



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30323

Report Nos.: 50-390/87-04 and 50-391/87-04

Licensee: Tennessee Valley Authority
 6N 38A Lookout Place
 1101 Market Street
 Chattanooga, TN 37402-2801

Docket Nos.: 50-390 and 50-391

License Nos.: CPPR-91 and CPPR-92

Facility Name: Watts Bar 1 and 2

Inspection Conducted: March 5-6, 1987

Inspectors: *J. R. Harris* *3-18-87*
 J. R. Harris Date Signed
J. J. Lenahan *3-18-87*
 J. J. Lenahan Date Signed

Accompanying Personnel: T. Kenyon, NRC Watts Bar Project Manager
 F. Rinaldi, NRC - NRR - PAEB
 R. Philleo, NRC Consultant

Approved by: *T. Conlon* *3/19/87*
 T. Conlon, Section Chief Date Signed
 Engineering Program Branch
 Division of Reactor Safety

SUMMARY

Scope: This special announced inspection was in the areas of follow-up on employee concerns in structural concrete.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Licensee Employees Contacted

- *R. Bullock, Division of Nuclear Engineering
- *J. Coan, Division of Nuclear Engineering
- *M. Cones, Division of Nuclear Engineering
- *R. Hernandez, Division of Nuclear Engineering
- *H. Hutchinson, Division of Nuclear Engineering
- *D. Kulisek, Division of Nuclear Engineering
- *B. Whittier, Division of Nuclear Engineering

Other licensee employees contacted included construction craftsmen, engineers, and technicians.

Other Organization

- *O. Parr, TVA Consultant

*Attended meeting

2. Exit Interview

No formal exit interview was held. The licensee representatives identified in the paragraph above presented their schedule for testing and methodology for testing on March 5, 1987. Questions regarding testing and results of testing by the NRC Consultant and NRC representatives were discussed with licensee representatives. The licensee stated results of the core tests will be completed by March 15 and a report on the tests will be issued by the end of March.

The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters.

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during the inspection.

5. Independent Inspection Effort

The Region II inspectors and representatives from NRR met with licensee representatives to discuss testing of concrete in low strength areas that were identified as concerns by TVA employees during the investigation conducted by the Quality Technology Company. In the follow-up on these

concerns, the licensee used a Windsor Probe to test the low strength areas. Based on results of these tests, the licensee decided to take twenty-one cores in areas of low strength concrete.

During the inspection, the licensee demonstrated methodology used for taking the cores and preventing interference of rebar during the coring operations. Methods used for coring and testing are those presented in American Society of Testing and Material (ASTM) C42-77, "Obtaining and Testing Drilled Cores, and Sawed Beams of Concrete," and procedure WP-20, "Drilled Cores for Testing of Inplace Concrete." Acceptance criteria of the cores is based on the requirements of American Concrete Institute (ACI) 318 which states that the core strengths are acceptable if the average of test results are at least 85 percent of the specified strength and no core is less than 75 percent of the design strength.

After meeting with the licensee at the Watts Bar site, NRC and licensee representatives met at the TVA Singleton Test Laboratory to observe curing, preparation, and testing of three cores. The three cores tested broke at 92, 94 and 123 percent of the specified strength. The average strength of the three cores was 103 percent of the specified strength. Thus the cores exceed the strength specified in ACI 318. The licensee indicated testing of the cores will be completed by March 15 and that a report on the test results will be issued by the end of March.