November 8, 1999

Tennessee Valley Authority
ATTN: Mr. J. A. Scalice
Chief Nuclear Officer and
Executive Vice President
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: NRC INTEGRATED INSPECTION REPORT NO. 50-327/99-06 AND 50-328/99-06

Dear Mr. Scalice:

On October 9, 1999, the NRC completed an inspection at your Sequoyah 1 & 2 reactor facilities. The enclosed report presents the results of this inspection. The results of the inspection were discussed on October 20, 1999, with Mr. M. Bajestani and other members of your staff.

The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, the inspection covered periodic resident inspections and scheduled inspections by three engineering specialists and a radiation specialist. There were no findings in any of the strategic performance areas.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

Sincerely,

(Original signed by Paul E. Fredrickson)

Paul E. Fredrickson, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Docket Nos. 50-327, 50-328
License Nos. DPR-77, DPR-79

Enclosure: NRC Inspection Report

cc w/encl:

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-327, 50-328
License Nos:	DPR-77, DPR-79
Report No:	50-327/99-06, 50-328/99-06
Licensee:	Tennessee Valley Authority (TVA)
Facility:	Sequoyah Nuclear Plant, Units 1 & 2
Location:	Sequoyah Access Road Hamilton County, TN 37379
Dates:	August 29 through October 9, 1999
Inspectors:	R. Gibbs, Senior Resident Inspector D. Starkey, Resident Inspector R. Telson, Resident Inspector C. Smith, Engineering Specialist and Team Leader (Section 1R17) R. Moore, Engineering Specialist M. Thomas, Engineering Specialist E. Testa, Senior Radiation Specialist (Sections 2OS2 and 2OS3)
Approved by:	P. Fredrickson, Chief Reactor Projects Branch 6 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

Sequoyah Nuclear Plant, Units 1 & 2
NRC Inspection Report 50-327/99-06, 50-328/99-06

The report covers a 6-week period of resident inspection. In addition, it includes the results of a permanent plant modification team inspection and the results of two inspections by a radiation specialist inspection.

Performance Indicator Verification

- Mitigating Systems Cornerstone. Safety System Unavailability. Auxiliary feedwater system (AFW) performance verification (PI). The licensee identified errors in the Units 1 and 2 AFW PI calculation submitted for August 1999. The errors did not result in a change to the reported PI value and subsequently had no impact on the existing response band of performance. The PI remained in the Green band with less than 2% unavailability (Section 4OA2).

Report Details

Units 1 and 2 operated at or near 100 percent power for the entire inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigation Systems, Barrier Integrity

1R03 Emergent Work

a. Inspection Scope

The inspectors observed emergent troubleshooting and repair activities, following the licensee's discovery that the DC rectifier output voltage of vital inverter 2-III was abnormally high, to assess whether the licensee was taking necessary steps to demonstrate adequate planning and controls.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors performed a partial walkdown inspection of the emergency diesel generators (EDGs) to verify emergency power system operability during a period when off-site power was in an off-normal configuration. The inspectors reviewed equipment condition and lineups for any discrepancies which might affect system operability.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R05 Fire Protection

a. Inspection Scope

The inspectors conducted tours of the EDG building and the cable spread area to assess the adequacy of fire protection program implementation for these areas. Both areas were considered to be high risk fire areas according to the licensee's probabilistic fire risk analysis. The inspectors checked for the control of transient combustibles and condition of the fire detection and fire suppression systems.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R09 Inservice Testing of Pumps and Valves

.1 Component Cooling Water Pump Flow Performance Test

a. Inspection Scope

The inspectors observed inservice testing of component cooling water pump 2A-A to evaluate the effectiveness of the testing program. Test instructions were examined for compliance with Technical Specification (TS) 4.0.5 and American Society of Mechanical Engineers (ASME) Section XI requirements. The inspectors reviewed pump operating data for negative operating trends.

b. Observations and Findings

No findings were identified and documented through this inspection.

.2 Power Operated Relief Valve (PORV) Block Valve Operability Test

a. Inspection Scope

The inspectors observed the inservice open and closed stroke test for valve 1-FCV-68-332 which is the block valve for PORV 1-PCV-68-340A. Test instructions were examined for compliance with TS 4.0.5 and ASME Section XI requirements. The inspectors reviewed test stroke data and compared the data to acceptable reference values. Historical trending information was also reviewed to determine if valve operation showed any negative operating trends.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed operators in the plant's simulator during licensed operator retraining. Two different operating crews were observed. In addition, the inspectors verified that the training program included risk-significant operator actions, emergency plan implementation, and lessons learned from previous plant experiences.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed the 120V vital AC system (System 250B) to evaluate the effectiveness of the licensee's maintenance rule implementation. The inspectors checked for proper system scoping, monitoring, and categorization as required by the maintenance rule.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R13 Maintenance Work Prioritization and Control

.1 Vital Inverter Repair

a. Inspection Scope

The inspectors evaluated a licensee decision to troubleshoot and repair vital inverter 2-III, with the site in an off-normal switchyard configuration, to assess whether plant risk and configuration were properly controlled and consistent with the Maintenance Rule. The inspectors interviewed plant personnel involved with scheduling and approving on-line maintenance and evaluated tools used for the risk assessment process.

b. Observations and Findings

No findings were identified and documented through this inspection.

.2 Solid State Protection System (SSPS) Testing

a. Inspection Scope

Inspectors evaluated a licensee decision to suspend scheduled SSPS testing during the troubleshooting and repair of vital inverter 2-III, to assess whether plant risk and configuration were properly controlled and consistent with the Maintenance Rule. The inspectors interviewed plant personnel involved with scheduling and approving on-line maintenance and evaluated tools used for the risk assessment process.

b. Observations and Findings

No findings were identified and documented through this inspection.

.3 EDG Surveillance Testing

a. Inspection Scope

Inspectors evaluated a licensee decision to perform routine surveillance activities rendering EDG 2A temporarily inoperable, with the site in an off-normal switchyard configuration, to assess whether plant risk and configuration were properly controlled and consistent with the Maintenance Rule. The inspectors interviewed plant personnel involved with scheduling and approving on-line maintenance and evaluated tools used for the risk assessment process.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R17 Permanent Plant Modifications

a. Inspection Scope:

The inspectors reviewed eight plant modification packages, containing approved design output documents along with referenced calculations, in order to verify that the following requirements had been satisfied:

- Design bases and performance capability of risk significant SSCs had not been degraded through plant modifications.
- Plant modifications were developed and implemented in accordance with the requirements of 10 CFR 50 Appendix B, Criterion III, Design Control.
- Design changes did not involve an unreviewed safety question and evaluations performed in accordance with the requirements of 10 CFR 50.59 were technically adequate.

The plant modification packages reviewed during this inspection are as follows:

Design Change Notice (DCN) No. M-DCN 12804, Resolve Civil Issues, Problem Evaluation Report (PER) No. SQ961347

M-DCN No. 13833, Resolve Civil Issues Priority 1 and 2 Pipe Support

M-DCN No. 12809, Resolve Civil Issues Described in PER No. SQ950369

M-DCN No. 13953, Replace Containment Spray Heat Exchanger 1B-B

T-DCN No. 14381, Replace Motor Driven Auxiliary Feedwater Pump (MDAFWP) 2B-B

T-DCN No. 20080, Turbine Driven Auxiliary Feedwater Pump (TDAFWP) Cooling Water Orifice

T-DCN No. 14028, Replacement for MDAFWP 1A-A

M-DCN No. 09198, Unit 2 TDAFWP Level Control Valve Design Changes

b. Observations and Findings:

No findings were identified and documented through this inspection.

2. RADIATION SAFETY
Cornerstone: Occupational Radiation Safety

2OS2 ALARA Planning and Controls

a. Inspection Scope

The inspectors reviewed the plant collective exposure history, current exposure dose trends, outage reports, source term reduction initiatives, the year 2000 annual site dose goal, the operating chemistry plan, and the shutdown chemistry crud burst and clean-up results. The inspectors also evaluated outage job evaluations and performance results, radiation work permit preparation, temporary shielding installation and removal, schedules for scaffold erection and removal, audits and self assessments, exposure tracking system, and corrective action program problem identification and resolution.

b. Observations and Findings

No findings were identified and documented through this inspection.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors reviewed the accuracy and operability of portable survey instruments, and observed the calibration, storage, and in-field source checks of these instruments. The inspectors also observed and reviewed calibration and daily operability checks for whole body counters and portal monitors. Calibration and maintenance of effluent release monitors were observed, and internal dose assessment calculations and dose assignments for skin contaminations were reviewed.

b. Observations and Findings

No findings were identified and documented through this inspection.

4 OTHER ACTIVITIES

4OA2 Performance Indicator Verification

a. Inspection Scope

The inspectors verified the accuracy of the performance indicator (PI) for SSU for the AFW system by comparing the reported PI data to plant operating logs from July through August 1999. The licensee's corrective action program was reviewed to determine if any problems with the collection of the PI data had been identified.

b. Observations and Findings

Following the inspectors' review of unavailability data with the licensee on September 30, the licensee identified an error in the August 1999 PI monthly report in which 54 minutes of Unit 1 AFW unavailability were not included in the PI calculation. On October 1, the licensee initiated Problem Evaluation Report 99-009088-000 to document and correct the error. Subsequent to that finding, the licensee further identified that Unit 2 AFW data were also affected in that 44 minutes of unavailability were not included. The licensee stated that the August 1999 PI calculation report would be revised to reflect the corrected information for both units. The inspectors verified that the corrected data had no impact on the unavailability value reported to the NRC. The inspectors also verified that the performance rating for the PI remained in the licensee response (Green) band following the recalculation. The inspectors ensured that the licensee had entered the appropriate TS action statement declaring the pumps inoperable during the time the pumps were unavailable.

4OA4 Other

.1 (Closed) LER 50-327/98003-01: Additional condition of an oscillator board with a bad solder joint in a vital inverter. The failure of vital inverter 1-IV in November 1998 was discussed in Inspection Report (IR) 50-327, 328/98-11 and documented in Licensee Event Report (LER) 50-327/98003-00. This LER was closed in IR 50-327, 328/99-02. Revision 1 to this LER subsequently addressed the discovery, following an April 1999 extent of condition review, of another bad solder joint on an oscillator board. The defective oscillator board, located in vital inverter 2-IV, was replaced and the 120VAC vital power system was reclassified as an a(1) system under the Maintenance Rule. The licensee had scheduled replacement of all vital inverters by July, 2000.

.2 (Closed) Apparent Violation (AV) 50-328/99-04-05: In NRC IR 50-328/99-04, an apparent violation was identified associated with the implementation of procedural changes which resulted in three containment penetrations being left open during the April 1999 refueling outage. These changes, which in effect, resulted in a change to TS 3.9.4.c, were implemented without prior Commission approval as required by 10 CFR 50.59.

In a letter dated September 21, 1999, the NRC notified the licensee that discretion would be exercised in accordance with Section VII.B.6 of the Enforcement Policy and therefore a Notice of Violation would not be issued in this case. Discretion was warranted because the NRC's review of these issues, as documented in IR 50-327, 328/91-23, dated November 18, 1991, contributed to the NRC not addressing the complete spectrum of regulatory issues at that time. In particular, the NRC's 1991 review, as well as the licensee's review, did not recognize the TS and 10 CFR 50.59 compliance issues, which contributed to the licensee's continued use of the 10 CFR 50.59 process to change procedures, resulting in a TS violation. The NRC noted that the licensee had been responsive in actively considering options to fully address these issues for any upcoming refueling operations.

4OA5 Management Meetings

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspections on September 24, October 1, and October 20, 1999. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. Bajestani, Site Vice President
H. Butterworth, Operations Manager
E. Freeman, Maintenance and Modifications Manager
J. Gates, Site Support Manager
C. Kent, Radcon/Chemistry Manager
D. Koehl, Plant Manager
M. Lorek, Site Engineering Manager
B. O'Brien, Maintenance Manager
P. Salas, Manager of Licensing and Industry Affairs
J. Valente, Engineering & Support Services Manager

NRC

R. Bernhard, Region II Senior Reactor Analyst
C. Hinson, Health Physicist, Office of Nuclear Reactor Regulation
S.Vias, Region II Engineering Specialist

ITEMS OPENED AND CLOSED

Closed

50-327/98003-01	LER	Additional condition of an oscillator board with a bad solder joint in a vital inverter (Section 4OA4.1).
50-328/99-04-05 EA99-207	AV	Procedural changes which resulted in three containment penetrations being left open during the April 1999 refueling outage (Section 4OA4.2).