



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

Report Nos.: 50-390/78-31 and 50-391/78-26

Docket Nos.: 50-390 and 50-391

License Nos.: CPPR-91 and CPPR-92

Categories: A2 and A2

Licensee: Tennessee Valley Authority
830 Power Building
Chattanooga, Tennessee 37401

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

Inspection at: Watts Bar Dam, Tennessee

Inspection conducted: November 28 - December 1, 1978

Inspectors: E. H. Girard
A. B. Ruff

Reviewed by:

T. E. Conlon
T. E. Conlon, Chief
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

12/22/78
Date

Inspection Summary

Inspection on November 28 - December 1, 1978 (Report Nos. 50-390/78-31 and 50-391/78-26)

Areas Inspected: Safety-Related Piping (Observation of Work and Work Activities)-Units 1 and 2; Reactor Coolant Pressure Boundary Piping (Observation of Work and Work Activities)-Unit 2; Ice Condenser Lower Support Structure Outer Platform Welds (Visual Examination)-Unit 1; Reactor Coolant Pressure Boundary and Other Safety-Related Stainless Steel Pipe Welding (Observation of Work and Work Activities)-Unit 1; Instrumentation (Components and Systems)-Observation of Work and Work Activities-Unit 1; Instrumentation (Components and Systems)-Review of Quality Records-Unit 1. The inspection involved 56 inspector-hours on-site by two inspectors.

Results: Of the six areas inspected, no items of noncompliance or deviations were found in four areas; an item of noncompliance was identified in each of the two remaining areas (infraction-failure to follow procedures applicable to storage of stainless steel pipe-Details I, Paragraph 6; infraction-failure to follow procedures for surveillance of welding, Details I, Paragraph 4.a).

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DETAILS I

Prepared by: E. H. Girard 12/22/78
E. H. Girard, Reactor Inspector
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch
Date

Dates of Inspection:

Reviewed by: T. E. Conlon 12/22/78
T. E. Conlon, Chief
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch
Date

1. Persons Contacted

Tennessee Valley Authority

- *T. B. Northern, Jr., Project Manager
- *J. M. Lamb, Mechanical Engineering Unit Supervisor
- *L. E. Northard, Welding Engineering Unit Supervisor
- F. Castro, Mechanical Engineer
- D. Spangler, Mechanical Engineer
- A. Leff, Mechanical Engineer

The inspector also talked briefly with craftsmen and other licensee personnel.

*Denotes persons attending the Exit Interview.

2. Licensee Action on Previous Inspection Findings

Not addressed in this inspection.

3. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 4.b and 5.b.

4. Independent Inspection Effort (Unit 1)

a. Reactor Coolant Pressure Boundary and Other Safety-Related
Stainless Steel Pipe Welding

The NRC inspector observed in-process welding of small diameter heavy wall stainless steel pipe being performed near the base of the major reactor component supports inside the crane wall. Field weld operation sheets were examined for appropriate entries and sign-offs for welds 1-062B-D034-09D (ASME Section III, Cl. 2), 1-068A-D237-06 (ASME Section III Cl. 1), and 1-062B-D034-09C (ASME Section III Cl. 2). Welding material requisition sheets 50925 and 50502 were verified for the filler metal for the latter two welds. In-process weld appearance was examined for compliance with ASME Section III (71 S73). In observing the actual performance of welding on the two latter welds, the NRC inspector noted that interpass temperature was not being checked. The welding procedure indicated for these welds, GT-8801R5, specifies a 350 degree Fahrenheit maximum interpass temperature. The welders and fitters for the two welds were questioned regarding performance of the interpass temperature checks. They stated that they had no means for performing the checks and that no checks were being performed in their area by inspection personnel. One of the welders was asked whether he had been given any instruction as to how he should control interpass temperature and he stated he had not. The TVA NCM manual (Section 5.1) requires periodic surveillance of each welder's job assignment and procedure conformance. TVA procedure WBNP-QCP-4.3 (Revision 5) requires welding surveillance to be performed daily and reported weekly. The failure to perform interpass temperature checks is considered a noncompliance with Criterion V of Appendix B to 10 CFR 50 as implemented by the FSAR, paragraph 17.1A.5 and is identified as item number 390/78-31-02.

b. Ice Condenser Lower Support Welds (Visual Examination)

The inspector examined welds on the lower support structure outer platform assembly in bay 11 for compliance with Westinghouse Drawing 1208E18. Several plate to inner beam welds were found undersize due to gouging away of the fillets near bolt holes. One weld near the bottom corner of a support plate was incomplete. Weld profile for the gouged welds had not been faired as required by the drawing and did not comply with AWS D1.1-75 (Section 9.25) quality requirements specified by the drawing. This conflict with specified requirements is being designated as an unresolved item in order to provide the licensee time to contact the vendor to determine whether these conditions were previously identified and accepted. This item is identified for record as Unresolved Item 390/78-31-03. This item will be examined in a later inspection.

In the areas inspected, no deviations were identified. One item of noncompliance was identified, which is described in 4.a above.

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

The inspector examined the work and work activities relative to safety-related piping described below. This was accomplished primarily through observations of completed work and review of the associated records.

a. Receipt, Receipt Inspection, Identification and Documentation
for Received Piping Items-Units 1 and 2

These activities were examined for compliance with TVA Quality Control Procedure WBNP-QCP 1.6 R7. Specific piping items and requirements addressed were as follows:

- (1) 8 inch flanges, SA-105, ASME Section III, Cl. 2, RD# 595858, item 14, WBNP 78-2216, Ht. 5DHT and 5EJO.
 - Verified Receiving Report per 6.2.3.4 of QCP 1.6
 - Verified Receiving Inspection Checklist per 5.2.6 of QCP 1.6 and 3.6 of the TVA NCM
 - Verified material in assigned storage per 6.4 of QCP 1.6
 - Verified identification on material per 6.3 of QCP 1.6
 - Verified mill test reports comply with ASME Section III (74W76)
- (2) 18 inch Sch 80 SA-106 Gr. B pipe, ASME Section III, Cl. 2 RD# 595858, item 7, WBNP 78-2647, Ht. L20479.
 - Verified Receiving Report per 6.2.3.4 of QCP 1.6
 - Verified Receiving Inspection Checklist per 5.2.6 of QCP 1.6 and 3.6 of the TVA NCM
 - Verified mill test report data complies with ASME Sect. III (74W76)

Note: The above items were not designated for specific units. They could be used for either Unit 1 or 2.

b. Location of Installed Piping (Unit 1 only)

The installed piping identified in TVA Manufacturing and Installation Quality Plan (MIQP) 1-62-F-5 (Dravo Drawing E2879-IC-22R1) (CVC System) and MIQP 1-74-F-6 (Dravo Drawing E2879-IC-47R1) (RHR System) was examined to verify appropriate location. In tracing out the piping components, the NRC inspector found that subassembly 62A-CVCS-46, sketch 2876-278, Ser. No. 6509 was located where the drawing E2879-IC-22R1 indicated subassembly 62A-CVCS-40, sketch 2879-273, Ser. No. 6503 should be. This apparent conflict with the drawing requirements was identified on the last day of this inspection. In order to allow sufficient time for the licensee to investigate this item and determine whether the installation may have been appropriately approved, it is being designated as an unresolved item, 390/78-31-04.

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

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

The inspector examined identification and storage of one item of ASME Section III Class 1 stainless steel piping for compliance with TVA QCP 1.6.R7 and TVA Process Specification No. 4.M.1.1(b) (12/20/73). Paragraph 6.3 of TVA Process Specification No. 4.M.1.1(b) requires that austenitic stainless steels be stored under cover with sufficient protection from the elements and requires that end caps for tubular products be maintained in place. Paragraph 6.4 of QCP 1.6 (R7) requires assignment of storage conditions by the Responsible Engineer.

Contrary to the requirements of 4.M.1.1.(b) noted above, the inspector observed the following examples of noncompliance:

- (1) Non-covered platform storage was assigned to ASME Section III Class 1 pipe (via the Receiving Inspection Checklist) identified as Receiving Report 78-2846; Contract 77K53-821594, Item 5; Request for Delivery (RD) #595858.
- (2) A piece of the pipe described in (1) was observed stored in the open, uncovered, on November 30, 1978. The storage location was B-5 in yard 1.
- (3) Adjacent to the pipe described in (2), in open but covered storage, were many pieces of stainless steel pipe. Some of these were uncapped at one end.

These examples of failure to follow procedures for storage and protection of stainless steel pipe are considered in noncompliance with Criterion V of 10 CFR 50, Appendix B as implemented by paragraph 17.1A.5 of the FSAR. The piping was not specifically designated for either unit or to a particular system. Therefore, this noncompliance will be identified to both units. It is categorized as an infraction, Items 390/78-31-01 and 391/78-26-01.

In the areas inspected no deviations were identified. One noncompliance was identified, which is described above.

7. Exit Interview

The inspector met with the licensee representatives denoted in paragraph 1 at the conclusion of the inspection and summarized the scope and findings of the inspection.

DETAILS II

Prepared by:

RM Cantu for
A. B. Ruff, Reactor Inspector
Engineering Support Section No. 1
Reactor Construction and Engineering
Support Branch

12/13/78
Date

Dates of Inspection: November 28 - December 1, 1978

Reviewed by:

RM Cantu for
J. C. Bryant, Chief
Engineering Support Section No. 1
Reactor Construction and Engineering
Support Branch

12/13/78
Date

1. Persons Contacted

a. Licensee

T. B. Northern, Jr., Project Manager
S. Johnson, Assistant Construction Engineer
A. W. Rogers, Supervisor, QA
C. O. Christopher, Assistant Construction Engineer (Civil)
R. L. Heatherly, Supervisor, QC&R Unit
J. H. Perdue, Supervisor, Electrical Engineering Unit
H. C. Richards, Construction Engineer
J. M. Lamb, Supervisor, Mechanical Engineering Unit
T. W. Hayes, Supervisor, Instrumentation Engineering Unit
J. G. Shields, Assistant Construction Engineer
S. Dohan, Supervisor, Quality Compliance Section
L. Northard, Supervisor, Welding Engineering Unit
R. W. Forsten, Instrumentation Engineer
C. T. Shelby, Instrumentation Engineer

2. Licensee Actions on Previous Inspection Findings

This area was not inspected.

3. Unresolved Items

No new unresolved items were identified during this inspection.

4. Independent Inspection Effort (Units 1 and 2)

The inspector observed the installation of cable trays and conduit in various areas of the plant, the protection of installed instrumentation and observed, in part, the installation of the upper-head in-core thermocouples for Unit 1.

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

5. Instrumentation (Components and Systems) Observation of Work and Work Activities (Unit 1)

The inspector selected the following instrumentation and associated components for an examination of work. At the time of the examination, instrument units were installed except for their sensing lines and cable routing was designated for one unit.

| <u>Instrument Number</u> | <u>Description</u> |
|--------------------------|--|
| 1-FT-3-90-A | No. 3 Steam Generator Inlet Feed Flow Transmitter |
| 1-FT-1-21A-D | No. 3 Steam Generator Main Steam Header Flow Transmitter |
| 1-LT-3-93-D | No. 3 Steam Generator Water Level Transmitter |
| 1-PDT-30-42-G | Containment Differential Pressure Transmitter |

The above instrumentation was examined to ensure that Quality Control Procedures (QCP) were being followed in the areas of identification; location; installation, including supports, protection and anchoring; calibration and functional checks; separation; handling and documentation of nonconforming items. Separation was visually examined for sensors only, and calibration and pre-functional checks that had been performed for only one instrument were also examined. The Quality Control Procedures used in this examination were: QCP 1.2, "Control of Nonconforming Items"; QCP 3.1 R8, "Handling, Storage and Maintenance of Permanent Electrical and Instrumentation Material"; QCP 3.6 R7, "Electrical and Instrumentation Equipment Installation, Standard Tests, Inspection and Documentation" and QCP 1.6 R7, "Receipt Inspection, Storage, Withdrawal and Transfer of Permanent Material".

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

6. Instrumentation (Components and Systems) Review of Quality Records (Unit 1)

The records for receipt inspection, material certification, handling, identification, installation and test were reviewed for the instruments identified in paragraph 5.

The inspector reviewed the following nonconformance reports (NCR) related to instrumentation: NCR-1230, 1225R, 1209R, 1169R, 1122R, 1054R and 1007. Reports were examined for current status, status of corrective action, legibility, and completeness in accordance with QCP-1.2, "Control of Nonconforming Items".

Two Quality Assurance audits, WB-I-78-04 and WB-I-78-03, were examined to confirm that audits were being performed and to confirm deficiency corrections and documentation.

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

7. Exit Interview

The inspector met with licensee representatives, denoted in paragraph 1, at the conclusion of the inspection. The inspector summarized the scope of the inspection:

- a. Instrumentation (components and systems)
 - (1) Observation of work and work activities
 - (2) Review of quality records

There were no items of noncompliance identified.