



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 50-390/83-02 and 50-391/83-02

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 site near Spring City, Tennessee

Inspectors: L. J. Watson
for T. L. Heatherly

2/14/83
Date Signed

for L. J. Watson
W. Swan

2/14/83
Date Signed

Approved by: P. Fredrickson
P. Fredrickson, Acting Section Chief,
Division of Project and Resident Programs

2/19/83
Date Signed

SUMMARY

Inspection on December 21, 1982 - January 21, 1983

Areas Inspected

This routine, announced inspection involved 156 resident inspector-hours on site in the areas of followup on licensee identified items; licensee action on previous enforcement matters; independent inspection effort; and licensee action on previous inspection items.

Results

No violations or deviations were identified in the four areas inspected.

DETAILS

1. Persons Contacted

Licensee Employees

G. Wadewitz, Construction Project Manager
E. Burke, Assistant Construction Engineer
S. Johnson, Assistant Construction Engineer
R. Olson, Construction Engineer
A. Rogers, Supervisor - Office of Quality Assurance Branch
J. Thompson, 79-14 Task Force Supervisor

Other licensee employees contacted included 10 engineers.

2. Exit Interview

The inspection scope and findings were summarized on January 21, 1983, with those persons listed in paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters

- a. (Closed) Unresolved Item (390/81-11-06, 391/82-11-04): Faulty Welds on the Tritiated Drain Tank and Floor Drain Collector Tank. The licensee initiated an NCR (3380R) that identified a potential lack of vendor weld inspection. This NCR was subsequently upgraded and reported to NRC on July 7, 1981 in accordance with 10 CFR 50.55(e) as WBRD 50-390/81-60 and WBRD-50-391/81-56. Deficient welds on these tanks were apparently only one example of several others noted by TVA and NRC at all TVA sites. NRC will review the final response to NCR YCN QAB 8101 to assess TVA corrective actions. This item is closed.
- b. (Closed) Unresolved Item (390/80-13-05): Functional Test of ECCS Check Valves. The inspector reviewed three different preoperational tests and found that the tests made acceptable provisions for functionally testing ECCS check valves. This item is closed.
- c. (Open) Unresolved Item (390/82-37-01, 391/82-34-01): Defective Welds in 6.9 KV Shutdown Board Cabinets. This unresolved item involved a synopsis of questions identified to the licensee during a telecon conducted on October 13, 1982. The detailed questions, concerning apparent defective welds within the 6.9 KV Shutdown Board cabinets, were informally transmitted to the licensee immediately after the telecon. As committed, the response was provided to the inspector on December 15, 1982.

The TVA and General Electric response indicated that no welding code had been specified by TVA or followed by the vendor during fabrication

of the welds; that some instances were noted where the "as built" welds differed from approved drawings; and that some inspected welds (observed with paint applied) were defective. However, the review had concluded that since no differences in weld quality were identified between seismically tested cabinets (testing which met or exceeded requirements) and non-tested cabinets, all shutdown boards could be considered seismically qualified. The inspector reviewed the response and forwarded comments and the TVA response to NRC regional management for further evaluation. This item will remain open until that evaluation is completed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Licensee Action on Previous Inspection Items

- a. (Closed) Open Item (390/80-21-16): Rod Control System Test. TVA preoperational tests W-5.1 and W-5.2 were properly revised to include steps for verifying that control rods could be withdrawn and inserted at the maximum and minimum rod speeds as specified in the FSAR. Also the acceptance criteria required evaluation of whether the bank overlap sequencing occurred within one step of the values entered into the counter. This item is closed.
- b. (Closed) Inspector Followup Item (390/79-29-02): TVA Test 16-A. Discrepancies between FSAR and TVA Test 16-A amperage values were evaluated by EnDes and corrected. The applicable section of test 16-A was subsequently reperformed satisfactorily. The inspector reviewed the new calculations and test results and found them to be adequately performed and documented. This item is closed.

6. Followup on Licensee Identified Items (LIIs)

- a. (Closed) LII (WBRD-50-390/82-15): Overpressurization of Unit 1 Volume Control Tank (VCT). The VCT condition was evaluated by TVA and Westinghouse. Evaluation and testing concluded that the tank could be "used-as-is". Testing and inspections included the following: 1) thickness measurement which concluded that ASME code requirements for minimum wall thickness were met; 2) hardness survey in which comparisons to the original test data indicated that there was no change in the hardness and quantitatively, that all material properties were unchanged; 3) satisfactory reinspection of all pressure boundary weld seams (RT and PT); 4) evaluation of effects on the corrosion resistance of the shell material by utilizing the results of ASTM A262 Practice E testing which revealed no discernable difference. A Westinghouse letter, WAT-D-5046, dated 8/17/82, certified the compliance of the VCT.

As further corrective action, the licensee committed to implement requirements for a peer technical review of hydrostatic test

procedures. All applicable test procedures were reviewed and found to contain this requirement. This item is closed.

- b. (Closed) LII (NCR WBN EEB 8004) Seismic Supports for Auxiliary Feedwater Control Valves (390/80-27-05, 391/80-21-06). The inspector field verified seismic strut installation and supporting documentation and found both to be acceptable. The strut assemblies arrived at the site and receipt inspection noted defective welding. TVA personnel rewelded defective areas of the assemblies. No seismic reanalysis was required since the assembly physical dimensions were unchanged. This item is closed.
- c. (Closed) LII (WBRD-50-390/81-60, WBRD-50-391/81-56): Defective Vendor Welds on the Tritiated Drain and Floor Drain Collector Tanks (NCR 3380R). The licensee and Westinghouse inspected both tanks to verify the adequacy of welding. Minor deficiencies were noted; however, the tanks were not considered safety-related and have satisfactorily undergone a standing water hydrostatic test. The licensee considered the tanks acceptable without weld repair. The inspector concurred and this item is considered closed.

Several examples of apparent vendor welding deficiencies have been identified by NRC and TVA at Watts Bar, Bellefonte and Yellow Creek. Differences in weld quality between vendors and between TVA and vendors, in part, appear to be the result of specifying and using different codes and standards. The quality of vendor and TVA inspection programs at the time of vendor release also appears to be a factor.

To address potential generic concerns, TVA conducted an investigation of 200 contacts. The investigation included all TVA sites and consisted of direct field inspection and documentation review. The results indicated only minor problems. (See NCR YCN QAB 8108).

NRC has and will continue to evaluate individually identified welding deficiencies. The evaluations will consider the component's safety significance, licensee repair methods and code applicability at the time of manufacture.

- d. (Open) LII (NCR MEB 79-17) Defective PORVs: The inspector reviewed the licensee's corrective actions for this item and found that actual hardware changes differed from the stated corrective actions in the licensee final report due to field changes, initiated independent of the NCR, to upgrade the PORV's. The licensee agreed to submit a revised report reflecting actual field changes. The item will be inspected subsequent to receipt of that report.
- e. (Closed) LII (CDR 390/81-29; CDR 391/81-28): Incomplete Lists for Outstanding Documentation and Work (NCR 3086R and W-5-P). IE Report Nos. 50-390/82-12 and 50-391/82-09, page 3, paragraph 6.b., referenced incorrect CDR numbers. This item is closed.

f. The following two licensee identified items were reevaluated by the licensee and determined not to be reportable under 10 CFR 50.55(e) criteria. The inspector reviewed these reevaluations and interim corrective actions to assess their adequacy.

(1) (Closed) LII (CDR 390/82-14, CDR 391/82-14): Failure to Implement G-32 Revision 6 Concerning Concrete Anchors (NCR 3842R). Three interim reports and a final report dated December 22, 1982, identified a potential concern in that G-32 requirements had not been expeditiously incorporated into site quality control procedures. NCR 3842R listed eight areas of noncompliance where site procedures were not adequate. Items 1-6 were evaluated as "use-as-is". Items 7 and 8 required further evaluation and analysis. Item 7 identified that procedures did not control attachments to embedded plates that were within certain distances of anchor locations. Sixty occurrences were identified and the licensee determined that in all cases the actual design load was less than allowable by design. Item 8 identified that inspection requirements had not been established for one hole pipe straps supporting individual conduits 4 inches in diameter and under and anchors supporting not more than 4 nondivisional conduits one inch in diameter for spacing requirements. TVA could not find a single occurrence that required evaluation. Based upon the above analyses, evaluations and interim corrective actions taken, TVA determined this condition was not adverse to safe operation of the plant. This item is closed.

2. (Closed) LII (CDR 390/81-36 and CDR 391/81-35): Anchor Bolts not Installed in Accordance with Spacing Specifications (WBRD-50-390/81-36, WBRD-50-391/81-35). The licensee's final report dated December 7, 1982 stated that the reported condition could not have adversely affected safe operation of the plant. The inspector reviewed the licensee's reevaluation package and concurred. This item is closed.

7. Independent Inspection Effort

a. Black and Veatch Independent Design Review

The inspector continued to monitor administrative processes and review findings identified by Black and Veatch as part of its independent review of the design and construction of the Auxiliary Feedwater System (AFW). The licensee had developed a special procedure which defined a documented sequential review of Black and Veatch findings. A policy review committee had also been established to take appropriate action as necessary. The committee consisted of several upper TVA management officials. TVA anticipates that the Black and Veatch final report will be submitted to NRC and TVA prior to April 1, 1983. Any concerns identified as a result of the inspector's review of Black and Veatch findings will be conveyed to TVA after the April 1 date.

b. Reported Occurrence

On January 13, 1983, an Auxiliary Unit Operator (AUO) crossed through an established barrier used during radiographic testing. Testing was in progress at the time. The dose to the employee was calculated at less than 0.1 mrem. The employee later stated that he knew crossing the barrier was not allowed procedurally but said that he was in a hurry. The licensee investigated the matter and took punitive action against the employee.

On January 18, 1983, another employee stepped into the barrier. He later realized that he had violated procedure and reported the occurrence to his supervisor. No testing was in progress at the time. Punitive action was taken against the employee.

Both the Division of Construction and Nuclear Power took immediate corrective action. Policy statements and safety meeting agendas included references to procedure adherence and discussion of management actions taken towards employees for procedural noncompliance. The inspector concurred with these actions.

8. Miscellaneous Information

- a. The permanent NRC Construction Senior Resident Inspector arrived onsite January 10, 1983. The inspector will be charged with the responsibility of inspecting remaining construction activities for Unit 1 and Unit 2; reviewing previously identified enforcement items; and following up on reportable occurrences to assess corrective actions. Interfacing activities, NucPr activities and licensing issues will be reviewed by the operations inspector. These defined responsibilities were briefly discussed with Watts Bar management during the inspection period.
- b. The inspector continued a review of open Construction Deficiency Reports (CDR). Discussions were held with the construction site Nuclear Licensing Unit, the Construction Project Manager and the OEDC Project Manager with the objective of expediting correction of discrepancies and closure of items. The licensee's responses were helpful and positive.