



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

Report No.: 50-390/79-02 and 50-391/79-02

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

Facility Name: Watts Bar Nuclear Plant, Units 1 and 2

Docket No.: 50-390 and 50-391

License No.: CPPR-91 and CPPR-92

Inspection at: Watts Bar Dam, Tennessee

Inspector: *T. E. Conlon* for 2/6/79  
E. H. Girard Date Signed

Approved by: *T. E. Conlon* 2/6/79  
T. E. Conlon, Section Chief RCE&S Branch Date Signed

SUMMARY

Inspection on January 8-12, 1979

Areas Inspected

This routine unannounced inspection involved 33 inspector-hours onsite in the areas of: licensee action on previous inspection findings; ice condenser lower support welds (Unit 2); pressurizer spray line Unit 1; welding of ASME Section III, Class 3 piping (Unit 1); reactor coolant pressure boundary piping - observation of work and work activities (Unit 2); safety related piping - observation of work and work activities (Units 1 and 2); reactor coolant pressure boundary piping (welding) - observation of work and work activities (Units 1 and 2).

Results

Of the six areas inspected, no apparent items of noncompliance or deviations were identified in five areas; an apparent item of noncompliance was found in one area (Deficiency - Installed pipe subassembly was of different subassembly and serial number than specified by the installation drawing - paragraph 3).

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## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*T. B. Northern, Jr., Project Manager
- \*L. C. Northard, Welding Engineering Unit Supervisor
- \*J. M. Lamb, Mechanical Engineering Unit Supervisor
- \*H. C. Richardson, Construction Engineer
- \*R. L. Heatherly, QC&R Unit Supervisor
- \*S. Johnson, Assistant Construction Engineer
- \*A. W. Rogers, QA Supervisor

#### NRC Resident Inspector

- \*B. J. Cochran

\*Attended exit interview.

### 2. Exit Interview

The inspection scope and findings were summarized on January 12, 1979 with those persons indicated in Paragraph 1 above. In discussing the piping installation noncompliance described in Paragraph 3 below, the licensee asked if it would be a deficiency. He also asked if a response would be required since the installation had been corrected. As noted in Paragraph 3 this item has been determined to be a deficiency. It will require a licensee response in which the licensee is to identify the cause and his action to prevent recurrence.

### 3. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (391/78-05-02): Licensee reported reactor vessel - nozzle weld surface cracks which recurred after repair. The inspector reviewed instructions (dated April 25, 1978) developed for repair and the final penetrant and radiographic test reports documenting acceptance of the weld.

(Closed) Unresolved Item (390/391/78-05-03): Requirements for performance and documentation of weld fitup for structural welds. The inspector verified that the licensee's procedure (WBNP-QCP-2.4, Revision 4) had been revised to give the Civil Engineering Unit responsibility for verification and sign-off of weld fitup.

(Open) Unresolved Item (390/78-05-04): Poor Radiographic film processing for Raw Water Storage Tank weld. A reshot was requested for weld 5V4, station 2-3. The licensee stated that the weld had been reradiographed and the film processed, however, the film could not be located during the inspection and the item remains open.

(Open) Unresolved Item (390/78-31-03): Welds on contractor supplied Ice Condenser lower support structure platform did not comply with drawing. The licensee stated the contractor had not fully responded to questions on this item yet.

(Closed) Unresolved Item (390/78-31-04): Piping subassembly installed had different subassembly and serial numbers than shown on the drawing. The inspector verified that subassembly 62A-CVCS-46, sketch 2876-278, Serial No. 6509 was installed where the drawing E2879-IC-22R1 indicated subassembly 62A-CVCS-40, sketch 2879-273, Serial No. 6503 should be. The inspector also verified that the licensee had not formally acknowledged or approved this difference. This failure to comply with the drawing is considered a noncompliance with Criterion V of Appendix B to 10 CFR 50. The safety significance of this noncompliance is considered minimal as the incorrectly installed item was of the same material and configuration as the subassembly specified by the drawing. This previously identified unresolved item is being changed to a noncompliance of the deficiency level and is identified as 390/79-02-01. The licensee replaced the incorrectly located subassembly with the one specified on the drawing during this 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 5.c.

#### 5. Independent Inspection

##### a. Ice Condenser Lower Support Welds (Unit 2)

The inspector examined welds on the lower support structure outer platform assembly for compliance with Westinghouse Drawing 1208E18. No deviations or items of noncompliance were identified.

##### b. Welding of ASME Section III Class 3 Piping (Unit 1)

The inspector observed welding of ASME Section III Class 3 (71S73) piping at various stages of weld completion. The fabrication and examination requirements of the Code are implemented by TVA General Construction Specification G-29M (Revision 7).

Observation of welding activities included, where applicable, the following areas: weld identification and location, joint preparation and alignment, specified welding procedure, welder qualification, specified weld material, specified purge, specified temperature (pre-heat and interpass), welding variables within limits, evidence of QC verification and physical appearance of weld surface. All of the welds examined were in the Essential Raw Cooling Water System. The stages of welding and welds examined are listed below:

- (1) Joint Fitup  
Weld: 1-067C-T291-9  
Weld: 1-067C-T291-10
- (2) Welding in progress  
Weld: 1-067C-T291-9  
Weld: 1-067C-T291-10  
Weld: No. 23 on subassembly 1-67-S-30-64  
Weld: No. 24 on subassembly 1-67-S-30-64
- (3) Welding complete, awaiting inspection  
Weld: 1-067C-T291-9  
Weld: 1-067C-T291-10

c. Pressurizer Spray Line (Unit 1)

The spray line from the top of the pressurizer down through its 6 x 4 reducing tee to the first valve off each leg of piping from the tee was examined for compliance with drawing 47W-465-2. The Code nameplates on the two valves specified a design pressure of 2485 psi and temperature of 650°. The drawing specified the same design pressure but a design temperature of 680°. The licensee was requested to determine whether the valves were adequate for the application. This is considered an unresolved item and is identified as 390/79-02-02.

6. Reactor Coolant Pressure Boundary Piping - Observation of Work and Work Activities (Unit 2)

The inspector observed non-welding related work activities and completed work for reactor coolant pressure boundary (RCPB) piping. The code for this piping is ASME Section III Class 1. The licensee implements Code and regulatory requirements for this piping through specifications N3M-868, G-29 and G-43 and through the WBNP Quality Control Manual.

- a. The activities and items identified below were examined for compliance with the requirements of applicable QC and work performance procedures and for use of specified materials (in contact with stainless steel):

- (1) Temporary support of stainless steel pipe and valve at Chemical Volume Control (CVC) system weld joint 2-06213-D137-12
  - (2) Temporary storage of CVC System stainless steel pipe identified MK 62A CVCS-166
- b. The installed piping from the bottom of the pressurizer to the leg of steam generator No. 2 was examined for compliance with the specification requirements and the requirements of drawing 47W-304-2.

No deviations or items of noncompliance were identified in the areas described.

7. Safety Related Piping - Observation of Work and Work Activities  
(Units 1 and 2)

The inspector observed non-welding related work activities and completed work for safety related piping outside of the reactor coolant pressure boundary. The Code for this piping is ASME Section III (Class 2 and 3). The licensee implements Code and regulatory requirements for this piping through specifications N3M-868, G-29 and G-43 and through the WBNP Quality Control Manual.

The activities and items identified below were examined for compliance with the requirements of applicable QC and work procedures, for record keeping, of construction/installation specifications, for use of specified materials, and for performance of prescribed inspections:

- (1) Bending of 1/2" Sch 80 stainless steel pipe identified MK 1129 for the ERCW system, Unit 1.
- (2) Cutting and transfer of heat numbers for stainless steel pipe (Heat No. 4286) for subassembly 1-67-5-30-112 from the ERCW system, Unit 2.
- (3) Machining end of pipe subassembly 01A-MS-15, Serial No. 8823, for the main steam system, Unit 1.

No deviations or items of noncompliance were identified.

8. Reactor Coolant Pressure Boundary Piping (Welding) - Observation of  
Work and Work Activities (Unit 1 and 2)

The inspector observed welding of reactor coolant pressure boundary piping at various stages of weld completion. The applicable code for this pipe welding is ASME Section III Class 1 (71S73), as implemented by specifications N3M-868 and G-29M and the WBNP Quality Control Manual.

Observation of welding activities included, where applicable, the following areas: weld identification and location, joint preparation and alignment, qualified weld procedure, welder qualification, specified weld material, specified purge, specified temperature (pre-heat and interpass), welding variables within limits, evidence of QC verification, physical appearance of weld, weld surface suitable for NDE and specified NDE being performed, control of unused weld material at work locations, 3 to 1 taper for pipe to components, and sufficient QA and inspection personnel. The stages of welding and welds examined and the other weld-related items checked are listed below.

a. Joint Fitup

<u>Joint Number</u>	<u>Pipe Size</u>	<u>Welding Procedure</u>
1-063B-T108-2	2" Sch 160	88-0-1
1-063B-T058-20	1½" Sch 160	88-0-1

b. Root Pass Only

<u>Joint Number</u>	<u>Pipe Size</u>	<u>Welding Procedure</u>
1-063B-T108-3	2" Sch 160	88-0-1

c. Welding Beyond Root Pass in Progress

<u>Weld Number</u>	<u>Type</u>	<u>Subassembly</u>	<u>Welding Procedure</u>
6C1	pipe to valve	1-68-S-2-4	88-0-1

d. Welding Complete and NDE in Progress

<u>Joint Number</u>	<u>NDE Procedure</u>
2-062B-0137-12	WBNP-QCP-4.13

e. Observation of weld material control included: identification, segregation, oven temperatures, issue slips and control of unused material at the issue station adjacent to the exit from Unit 2.

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