



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

Report Nos. 50-390/79-18 and 50-391/79-14

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

Facility Name: Watts Bar Nuclear Plant

Docket Nos. 50-390 and 50-391

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar Site near Spring City, Tennessee and at Corporate  
Office in Chattanooga, Tennessee

Inspector: J. E. Conlon for 5/14/79  
E. H. Girard Date Signed

Approved by: J. E. Conlon 5/14/79  
T. E. Conlon, Section Chief, RC&ES Branch Date Signed

SUMMARY

Inspection on April 9-12, 1979

Areas Inspected

This routine unannounced inspection involved 29 inspector-hours on site in the areas of licensee action on previous inspection findings (Units 1 and 2), stud welding to metal containment vessel (Unit 2), safety related piping (welding) - observation of work and work activities (Unit 1), preservice inspection - review of program (Units 1 and 2) and preservice inspection - observation of work and work activities (Unit 1).

Results

Of the five areas inspected, no apparent items of noncompliance or deviations were identified.

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## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*E. Crane, Mechanical Engineer - Power Production
- \*\*T. B. Northern, Project Manager - WBNP
- \*\*S. Johnson, Assistant Construction Engineer - WBNP
- \*\*R. L. Heatherly, Supervisor, QC & R Unit - WBNP
- L. C. Northard, Supervisor, Welding Engineering Unit - WBNP
- B. Willis, Nuclear Plant Quality Assurance Supervisor - WBNP
- T. Hale, Engineering Aide - Power Production
- D. Miller, Lead Inspector, Welding Engineering Unit - WBNP

#### Other Organizations

- A. L. Hogarth, Westinghouse NSD Site Manager, Watts Bar Site
- M. King, Senior Examiner (Level II), Lambert MacGill, Thomas, Inc.

#### NRC Resident Inspector

B. J. Cochran

- \*Attended exit interview at Chattanooga offices.
- \*\*Attended exit interview at Watts Bar site.

### 2. Exit Interview

The first portion of the inspection which covered the area of "preservice inspection - review of program" only, was conducted at TVA's Power Plant Maintenance Branch offices in Chattanooga. The scope and findings of that portion of the inspection were summarized at those offices on April 9, 1979. The remainder of the inspection was conducted at the Watts Bar site. The scope and findings of the inspection at the site were summarized there on April 12, 1979. The inspector discussed noncompliance 390/79-09-01 and 391/79-06-01 with management on site and indicated that he was requesting a supplemental response with regard to the item. The information requested is described in Paragraph 3. It is the inspector's understanding that the requested information will be submitted to Region II. Personnel attending the exit meeting are indicated in Paragraph 1 above.

### 3. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item (390/78-31-03): Some welds in the ice condenser lower support platform do not comply with the drawing. The licensee is

obtaining information on past accepted design deviations for this item to determine whether the condition reported by the NRC inspector had been previously evaluated and accepted. The licensee indicated he would have this information within two weeks.

(Open) Noncompliance (390/79-09-01 and 391/79-07-01): Chemical Volume Control System (CVCS) Holdup Tanks girth welds have reinforcement that exceeds the ASME Code maximum tolerance. The inspector discussed the condition of the tank welds with the licensee's Welding Engineering Unit (WEU) supervisor and reexamined many of the welds in the tanks. A number of short lengths of the welds were found to have reinforcement exceeding 1/8-inch - the Code maximum is 3/32 inch. Reinforcement exceeding 1/8-inch was also found on one longitudinal seam weld. All of the examinations were made from the O.D. of the tank. The inspector questioned the WEU supervisor regarding the nondestructive examination requirements for the tanks and was informed that penetrant examination and spot radiography had been required. The inspector stated that satisfactory penetrant examination could not have been performed because of the surface condition of the welds - which was rough and contained some localized areas of tight undercut and unremoved slag. In further inspection, the inspector identified another safety-related tank fabricated by the same contractor (Chicago Bridge and Iron) as the Holdup Tanks and found that it too had weld reinforcement exceeding the Code maximum tolerance. This tank was identified as CVCS Monitor Tank, ASME Section III Class 3, National Board No. 4406.

The inspector requested the licensee to provide RII with the following additional information:

- a. Accurate representative description of the weld surface condition on the I.D. and O.D. of each tank.
- b. Review and evaluate radiographic film for the tank welds. Provide a description of your findings.
- c. Provide copies of the ASME Data Reports for the two Holdup Tanks and for the Monitor Tank.
- d. Identify any safety-related fabrication performed by Chicago Bridge and Iron at the Watts Bar site in addition to that already identified (i.e., in addition to the monitor tank, holdup tanks and the two steel containments).
- e. Indicate whether or not the contractor will be contacted with regard to corrective action on the tanks. If not, why not?

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 and 8.

5. Independent Inspection

Arc Stud Welds on the Metal Containment (Unit 2)

The inspector examined studs welded to the metal containment above the ice condenser baskets. The studs were found to be arc stud welded. The licensee stated that the studs are being used to support air ducting for the ice condenser. The licensee identified the Code applicable to this welding as ASME Section III (Subsection NE). The applicable edition and addenda of the Code could not be identified during the inspection. However, the inspector noted that the last two editions (74 and 77) of ASME Section III have limited the use of arc stud welding to "minor attachments" and questioned whether their application on the containment could suitably be described as "minor attachments". The inspector has asked the licensee's design engineering personnel to provide the following information with regard to the arc stud welding:

- a. Identify the applicable Code edition and addenda.
- b. Identify loads to be supported (items and actual maximum design load values).

This item is being identified as unresolved item 391/79-14-01: Apparent deviation or noncompliance with requirements for welding to the metal containment.

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

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

The inspector observed welding on weld 1-062A-D020-10A in the Chemical Volume Control System. The code applicable to this welding is ASME Section III Class 2 (71S73) as implemented by TVA General Construction Specification G29-M. The completed root pass of the subject weld and the associated records were examined to determine weld and welder identification, qualified welder and weld procedure, and physical appearance of the weld.

No items of noncompliance or deviations were identified.

7. Preservice Inspection - Review of Program (Units 1 and 2)

The licensee has committed to Section XI of the ASME Code, 1974 Edition with addenda through S76 for steam generator tube examinations and, through S75 for other components. Two contractors are currently performing the examinations required in the preservice inspection (PSI) portion of TVA's inservice inspection (ISI) program. They are Lambert MacGill Thomas, Inc. (LMT) and Southwest Research Institute (SwRI). The TVA central office Power Plant Maintenance Branch of the Division of Power Production is assigned responsibility for preparation and administration of the program. The audit function is assigned to the central office, QA and Audit Staff, of the Office of Power.

The inspector examined the following documents:

- a. Surveillance Instruction SI-4.4.10.1 Rev.3, Preservice Baseline Inspection and Inservice Inspection Program for Tennessee Valley Authority Watts Bar Nuclear Plant, Units 1 and 2.
- b. Watts Bar Nuclear Plant Operational Nuclear Quality Assurance Manual, Rev. 2/7/79.
- c. LMT Operating and Quality Assurance Manual, Rev. 11 (3/26/79)
- d. SwRI Nuclear Quality Assurance Program Manual, Rev. 1, Change 6

These documents were reviewed to determine compliance with requirements relative to program approval, organizational structure and responsibilities, scope of program and examinations, establishment of work and other quality procedures, control of processes, control of examinations and examination equipment, personnel and procedure qualifications, and generation of records.

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

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

The Code and licensee implementing documents applicable to PSI are identified in paragraph 6 above. The inspector witnessed a portion of the preexamination calibration and the entire transverse angle beam scan for ultrasonic examination of weld 1-74A-D046-01A (Residual Heat Removal System). TVA Procedure N-UT-1 Rev. 0 (1/4/79) was used in the examination. The weld is an ASME Section III Class 2 piping weld.

Performance of the calibration and examination was observed to determine if requirements were being met with respect to program and procedures; familiarity of personnel with methods and equipment; reference points; type of apparatus used including: frequency range, size and type of search units, linearity, and beam angles; method employed including: extent of coverage, equipment calibration, DAC curve, scanning and reference sensitivity; methods and levels for recording, evaluation indications and, strip chart recording of the examination.

Licensee personnel performing the examination informed the NRC inspector that some longitudinal piping welds were not as yet located and identified for examination. These were apparently limited to welds supplied in welded piping materials.

The licensee indicated action was being taken to locate these welds through receiving documentation for the purchased piping. The NRC inspector will examine action in this area to determine whether the welds were satisfactorily located and identified. This will be designated unresolved item 390/79-18-01, "location and identification of piping material longitudinal welds for ISI".

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