



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

JAN 14 1980

Report Nos. 50--390/79-47 and 50-391/79-40

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

Facility Name: Watts Bar Nuclear Plant

Docket Nos. 50-390 and 50-391

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar Site near Spring City, Tennessee

Inspector: J. L. Lember
for R. J. Hardwick, Jr.

Jan 10, 1980
Date Signed

Accompanying Personnel: N. Merriweather

Approved by: J. L. Lember
for T. E. Conlon, Section Chief, RCES Branch

Jan 10, 1980
Date Signed

SUMMARY

Inspection on December 12-14, 1979

Areas Inspected

This routine unannounced inspection involved 46 inspector-hours onsite in the areas of electrical cable installation work activities and quality records; licensee action on previous inspection findings; and inspector follow-up items.

Results

Of the three areas inspected, no items of noncompliance or deviations were identified in two areas; one item of noncompliance was found in one area (Deficiency 390/79-47-01 and 391/79-4-0-01, Failure to follow Quality Control Procedure WBNP-QCP 3.1 for cable certification.).

DETAILS

1. Persons Contacted

Licensee Employees

- *J. E. Wilkins, Project Manager
- *H. C. Richardson, Acting Project Manager
- *J. H. Perdue, Supervisor, Electrical Engineering Unit (EEU)
- *E. J. Austin, Assistant Supervisor, EEU
- *R. D. Anderson, Electrical Engineer, EEU
- J. E. Hoffert, Electrical Engineer, EEU
- J. W. Woolbright, Electrical Engineer, EEU
- T. Baker, Electrical Engineering Aid, EEU
- T. Deakins, Electrical Engineering, Aid, EEU

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 14, 1979, with those persons indicated in Paragraph 1 above. Deficiency 390/79-47-01 and 391/79-40-01, Failure to follow Quality Control Procedure WBNP-QCP 3.1 for cable certification, and Inspector follow-up item 390/79-47-02 and 391/79-40-02, Revision to WBNP-QCP's 3.5 and 3.6 for determination and rework of installed cables, were discussed in detail.

3. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item 390/79-20-03 and 391/79-16-03: Acceptance criteria for 6900 volt shutdown board factory installed wiring. The licensee has requested additional information from the vendor concerning the equipment deficiencies noted during receipt inspection by the Inspection and Test Branch. Further review will be conducted when this additional information is received by the licensee.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Licensee Identified Items

(Open) Item 390/79-306 and 391/79-25-06: MOV Control Circuit Failure (NCR 700 and 714). The licensee has issued Engineering Change Notice (ECN) 1715 to change the control circuit fuse amperage size on the affected control circuit diagrams. Actions are presently being taken to assure that fuses installed in the equipment are the correct amperage size and that all solid state relays have received a 96 hour burn-in test.

6. Inspector Follow-Up Items

(Closed)Inspector follow-up item 390/79-40-01: Cable Certification list update. This item was reviewed and has been established as an item of noncompliance.

Watts Bar Nuclear Plant Quality Control Procedure (WBNP-QCP) 3.1 (Revision 10) "Handling, Storage, and Maintenance of Permanent Electrical and Instrumentation Material:", paragraph 6.3.1.8 requires that "No insulated cable will be tagged as conforming material or issued for installation until a favorable certification status report has been received". Certification status reports are issued by the QC department in Knoxville, Tennessee.

Two examples where the above requirement was not complied with are as follows:

- a. Safety-related control cable number 1-3PL062-6149-A was installed using Type WBH-1 cable from reel number 9384 and QC inspected on October 11, 1979. The cable reel was purchased per contract number 78K5-823412-1. On October 26, 1979, a review of the certification status report by NRC was conducted and it was determined that the above cable was not listed as certified material.
- b. On December 12, 1979, the licensee provided a "partial certification form" dated October 29, 1979, as certification that cable type WBH-1 from reel WB 9384 was conforming material. The inspector was informed that the partial certification form is the current method used to certify conforming material when partial or incomplete shipments of material are received at the site. The partial certification is only for those items received and is based on documentation applicable to the specific items. WBNP-QCP 3.1 does not recognize a "partial certification form" as a method for certifying conforming material.

The above examples are considered to be a failure to follow the WBNP-QCP 3.1 procedure and are identified as Deficiency, 390/79-47-01 and 391/79-40-01, Failure to follow Quality Control Procedure WBNP-QCP 3.1 for cable certification.

7. Independent Inspection Effort

The inspector reviewed the receiving reports, Inspection and Test (I/T) Branch QC checklist and shipping release, certification status report and procurement specifications for the following cables procured from American Insulated Wire Corporation.

Contract Number

Cable Mark Number

77K5-822401

WGC-1

"

WGB-1

"

WFC-1

"

WFB-1

79K7-825714	WJF
"	WJG
"	WJK
78K13-823413	WJF
"	WJH
"	WJJ
"	WJK

Work activities on the second shift were observed in Units 1 and 2 reactor containment building around the reactor vessel head area and the iso-phase bus work in the turbine building.

An inspection was made of the Unit 1, 125VDC Vital Battery Number 0-BAT-236-1-D and battery room.

Within the areas examined, there were no items of noncompliance or deviations identified.

8. Electrical (Cables & Terminations II) - Observation of Work and Work Activities - Unit 1

The inspector selected the following safety-related control cables for examination.

Cable Number	Description
1-3V-63-2375A	Residual Heat Removal (RHR) Pump 1A-A Discharge Isolation Valve Control Cable
1-3V-63-2376A	"
1-3V-63-2377A	"
1-3V-63-2381B	RHR Pump 1B-B Discharge Isolation Valve Control Cable
1-3V-63-2382B	"
1-3V-63-2383B	"
1-3V-63-2387A	Safety Injection (SI) Pump 1A-A Discharge Isolation Valve Control Cable
1-3V-63-2388A	"
1-3V-63-2389A	"

1-3V-63-2393B	SI Pump 1B-B Discharge Isolation Valve Control Cable
1-3V-63-2394B	SI Pump 1B Discharge Isolation Valve Control Cable
1-3V-63-2395B	"
1-3PP-63-603A	SI Pump 1A-A Control Circuit Cable
1-3PP-63-602A	"
133PP-63-605A	"
1-3PP-74-508A	RHR Pump 1A-A Control Circuit Cable
1-3PP-74-578A	"
1-3PP-74-577A	"

Work and work records were examined in the areas of storage, handling, and cable identification. Completed "Pull" and "Termination" slips were reviewed to ensure cable installation instructions and inspections required by WBNP-QCP 3.5 were specified and verified as being accomplished in the following areas.

- a. Maximum allowable pull tension
- b. Rope pull device size
- c. Special pull instructions
- d. Installed cable length
- e. Termination data
- f. Crimp and torque tool numbers
- g. Cable routing

Cable size, type, physical protection, separation, routing and termination were examined. It was observed that cable number 1-3PP-74-5800A had been disconnected at the process control cabinet, R48, end. This cable had been disconnected for performance of a "Preliminary Functional Test" (Standard Test No. 6-04) in accordance with WBNP-QCP 3.6, "Electrical and Instrumentation Equipment Installation, Standard Tests, Inspections, and Documentation". Cable tray bonding, identification, and loading appeared to be adequate.

Within the areas examined, there were no items of noncompliance or deviations identified.

9. Electrical (Cables and Terminations II) - Review of Quality Records

The inspector reviewed the quality records for the cables identified in paragraph 8 above. The records review was in the areas of cable termination, pulling, routing, identification, separation, and insulation resistance testing.

The licensee informed the inspector of a revision to WBNP-QCP 3.5 and 3.6 which was currently being written. This QCP revision addresses the problem of having to rework cables after installation and termination QC inspections have been performed. A method of identifying reworked cables in the Equipment Monitoring Program (EMP) computer printout is also being devised. This item will be identified as Inspector Follow-up Item 390/79-47-01 and 391/79-40-01; Revision to WBNP-QCP 3.5 and 3.6 for determination and rework of installed cables.

Within the areas examined, there were no items of noncompliance or deviations identified.