform to code requirements.

Welding materials are procured by TVA's Division of Purchasing and supplied to BF with all applicable certifications. The BF Power Stores Unit is responsible for initial receipt, storage and issuing of weld material. The maintenance supervisor is responsible for control of the weld material from that point on in accordance with Maintenance Section Instruction Letter 17 (MSIL-17), "Welding Material Control," dated October 20, 1975.

The inspector selected records from three completed welds to determine conformance to specification requirements (Weld No. 1, MMI-60, Maintenance on A&M Valve No. 1-3-554; Weld No. 2 - MMI-60, Maintenance on A&M Valve No. 3-568; and Weld No. 3 (from Trouble Report 29864). Qualifications of four identified welders and one NDE Level II examiner were checked and found to be in accordance with code requirements.

No items of noncompliance were noted in the areas examined.

6. Exit Interview

At the conclusion of the inspection, the inspector discussed findings of the review of Unresolved Item No. 77-7/II-1 and informed licensee's management that the item would be closed. He also stated that there were no new unresolved items, noncompliances or deficiencies found during this portion of the inspection. The

inspector also discussed the elimination of welding electrode stub count (Item 5.a above), and licensee's management agreed to reevaluate the need for the requirement. Licensee Management was also appraised of the inspectors independent inspection effort (Item 4 above).

The licensee had no questions or dissenting comments.

