



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

Report Nos.: 50-390/84-53 and 50-391/84-42

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

Docket Nos.: 50-390 and 50-391

License Nos.: CPPR-91 and CPPR-92

Facility Name: Watts Bar 1 and 2

Inspection Dates: July 9-13, 1984

Inspection at Watts Bar site near Spring City, Tennessee

Inspector: T. D. Gibbons

7-31-84  
Date Signed

Approved by: T. E. Conlon  
T. E. Conlon, Section Chief  
Engineering Branch  
Division of Reactor Safety

7-31-84  
Date Signed

SUMMARY

Areas Inspected

This routine unannounced inspection involved 37 inspector-hours on site in the areas of licensee actions on previous enforcement items, licensee identified items, inspector followup items, and IE Bulletins.

Results

No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*G. Wadewitz, Project Manager
- \*T. Hayes, Supervisor, Nuclear Licensing Unit
- \*H. J. Fischer, Construction Engineer
- \*S. Johnson, Quality Manager
- \*A. W. Rogers, Supervisor Construction QA Branch

#### NRC Resident Inspectors

- \*W. B. Swan, SRC
- \*C. W. Caldwell, RI

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on July 13, 1984, with those persons indicated in paragraph 1 above.

### 3. Licensee Action on Previous Enforcement Matters

(Closed) Unresolved Item (URI) 390/84-38-01, Repair of Damaged Cable and Followup on Nonconformance Report (NCR) 5612. This item involves repairs of damaged cables by splicing to facilitate preoperational testing and is affiliated with violation 390/84-42-01 which will be examined on a future inspection.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Licensee Identified Items

- a. (Closed) Item 390/CDR 83-56, "Pressurizer Level Transmitter does not cover Process Range" (10 CFR 50.55(e)). The final report was submitted on January 9, 1984. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation to verify that the corrective actions identified in the report have been completed. The transmitters were returned to ITT Barton under Westinghouse Field Deficiency Report (FDR) WATM-10222 to be adjusted to the correct range. The corrected transmitters were reinstalled and the Westinghouse transmitter specification sheets have been corrected to reflect the new ranges.

The licensee stated in his response that Westinghouse has instituted a program to incorporate improvement in the methodology of pressurizer level range calculation. To date, this methodology has been applied to 15 Westinghouse plants.

- b. (Closed) Item 390/CDR 81-20 and 391/CDR 81-19, "Electrical Separation Field Audit" (10 CFR 50.55(e)). The final report was submitted on November 27, 1981. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation to verify that the corrective actions identified in the report have been completed. The licensee has identified 11 items which failed to meet the one inch physical separation of enclosed cable raceways for redundant class IE circuits. A total of 20 work releases and one work package were completed. The site issued revisions to Quality Procedures 3.3, 3.4 and 3.5 to minimize these type of problems in the future. Design has issued ECN 3121 to revise the necessary drawings to include the specific one inch separation. This item was tracked by licensee's NCR W-31-P and it has been closed satisfactorily.
- c. (Closed) Item 390/CDR 83-50, "Installation of Flow Switches and Sensing Lines" (10 CFR 50.55(e)). The final report was submitted on October 19, 1983. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation to verify that the corrective actions identified in the report have been completed. The licensee has relocated 19 instrument ports and revised the set points on 51 pressure switches on work plan 3091R2. Fourteen additional pressure switches were found to have acceptable set points and were not changed.
- d. (Closed) Item 390/CDR 83-39, "Sensing of Pipe Breaks in Component Cooling System" (10 CFR 50.55(e)). The final report was submitted on September 9, 1983 with supplemental information reports on October 13 and November 25, 1983. The reports has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation to verify that the corrective actions identified in the report have been completed. The licensee stated that the sensing scheme for isolating pipe breaks in class G or H piping portions of the component cooling system (CCS) from a qualified portion of the system was initially set-up to work on a pressure signal. In an evaluation for NUREG 0588, the licensee found that there was no pressure set point that could be determined to perform this isolation function and still allow the operation of this class G or H piping portion for the known various plant operating conditions or modes. To perform this isolation the licensee now uses a level signal from the CCS surge tanks. ECN 4253 was issued to initiate the corrective action for this CDR item.

In addition, Design has issued Electrical Design Standard DS-E18.1.10, Instrument Set Points and Limits, which establish a controlled method for establishing instrument setpoints and should prevent recurrence of this type of deficiency in the future.

- e. (Closed) Item 390/CDR 83-08, "Transfer Switches to Auxiliary Feedwater have Non-divisional Power. (10 CFR 50.55(e)). The final report was submitted on September 27, 1983. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation to verify that the corrective actions identified in the report have been completed. The licensee has issued Engineering Change Notice (ECN) 3951 and incorporated the change on Work Plan 3437R. The change provides redundant circuits identical to the existing ones. These redundant circuits are identified as train "A" and train "B" and are aligned with train "A" and "B" valves in the automatic transfer scheme.
- f. (Closed) Item 390/CDR 84-16 and 391/CDR 84-16, "Undersized 125 VDC Emergency Lighting Contactors" (10 CFR 50.55(e)). The final report was submitted on May 2, 1984. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation. The licensee has replaced the contacts on contactors O-SW-228-1-A and O-SW-228-2B. The loads have been redistributed to allow each contactor to be balanced. This work was directed by ECN 4766 and work plan 4354.
- g. (Closed) Item 390/CDR 84-05 and 391/CDR 84-05, (Damage to Wiring in Low Voltage Switchgear" (10 CFR 50.55(e)). The final report was submitted on April 24, 1984. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation to verify that the corrective actions identified in the report have been completed. This item involves damaged wires in low voltage switchgear as a result of the manufacturing process. The licensee repaired the damaged breaker identified in nonconformance report W-141-P. NCR W-157-P was issued to inspect all other Westinghouse DS type breakers, and to direct any rework as a result of discrepancies, to be performed by maintenance request. The vendor, Westinghouse, was contacted on this item and Westinghouse in their response to TVA dated March 13, 1984, states that all nuclear users of this switchgear have been notified concerning this problem.
- h. (Closed) Item 390/CDR 83-31, "Reactor Trip Breakers Design Errors" (10 CFR 50.55(e)). The final report was submitted on September 26, 1983. The report has been reviewed and determined to be acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation to verify that the corrective actions identified in the report have been completed. The

licensee has replaced the Under Voltage attachment on the four DS 416 breakers. The breakers were tested for pretravel, trip margin, functional operations, and tripping force. The work was completed on work plan 3737 which incorporated Westinghouse field change notice WATM-10687.

6. IE Bulletins

(Closed) IE Bulletin 84-02, Failure of General Electric Type HFA Relays in Use in Class IE Safety Systems. The licensee has issued a response dated July 10, 1984. The response stated that there are no HFA relays used in the NSSS, all class IE in other systems and non class IE HFA relay coils used in the balance of plant, have been replaced with Century Series coils. The licensee states that the action was taken as a result of IEN 82-13 and documented by NCR WBN EEB-82-06.

7. Inspector Followup Item

(Closed) IFI 390/81-25-01, Resolution of Limitorque Operator Lubrication Problem. The Nuclear Power Production maintenance program for motor operated valves (MOV) has a periodic inspection interval of 36 months for the main gear case lubricant which exceeds the vendor recommendation of 18 months or 500 cycles. The vendor indicates that this periodic inspection can be adjusted based on users experience. The licensee has indicated that each valve is operated at a maximum of 25 cycles per year. The licensee has performed preventive maintenance on all MOVs and has identified no trend which would indicate the need of an 18 month inspection. The site will observe the trend on MOVs and will adjust the preventive maintenance schedule if operating or maintenance experience indicates that a change is required.

8. Electrical (Cables and Terminations) Observation of Work and Work Activities II Instrumentation (Cables and Terminations) Observation of Work and Work Activities II

The inspector examined thirty cable tray fire seals and thirteen conduit seals as identified below. The drawings for the seals are E45W883-1, Revision 9, and E45W883-2, Revision 10. The seals examined conformed to the drawings and have been inspected by the licensee QC organization. The cable tray fire seals examined were 0-CTP-290-003, 004 005, 006, 007, 008, 009, 010, 028, 029, 035, 036, 037, 041, 042, 043, 044, 046, 047, 048, 304, 305, 306, 307, 435, 436, 437, 438, 439, 441, and 445. The conduit seals examined were 2N519, 520, 521, 522, 523, 3N661, 664, 665, 666, 668, 669, 670 and 671.

Within the areas examined there were no violations or deviations identified.