



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

Report Nos. 50-390/81-11 and 50-391/81-11

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

Facility Name: Watts Bar

Docket Nos. 50-390 and 50-391

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar

Inspectors: *D. Quick*
J. A. McDonald

6/11/81
Date Signed

Approved by *D. Quick*
D. Quick, Section Chief, Division of
Resident and Reactor Project Inspection

6/11/81
Date Signed

SUMMARY

Inspection on April 20 - May 20, 1981

Areas Inspected

This routine, announced inspection involved 152 resident inspector-hours on site in the areas of licensee action on previous findings, design control, independent inspection effort, and previous inspection findings.

Results

Of the four areas inspected, no violations or deviations were identified in three areas; two violations were found in one area (failure to follow procedures - paragraph 3.a.; failure to provide adequate procedures - paragraph 3.b.).

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DETAILS

1. Persons Contacted

Licensee Employees

- *S. Johnson, Assistant Construction Engineer
- *W. I. Dothard, Engineering Design
- *W. C. English, Assistant Construction Superintendent
- *H. J. Fisher, Assistant Construction Engineer
- *T. Hayes, Instrumentation Engineering Unit Supervisor
- *L. J. Johnson, Mechanical Engineering Unit "B" Supervisor
- *M. K. Jones, Preoperational Test Supervisor
- *A. W. Rogers, Quality Assurance Supervisor
- *J. A. Thompson, Startup and Test Engineering Supervisor
- *T. R. Trail, NRC Response Center

Other licensee employees contacted included five construction craftsmen and ten technicians.

Other Organization

- *A. Hogarth, Project Manager, Westinghouse Field Office
- *Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 21, 1981, with those persons indicated in paragraph 1 above. The licensee by practice will make commitments for resolution of open items and unresolved items within two weeks of the exit interview. During the exit the Assistant Construction Engineer, Mechanical, stated that he disagreed with the NRC policy of citing TVA while closing out an unresolved item. The example discussed was item A in the Notice of Violation. There was no disagreement over the circumstances; however, he felt NRC should not apply an enforcement action to an item when TVA had already completed most, if not all, of the appropriate corrective actions. The inspector explained and provided justification for the policy. Agreement was not reached.

3. Licensee Action on Previous Inspection Findings

- a. (Closed) Unresolved item (390/80-25-03, 391/80-19-03): Equipment supports anchors of both pedestals. The inspector had noted anchor bolts in the spent fuel cooling heat exchangers had been used on both pedestals of the heat exchanger. The inspector reviewed the manufacturer's drawing and the drawing showed that one pedestal was required to move axially to allow for the affects of thermal expansion. Followup inspection revealed that the Mechanical Engineering Unit had failed to follow the manufacturer's notes when installing the heat

exchangers. This was also required by QCP-4.7. This failure to follow procedures for activities affecting quality constitutes a violation (390/81-11-01, 391/81-11-01).

The licensee has concurred in the circumstances (see paragraph 2), made modifications to the heat exchangers, and conducted appropriate training to prevent further violations. Therefore, in response to this item the licensee need only address generic implications of this finding.

- b. (Open) Infraction (390/80-13-01): Failure to control testing. Since this citation in May 1980, Construction Specification G-39 has been revised to allow for verification of flush results by means other than the use of in line strainers or filters. Now sample rigs with cartridge filters or strainers may be employed per section 8.4.3.1 of the specification. However, a variety of sample rigs have been employed at the Watts Bar (and Sequoyah) sites per the engineers. Apparently, Engineering Design gave no consideration to the equipment specifications needed to assure a representative process line sample was seen by the sample equipment. This failure to provide appropriate acceptance criteria in an instruction constitutes a violation (390/81-11-02).
- c. (Closed) Unresolved Item (390/80-36-05, 391/80-28-04): Incomplete documentation on valve modifications. The inspectors received procurement documentation, some inspection documentation and a source evaluation audit. This permitted further review of the area and the findings thus far are:
 - 1) TVA memo, NEB 810 227 250, and Westinghouse memo, J. L. Taiw to J. A. Raulston of TVA, dated April 24, 1981, indicated that a Westinghouse Quality Release (QR) had not been completed on Unit 2 Upper Head Injection isolation valves, but the same verification of modification would be done as was done on Unit 1 valves. Subsequently, Westinghouse quality release on Unit 2 valves is in question since many of these records were not available on site. Both QR's stated that the reviews pertained to disc rework. Rework included wedge modification which was not addressed in either QR. Until the licensee reviews the adequacy of these Westinghouse QR's this item is unresolved (390/81-11-03, 391/81-11-02).
 - 2) Apparently Westinghouse has not performed triennial source audits of Anchor Darling since 1975. This is required by the Westinghouse topical QA report. The matter will be pursued by the NRC OIE Vendor Inspection Branch.
- d. (Open) Violation (390/81-05-02, 391/81-05-02): Failure to establish HVAC quality assurance program. While monitoring licensee efforts to establish appropriate controls, the inspectors noted a Design Information Request response which appeared to delete Construction QA

Program requirements for balancing of HVAC systems per Construction specification G-37. This was based upon adequate program coverage by preoperational test procedures. However, inadequate coverage of individual flow paths is currently provided in the preoperational test procedures. Therefore, prior to conducting flow balancing and testing, the overall QA programmatic controls must be reestablished. This item is open (390/81-11-04).

- e. (Closed) Deficiency (390/80-21-06, 391/80-15-02): Control and Storage of Engineering Change Notices. Watts Bar Field Instruction (WBFI) G-10 has been deleted. ECN instructions are now written in QCI-1.9. Requirements to store ECN's in the Quality Control and Records Unit have been deleted. ECN's are now stored and controlled within the Modifications and Additions Unit in accordance with QCI-1.9.
- f. (Closed) Unresolved item (390/79-31-02): Unidentified weld on Residual Heat Removal Piping. Review of revised drawing, E287-1S047 (L), indicated that the previously missing weld was now identified.
- g. (Closed) Unresolved item (390/81-01-06): Investigation of Nonconforming Condition Reports (NCR's). The Region II investigative staff has completed it's investigation and has issued the results to the licensee in report 390/81-08, 391/81-08.
- h. (Closed) Unresolved item (390/80-23-07, 391/81-05): Residual Heat Removal System instrumentation setpoints. TVA memo, SWP 810416001, provided clear justification that the apparent discrepancy was totally due to the conservative application of factors for instrumentation inaccuracies.
- i. (Closed) Unresolved item (390/81-09-02): Lack of Component Cooling System Heat Exchanger Relief Valves. A response by Engineering Design explained why relief valves were not installed on the heat exchangers.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraphs 5 and 6.

5. Design Control

The inspector reviewed TVA flow diagrams for the Waste Disposal System to verify that any changes to the NSSS vendor design were appropriately controlled. Also the completion of TMI related hardware changes were reviewed. Findings were as follows:

- a. Numerous differences exist between the Westinghouse flow drawings 113E795-1 through 6 and TVA design drawings 47W830-1 through 7. A separate review by the Nuclear Safety Section of the Nuclear

Engineering Branch is now in progress. Until the licensee completes it's review of the differences between these drawings and addresses the safety impact and the generic aspects of these differences this item is unresolved. (50-390/81-11-05, 50-391/81-11-03)

- b. The inspector verified implementation and subsequent testing of work as stated in Engineering Change Notice (ECN) 2006 and Field Change Notice (FCN) WAT 10575, Solid State Protection System - Input Channels to S.I. signal. Eleven of twenty-four drawings attached to the ECN were reviewed to insure that they were revised. A review of master ECN/FCN files indicated that the work had been completed.

Four of twenty-five wiring changes were inspected in the field. Construction testing of the modification, as referenced in the FCN, was reviewed with the system engineer.

Within the areas inspected no violations or deviations were identified.

6. Independent Inspection Effort

An inspection as a result of a craft concern indicated that welds may be deficient on the seismic 1(L) supports to the Tritiated Drain Collector Tank and the Floor Drain Collector Tank. Defective welds on the Tritiated Drain Collector Tank had previously been identified as nonconforming, but dispositioned, "use-as-is", by the on site construction group. Other apparently deficient vendor welds have been reported to responsible engineers by field personnel indicating a potentially inadequate vendor inspection program. Until the licensee provides information to determine the adequacy of welding and weld inspection of the seismic category 1(L) supports for NSSS vendor supplied Tritiated Drain Collector Tank and the Floor Drain Collector Tank this item is unresolved (390/81-11-06, 50-391/81-11-04). The following information is required:

- 1) Weld acceptance criteria and acceptability of welds.
- 2) Requirements for inspection by NSSS and TVA Inspection and Testing Branch.
- 3) Evidence of inspection by NSSS vendor and TVA Inspection and Testing Branch.

7. Previous Inspection Items

- a. (Closed) Open item (390/80-30-2, 391/80-23-02): Inadequate tracking and identification of Field Change Requests (FCR). Quality Control Instruction 1.13 has been revised to insure that responsible engineers mark FCR's on master drawings in the spread room. Engineering Unit Supervisors are responsible for FCR tracking from initiation through completion.

- b. (Closed) Open item (390/80-23-12, 391/80-17-09): Graphoil packing added to safety-related valves. Westinghouse Valve Engineering Group stated that graphoil packing has been tested and found acceptable for use on Westinghouse supplied valves.
- c. (Closed) Open item (390/81-09-07): Inadequate framework for quality Control procedures, instructions and tests. Quality Control Instruction 1.10, addendum two, provides adequate framework for Quality Control procedures, instruction and tests.
- d. (Closed) Inspector followup item (390/80-20-01, 391/80-01-01): Lack of ECN implementation. Quality Control Instruction (QCI) 1.9 now delegates authority and assigns priority for Engineering Change Notice (ECN) completion. ECN's are now tracked by procedural attachments and closure sheets.