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

Report Nos. 50-390/79-30 and 50-391/79-25

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

Facility Name: Watts Bar Nuclear Plant Units 1 & 2

Docket Nos. 50-390 and 50-391

License Nos. CPPR-91 and CPPR-92

Inspection at Watts Bar Site near Spring City, Tennessee

Inspected by: M. Thomas for
B. J. Cochran — 8/22/79 Date Signed

M. Thomas
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Approved by: For R. W. Wright
F. S. Cantrell, Section Chief, RC&ES Branch — 8/22/79 Date Signed

SUMMARY

Inspected on July 2-27, 1979

Areas Inspected

This routine, announced inspection involved 100.5 inspector-hours onsite in the areas of welding of safety related piping, fire prevention and protection systems, storage of pipe supports and hangers, installation of pipe snubbers, instrument piping, glass blasting of Unit 2 reactor refueling water storage tank, installed storage of Units 1 and 2 safety related pumps and motors, storage of stainless steel piping.

Results

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

DETAILS

1. Persons Contacted

Licensee Employees

*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
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
*W. I. Dothard, OEDC-MEB
*S. Duhan, Supervisor, Quality Compliance Section, QEDC-QA
*C. M. Callihan, Licensing Engineer, Power
*W. K. Anders, QA Engineer, OEDC-QA

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

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on July 13, 1979 with those persons indicated in Paragraph 1 above. The resident inspector met with the licensee construction project manager and engineering supervisors to review the resident inspector's activities and findings. The inspection findings for the last half of the month were discussed on August 3, 1979 due to the absence of the resident inspector.

No items of noncompliance or deviations were identified.

3. Licensee Action on Previous Inspection Findings

These items were not inspected during this inspection period.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort (Units 1 and 2)

a. During this inspection period the following non-programatic construction activities were inspected, observed or witnessed:

(1) Inspected the storage of spring pipe supports and MOV's in the temporary storage buildings. Spring pipe supports are segregated according to size and on shelves. The MOV's are stored on dunnage with all openings capped or taped close.

(2) Observed the installation of mechanical pipe snubbers on piping in RHR pump room 1AA. Fitters confirmed the operation of each snubber by exercising them prior to bolting them in place.

(3) Inspected sleeves cut into the Unit 1 reactor building crane wall for damage to rebar. No damage was identified.

(4) Inspected instrumentation piping on elevation 692 for proper slope. No deficiencies were identified.

(5) Observed the glass blasting of the interior of the Unit 2 refueling water storage tank.

(6) Inspected construction housekeeping in Units 1 and 2 containment buildings, the auxiliary building and control building.

(7) Inspected the installed storage of Units 1 and 2 RHR, containment spray, SIS, reciprocating charging and centrifugal charging pumps and motors.

(8) Inspected maintenance records for the following motors:

SIS Motors:

1-MTR-63-10A
1-MTR-63-15B
2-MTR-63-10A
2-MTR-63-15B

Centrifugal Charging Pump Motors:

1-MTR-62-108-A
1-MTR-62-104-B
2-MTR-62-108-A
2-MTR-62-104-B

Reciprocating Charging Pump Motors:

1-MTR-62-101
2-MTR-62-101

The records are current and show that maintenance inspections are being performed regularly.

(9) In the RHR and containment spray heat exchanger room 1B, observed the preparation of piping subassemblies 63-SI-77 and 63-SI-78 for the fitup of flanges.

(10) Inspected the storage of stainless steel piping in Unit 2 reactor building. The piping was stored on dunnage with the ends capped or taped to keep out dirt and debris.

(11) Observed the testing of RHR system flow control valves (1-FCV-74-12-A)and (1-FCV-72-22-A) on elevation 676 and flow control valves (1-FCV-74-8-A) and (1-FCV-74-1-A) from the 480V shutdown board Motor Control Center.

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

b. The following Watts Bar QA audits were examined:

(1) WB-C-79-04, Splicing of Reinforcing Steel.
(2) WB-E-79-07, Installation of Class 1E Cable.
(3) WB-G-79-10, Preparation and Documentation of Field Change Requests
(4) WB-M-79-08, Lubrication Control of Permanent Mechanical Equipment
(5) WB-M-79-09, Mechanical Piping Systems

6. Licensee Identified Items

a. (Closed) Item Nos. 390/79-13-08 and 391/79-10-08, Heating and Ventilation System Hanger Design (SWP-79-W-5)

The design drawings are revised to specify the numbers and locations of ductwork hangers required for Seismic Category I intergrity. The required additional hangers are in the process of being installed in the auxiliary building.

b. (Open) Item Nos. 390/79-30-01 and 391/79-25-01, Diesel Generator Turbocharger Lubrication System (MEB 79-27)

TVA reported that the supplier of the emergency diesel generator sets had notified them of a possible problem with the diesel lubricating oil system. Under certain starting conditions, the diesel turbo-charger thrust bearing could fail due to the lubricating oil having drained from the bearing housing.

c. (Open) Item Nos. 390/79-30-02 and 391/79-25-02, Motor Driven Auxiliary Feedwater Pump Lube Oil System (MEB 79-34)

TVA reported to RII that the vendor of the motor driven auxiliary feedwater pumps had incorrect information on the drawings on how to connect the lube oil cooling.

d. (Open) Item Nos. 390/79-30-03 and 391/79-25-03, Hydrogen Detection System not Environmentally Qualified (EEB 79-11)

TVA informed the resident inspector that hydrogen detection systems supplied by Comsip-Delphi Inc., have not been environmentally qualified.

e. (Open) Item Nos. 390/79-30-04 and 391/79-25-04, Missing Hanger on Auxiliary Feedwater Pump Trip and Throttle Valve (MEB 79-36)

TVA informed RII that seismic analysis assumed turbine trip and throttle valves were supported by spring hangers. Spring supports were not required by TVA field erection drawings.

f. (Open) Item Nos. 390/79-30-05 and 391/79-25-05, Deficiency in Steam Generator Level Indicators (MEB 79-33)

TVA reported that Westinghouse had informed them that analysis of a high energy line break indicates auxiliary feedwater would be delayed in initiation due to steam generator level indication errors introduced by an increasing reference leg temperature.

g. (Open) Item Nos. 390/79-30-06 and 391/79-25-06, MOV Control Circuit Failure (NCR 700 and 714)

On June 16, 1978, in a written report of the subject deficiency for Sequoyah Nuclear Plant, TVA informed RII that the same type relays were to be used at Watts Bar. The circuits are used for monitoring of the control of essentially all safety systems and isolation MOV's at Watts Bar.

h. (Open) Item Nos. 390/79-30-08 and 391/79-25-07, Pressurizer Relief and Safety Line Blowdown Analysis Performed Incorrectly (CEB 79-26) TVA notified RII that they were informed by EDS Nuclear Inc., (EDS), that one of the two modes of operation used to perform the blowdown analysis (Sequential and Simultaneous Discharge Modes) was incorrect.

7. Part 21 Identification

(Open) Item No. 390/79-30-07, Barton Steam Generator Level Transmitters (Narrow Range) Fail to Meet Specifications.

Westinghouse informed NRC that 7 Barton Lot 1 differential pressure transmitters delivered to Watts Bar for use in the steam generator level (narrow range) function, may exhibit a positive inaccuracy in excess of the Westinghouse specification of +10 percent. Dependent on the magnitude of the inaccuracy of the individual transmitters and the disposition of the units within the plant, the protective actions reliant on the steam generator level (narrow range) initiation signal might potentially be impaired.

8. IE Bulletins

a. (Closed) IEB 79-07, Seismic Stress Analysis of Safety Related Piping

TVA has thoroughly investigated all non-NSSS systems for Watts Bar and has determined that no dynamic seismic piping analysis was performed utilizing algebraic summation of components or responses for either Response Spectrum Model Analysis or Time History Analysis.

TVA has received the required information on the NSSS systems from each of the vendors, which were responsible for performing the seismic analysis of safety-related piping for Watts Bar. The uniform response was that no analysis was performed using the Response Spectrum Model Analysis or Time History Analysis.

b. (Closed) IEB 79-09, Failure of GE Type AK-2 Circuit Breaker in Safety Related Systems

None of the GE type AK-2 circuit breakers are in use or are planned for use in NSSS safety-related systems. However, for certain balance-of-plant safety-related systems, GE type AK-2 circuit breakers are in use. These breakers do not have the undervoltage trip device.

c. (Closed) IEB 79-11, Faulty Overcurrent Trip Device Circuit Breakers for Engineered Safety Systems.

TVA's investigation revealed that none of the DB-50 and DB-75 circuit breakers with overcurrent trip devices have been used or are planned for use at Watts Bar.

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

Inspection under this activity included the inspection of Welds 1-062A-T134-04, 1-062A-T134-05, 1-062A-T134-06B, and 0-77D-T138-19.

Field weld operation sheets 1-62-F-9-6, 1-62-F-015, 1-62-F-014 and 0-77-F-509-85 were examined for proper identification of the subassemblies, weld procedures, inspection and NDE requirements and status of the weld.

Welds 1-062A-T134-04, 05, 06B and 0-77D-T138-19 were inspected during the final pass or after the welds were completed. Records indicate that no repairs were required on welds 1-062A-T134-04, 05, 06B and 077D-T138-19.

The end preparation of subassemblies 2-67-S-19-7 and 2-67-S-19-8 for weld 2-067B-T216-04 was inspected prior to start of welding. The operation sheet confirmed that the Mechanical Engineer had verified the correct material and inspected the prefittup cleanliness.

The inspector verified that the referenced welding procedures were the proper procedures for the material and process and had been qualified according to the PQR.

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

10. Fire Prevention/Protection - Observation of Work and Work Activities (Units 1 and 2)

This inspection activity confirmed that all scaffolding used in work areas is treated with a flame retardant paint. Drop cloths or weld blankets are fire resistant fiber glass material. Plastic material used to cover major components to protect them from construction debris is flame resistant. Construction trash is accumulated in metal pans near an area that is serviced on all floors of the auxiliary building by a crane and is emptied regularly.

Flammable liquids are maintained in a storage warehouse away from the construction area. Limited amounts of flammable liquids are permitted in the auxiliary and reactor buildings for special cleaning purposes. They are kept in containers approved for their use and distinctly identified as flammable.

Construction forces are currently installing the permanent fire protection piping in the auxiliary, control, reactor and turbine buildings; however, the systems are not complete at this time.

Sixteen fire extinguishers in Units 1 and 2 reactor buildings and twenty three extinguishers in the auxiliary building were checked for proper fill and compliance with periodic inspection requirements.

The outside fire storage equipment was inspected and found to be in order and available for immediate use.

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