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

MAY 18 1977

In Reply Refer To:
IE:II:VLB
50-390/77-4
50-391/77-4

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. V. L. Brownlee of this office on April 26-29, 1977, of activities authorized by NRC Construction Permit Nos. CPPR-91 and CPPR-92 for the Watts Bar Nuclear Plant, Units 1 and 2 facilities, and to the discussion of our findings held with Mr. T. B. Northern, Jr. at the conclusion of the inspection.

Areas examined during the inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of selective examination 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 identified in Appendix A to this letter.

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 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,

C. E. Murphy, Chief
Reactor Construction and
Engineering Support Branch

Enclosure: 1 as stated

cc: Mr. J. E. Gilleland
Assistant Manager of Power
831 Power Building
Chattanooga, Tennessee 37401

Mr. T. B. Northern, Jr.
Project Manager
Watts Bar Nuclear Plant
P. O. Box 2000
Spring City, Tennessee 37381

Tennessee Valley Authority
Attn: Stan Duhan
400 Commerce Street
E4D112
Knoxville, Tennessee 37902

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Appendix A

Report Nos.: 50-390/77-4 and 50-391/77-4

Docket Nos.: 50-390 and 50-391 License Nos.: CPPR-91 and 92

Categories: A2, A2

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

Facility Name: Watts Bar Nuclear Plant, Units 1 and 2

Inspection at: Watts Bar Dam, Tennessee

Inspection conducted: April 26-29, 1977

Inspector-in-Charge: V. L. Brownlee, Principal Inspector
Projects Section
Reactor Construction and Engineering
Support Branch

Accompanying Inspectors: J. A. Harris, Civil Engineer/Geologist
Engineering Support Section No. 1
Reactor Construction and Engineering
Support Branch

Other Accompanying Personnel: None

Reviewed by: C. E. Murphy 5/12/77
C. E. Murphy, Chief Date
Reactor Construction and Engineering Support Branch

Inspection Summary

Inspection on April 26-29, 1977 (Report No. 50-390/77-4; 50-391/77-4)
Areas Inspected: QA manual including QA procedure for control of auditing construction activities; audit schedules; audit reports; work activities for reinforced concrete placement in Unit 2 polar crane wall, Unit 1 valve room, intake pumping station, the materials testing laboratory activities and associated quality records; licensee action on previously identified unresolved items. The inspection involved 32 inspection-hours on site by two NRC inspections.
Results: No items of noncompliance or deviation were disclosed.

DETAILS I

Prepared by: _____ 5/12/77
V. L. Brownlee, Principal Inspector Date
Projects Section
Reactor Construction and Engineering
Support Branch

Dates of Inspection: April 26-29, 1977

Reviewed by: _____ 5/12/77
J. C. Bryant, Chief Date
Projects Section
Reactor Construction and Engineering
Support Branch

1. Persons Contacted

Tennessee Valley Authority (TVA)

*T. B. Northern, Jr. - Project Manager
*H. C. Richardson - Construction Engineer
J. H. Perdue - Electrical Engineering Unit Supervisor
J. M. Lamb - Mechanical Engineering Unit Supervisor
*J. S. Colley - QA Engineer, EN DES
*R. D. Anderson - Electrical Engineer
*S. Johnson - Assistant Construction Engineer - Mechanical
*J. R. Inger - QA Engineer, Construction
*L. C. Northard - Supervisor, Welding Engineering Unit
*J. C. Cofield - Supervisor, Materials Engineering Unit
R. J. Buning - Materials Engineer

The inspector also interviewed other licensee employees during the course of the inspection. They included Mechanical Engineers, Materials Laboratory Technicians, and Concrete Placement personnel.

*denotes those present at the exit interview

2. Licensee Actions on Previous Inspection Findings

a. (Closed) Unresolved Item (76-11/2) Quality Control Procedure 1.12 (Units 1 and 2): The procedure did not identify the calibration interval for crimping tools. WBNP-QCP-1.12, Revision 4, March 3, 1977, added the calibration interval (90 days) for crimping tools. This item is considered resolved.

b. (Closed) Unresolved Item (76-11/4) Modification - General Warning Alarm System in the Solid State Protection System (Units 1 and 2): The problem involved the initiation of a reactor trip through only one train of the solid state protection system when a general warning condition was inadvertently imposed in both trains by the operators. Although the safety of the reactor was not affected, the need for modification was necessary in order to assure performance of the general warning alarm system in accordance with design requirements.

Westinghouse provided TVA with the change notices and kits. TVA performed the modification and functional tests in accordance with the Westinghouse change notice test procedures. This item is considered resolved.

c. (Open) Unresolved Item (76-11/5) Nonconformance Report 554, "Relays - Shutdown Board Logic Panels" and Condition Adverse to Quality Report No. E3, "Two Position Selector Switch Operator - Square D Company 9001-DS 11FB (Units 1 and 2): Relays - The relays in question are ASEA Model Nos. RRM H-2 and RRM VB-2. TVA has completed a survey of the supplied relays and found 118 of the 320 supplied relays to have banana plug spring parts soldered, loose or missing and misaligned contacts. Damaged relays are being returned to ASEA for study to determine cause of plug and contact problems. This item remains open pending completion of study and adequate resolution of the problems.

Two Position Selector Switch Operator - Square D Company has provided replacement switches which correct the false detent condition. TVA is replacing all switches of this type. This part of the unresolved item is considered resolved.

3. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 6, 7 and 8.

4. Independent Inspection Effort, Concrete

The inspector observed prepour preparations, placement and concrete laboratory activities for pours at the intake pumping station, Unit 1 valve room, Unit 2 polar crane wall and auxiliary building wall.

Pour preparation was adequate, pour cards were signed off, adequate crew and equipment were available, and the placement was made in accordance with accepted practice and the concreting QA/QC program requirements.

5. Partial Mid-Term Construction Permit QA Inspection (Units 1 and 2)

The inspector performed a review and evaluation of the licensee's site audit program. CONST-QAP 18.01, "Auditing Construction Activities," is the controlling procedure for site audits. The procedure applies to the auditing of TVA CONST, contractors and/or service organizations at the site.

The inspector reviewed the procedure, the audit schedule and completed audits for January through March, 1977, the projected schedule of audits for the period of April through June, 1977, and performed a selective examination of the following QA unit audits: WB-M-77-04, "Material Traceability"; WB-M-77-05, "Erection, Inspection, and Documentation of Stainless Steel Liners"; WB-E-77-01, "Handling, Storage, and Maintenance of Permanent Electrical Material"; and WB-G-77-01, "QA Records."

The review and evaluation of the site audit procedure, audit schedules, audits performed, selected audit reports, and discussions with QA unit personnel verified that applicable QA procedures and criteria were being met.

6. Unresolved Item (390/77-4U1 and 391/77-4U1): Essential Raw Cooling Water (ERCW) Discharge Pipeline (10 CFR 50.55(e))

TVA notified IE:II of this matter on March 30, 1977. The ERCW system design bases require a seismically qualified means to discharge ERCW from the plant. The ERCW discharge pipelines are seismic Category I; however, they have been routed through an area of the plant site for which complete soils information is unavailable and through slopes which have not been seismically qualified. TVA is evaluating the problem and will submit a Construction Deficiency Report. The EN DES QA Engineer and the site Materials Engineer Supervisor briefed the inspector relative to this matter.

7. Unresolved Item (390/77-4U2): Safety Injection Pump Motor 1A - (10 CFR 50.55(e))

TVA notified IE:II of this matter on April 7, 1977. The motor heater windings heated and shorted. The motor is a Westinghouse model HSDP, Serial No. 15-76, 400 HP, 6600 Volt, 3 phase, with 120 Volt heaters. TVA will investigate the problem and will submit a

Construction Deficiency Report. The EN DES QA Engineer and the site Electrical Engineering Unit Supervisor briefed the inspector relative to this matter.

8. Unresolved Item (390/77-4U3): Containment Spray Header and Residual Heat Removal Pipe Supports (10 CFR 50.55(e))

TVA notified IE:II of this matter on April 27, 1977. The Chicago Bridge and Iron (CB&I) contract for subject work does not provide for material certification and onsite installation and inspection documentation. TVA and CB&I are negotiating a contract change to obtain them. TVA will submit a Construction Deficiency Report. The EN DES QA Engineer and the site Mechanical QA Engineer briefed the inspector and the inspector made observations of field activities relative to this matter.

9. Management Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on April 29, 1977. The inspector summarized the purpose and the scope of the inspection and the findings.

DETAILS II

Prepared by: J E Conlon for 5/16/77
J. R. Harris, Civil Engineer/ Geologist
Engineering Support Section No. 1
Reactor Construction and Engineering Support Branch
Date

Dates of Inspection: April 26-27, 1977

Reviewed by: J E Conlon 5/16/77
T. E. Conlon, Chief
Engineering Support Section No. 1
Reactor Construction and Engineering Support Branch
Date

1. Persons Contacted

Tennessee Valley Authority (TVA)

T. B. Northern, Jr. - Project Manager
H. C. Richardson - Construction Engineer
J. C. Cofield - Supervisor, Materials Engineer
C. O. Christopher - Supervisor, Civil Engineering Unit

2. Licensee Action on Previous Inspection Findings

(Closed) 76-10/1 - Intake Channel - Unfavorable Gravel Conditions (10 CFR 50.55(e)) (Units 1 and 2)

The Construction Deficiency Report was submitted on March 15, 1977. The report was received by IE:II, reviewed and determined to be acceptable. Discussions with the field engineers, review of approved drawings, physical examinations of the work area and review of the site records verify that the modification is being performed in accordance with TVA's commitments in the subject report, approved engineering documents and field QA/QC requirements. This item is closed.

3. Unresolved Items

No unresolved items were disclosed.

4. Termination of Inspection

Inspection by accompanying inspector, J. Harris was terminated after six hours at the site because the inspector was called to Wolf Creek Nuclear Power Plant site, Kansas.