



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

Report Nos. 50-390/82-15 and 50-391/82-12

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

Facility Name: Watts Bar

Docket Nos. 50-390 and 50-391

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar site near Spring City, Tennessee

Inspectors: <u>N. Merriweather</u>	<u>5-7-82</u>
N. Merriweather	Date Signed
<u>A. G. Debbage</u>	<u>5-7-82</u>
A. G. Debbage	Date Signed
Approved by: <u>C. M. Upright</u>	<u>5/7/82</u>
C. M. Upright, Section Chief	Date Signed
Engineering Inspection Branch	
Division of Engineering and Technical Programs	

SUMMARY

Inspection on April 12-16, 1982

Areas Inspected

This routine, unannounced inspection involved 66 inspector-hours on site in the areas of electrical and instrumentation work and site procurement, receiving, and storage activities.

Results

Of the two areas inspected, one violation was found in the area of electrical and instrumentation work; (Violation of separation criteria for train A and train B flow switches - paragraph 5.b.2); and one violation was found in the area of site procurement, receiving, and storage; (Failure to take adequate corrective action - paragraph 6.c.).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. E. Wilkins, Project Manager
- *E. Burke, Assistant Construction Engineer
- *S. Johnson, Assistant Construction Engineer
- *C. O. Christopher, Assistant Construction Engineer
- *G. B. Lubinski, Supervisor, Electrical Engineering Unit (EEU)
- *V. Thomas, Supervisor, Instrumentation Engineering Unit
- *A. W. Rogers, Quality Assurance Supervisor
- *T. Hayes, Supervisor, Nuclear Licensing Unit
- H. S. Odum, Assistant Supervisor, Warehouse Services Unit
- R. Anderson, Assistant Supervisor, EEU
- J. Allison, Assistant Craft Superintendent

Other licensee employees contacted included construction craft men and QC inspectors.

NRC Resident Inspector

T. Heatherly

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 16, 1982, with those persons indicated in paragraph 1 above. The violations were discussed in detail.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraph 6.b.

5. QA Inspection of Performance (35061B)

This inspection was conducted to determine whether site work is being performed in accordance with NRC requirements and SAR commitments; the QA/QC program is functioning in a manner to assure that requirements and

commitments are met; and prompt and effective action is taken to achieve permanent corrective action on significant discrepancies.

The following areas were examined to achieve the inspection objectives:

a. Documents Examined

- (1) DWG. No. 47A053-132,R3
- (2) DWG. No. 47A051-19,R2
- (3) DWG. No. 47W610-30-5, R3
- (4) DWG. No. 47W600-0-4, R6
- (5) DWG. No. 47W610-62-2, R6
- (6) QCP1.14,R9 Inspection and Testing of Bolt Anchors Set in Hardened Concrete and Control of Attachments to Embedded Features
- (7) QCP3.6,R12 Electrical and Instrumentation Equipment Inspection, Testing, and Documentation
- (8) Quality Trend Analysis Report of Significant and Reportable Items October - December 1981 - WB-TASR-81-04
- (9) Quality Trend Analysis Report of Audit Items October - December 1981-WB-TAAI-81-04
- (10) Quality Trend Analysis Report July - December 1981 - WB-TA-81-02

b. Field Inspection

- (1) The NRC inspector accompanied a QC Instrumentation Inspector to observe the as-built installation for the Essential Air System (Subassemblies No. 1-32-S-6-12, 1-32-S-6-5 and 0-32-S-2-64). The NRC inspector observed that the routing was in accordance with the isometric drawings and that the pipe hangers examined met the field fabrication and installation requirements. The NRC inspector witnessed inspections being performed on instrument lines and witnessed the craft perform testing on anchor bolts. The inspector interviewed the craft performing anchor bolt testing to determine if their level of knowledge and experience was adequate to provide quality workmanship. The NRC inspector also discussed training requirements with the craft and with the Assistant Craft Superintendent. The inspector reviewed the training records and the QC procedures being maintained by the craft to ensure that the training was current and the procedures were up to date.

Within this area, no violations or deviations were identified.

- (2) The inspector toured the power house to observe in-process work and in-place equipment. The inspector observed that train A flow switch (2-FS-30-184-A) and train B flow switch (2-FS-30-185-B) were mounted on the same hanger approximately two inches apart. After pursuing this matter further the inspector determined that no outstanding nonconformances had been identified against this installation. The Instrument Status Master Report indicated that

construction tests 6-00A, Receiving; 6-25A, Installation; and 6-49A, Tubing were complete. The inspector later determined that QCP3.6, Appendix A, Standard Inspection 6-25, Section 4.1 requires that devices or equipment be located in accordance with the dimensional requirements of an approved TVA or Vendor physical location drawing. TVA drawing number 47W600-0-4, Revision 6, note 6.9, requires instrument lines from train A instruments be physically separated from train B instruments lines as far as practicable and at all times by a minimum distance of 60 inches. These flow switches are in the containment ventilation system space coolers for Unit 2. This item is a violation of separation requirements and was identified to the licensee as violation 391/82-12-02, Violation of Separation Criteria for Train A and Train B Flow Switches.

Within this area, one violation was identified as item 391/82-12-02.

c. QA Audits

The inspector discussed the audit schedule with the QA supervisor to determine if activities performed on site were being audited frequently enough and in enough depth to assure compliance with 10 CFR 50, Appendix B requirements. The inspector selected QA audit reports WB-E-82-01, WB-E-82-03, WB-E-81-06, WB-E-81-05, WB-G-82-05, WB-I-82-01, and WB-I-81-03 to determine whether results indicate that:

- Drawings are in agreement with the SAR.
- Installation is according to drawings and specifications.
- Craftsmen are qualified and competent to perform the work they are doing.
- QC procedures and inspectors meet requirements.
- Materials and equipment meet specifications.
- Close-out on audit deficiencies was complete and timely.

The lead auditors' qualifications were also reviewed and found acceptable.

Within this area, no violations or deviations were identified.

d. Nonconformances

The inspector reviewed open nonconformance reports 3981R, 3971R, 3980R, 3672R and 3866R. These nonconformances were reviewed to assure compliance with NRC reporting requirements and QC procedures.

Within this area, no violations or deviations were identified.

e. Equipment Calibration

The inspector reviewed the calibration records for one hydraulic ram number AT-28 and one pressure gauge number 900746. The standards used to calibrate these instruments were identified as 502798 and US-TVA441240, respectively. The records for the standards were not examined.

Within this area, no violations or deviations were identified.

f. QC Personnel Qualifications

The inspector reviewed the qualification records for two QC inspectors (T. Middlebrook and J. W. Moore) and found them acceptable.

Within this area, no violations or deviations were identified.

6. Procurement, Receiving and Storage (35065B)

a. Procedures Reviewed

Program requirements and procedures governing procurement, receiving and storage control activities were reviewed for completeness and effectiveness. The documents reviewed included the following:

QAP 4.1	Procurement Document Control
WBNP-OCI-1.20R1	Site Control of Procurement
WBNP-QCP-1.6R8	Receipt Inspection, Storage, Withdrawal, and Transfer of Permanent Material
WBNP-QCI-1.17R0	Transfer of Materials, Parts and Components
WBNP-OCP-3.1R12	Handling, Storage and Maintenance of Permanent Electrical and Instrumentation Material
WBNP-QCP-3.6 R12	Electrical and Instrumentation Equipment Inspections, Testing and Documentation
WBNP-QCP-1.6R9	Receipt Inspection of Safety-Related Items (To be issued 4/19/82)
Supplier Index 3/31/82	Field Purchases of QA Material, Equipment and Service Guide

b. Onsite Procurement

Onsite procurement is made by using one of three methods: Request for delivery from an indefinite quantity contract (e.g., aggregate); Transfer of material (e.g., stainless steel tubing/pipe); or Purchase Request. The purchase requests were either forwarded to TVA, Knoxville for procurement by the Division of Purchasing or obtained directly by field purchase order. Approximately 5 to 10 purchase requests are being generated daily and field purchase orders average 40 per month. Design Engineering Quality Assurance provides an approved supplier index for use on the site; the index found to be in use was dated March 31, 1982. Purchase requests were examined to ensure that the technical and quality assurance requirements were specified and that the recommended supplier was on the approved supplier index.

Purchase request #M318644363 resulted in purchase requisition 644368 dated March 5, 1982. This was for the procurement of screws and a certificate of compliance was required. Purchase request #644479 resulted in purchase requisition 644479 and contract #82KN2-644479 for 2" Erickson couplings required in the hydrogen igniter system; delivery was made and the receiving inspection WBNPS2-1569 satisfactorily completed. An emergency purchase request #644087 dated January 29, 1982 required a Backup Power Battery #BT-3 and CP-30 Horn #190-121487, for fire detection system 13 being completed to work package E013A01. A certificate of compliance from Pyrotronics was required. The request had been reviewed by the QA unit supervisor and the equipment was delivered on February 4, 1982 with the specified documentation under contract #82KN7-644087. An emergency purchase request #624104 dated January 11, 1982 required flexible hose couplings with a certificate of conformance from Hajoca Corporation. A field purchase order #G728106 was issued and the material receipt inspected on January 22, 1982. An additional twenty field purchase orders were examined, fifteen of which were marked non-QA. In all cases, the processing of these orders was performed correctly.

Site quality assurance audits of procurement activity were examined. Procurement documentation and material transfer WB-G-80-16 was conducted during August 1980 and site-initiated procurement of engineering controlled material WB-G-81-02 was conducted during June 1981. The audit report stated that engineering controlled, non-permanent materials were purchased by field purchase orders, request for delivery, and requisitions. The audit team found that out of 17 samples, only four had been receipt inspected; also that several had not been routed via the assistant construction engineer and several having QA requirements had not been routed via the site quality assurance unit. The report concluded that the established QA program was acceptable but the program was not being properly implemented. The audit deficiency was dated July 1, 1981, the latest follow-up action dated February 4, 1982 showed that the deficiency remained open because procedure WBNP-QCI-1.20 had not been revised. A memorandum dated

August 27, 1981 addressed the procurement of engineered controlled items; this stated that the Warehouse Service Unit would insist on authorization of the purchase request by the construction engineer prior to purchase of engineering controlled items as compiled from G-29 specifications. During this inspection there was insufficient time to determine whether procedure WBNP-OCI-1.20 was inadequate (since the deficiency remained open pending revision to this procedure) or the procedure was not being implemented (since the audit report stated that the program was not being properly implemented). Also not determined was the effectiveness of interim measures to correct the deficiency and verification by the site QA unit that the problem had been resolved. A subsequent telecom between the Project Manager and this inspector changed the item of concern mentioned at the exit interview to an unresolved item 390/82-15-02 and 391/82-12-03. Follow-up of deficiency resolution in audit report WB-G-81-02.

c. Storage of Equipment and Materials

The warehouses and laydown areas were inspected to verify that the equipment remaining in storage was retained in the correct level of storage environment. Storage areas inspected were warehouses number 4, 6, 8, 9, 11, and 12; Electric Motor Hut containing two La Grange electromotive diesel generators; stainless steel sheds; and laydown areas in the vicinity of these areas.

Equipment requiring B class storage was found stored in warehouse #4 and #6, both class C storage facilities. The equipment was 6.9kv switchgear supplied by General Electric Company to the Hartsville project for the Hartsville ESW pumping station. This equipment had been transferred to Watts Bar Nuclear Project for the additional diesel generator building. Identification of the switchgear is tabulated below:

Warehouse #4

Serial #269A7289-020
 269A7289-022
 269A7297-020
 269A7297-021

Warehouse #6

Serial #269A7287-058
 269A7287-053
 269A7237-050

The equipment was transferred by inter-project order E-N3-131 and delivered December 31, 1981. A nonconformance report 388R was written on January 11, 1982 identifying that the equipment was not stored as specified by WBNP-QCP-3.1 and recommended storage in a dry area with

temporary heat. The recommendation was approved for disposition on January 18, 1982. No action was taken to place the equipment in a level B storage area or temporary heated area. This item of violation has been identified as 390/82-15-01 and 390/82-12-01. Failure To Take Adequate Corrective Action.

Within the above area, one violation and one unresolved item were identified.