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

Report Nos. 50-390-81-16 and 50-391/61-16

Licensee: Tennessee Valley Authority

Facility Name: Watts Bar

Docket Nos. 50-390 and 50-391

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar

Inspector: R. V. Crlenjak for — 9/22/81
J. A. McDonald, Senior Resident Inspector — Date Signed

R. V. Crlenjak for — 9/22/81
T. L. Heatherly, Resident Inspector — Date Signed

Approved by: D. R. Quick — 9/22/81
Donald R. Quick, Section Chief RRPI Division — Date Signed

SUMMARY

Inspection on July 21, 1981 through August 20, 1981

Areas Inspected

This routine, announced inspection involved 107 resident inspector-hours on site in the areas of Preoperational Testing Quality Assurance, Corrective Actions System, Preoperational Test Review, Design Verification, Independent Inspection Effort, Review of Conduct of Operations and Procurement Procedures.

Results

Of the 7 areas inspected, no violations or deviations were identified in 6 areas; 1 violation was found in 1 area, failure to follow procedures - paragraph 4.

DETAILS

1. Persons Contacted

Licensee Employees

*R. L. Lewis, Assistant Plant Superintendent - Operations
*J. E. Wilkins, Project Manager
*J. E. Cross, Assistant Plant Superintendent - Health and Safety
*G. W. Curtis, Nuclear Power, QA Supervisor
*H. J. Fischer, Assistant Construction Engineer - Mechanical
*I. M. Heatherly, Nuclear Licensing Section - Engineer
*A. Hogarth, Project Manager -Westinghouse
*S. Johnson, Assistant Construction Engineer - Startup and Test
*R. W. Olson, Construction Engineer
*C. H. Whittemore, Office of Power Quality Assurance Engineer

Other licensee employees contacted included five construction craftsmen and seven engineers.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 21, 1981, with those persons indicated in paragraph 1 above. The licensee will make commitments for resolution of open and unresolved items within two weeks of the exit interview. The licensee stated that ECN 2846 will be transmitted to the site to install air dryers in the diesel generator air start system. The priority assigned to this ECN will require installation of these air dryers before fuel loading. This commitment was made by the licensee relevant to the unresolved item in paragraph 5a.

3. 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 5., 7.a., and 7.b.

4. Preoperational Testing Quality Assurance

A review was conducted to ascertain that the licensee's QA program had been implemented and controlled for maintenance activities on systems that had been transferred from the Division of Construction to the Division of Nuclear Power. Findings were acceptable except as follows:

a. During a plant tour the inspector noted that the 1A-A centrifigal changing pump discharge flange spiral wound gasket appeared to be

distorted into a dish shape. At inspector request the flange was disassembled. During the disassembly and through subsequent investigations the following discrepancies were noted:

The retaining studs and nuts for the pump discharge flange were of a different material than specified on the Flange Bolting Operations Sheet. Interviews conducted with the responsible engineer and the craft who had disassembled and reassembled the flange on May 19, 1981, revealed that the correct bolting material had apparently been installed and has been verifed to be correct.

The spiral wound gasket that was removed on July 30, 1981, was dish-shaped. The "dishing" occurred apparently because of improper positioning of the gasket during previous torquing operations. This gasket was also noted to have crinkle tape applied to it's compression surface. The responsible engineer and craft both stated that they had installed a new gasket without crinkle tape on May 19, 1981. The inspector concluded that the used gasket and incorrect bolting material had been installed between May 19, 1981, and July 30, 1981, without authorization and without proper QA controls as specified in QCP-4.10 Appendix B.

b. The craft replacing the distorted gasket used maintenance practices not in accordance with those specified in Quality Control Instruction-4.31. The instruction requires that spiral wound gaskets be prepackaged in low chloride material until just prior to installation and that good engineering practices be used when gaskets are installed to prevent chloride contamination of stainless steel. The new spiral wound gasket intended for installation was not prepackaged or handled in a manner that precluded chloride contamination. Discussions with the craftsman and two of his supervisors indicated that they were unaware of the procedures for packaging or handling gaskets and they all expressed a general concern that procedures applicable to their work were difficult to obtain and training on these procedures is generally inadequate to assure quality. Apparently the methods used to insure craft are properly trained on applicable procedures varies considerably.

c. On July 16, 1981, three NRC inspectors noted that work on the 1A-A centrifigal charging pump suction line was in progress but had stopped for engineer verification of a hold point. The craft directly involved with the work had left the room but had failed to seal the open piping as required by QCP-4.10, Appendix E. The craft performing this task were out of the room for approximately one hour according to other workers in the room. Other construction work had been in progress adjacent to the opening but these craft were not involved with the 1A-A charging pump suction line work and were not assigned cleanliness responsibility.

These three examples of failure to follow procedures collectively constitute a violation of 10 CFR 50, Appendix B, Criterion V (390/81-16-01).

In response, the licensee should address the apparent deficiences in the craft training program and delineate the corrective action that will be taken to insure activities performed by the crafts are adequate to assure quality.

5. Corrective Action Systems

The corrective action systems used by the Division of Nuclear Power were reviewed for responsiveness to the issue of corrosion in the diesel generator air start systems. Findings were acceptable except as follows:

Sections 4.1, 5.3, and 5.7 of Watts Bar Standard Practice 11.1, Attachment 1-7, state that Nonconforming Condition Reports (NCR) are only required to be initiated and forwarded be affected organizations if the section supervisor evaluates the deficiency as significant or requiring extensive repair, redesign, or evaluation. A recognized deficiency in the diesel air start system was reviewed. It had been considered to be nonsignificant. The licensee did not initiate an NCR; however, there were other administrative controls in place to inform the affected organization of final disposition. Until the licensee reviews past nonconforming condition dispositions that have been evaluated as nonsignificant, to determine if notification of the affected organizations was accomplished, and revises the implemented program this item is unresolved (390/81-15-02).

6. Preoperational Test Review

The inspector requested that the licensee investigate the following issues related to preoperational testing: (1) diesel generator operability from outside the control room; (2) apparent valve failures during preoperational testing; and (3) generic concerns with Containment Purge Air System inlet valve failures. Findings were acceptable except as follows:

The preoperational test section is presently investigating the generic applicability of purge air system valve failures and TVA test requirements to ensure adequate operability during system operation. Until the licensee completes its investigation of generic purge air system valve failures and ensures preoperational testing is adequate to verify operability over the anticipated environmental temperature range this item is open (390/81-16--03).

7. Design Verification

The inspector reviewed the design considerations employed in the following areas: (1) Vendor recommendations of equipment nozzle loading: (2) Accessibility for maintenance activities on mechanical components; and (3) ALARA considerations for placement of the plant's dead weight testers. The findings were acceptable except as follows:

a. The Upper Head Injection System as presently designed and constructed contains two check valves (1-CKV-82-562 and 1-CKV-82-563) located inside containment that do not appear to have adequate clearance for

maintenance activities. Until the licensee reviews the adequacy of design control measures applied to the accessibility for repair of these check valves and other safety-related components this item is unresolved (390/81-16-04, 391/81-16-01).

b. The dead weight tester, used for calibration of pressurizer level instrumentation during power operations, has been designed and installed inside containment. Since containment access is required, it is not clear that ALARA considerations are adequately addressed. Until the licensee reviews the design evaluation to determine whether ALARA aspects were adequately considered in this design, and takes any appropriate corrective action, this item is unresolved (390/81-16-05).

8. Independent Inspection Effort

As a result of routine interface with licensee personnel and facility tours, the inspector made the following findings:

Terminal blocks (Marthon Series 300) in Limitorque brand valve operators have been derated from 600 volts and 30 amps to 300 volts and 30 amps at other plants. Until the licensee addresses the applicability of this derating of terminal blocks on Limitorque valves this item is open (390/81-16-06).

9. Review Conduct of Operations

A comparative analysis of the Division of Nuclear Power "Emergency Operating Instructions" (EOIs), using the criteria defined in NUREG/CR-1970 SANDI 81-7070, is in progress. Since the analysis was not complete at the close of the inspection period the potential findings were not discussed with the licensee.

10. Procurement Procedures

Procurement procedures were audited for the diesel generators and the diesel generator air start system piping components. Findings were acceptable in the areas inspected.