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

Report Nos.: 50-390/85-63 and 50-391/85-52

Licensee: Tennessee Valley Authority
6N11 B Missionary 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: November 21, 1985, to December 20, 1985

Inspectors: R E Carroll Jr for — 1/16/86
M. B. Shymlock — Date Signed

R E Carroll Jr for — 1/16/86
W. E. Holland — Date Signed

R E Carroll Jr for — 1/16/86
C. W. Caldwell — Date Signed

Accompanying Inspector: John York

Approved by: S P Weise — 1/16/86
S. P. Weise, Section Chief — Date Signed
Division of Reactor Projects

SUMMARY

Scope: This routine inspection entailed 226 resident inspector - hours on site in the areas of followup on inspector identified items, fire prevention and protection, preoperational test program implementation verification, testing of pipe support and restraint systems, licensee event followup, and welder performance qualification.

Results: One violation was identified in this inspection report.

8601290299 860117
PDR ADOCK 05000390
Q PDR

REPORT DETAILS

1. Persons Contacted

Licensee Employees

W. R. Brown, OEDC Project Manager for Watts Bar
E. R. Ennis, Plant Manager
*R. H. Ector, Assistant Site Director
*G. Wadewitz, Construction Project Manager
*B. S. Willis, Operations and Engineering Superintendent
*H. B. Bounds, Maintenance Superintendent
D. W. Wilson, Design Services Manager
J. E. Gibbs, Site Services Manager
*R. Norman Jr., Operations Supervisor
T. L. Howard, Quality Engineering Supervisor
*R. C. Miles, Modifications Manager
*R. D. Greer, Electrical Maintenance Supervisor
*C. D. Nelson, Special Projects Manager
M. K. Jones, Engineering Group Supervisor
R. A. Beck, Health Physics Supervisor
*R. T. McCollom, Acting Instrument Maintenance Supervisor
J. A. McDonald, Plant Compliance Supervisor
R. R. Garu, Preoperational Test Supervisor
R. D. Tolley, Project Manager, Design Services
*T. W. Hayes, Nuclear Licensing Unit Supervisor
*C. W. Hutzler, Plant Compliance Staff, Compliance Engineer
L. C. Miller, Head, Plant Quality Engineering and Control Group
H. L. Pope, Supervisor, Plant Quality Control Section
L. J. Smith, Supervisor, Quality Surveillance Section
*A. J. Everitt, Welding Engineer, OC
*W. S. Delk, Acting Engineering Supervisor, NUC PR
*L. E. Ottinger, Plant Compliance Staff, Nuclear Engineer
C. A. Borelli, Plant Compliance Staff, Nuclear Engineer
R. E. Yarbrough Jr., Assistant Operations Supervisor
R. E. Bradley, Assistant Operations Supervisor
M. J. Burzynski, Regulatory Engineering Supervisor
G. R. Owens, Nuclear Engineer, Nuclear Licensing Section
T. R. Brown, Asst. Construction Engineer - Construction
R. L. McKnight, Engineer, Design Services - WBNP
*R. C. McKay, Project Engineer, PMO-WBN
*D. A. McNabb, QA Evaluator, OC
*M. Reeves, Project Engineer, PMO-WBN

Other licensee employees contacted included engineers, technicians, nuclear power supervisors, and construction supervisors.

* Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on December 19, 1985, with those persons indicated by an asterisk in paragraph one above. One inspector followup item (paragraph 5) was identified with regards to review of testing requirements for new work on Unit 1. In addition, one unresolved item (paragraph 8) was identified with regards to an evaluation of a nonconformance report, and one violation (paragraph 8) was identified with regards to an inadequate procedure for Welding QC inspectors to check welder certification cards.

The licensee acknowledged the inspection findings with no dissenting comments. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. At no time during the inspection period did the inspectors provide written material to the licensee.

3. Followup on Inspector Identified Items (92701)

(Closed) IFI 390/85-59-02, Followup on Disposition of Q List Nonconforming Conditions. The subject issue was identified in inspection report 390/85-59. Since that time the licensee has reported the nonconformance in accordance with 10CFR 50.55(e). The nonconformance is identified as Construction Deficiency Report (CDR) 390/85-56 for Unit 1 and CDR 391/85-53 for Unit 2. The licensee submitted an interim report with regards to the CDRs on December 9, 1985. The inspector reviewed this interim report and determined that all issues identified in the subject IFI will be addressed during evaluation of the CDRs. This item is closed.

4. Fire Prevention and Fire Protection - Unit 2 (42051)

During plant tours, the inspectors conducted observations of fire prevention and protection activities in areas containing combustible materials where ignition of these materials could damage safety-related structures, systems or components. The observations included verification that applicable requirements of Administrative Instruction (AI) 9.9 (Torch Cutting, Welding, and Open Flame Work Permit), Standard Practice WB 12.6 (Fire Brigade Instructor's Guide and Fire Brigade Handbook), AI 1.8 (Plant Housekeeping) and WBNP Quality Control Instruction (QCI) 1.36 (Storage and Housekeeping) were being implemented with regards to fire prevention and protection.

Within the area inspected, no violations or deviations were identified.

5. Preoperational Test Program Implementation Verification - Unit 1 (71302)

The inspectors conducted routine tours of the facility to make an independent assessment of equipment conditions, plant conditions, security, and adherence to regulatory requirements. The tours included a general observation of plant areas to determine if fire hazards existed, observation of other activities in progress (e.g., maintenance, preoperational testing,

etc.) to determine if they were being conducted in accordance with approved procedures or could damage installed equipment or instrumentation. The tours also included evaluation of system cleanliness controls and a review of logs maintained by test groups to identify problems that may be appropriate for additional followup.

During this inspection period, the licensee established a project management team to evaluate new work being identified for Unit 1 as a result of employee concerns and Office of Engineering (OE) identified nonconforming conditions. The inspector attended a meeting on December 11, 1985, which was held to review the status of all issues currently identified. During the meeting, several issues were identified which required rework. This rework will require review to identify any effects on preoperational test requirements. Some of the areas identified in the meeting were:

- Rerouting of the Unit 1 instrument lines which are used to determine reactor coolant loop flow.

- Relocating of the Unit 1 steam generator instrument panels.

- Proper supporting of cables in vertical conduit risers.

- Replacement of Unit 1 motor driven auxiliary feedwater pump discharge pressure control valves.

Inspector followup and evaluation of preoperational test requirements for new work being identified as a result of employee concerns and OE identified nonconforming conditions is identified as a inspector followup item (390/85-63-01) for Unit 1.

Within the area inspected, no violations or deviations were identified.

6. Testing of Pipe Support and Restraint Systems - Unit 1 (70370C)

The inspector toured areas of the Unit 1 auxiliary building and reactor building. Numerous snubbers and restraints were observed. Visual examinations were conducted to check for deterioration and physical damage of mechanical snubbers. Visual examinations were also conducted to check for proper installation of base support plates, fasteners, locknuts, brackets, and clamps of fixed pipe supports.

During this inspection period, the inspectors identified an increase in the number of nonconformance reports being initiated in the structural areas for both units. The inspectors requested that the licensee provide a listing of these reports so that an appropriate review and inspection can be conducted. This action is being taken to ensure that these reports are properly dispositioned and corrective actions address the root cause of the nonconformances.

Within the areas inspected, no violations or deviations were identified.

7. Licensee Event Followup (92700)

(Closed) CDR 390/85-58;391/85-54, Incorrect Position of Safety Injection Valves. The subject deficiency involved office of engineering (OE) revision and issuance of a flow diagram for the Safety Injection (SI) system. The diagram incorrectly identified valves in the flow path designed to recirculate the contents of the boron injection tank (BIT) to the boric acid tanks (BAT) as being normally open instead of normally closed. This discrepancy was identified during a revision to the flow diagram. Corrective action taken by the licensee included revision of the associated flow diagram to indicate proper position of the valves and implementation of new procedures in OE to provide improved guidelines for all phases of design verification and review.

The inspector reviewed the corrective action and considers that the new procedures are an improvement with regards to OE guidance to engineers and managers involved in the design process. However, the inspector discussed the deficiency with the NUC PR operators at Watts Bar and determined the following:

> Procedures which establish and control valve lineups at the plant had not been changed to reflect the incorrect valve positions as shown in the revised flow diagram. The licensed operators who prepared the procedure stated that flow diagram valve position is not used to establish configuration control. They also inferred that a discrepancy of this nature would be very obvious and would not be included in a procedure revision based on their knowledge of the system operating requirements. If system configuration controls were maintained by flow diagrams, then the procedure change process would have involved a formal (PORC) review of the system operating instruction. This review process would have identified the design discrepancy and required that the flow diagram be revised.

Based on the corrective actions taken by OE and the fact that the plant procedure was never changed to reflect the incorrect valve lineups, the inspector considers that all corrective actions necessary to close this item have been accomplished.

8. Welder Performance Qualification (55150)

The inspectors reviewed a sample of welder performance qualification test results and welding continuity records for welders who were originally hired by the site and for welders who had been transferred from other nuclear plants. The following table gives the welder identification by stencil number, the site transferred from, if applicable, and date of transfer:

Welder Stencil Number	Site Transferred From	Date of Hire or Transfer
6ADC	Bellefonte	8/13/85
6ZGG	Bellefonte	4/8/85
6SZZ	Sequoyah	1/25/85
4QK	Sequoyah	2/24/84
6UWW	Sequoyah	5/23/83
6UV	Phipps Bend	11/17/81
6CZZ	Sequoyah	6/3/81
6XXN	Rehire	11/3/80
6GQQ	Sequoyah	10/23/81
6HKK	NA	8/15/85
6NNK	NA	4/3/85
6NN	NA	8/18/82
6RRW	NA	10/23/81

The word rehire and the designation of NA in the table indicates that the welder was originally hired at Watts Bar.

Review of the records for the 13 welders indicated that a problem had been identified by the licensee for welder 6GQQ but none for the other 12 welders.

A Nonconforming Condition Report (NCR) No. 4862 dated June 3, 1983, identified the fact that welder 6GQQ had welded on material thicker than that allowed by ASME Sec. IX welder performance qualification. This NCR was later evaluated as nonsignificant. Further review of this evaluation to determine if it was properly evaluated is identified as unresolved item 390/85-63-02.

The ASME Code Section III requires that all welders used to join permanent or temporary attachments to pressure parts and to make permanent or temporary tack welds be qualified to either Section III or Section IX of the Code. When conducting welding operations to the ASME Code requirements, licensee instructions or procedures should include a requirement that the welders performance qualifications be checked to ascertain if the welder is qualified to make a particular weld. The licensee stated that the Welding Quality Control (WQC) inspectors check a welders performance qualification during fit up inspection to determine if he is qualified to perform the weld. During this inspection, the weld fit up procedure, QCP-4.13-Fit Up and Visual Mechanical (FU&VM) was reviewed. This procedure required that WQC check the welder identification (Attachment A, paragraph 7.0). However, it did not require that WQC check the welders qualifications. This failure constitutes a violation (390/85-63-03; 391/85-52-01) for failure to establish an adequate welding inspection procedure.