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

JUN 17 1980

Report Nos. 50-390/80-14 and 50-391/80-10

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

Facility Name: Watts Bar Nuclear Facility

Docket Nos. 50-390 and 50-391

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar site near Spring City, Tennessee

Inspector: J. L. Coley — 6-10-80
J. L. Coley — Date Signed

Approved by: A R Herdt — 6-10-80
A. R. Herdt, Section Chief, RCES Branch — Date Signed

SUMMARY

Inspection on May 19-22, 1980

Areas Inspected

This routine, unannounced inspection involved 32 inspector-hours on site in the areas of preservice inspection of work and work activities (Unit 1), preservice inspection data review and evaluation (Unit 2), safety-related pipe welding (Units 1 and 2), and review of licensee corrective action on previously identified item of noncompliance and a unresolved item.

Results

Of the four areas inspected, no items of noncompliance or deviations were identified in two areas; two items of noncompliance were found in two areas (Infraction - Failure to Follow Qualified Parameters of Welding Procedure - Paragraph 6). (Deficiency - Failure of Dye Penetrant Inspectors to Conduct Proper Post Examination Cleaning - Paragraph 5.b).

DETAILS

1. Persons Contacted

Licensee Employees

*J. E. Wilkins, Project Manager - WBNP (Watts Bar Nuclear Plant)
M. Gothard, Mechanical Engineer, Baseline & Inservice Inspection Division of Power
*D. Harvey, Engineering Associate, Baseline & Inservice Inspection Division of Power
*S. J. Boney, Welding Engineering Unit (WEU) WBNP
*R. L. Heatherly, QC&R Unit Supervisor WBNP
*A. W. Rogers, QA Supervisor WPNP
*L. J. Johnson, Mechanical Engineering Unit (MEU)
*J. E. Treadway, Construction Superintendent WPNP
*J. M. Lamb, Mechanical Engineer, Supervisor, WBNP
*H. E. Richardson, Construction Engineer, WBNP

Other licensee employees contacted included six construction craftsmen, five technicians, two security force members, and two office personnel.

NRC Resident Inspector

*T. Heatherly
*J. McDonald

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 22, 1980 with those persons indicated in Paragraph 1 above. The inspector identified the areas inspected, discussed the two items of noncompliance and the unresolved item. No dissenting comments were received from the licensee.

3. Licensee Action on Previous Inspection Findings

(Closed) Infraction 50-390/79-41-01 and 50-391/79-38-01, "Failure to Establish Adequate Measures for Handling and Storage of Equipment and Materials". Tennessee Valley Authority (TVA) letter of response dated February 8, 1980 has been reviewed and determined acceptable by Region II. The inspector held discussions with the supervisor of the QC&R Unit and reviewed the revision to the Quality Control Manual Procedure WBNP-QCP-1.7. The inspector is satisfied with the disposition provided and considers this item closed.

(Closed) Unresolved item 390/79-31-01 and 391/79-26-01, "Requirements for Storage of PSI Record are Unclear". The inspector verified that the PSI records were stored in a one hour fire rated cabinet and that the operational

QA manual had been revised to clarify alternate methods of storage in the event a one hour fire rated cabinet is not used. The inspector is satisfied with the licensee's compliance.

(Open) Infraction 50-390/79-41-02, "Failure to Follow Welding Procedure Purge Requirements". Joint number 1-067C-289-02 in the essential raw cooling water system was previously observed to have had root oxidation indicating the joint had been welded without an internal inert gas purge on the root. The inspector however was unable to verify that the weld joint had been cut out and rewelded as reported by the licensee because the weld package was inaccessible at this time. This item will be addressed in a later inspection.

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 paragraph 7a.

5. Independent Inspection Effort

a. Construction Activities (Units 1 and 2)

The inspector conducted a general inspection of the auxiliary building, turbine building and Unit 1 and 2 containments to observe construction progress and construction activities such as welding, nondestructive examination, material handling and control, housekeeping and storage.

b. Dye Penetrant Examination Cleaning (Unit 1)

On May 21, 1980 the inspector accompanied by a representative of the licensee made a general inspection of Unit 1 containment on the auxiliary building. The inspector noted the following safety-related components and piping where dye penetrant inspectors had failed to completely remove dye and developed from weld joints and adjacent components upon completion of their inspection.

Pipe or Component	Unit	Location
1-FCU-63-175	1	SIS Pump B-B Level 692
1-VTV-63-512	1	SIS Pump B-B Level 692
1-CKV-62A-532	1	Centrifugal charging pump B-B level 692

TVA Process specification 3.M.1.1(c) "Specification for Liquid Penetrant Examination Solvent Removal Method", paragraph 11.1 requires post examination cleaning of penetrant materials upon the completion of all examinations. The examined areas are required to be cleaned by wiping with a clean dry cloth or paper, followed by wiping with a cloth or paper saturated with acetone, isopropyl alcohol, or penetrant remover.

The pipe and components noted above were completed work. However these items seem to be isolated cases of poor post examination cleaning. Failure to follow established procedures is in noncompliance with 10 CFR 50 Appendix B Criterion V. This is a deficiency and is assigned item No. 50-390/80-14-02, "Failure of Dye Penetrant Inspectors to Conduct Proper Post Examination Cleaning".

Within the areas inspected no items of noncompliance or deviation except as described in paragraph 5.b were identified.

6. Safety-Related Piping (Welding) - Observation of Work and Work Activities (Unit 1 and 2)

The inspector observed field welding of safety-related piping outside the reactor coolant pressure boundary at various states of weld completion. The applicable Code for safety-related pipe welding is ASME Section III (71 S 73) as implemented by TVA General Construction Specification G29M R12. The following welds were observed:

Weld No.	Size (Inch)	Stage of Completion
0-032E-T037-25	2" schedule 40	Intermediate weld
0-03E-T037-26	2" schedule 40	Final weld
1-067J-T563-2	2" schedule 40	Fit-up
1-067J-T563-3	2" schedule 40	Root layer
1-067J-T563-4	2" schedule 40	Fit-up
1-067J-T563-4	2" schedule 40	Root layer

For the above welds, the inspector reviewed applicable weld data sheets, weld rod issue slips, welder qualifications, fitup and alignment, and questioned two welders concerning the parameters of the welding procedure since neither welder had a copy of the welding procedure available at the job site. One welder who had completed the root layer on joints No. 1-067J-T563-3 and 1-067J-T563-4 was not aware of the correct interpass temperature and had used 1/8 inch filler material for the root layer which was not qualified in accordance with weld procedure GT-88-0-3 R-0. This welder had been allowed to weld by a weld inspector who apparently was also not aware of the weld parameters for filler material size. The inspector requested to see the welding procedure to verify the parameters, and was told that a copy was in the supervisors office. The supervisor office was outside the containment building and its location was not supportive of the welding or the in-process inspection. The above is in noncompliance with 10 CFR 50, Appendix B, Criterion V. This is an infraction and was assigned item number 50-390/80-14-01 Failure to Follow Qualified Parameters of Welding Procedure. In the areas inspected, one item of noncompliance was identified and is described above. No deviations were identified.

7. Preservice Inspection - Data Review and Evaluation (Unit 2)

a. The inspector reviewed records of preservice inspection (PSI) for compliance with ASME Section XI (74S75), the SAR, and the licensee's PSI Program. The records for the areas identified below were reviewed

to verify that they contained or referenced examination results and data sheets, calibration data sheets, examination evaluations, extent of examination, deviations from program, requirements and disposition of findings:

Weld No.	Weld Category	Report No.	Test	Product
RCFG 2-4	B-L-1	002	UT	MCP to Pipe Weld
WP-10SE	B-F	051	UT&PT	Pressurizer surge nozzle to safe end
WP-125E	B-F	053	UT&PT	Pressurizer safety nozzle to safe end

Examination of Equipment data for the above welds is stored at TVA's Corporate office in Chattanooga and was not examined during this inspection. The inspector noted that PT report No. 053 for the pressurizer safety nozzle to safe end weld No. WP-12SE reported an arc strike in the weld at 195 degrees with minimum bleed out and 7/16" long the report also stated that the indication was detected visually. In accordance with Lambert, MacGill, and Thomas procedure No. QA-27 Revision A page 1, a report entitled "Notification of Reportable Indications" should have been completed and submitted to TVA so that the reportable indication could be evaluated/repaired and retested. The inspector visually observed that the indication has not been worked. In addition, records at TVA's Watts Bar construction site or TVA Corporate office in Chattanooga did not reveal this report. However, Lambert, MacGill, and Thomas Inc., has not forwarded their final report for Unit 2. This will be identified as a unresolved item and assigned item No. 50-391/80-10-01 "Incomplete Documentation for Notification of a Reportable Weld Metal Indication".

b. The records for the following welds were reviewed to verify that examination unit calibrations showed no major deviations between initial and final calibrations, that examination data was properly recorded, that a Level II or III examiner had evaluated the data and that the evaluation complies with the procedure:

Weld No.	Report No.	Weld Category	Product
WP-4	065; 065-1 065-2, 088	B-B	Pressurizer Circumferential weld
WP-5	037, 068, 058	B-B	Pressurizer Circumferential weld

Weld No. (Continued)	Report No.	Weld Category	Product
WP-6	026, 050, 070, 070-2, 57	B-B	Pressurizer Longitudinal weld

In the areas inspected, no items of noncompliance or deviations were identified.

8. Preservice Inspection - Observation of Work and Work Activities (Unit 1)

The inspector observed the PSI activities described below to determine whether these activities were being performed in accordance with regulatory requirements and licensee procedures. See paragraph 7 above for the applicable code.

a. Personnel qualification records for 3 level II examiners performing ultrasonic inspection were reviewed.

b. In-process ultrasonic (UT) inspection, including calibration checks and recalibration on applicable calibration block was observed for the following welds.

Weld Identification No.	Inspection Process Witnessed
CVCS-10	Shear wave Inspection
CVCS-11	Shear wave Inspection
CVCS-12	Shear wave Inspection

The inspections were compared with the applicable procedures in the following areas:

(1) Availability of and compliance with approved NDE procedures.
(2) Personnel knowledgeable of examination methods, and operation of UT equipment.
(3) Use of NDE personnel qualified to the proper level.
(4) Test results properly recorded and evaluated.
(5) Type of apparatus used.
(6) Extent of coverage of base material and weldment.
(7) Calibration requirements.
(8) Search units size and frequencies.
(9) Search unit beam angles.
(10) DAC curves established.
(11) Reference level for monitoring discontinuities as defined and scanning gain setting as specified.
(12) Method for demonstrating penetration.
(13) Limits for evaluating and recording indications.
(14) Methods of recording significant indications.

(15) Acceptance limits are determined.
(16) Type of couplant used and certification of specified materials.
(17) Calibration block notches and block certification verified.

Within the areas inspected, no items of noncompliance or deviations were identified.