



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

MAY - 8 1980

Report No. 50-328/80-09

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

Facility Name: Sequoyah Nuclear Plant

Docket No. 50-328

License No. CPPR-73

Inspection at Sequoyah site near Chattanooga, Tennessee

Inspector: C. R. McFarland  
C. R. McFarland

5-8-80  
Date Signed

Approved by: F. S. Cantrell  
F. S. Cantrell, Section Chief, RC&ES Branch

5/8/80  
Date Signed

SUMMARY

Inspection on April 21-23, 1980

Areas Inspected

This routine unannounced inspection involved 26 inspector-hours on site in the areas of 10 CFR 50.55(e) items, QA audits, and observation of safety-related work activities.

Results

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

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## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*G. G. Stack, Project Manager
- \*T. B. Northern, Jr., Construction Engineer
- \*D. W. Mack, Assistant Construction Engineer
- \*R. W. Olson, Assistant Construction Engineer
- H. J. Fischer, Supervisor, Mechanical Engineering Unit
- \*R. C. Miles, Supervisor, QC Records Unit (QCRU)
- \*J. M. Munns, Supervisor, Construction QA Unit (CQAU)
- \*R. B. Bruce, Lead QA Engineer, CQAU
- H. Loftis, Mechanical Engineering Unit
- S. Nash, Mechanical Engineer, Hangers
- \*E. C. Pendergrass, Engineer, QCRU

Other licensee employees contacted included various construction craftsmen, technicians and office personnel.

#### NRC Resident Inspectors

- W. T. Cottle, SRI
- S. D. Butler, RI
- A. P. Tattersall, RI

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on April 23, 1980, with those persons indicated in Paragraph 1 above.

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Licensee Identified Items (LII) Unit 2

TVA has reported a number of items to Region II as reportable in compliance with 10 CFR 50.55(e). The Region II inspector reviewed the items listed

below and the supporting documentation, and discussed the items with responsible licensee staff during this inspection.

- a. (Open) LII 328/79-31-01 - Inadequate Design of Containment Spray Heat Exchangers (CSHX), NCR 16P and NCR 2070. The inspector reviewed the TVA interim report dated November 23, 1979, and the final report to Region II (RII) dated February 1, 1980, discussed the corrective action with the responsible mechanical engineering staff, and observed the tube staking work in progress on Unit 2A. Work on Unit 2B has been essentially completed; the shell side hydrostatic test was to be performed during the inspection period. To correct the tube vibration and wear problems helical wire spacers have been placed between certain tubes as determined by a TVA contractor, Foster Wheeler Corporation. The tubes have been staked at six elevations and at three locations in the U-bend area.

A further review by TVA has determined that tube wall wear has occurred in the three Component Cooling System (CCS) heat exchangers that were manufactured by Industrial Process Engineers, Inc. (IPE), the manufacturer of the CSHXs. IPE has gone out of business. The CSHXs were built in 1972. This item will be inspector followup item 328/80-09-12, CCS heat exchanger tube wear, until TVA determines whether a NCR needs to be written relative to the CCS heat exchangers.

- b. (Open) LII 328/80-03-03 - Omitted Supports in CVCS, NCR CEB 79-38. The inspector reviewed the TVA final report to RII dated January 31, 1980. TVA has adopted the TPIPE program for piping analysis. TPIPE has a larger problem size capability and corrects the basic problem. Work related to the Unit 1 work for NCR CEB 79-38 was closed in the RII Resident Inspector's (RI) Report 50-327/80-6. Field work on the Unit 2 missing pipe support has not been started.
- c. (Closed) LII 328/80-09-01 - Rebar Bending, NCR YC-023. The inspector reviewed the TVA final report to RII dated February 1, 1980, and the corrective action taken to correct the basic problems with bending and straightening partially embedded rebar. The inspector reviewed the revisions to the Sequoyah Procedure P-13, Releases for Drilling, Chipping, Welding, Sandblasting and Rework of Permanent Structures or Components: Revision 11 (April 11, 1979), Revision 12 (October 12, 1979) and Revision 13 (February 1, 1980). Revision 13 of P-13, Section 6.0, Item A.9 permits isolated cases where a corrective action or a field change is specifically approved by the design department, EN DES, and relates to the General Construction Specification for Plain and Reinforced Concrete, G-2, Revision 2 (January 9, 1980) which provides detailed requirements for bending in place steel.
- d. (Open) LII 328/80-9-2 - Ruskin Fire Dampers; NCR MEB 8007. TVA informed RII of this item on February 27, 1980, and issued a final report dated March 28, 1980. Modification packages to correct a deficiency in the

- spring holding slot of the spring brackets for the spring closure of the dampers have been shipped to Sequoyah. This item was not inspected.
- e. (Open) LII 328/80-9-3 Main Control Room Environment; NCR QEB 8001. TVA informed RII of this item on March 5, 1980, and issued a final report dated April 3, 1980. Certain modifications to the control room ventilation duct system need to be made to prevent leakage of outside unfiltered air into the main control room during isolation conditions. This item was not inspected.
  - f. (Open) LII 328/80-09-04 Walworth Valve Weights Incorrect; NCR CEB 8005. TVA informed RII of this item on March 13, 1980, and issued a final report dated April 11, 1980. Incorrect motor operator weights were used in the piping load analysis for three-inch piping in the Component Cooling Water System. The piping load analysis have been rerun and the attachment to the pipe for one support will require a modification. This item was not inspected.
  - g. (Open) LII 328/80-09-05 Class IE Cable Qualifications; NCR QEB 8002. On March 25, 1980, TVA informed RII that a small amount of cabling inside containment would be exposed to larger radiation levels under post LOCA conditions than the specified design requirements allowed. A final report is due April 25, 1980.
  - h. (Open) LII 328/80-09-06 Upper Internals Guide Tube Support Pins, NCR NEB 8006. On March 25, 1980, TVA informed RII that a generic problem exists with cracking of the subject support pins due to stress corrosion caused by improper heat treatment. TVA plans to replace the subject pins with pins heat treated at a higher temperature. A final report is due April 25, 1980.
  - i. (Open) LII 328/80-09-07 Upper Head Injection (UHI) Hydraulic Isolation Valve, NCR NEB 8007. On March 25, 1980, TVA informed RII that a problem exists with the mass balancing of the hydraulic control system for the UHI system. The problem involves inconsistent indication of accumulator liquid weights. A final report is due April 25, 1980.
  - j. (Open) LII 328/80-09-08 Overstressed U Bolts, NCR SWP 8007. On April 1, 1980, TVA informed RII that several vendor (EDS-Nuclear) designed pipe supports for 3/4" Class A pipes, related to the reactor coolant system and the chemical volume control system, were designed using bolts that would be overstressed during a seismic event. A final report is due May 1, 1980.
  - k. (Open) LII 328/80-09-09 Main Steam Pressure Transmitters, NCR EEB 8003. On April 7, 1980, TVA informed RII that environmental qualification data failed to substantiate the required long-term operation of eight Foxboro Model E11GM pressure transmitters (PT). The PTs are located outside containment in the main steam valve room and are only

qualified for 130°F, although the FSAR states that the temperature in the main steam valve room could reach 290°F. A final report is due May 7, 1980.

- l. (Open) LII 328/80-09-10, 2" Core Spray Pipe Design Error, NCR CEB 8007. On April 15, 1980, TVA informed RII that an incorrect outside diameter was used in the design of two core spray piping lines. A reanalysis has been initiated. A final report is due May 15, 1980.
- m. (Open) LII 328/80-09-11 Auxiliary Feedwater Pump Flow Test, NCR NEB 8009. On April 15, 1980, TVA informed RII that the test specification requirements appear to be inconsistent, less conservative, than those stated in the FSAR. The test response time to full flow exceeds 60 seconds which is the acceptance criteria according to the FSAR. A final report is due May 15, 1980.

#### 6. Audits

The inspector discussed the current work of the Division of Construction, onsite QA staff with the supervisor and the lead QA engineer of the Sequoyah Construction QA Unit (CQAU), reviewed QA Audit Procedure (QAAP) 18 "Audits", and the QA Staff Procedure (QASP) 7.1, "Auditing Construction Activities". The inspector reviewed the following audits of Unit 2 onsite design work:

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|------------|---|
| SN-M-80-06 | HVAC Ducts and Supports, March 10-24, 1980                          |
| SN-I-80-02 | Installation of Instrument Line Tubing, February 19 - March 6, 1980 |
| SN-M-79-15 | Residual Heat Removal System, December 5-21, 1979                   |
| SN-M-79-01 | Pipe Restraints and Supports, January 25 - February 16, 1979        |

QASP 7.1 provides for identifying and reporting deficiencies, followup action records. A Sequoyah monthly management report of CQA audits tabulates the open audit deficiencies, response responsibilities and status, due dates, and comments. A weekly QCRU report tabulates the status of current audits, nonconformances, records, procedure changes, drawing revisions and new key punch items. For general information, TVA provides Sequoyah and all projects a listing of all NRC nonconformances reported on TVA projects.

No items of noncompliance or deviations were identified.

#### 7. Independent Inspection

The inspector conducted a general inspection of the Unit 2 containment building and the auxiliary building sections used for Unit 2. Work activities are essentially complete except for design modifications related to 10 CFR 50.55(e) items, the installation of the fire protection program equipment and related systems, and work on seismic supports and restraints.

No items of noncompliance or deviations were identified.