



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

Report Nos.: 50-390/78-35 and 50-391/78-27

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

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

Docket Nos.: 50-390 and 50-391

License Nos.: CPPR-91 and CPPR-92

Inspection at: Watts Bar Dam, Tennessee

Inspection conducted: December 1-22, 1978

Inspector: B. J. Cochran, Resident Inspector

Approved by:

A. R. Herdt
A. R. Herdt, Chief
Projects Section
Reactor Construction and Engineering
Support Branch

1/8/79
Date

Inspection Summary

Inspection on December 1-22, 1978 (Report Nos. 50-390/78-35
and 50-391/78-27)

Areas Inspected: All phases of construction activities; IE bulletins; safety-related components; safety-related piping; containment penetrations; storage of components and equipment. The inspection consisted of 154 inspector hours on-site by the resident inspector.

Results: Of the six areas inspected, no apparent items of noncompliance or deviations were identified in five areas; one item of noncompliance (infraction-failure to provide adequate design review-390/78-35-02 and 391/78-27-02-Paragraph 8) was identified.

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DETAILS I

Prepared by:

M.J. Longe for
B. J. Cochran, Resident Inspector
Project Section
Reactor Construction and Engineering
Support Branch

1/5/79
Date

Dates of Inspection: December 1-22, 1978

Approved by:

A.R. Herdt
A. R. Herdt, Chief
Projects Section
Reactor Construction and Engineering
Support Branch

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1. Persons Contacted

Tennessee Valley Authority (TVA)

T. B. Northern, Jr., Project Manager
S. Johnson, Assistant Construction Engineer
A. W. Roger, Supervisor QA
C. O. Christopher, Assistant Construction Engineer (Civil)
R. L. Heatherly, Supervisor, QC&R Unit
J. H. Perdue, Supervisor, Electrical Engineering Unit
J. M. Lamb, Supervisor, Mechanical Engineering Unit
H. C. Richardson, Construction Engineer
J. G. Shields, Assistant Construction Engineer
J. E. Treadway, Construction Superintendent
W. C. English, Assistant Construction Superintendent

The inspector also talked with craftsmen in their work areas and members of the engineering units.

2. Licensee Action on Previous Inspection Findings

There were none inspected during this inspection period.

3. Unresolved Items

There were no new unresolved items identified during this inspection period.

4. Independent Inspection Units 1 and 2

During this report period, the inspector performed inspection of the following activities:

- Installation of sleeves through walls and floors for the fire protection system. Craftsmen are alerted to guard against damage to rebar.
- Welding of instrument tubing using an Astro arc welding machine.
- Storage of safety-related components and maintenance records.
- Installation of Hilti bolts for electrical tray supports.
- Electrical terminations in control panels in the control room.
- Weld rod control, issuing and storage facilities.
- Installation of ice condenser lattice support frames.
- Cable pulling in diesel generator building.
- Housekeeping and cleanup activities throughout the construction area.
- Outdoor and indoor storage of equipment, components and supplies.
- Installation of Unit 1 Reactor Coolant Pump Motors Nos. 1 and 2
- Welding in Units 1 and 2 reactor buildings
- Review of TVA site QA audit reports:
 - . WB-M-78-07, Inspection and Documentation of the Ice Condenser System Installations and Seals
 - . WB-W-78-03, Procurement, Storage, Issue and Control of Welding Materials
- Attended weekly construction scheduling meetings and bi-weekly electrical planning meetings.
- Machining of core based support clevis inside Unit 2 reactor vessel. Activity is estimated to require six weeks' effort.

- Assisted NRR Technical Branch in conducting an inspection on instrument and control equipment and systems in preparation for the Safety Evaluation Report (SER).
- Assisted IE Headquarters and Region II in the conduct of a communications drill at the Watts Bar Site.
- Visited the Local Public Document Room in the Dayton, Tennessee Public Library.

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

5. Licensee Identified Item (50.55(e))

Open Item Nos. (390/78-35-01 and 391/78-27-01), Pipe Hanger Support Plate Bolts

The construction engineers notified the NRC resident inspector that a number of pipe hanger support plates had been identified where the bolt heads have been cut off and the heads welded to the back side of the plate and the Hilti inserts have been cut off and the bolts screwed into the inserts.

6. IE Bulletins

(Open) IE Bulletin 78-04, "Environmental Qualification of Certain Stem Mounted Limit Switches Inside Reactor Containment"

TVA has advised that all stem mounted limit switches on valves inside reactor containment will be replaced with qualified limit switches that will provide valve position indication and control functions in all affected environmental conditions.

This item will remain open until the replacement is completed.

7. Containment Penetrations-Observation of Work Activities (Unit 1)

Welding of penetrations is essentially completed in Unit 1 containment building. This inspection effort consisted of inspection of installed penetrations and review of selected records. The containment penetration schedules identify the required welding procedures and NDE requirements for each penetration.

Electrical Penetrations, X-145E to CRDM and X-146E to CRDM and mechanical penetrations, X40A to Auxiliary Feed Water and X40B to

Auxiliary Feed Water, were inspected and field weld operation sheets and weld repair sheets examined. Records confirm that the welds were made by qualified welders, NDE examinations performed by qualified inspectors and procedural requirements met.

No items of noncompliance or deviations were identified.

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

The Chemical Volume Control System was selected for this inspection activity. The installation of piping in this system is approximately 84 percent complete, hangers are approximately 75 percent, and valves approximately 70 percent. Inspection and installation records confirm that related activities are performed according to procedure and properly documented.

During the walk through inspection of the installed components and piping, the inspector identified eight swing check valves installed in vertical pipe runs. An examination of the system's isometric drawings confirmed that the valves were installed according to the design drawings. Examination of Westinghouse drawings 934D194 for the 10 inch swing check and 934D175 for the 4 inch check valve and the Westinghouse E specifications for swing check valves confirmed the installation requirement, "The valve must be mounted in a horizontal pipe run with the valve bonnet above the valve body". This was identified as an infraction for failure to provide adequate design review of a contractor's drawings and specifications in accordance with Criterion III of Appendix B to 10 CFR 50 as implemented by Paragraph 17.1A.3.1 of the FSAR.

This infraction is identified as 50-390/78-35-02 and 50-391/78-27-02.

9. Reactor Vessel Internals-Observation of Work Activities (Unit 2)

The reactor internals for Unit 2 have been removed from storage inside the reactor vessel and relocated to the Unit 2 refueling storage area. The internals are stored on their supports and are protected from construction debris. Assembly of the internals is scheduled for a later time.

No items of noncompliance or deviations were identified.

10. Safety-Related Components-Observation of Work (Unit 2)

The chemical and volume control system centrifugal charging pumps and safety injection system pumps were selected for inspection. Inspection confirmed that the pumps, motors, speed controls, valves

and piping are adequately protected against construction debris and from damage due to other construction activities in the immediate area. Pump rooms are cleaned by a cleanup crew in constant attendance.

Examination of storage and maintenance records confirm that periodic inspections and preventive maintenance activities are performed. Piping and installation of conduit in the pump rooms are incomplete.

No items of noncompliance or deviations were identified.

11. Exit Interview

The resident inspector met with the licensee construction project manager and supervisors each week to review the resident inspector's activities and findings. Subjects discussed included the NRC's communications equipment drill held at Watts Bar, local public document room and construction activities.

One item of noncompliance, regarding the design review of contractor's drawings for the installation of swing check valves in vertical pipe runs, was identified.