



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

Report No. 50-390/79-29

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

Facility Name: Watts Bar

Docket No. 50-390

License No. CPPR-91

Inspection at Watts Bar Site near Spring City, Tennessee

Inspector: Thomas J. Donat July 30, 1979  
T. J. Donat Date Signed

Accompanying Personnel: S. P. Welsh (Intern)

Approved by: R. D. Martin 7/31/79  
R. D. Martin, Section Chief, BONS Branch Date Signed

SUMMARY

Inspection on July 9-12, 1979

Areas Inspected

This routine, unannounced inspection involved 48 inspector-hours on-site in the areas of preoperational test procedure review, review of previously identified inspector findings, review of plant status, and tour of plant areas.

Results

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

7909270444

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

J. Groves, Plant Superintendent  
\*C. Mason, Assistant Plant Superintendent  
\*K. Jones, Preoperational Test Supervisor  
\*B. Willis, Quality Control Staff Supervisor  
\*S. Caruthers, Preoperational Test Engineer  
G. Curtis, Preoperational Test Engineer  
H. Bennett, Preoperational Test Engineer

Other licensee employees contacted during this inspection included construction craftsmen and office personnel.

\*Attended exit interview.

### 2. Exit Interview

The inspection scope and findings were summarized on July 12, 1979 with those persons indicated in Paragraph 1 above. Within the areas of inspection, no items of noncompliance or deviations were found.

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Followup on Previously Identified Inspection Findings

- a. Closed-Open Item 79-03-02 concerning testing of diesel generator battery chargers in preoperational test TVA-14D.

The inspector reviewed preoperational test procedure TVA-14D, "Diesel Generator and Supporting Auxiliaries (125V Control and Field Flashing)", Rev. 0, dated May 18, 1979 and the charger tests are consistent with the FSAR requirements. This item is considered closed.

- b. Open-Open Item 78-29-01 concerning diesel generator fuel transfer pump testing.

The inspector reviewed preoperational test procedure TVA-14A, "Diesel Generator and Support Auxiliaries (Diesel Generator Fuel Oil System)", Rev. 0. The inspector also reviewed TVA letter 400CST from TVA's

Engineering Design to TVA's Licensing which recommended changing the classification of the diesel generator skid mounted equipment from ASME Class 3 (TVA Class c) to no classification. This would result in the subject fuel transfer pumps being no longer subject to ASME Section XI testing requirements. This item will remain open until an FSAR amendment has been issued.

- c. Open-Open Item 79-03-03 concerning preoperational test TVA-14E not fulfilling the requirements of Regulatory Guide 1.108 on the loading sequence for the diesel generator heat run and FSAR table 14.2 on the performance of a Lube Oil preheater test.

The inspector reviewed TVA-14E, "Diesel Generator and Support Auxiliaries (Diesel Generator Functional Tests)", Draft Revision R0 and neither item has been incorporated. This item remains open.

6. Preoperational Test Procedure Review

Preoperational test procedures were reviewed for conformance to Regulatory Guides 1.68, 1.79, 1.108, and the FSAR.

- a. No deficiencies were noted during review of the following procedures:

1. TVA-15 Vital 120 VAC Power System-Revision R0, February 14, 1978
2. TVA-16B Battery Load Verification-Revision 0, June 12, 1979
3. W-4.1 Residual Heat Removal System Test-Revision 0, June 29, 1979

- b. During review of the following procedures, the inspector identified items which must be resolved prior to approval and implementation of these procedures:

- . W-3.1B "SIS-Accumulator Test"
- . W-3.1A(1) "SIS-Integrated Flow Test"
- . W-3.1C "SIS-Centrifugal Charging Pump and Related Injection Piping"

- (1) The inspector reviewed draft copies of W-3.1B, W-3.1A(1), and W-3.1C with respect to the timing of SI actuated valves with the maximum expected differential pressure conditions as described in Regulatory Guide 1.79, Section C. Procedures W-3.1B, W-3.1A(1), and W-3.1C contained acceptable valve timing requirements.

- (2) The inspector reviewed draft copies of W-3.1B, W-3.1A(1) and W-3.1C for conformance to the vibration monitoring program requirement of FSAR Section 3.9.2.1. No vibration measurement or observation requirements were found in any procedure and the licensee acknowledged that none presently exists in the SIS test sequence. The licensee agreed to add vibration monitoring to these procedures. The inspector will carry this as Inspector Follow Item (79-29-01).
- c. During the review of preoperational test TVA-16A, "125 Volt DC Power System", Revision 0 it was noted that steps 5.1.26, 5.3.26, 5.5.26, and 5.7.26 place the battery's normal charger in service and establish an equalizing charge without use of any plant procedure.
- The procedure also uses battery loads of 494 amperes and 83 amperes for the 2-hour discharge test and the normal load test, respectively. The FSAR in section 8.3.2.2 states that the battery loads with/without the battery charger in service are less than 520 amperes and less than 95 amperes, respectively; however, FSAR table 8.3-19, 8.3-20, 8.3-21, and 8.3-22 which itemize the loads on each battery bus have total currents in excess of the values used in the test and those stated in section 8.3.2.2. The licensee acknowledged that there was a conflict between the FSAR and the preoperational test and stated that he would have it resolved. The resolution will be followed as Inspector Followup Item (79-29-02).
- d. The acceptance criteria section of preoperational test TVA-14D, "Diesel Generators and Support Auxiliaries (125V Control and Field Flashing)", Revision 0, dated May 18, 1979, did not meet the requirements of Regulatory Guide 1.68, Appendix C for definitive criteria such as satisfactory completion of test steps or recorded data within specified limits. Also, it was noted that the test did not include a section verifying the battery's capability when at 80 percent of initial charge as described in FSAR section 8.3.2. The licensee agreed that the test was deficient in these areas and stated that the test acceptance criteria would be changed and the conflict between the test and the FSAR concerning initial battery charge resolved. The inspector will review this during a subsequent inspection and considers it an Inspector Followup Item (79-29-03).
- e. During the review of W-3.1.C, "SIS-CCP and Related Safety Injection Piping", it was noted in steps 5.1.12.43 for Centrifugal Charging Pump A and 5.1.13.43 for Centrifugal Charging Pump B that the time for the Centrifugal Charging Pump relay to energize following a station blackout with Safety Injection was 1.9 seconds to 2.5 seconds following Diesel Generator breaker closure. FSAR Table 8.3-3, "Diesel Generator Load Sequentially Applied Following a Loss of Site Power", specifies this time as 2.0 seconds. Since all loads specified in this table are engineered safety features, the time specified must be considered a maximum unless otherwise noted in the table or text. The licensee

acknowledged the difference and stated that either the test or the table would be changed. This will be Inspector Followup Item (79-29-04).

7. Preoperational Test Personnel Training

The licensee conducted a training session on how to conduct equipment turnovers. The session covered such topics as: system walk throughs, tentative transfers, final transfers, and initial operational releases. The licensee discussed what items had to be completed before tentative transfer of a system and which could be placed on the system's preoperational test punchlist to be completed prior to final transfer. The use of Initial Operational Release (IOR's) to allow operation of equipment by the operations staff in support of construction or preoperational testing prior to tentative transfer of the equipment was also discussed.

The inspectors had no comment on the scope of the session or its presentation.

8. Plant Tour

The inspectors toured the turbine building, the control building, the auxiliary building, the fuel handling building, the unit #1 reactor containment, the unit #1 additional equipment building, the site's diesel generators, cooling towers and meteorological station. The areas were inspected for general cleanliness and housekeeping. No discrepancies were noted!