



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

Report Nos. 50-390/80-02 and 50-391/80-01

Licensee: Tennessee Valley Authority  
 500A Chestnut Street Tower II  
 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

Inspectors:

*M. A. Gouge for*  
 M. A. Gouge

*1/24/80*  
 Date Signed

*M. Thomas*  
 M. Thomas

*1/24/80*  
 Date Signed

Approved by:

*M. Thomas for*  
 F. S. Cantrell, Section Chief, RCES Branch

*1/24/80*  
 Date Signed

SUMMARY

Inspection on January 8-11, 1980

Areas Inspected

This routine, unannounced inspection involved 52 inspector-hours onsite in the areas of welding of safety related piping, 10 CFR 50.55(e) items, non-welding activities for safety-related piping and safety-related pipe supports and restraints.

Results

Of the four areas inspected, no items of noncompliance or deviations were identified.

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## DETAILS

### 1. Persons Contacted

#### Licensee Employees

\*J. E. Wilkins, Project Manager  
\*S. Johnson, Assistant Construction Engineer (Mech)  
\*J. E. Treadway, Construction Superintendent  
\*R. L. Heatherly, Supervisor, QC&R Unit  
\*A. W. Rogers, Supervisor, QA  
\*C. O. Christopher, Assistant Construction Engineer (Civil)  
\*G. M. Tolson, QEDC-QA  
\*J. M. Lamb, Supervisor, Mechanical Engineering Unit (MEU)  
J. Nichols, Supervisor, Civil Engineering Unit  
T. W. Hayes, Supervisor, Instrumentation Engineering Unit  
C. L. Scoonover, Supervisor, Hanger Inspection Unit  
Gary Bonine, Engineer, MEU  
L. J. Johnson, Engineer, MEU  
R. Adams, Engineer, EEU  
J. P. Ballard, Engineer, MEU  
G. Williams, Instrumentation Supervisor, Power Production

Other licensee employees contacted included construction craftsmen and technicians.

#### NRC Resident Inspector

\*T. L. Heatherly

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on January 11, 1980 with those persons indicated in Paragraph 1 above.

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Licensee Identified Items (50.55(e)) (Units 1 and 2)

The Region II inspectors reviewed the items listed below, the supporting documentation, and discussed the items with responsible licensee staff during the inspection.

- a. (Closed) Item Nos. 50-390/79-13-03 and 50-391/79-10-03, "Lower Than Required Factor of Safety for Weld Anchorages" (CEB 79-6). When TVA discovered this problem, a testing program was initiated to qualify the effect of plate flexibility on stud capabilities to withstand design loadings. Based on the results and conclusions of the testing program, a review of welded anchorages found the anchorages were adequate and would perform as designed under design loadings.
- b. (Closed) Item 50-390/79-13-05 and 50-391/79-10-05: Control Loop Bistables. The inspector reviewed the TVA revised final report dated May 31, 1979, the closed NCR MEB 79-09, the closed ECN 1883 and various drawings revised by ECN 1883. The inspector verified that the wiring changes made by ECN 1883 to the pressurizer power operated relief valves auxiliary control loops were installed correctly. The wiring changes to each of the valves in both units were made in accordance with the electrical drawings revised by ECN 1883.
- c. (Closed) Item Nos. 390/79-23-03 and 391/79-19-03, "Insufficient Metal Between Flange Face and Socket" (WB-M-79-06). TVA Engineering Design has performed a stress analysis and has determined the minimum ligament (wall thickness) and fillet weld required for the intended service pressure-temperature conditions of the particular flange. This analysis was performed for determining minimum wall and fillet weld thicknesses for the enlarged instrument ports on stainless steel flanges. This data has been supplied to the site and was reviewed by the inspector. Flanges not meeting this minimum wall criteria have been reviewed on a case-by-case basis and those found unacceptable have been replaced.
- d. (Open) Item Nos. 390/80-02-02 and 391/80-01-02, "Motor Starters/Contactors" (1971R and 35-1). TVA reported to RII that four motor starter/contactors NEMA, Type 3, Class A10-A20, located in the control and auxiliary building's 480 volt ventilation motor control center could cause possible binding or seizure of the carrier assembly against the support plate of the stationary contact assembly due to an undersized dimension of the support leg.

6. Safety-Related Pipe Support and Restraint Systems (Units 1 and 2)

The inspector reviewed the licensee's program for handling design changes to pipe supports and restraints. The following nonconformance reports document problems with initial hanger design that require some type of redesign:

NCR SWP-79-W-7	Thermal and Safe Shutdown Earthquake Deflections
NCR MEB 79-36	AFW Pump Trip and Throttle Valve Support
NCR CEB 79-26	Pressurizer Relief Line Blowdown Analysis

The licensee's design organization had issued Engineering Change Notices (ECN) that revise appropriate drawings to reflect design changes required by the above NCR's. The inspector found that little effort had been made at the site to implement these design changes on existing hangers. The licensee maintains a computerized status of ECN's that require action by construction and performs a final inspection of all safety related systems to ensure that construction has conformed to design drawings. These measures would ensure that design changes are implemented prior to system turnover for preoperational testing. The effort made to date on implementing design changes to installed pipe hangers, however, is not in line with the stage of facility completion for Unit 1. This condition was particularly apparent in the Unit 1 Residual Heat Removal system. Discussions with personnel in the Hanger Inspection Unit indicated some lack of awareness of major hanger ECN's. Licensee site management is working on methods to better control and schedule implementation of design changes. This item is identified as inspector followup item 50-390/80-02-01 and 50-391/80-01-01: Construction Scheduling of Design Changes.

No items of noncompliance or deviations were identified.

7. Safety-Related Piping (Welding) (Unit 2)

Fit-up inspection of TVA Class B weld 2-062A-D011-01 was observed in the Unit 2 Containment Building. This weld joined parts X-44/SN #53894 to CVC-72/10514. This 4" weld was performed to GT-88-01, R6. Areas inspected included weld identification, joint alignment, QC documentation of fit-up inspection, purge gas control, welder qualification and proper adherence to QC hold points.

Inprocess welding of TVA Class B weld 2-062B-D134-18 was observed in a Unit 2 accumulator room. The weld joined parts 11901D to 11902D. The applicable weld procedure was GT-88-01, R6. Areas inspected included documentation of fit-up inspection, adherence to QC hold points, purge gas control, control of interpass temperature, welder qualification, welding rod control and weld technique.

No items of noncompliance or deviations were identified.

8. Reactor Coolant Pressure Boundary Piping - Observation of Work and Work Activities (Unit 2)

Piping activities were selected and observed for evaluation of work performance in order to verify whether work accomplishments were in accordance with applicable requirements. Activities selected included storage, cutting, and cleaning. The piping selected was:

Reactor Coolant Subassembly

68-RC-7

The inspector verified that storage, cutting per applicable drawings and specifications, cleaning and QC inspections were performed in accordance with procedures.

Within the areas inspected no items of noncompliance or deviations were identified.

9. Observation of Safety-Related Activities (Units 1 and 2)

The inspectors conducted a general walk-through inspection of Units 1 and 2 Containment Buildings and the Auxiliary Building. Areas inspected included general housekeeping practices, storage of QA materials, installation of various supports for safety-related piping and valves, rigging practices, measures to control cleanliness of piping and application of space heat to Class 1E motors in storage.

No items of noncompliance or deviations were identified.