

Central File
50-259/76-16
50-260/76-16

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA TENNESSEE 37401

August 5, 1976

Re: Wright Branch

50-259-44-107



Mr. Norman C. Moseley, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 818
230 Peachtree Street, NW.
Atlanta, Georgia 30303

Dear Mr. Moseley:

This is in response to your August 3, 1976, letter, IE:II:BJC 50-259/76-16, 50-260/76-16, 50-296/76-12, which transmitted for our review an IE Inspection Report (same number); and to F. J. Long's August 2, 1976, letter, IE:II:RFS 50-259/76-15, 50-260/76-15, which transmitted for our review an IE Inspection Report (same number). We have reviewed those reports and do not consider any part of them to be proprietary.

Very truly yours,

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

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

AUG 3 1976

In Reply Refer To:

IE:II:BJC

50-259/76-16

50-260/76-16

50-296/76-12

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. B. J. Cochran of this office on June 19, 1976, of activities authorized by NRC Operating License Nos. DPR-33, DPR-52 and Construction Permit No. CPPR-48 for the Browns Ferry Units 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 this inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of interviews with personnel and observations by the inspector.

During the inspection, it was found that certain activities under your licenses were found to deviate from commitments made to the NRC. These items and references to pertinent commitments are listed in Section I of the Summary of the enclosed report. You are requested to reply within 20 days of your receipt of this notice with a written statement describing your actions to avoid these deviations from NRC requirements.

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 enclosed 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 information sought to be withheld is incorporated in a separate paper

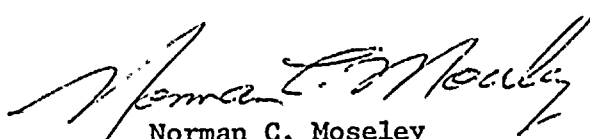
Tennessee Valley Authority

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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 enclosed 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,



Norman C. Moseley
Director

Enclosure:

IE Inspection Report Nos.

50-259/76-16, 50-260/76-16
and 50-296/76-12





UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report Nos. 50-259/76-16, 50-260/76-16 and 50-296/76-12

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

Facility Name: Browns Ferry Units 1, 2, and 3
Docket Nos.: 50-259, 50-260, and 50-296
License Nos.: DPR-33, DPR-52, and CPPR-48
Categories: C, C, and A3

Location: Limestone County, Alabama

Type of License: GE, 1098 Mwe, BWR

Type of Inspection: Announced, Installation of Electrical Cables

Dates of Inspection: June 19, 1976

Dates of Previous Inspection: June 16-25, 1976 (Units 1 and 2)
June 2-3, 1976 (Unit 3)

Inspector-in-Charge: B. J. Cochran, Reactor Inspector
Projects Section
Reactor Construction and Engineering Support Branch

Accompanying Inspector: None

Other Accompanying Personnel: None

Principal Inspector: *B. J. Cochran*
B. J. Cochran, Reactor Inspector
Projects Section
Reactor Construction and Engineering
Support Branch

7/27/76
Date

Reviewed By: *J. C. Bryant*
J. C. Bryant, Chief
Projects Section
Reactor Construction and Engineering
Support Branch

7/27/76
Date

SUMMARY OF FINDINGS

I. Enforcement Items

Deviations

In its acknowledgement of Notice of Violation, dated September 2, 1975, J. E. Gilleland to N. C. Moseley, Appendix B, "Areas of Concern," Item No. 8, TVA stated, in part, ". . . in answering this question (Question 7.5 of May 22, 1971), we included a statement that cable trays carrying control and signal cables are loaded to a maximum of 60 percent of the cross-sectional area of the tray. This answer applied to the safety related cables referenced in the question.

"The 60 percent guideline figure, which is the ratio of the cross-sectional area of the cable to the cross-sectional area of the tray, was obtained from past experience wherein it had been determined that a cable tray would be approximately level full at this point. Physical space for cables was the primary consideration because the weight limitation and electrical current considerations contained ample margin for filling to the worse case. If the cable tray became full before the 60 percent guideline was reached because of cable configuration in the tray, no additional cables were routed in that tray".

The inspector found that contrary to the above comment, there are trays filled above level full in Units 1 and 2 at elevations 565 and 593. (Details I, paragraph 3)

II. Licensee Action on Previously Identified Enforcement Matters

76-11-A1 Improper Welding Procedures (Unit 1)

Contrary to procedural requirements to prevent use of the wrong welding procedure, records indicate that welding of aluminum piping was done using a procedure for welding stainless steel piping rather than aluminum. This item remains open.

III. New Unresolved Items

None /

IV. Status of Previously Reported Unresolved Items

None

V. Design Changes

None

VI. Unusual Occurrence

None

VII. Other Significant Findings

None

VIII. Management Interview

At the conclusion of this inspection, the inspector met with Mr. J. G. Dewease and advised him that there were several areas in each unit found to be in violation to the commitment made in licensee's letter of September 2, 1975, regarding the limiting of cable tray fill to the top of the tray rail.

DETAILS I

Prepared by: B. J. Cochran
B. J. Cochran, Reactor Inspector
Projects Section
Reactor Construction and Engineering
Support Branch

7/27/76
Date

Dates of Inspection: June 19, 1976

Reviewed by: J. C. Bryant
J. C. Bryant, Chief
Projects Section
Reactor Construction and Engineering
Support Branch

7/27/76
Date

All information in Details I applies equally to Units 1, 2 and 3 except where identified with a specific reactor.

1. Individuals Contacted

Tennessee Valley Authority (TVA)

H. J. Green - Browns Ferry Plant Superintendent
J. G. Dewease - Browns Ferry Plant Assistant Superintendent
C. Sudduth - Supervisor, Electrical Design Engineering
D. Boone - Electrical Design Engineer
D. Deford - Supervisor Design QA
B. Bradley - Design QA Engineer

2. General

This inspection was performed to inspect against commitments made by the licensee regarding cable tray fill limitations. These commitments are contained in the licensee's response to Question 7.5 dated May 22, 1971, as modified in the licensee's letter dated September 2, 1975, responding to a letter dated July 28, 1975, from N. C. Moseley, Director, Region II to Mr. J. E. Watson, Manager of Power, TVA. The original commitment limited the tray to a maximum of 60% fill as determined by the cross sectional area of the cables installed in the trays. In the letter dated September 2, 1975, the licensee modified the fill criteria to be the point at which the trays are level full.

Each unit was inspected by elevation from elevation 565 to 639. The inspector confirmed that there were no cable trays located below elevation 565 by inspection of design drawings plus visual inspection of the pump room at elevation 540.

The inspection revealed several areas where cable was installed to a height above the side rails of the cable tray. The majority of cases where the tray was filled above the tray rail was at transition areas where the tray changed horizontal or vertical direction or where cables entered or left the tray to go to cabinets or penetrations.

An accurate determination of cable tray fill was restricted by the flamemastic. In some areas it was not possible to differentiate the cable from flamemastic.

In some cases, particularly in the cable tray elbows or Tee sections, cable was found to be heaped above the edge of the rails on the inside diameter of the curve while the back side of the tray remained relatively empty.

In some areas the trays were covered with stalactite type formations of flamemastic making it difficult to tell the flamemastic from cables running from tray to tray.

3. Tray Identification

Representative areas where the cables were stacked above the level of the tray rails and where it was questionable whether the tray fill criteria of 60 percent cross sectional area was exceeded are identified accordingly in the following listing:

a. Unit 1

At Elevation 565

- Tray KOESI, located along the north wall of the reactor building.
- Tray MAZESI, located along the west wall of the reactor building near a horizontal penetration and five 2-inch conduits emptying into the tray.
- Tray KEESI, in same area as above.
- Along the east wall of the reactor building above the control rod drive hydraulic modules, sections of trays are fitted with side covers covering the vertical area between two trays making it impossible to determine the extent of fill in the lower tray.
- Tray MESII above the RHR Heat Exchanger.
- Tray, FOESII, MEESII, and TLII near column R5.

At Elevation 593

- In the fire area, cables are run over the side rails to splice boxes and transfer from one tray to another at the penetrations. Cables in trays, MXESII, KT, FX and MEESII were found to be above the tray railing.

No areas of concern were identified at elevations 621 and 639.

b. Unit 2

At Elevation 565

- Cable buildup was identified in trays LGESI and KKMESI at elbows and where the trays changed elevations.

At Elevation 593

- Cable tray KJC along the north wall.

The penetrations and related cable trays were not accessible for inspection; therefore, no findings were made in this area.

No areas of concern were identified at elevations 621 and 639.

c. Unit 3

Elevations 565, 593, 621 and 639 were inspected but no areas of concern were identified. The penetrations and related trays were not accessible for inspection.

d. Cable Spreading Rooms

- Units 1 and 2 cable spreading rooms were inspected. Trays were fitted with metal covers at the penetration areas. Overfill was readily apparent because the covers were bent to cover the mounded cables.

As a general rule all the trays at the penetrations were filled above the level of the side rails.

Cable tray SD running parallel to the south wall of the cable spreading room was the only tray that was filled above the side rails for the length of the cable spreading room.

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- Unit 3 cable spreading room was not inspected because craftsmen were in the room spraying the trays with flamemastic.

The deviations from the licensee's acceptance criteria were identified to the licensee's management.