January 27, 2000

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. 50-327/99-08 AND 50-328/99-08

Dear Mr. Scalice:

On January 1, 2000, 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 January 6, 2000, 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. The inspection covered routine resident inspections and a scheduled licensed operator requalification inspection.

Based on the results of these inspections, the NRC identified one issue of low safety significance that has been entered into your corrective action program and is discussed in the summary of findings and in the body of the attached inspection report. The issue involved a violation of NRC requirements, but because of its low safety significance the violation is not cited. If you contest this noncited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Sequoyah facility.

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

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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:	50-327/99-08, 50-328/99-08
Licensee:	Tennessee Valley Authority (TVA)
Facility:	Sequoyah Nuclear Plant, Units 1 & 2
Location:	Sequoyah Access Road Hamilton County, TN 37379
Dates:	November 21, 1999 through January 1, 2000
Inspectors:	Russell Gibbs, Senior Resident Inspector D. Starkey, Resident Inspector R. Telson, Resident Inspector L. Mellen, Senior Operations Engineer (Section 1R11) M. Ernstes, Senior Operations Engineer (Section 1R11)
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 50-327/99-08, 50-328/99-08

The report covers a six-week period of resident inspection. In addition, it includes the results of a biennial licensed operator requalification inspection by region based inspectors.

Inspection findings were assessed according to potential risk significance, and were assigned colors of Green, White, Yellow, or Red, based on the NRC's Significance Determination Process (SDP). Green findings are indicative of issues that, while not necessarily desirable, represent little risk to safety. White findings would indicate issues with some increased risk to safety, and which may require additional NRC inspections. Yellow findings would be indicative of more serious issues with higher potential risk to safe performance and would require the NRC to take additional actions. Red findings represent an unacceptable loss of margin to safety and would result in the NRC taking significant actions that could include ordering the plant shut down. The findings, considered in total with other inspection findings and performance indicators, will be used to determine overall plant performance.

Mitigating Systems

- Green. A non-cited violation was identified for failure to follow a procedure during a corrective maintenance activity which resulted in the Unit 2 lower containment atmosphere particulate and gaseous radioactivity monitor being inoperable for approximately three hours. The failure to verify the monitor's output, as directed by the procedure, resulted in the monitor being incorrectly declared operable (Section 1R19.2).

  The Technical Specification allowed outage time of six hours for the instrument was not exceeded and; therefore, the finding was determined to have low risk to safety.

Report Details

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

1. REACTOR SAFETY

1R01 Adverse Weather Preparations

a. Inspection Scope

The purpose of the inspection was to verify that preparations for freezing weather conditions would limit the risk of freeze related initiating events and adequately protect mitigating systems. The inspectors reviewed the freeze protection procedure, open work orders (WOs) and problem evaluation reports (PERs) related to freeze protection, a recently completed licensee self-assessment of freeze protection practices and procedures, and the system engineer's system health status report. The inspectors also performed a partial walkdown of heat tracing associated with the refueling water storage tank (RWST) level transmitters, emergency raw cooling water (ERCW) instrumentation and piping, feedwater flow transmitters, and affected fire protection system components.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R03 Emergent Work

.1 Emergency Raw Cooling Water (ERCW) Pump K-A Electrical Breaker

a. Inspection Scope

The inspectors reviewed the WO and observed the troubleshooting activity related to the ERCW pump K-A breaker which failed to rack to the fully connected position following performance of time delay relay testing. The inspectors reviewed the licensee's work prioritization and risk determination associated with this activity to verify that necessary steps were planned, controlled, and executed.

b. Observations and Findings

No findings were identified and documented through this inspection.

.2 2B-B Emergency Diesel Generator (EDG) Output Breaker

a. Inspection Scope

The inspectors reviewed the emergent planning, troubleshooting, and PER associated with the momentary illumination of the 2B-B EDG output breaker disagreement light which occurred during a routine scheduled surveillance on November 23. The purpose of the inspection was to verify that the output breaker was operating correctly and that

the functional capability of the EDG mitigating system would not be affected by a momentary illumination of the disagreement light.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors conducted a partial walkdown of the 2A-A train of the RHR system while the 2B-B train was out-of-service for routine maintenance. The inspectors assessed conditions such as equipment alignment and system operation which could affect operability of the 2A-A train while its redundant train was out of service.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R05 Fire Protection

.1 Fire Drill Observations

a. Inspection Scope

On December 17, 1999, the inspectors observed an unannounced fire drill on the 714' elevation of the auxiliary building in a plant area determined to be risk significant by the licensee's fire risk analysis. The purpose of the inspection was to monitor the fire brigade's use of personal protective equipment and fire fighting equipment, to verify that fire fighting pre-plan procedures and appropriate fire fighting techniques were used, and to verify that the fire brigade leader's directions were thorough, clear, and effective.

b. Observations and Findings

No findings were identified and documented through this inspection.

.2 Relay Room and Mechanical Equipment Room Walkdowns

a. Inspection Scope

The inspectors conducted tours of the relay room and the mechanical equipment room located in the control building to assess the adequacy of the fire protection program implementation. Both areas were considered to be high risk areas according to the licensee's probabilistic fire risk analysis. The inspectors checked for the control of transient combustibles and the 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

a. Inspection Scope

The inspectors evaluated inservice testing of the 2B-B RHR pump and the 2B-B centrifugal charging pump and their associated system valves to determine the effectiveness of the licensee's American Society of Mechanical Engineers (ASME) Section XI testing program. The inspectors evaluated compliance with ASME code requirements, reviewed test methods, acceptance criteria, test instrument range/accuracy, and compliance with Technical Specification action statements/reporting requirements. The inspectors also verified that corrective actions were taken as applicable.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R11 Licensed Operator Requalification

.1 Operator Knowledge and Performance

a. Inspection Scope

The inspectors reviewed operator performance since the last requalification program inspection to verify that performance deficiencies had been addressed through the requalification training program. The inspectors included the following in their review:

- Plant Issue Matrix (PIM)
- Plant Performance Review (PPR)
- Recent examination and inspection reports
- Problem Evaluation Reports (PER)
- Resident inspector observations and reports regarding operator performance
- Licensee Event Reports (LERs)
- Human Factors Information System (HFIS)
- Licensee IP-71111 Self Assessment
- Procedures for Incorporating Operating Experience
- Sequoyah Individual Plant Examination Update

b. Observations and Findings

No findings were identified and documented through this inspection.

.2 Operator Human Performance on Annual Requalification Examinations

a. Inspection Scope

The inspectors observed the performance of two shifts and a total of ten operators during the dynamic simulator and job performance measure portions of the annual requalification examination. The inspectors also reviewed the results of the past biennial written examination.

b. Observations and Findings

No findings were identified and documented through this inspection.

.3 Review of Requalification Examinations

a. Inspection Scope

The inspectors reviewed the annual requalification examinations, which consisted of the dynamic scenarios and job performance measures to evaluate general quality, construction, and difficulty level. Additionally, the inspectors reviewed the last biennial written examination for quality and level of difficulty. The inspectors also reviewed the methodology for developing the requalification examinations and discussed various aspects of examination development and security with members of the licensee's training staff.

b. Observations and Findings

No findings were identified and documented through this inspection.

.4 Examination Administration

a. Inspection Scope

The inspectors observed the administration of all aspects of the requalification examination to determine the evaluators' ability to administer an examination and assess adequate performance through measurable criteria. The inspectors also observed the performance of the simulator to support the examinations. The inspectors observed crews during conduct of the dynamic simulator scenarios and job performance measure evaluations. Licensed operators and staff trainers were observed administering the examinations, including pre-examination briefings, observations of operator performance, individual and group evaluations of observations, techniques for job performance measure cuing, post scenario critiques, and final evaluation documentation. Additionally, staff members were interviewed as to their understanding of the requalification training process.

b. Observation and Findings

No findings were identified and documented through this inspection.

.5 Review of Requalification Feedback Process

a. Inspection Scope

The inspectors verified the methods and effectiveness of the licensed operator requalification training program to ascertain whether assessments of operator performance were effectively incorporated into the requalification training. The inspectors also reviewed the PIM, the latest PPR, recent inspection reports, other historical plant data and operator performance information. The inspectors also reviewed a matrix of all cycle 5 licensed operator requalification feedback to determine if the program's evaluation of the comments, recommendations, and their implementation were appropriate. Other documentation from the corrective action program was reviewed and interviews with staff members were conducted.

b. Observations and Findings

No findings were identified and documented through this inspection.

.6 Review of the Licensee's Remedial Training Program

a. Inspection Scope

The inspectors reviewed documentation of the licensed operator requalification remedial training program, program procedures, and conducted interviews with staff members.

b. Observations and Findings

No findings were identified and documented through this inspection.

.7 Review of Conformance with Operator License Condition

a. Inspection Scope

The inspectors reviewed a sample of records from the licensed operators to ascertain whether the facility and the operator licensee's were maintaining license conditions in accordance with 10 CFR 55.53.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R19 Post Maintenance Testing (PMT)

.1 2B-B RHR System

a. Inspection Scope

The inspectors reviewed the PMT procedures and test activities following routine maintenance of the 2B-B train of the RHR system to determine that the procedure and test activities were adequate to verify the operability and functional capability of this mitigating system following maintenance.

b. Observations and Findings

No findings were identified and documented through this inspection.

.2 Unit 2 Lower Containment Radioactivity Monitor

a. Inspection Scope

The inspectors reviewed the circumstances related to an improperly performed corrective maintenance procedure which resulted in rendering inoperable the Unit 2 lower containment atmosphere particulate and gaseous radioactivity monitor, 2-RM-90-106.

b. Observations and Findings

One non-cited violation (NCV) was identified for failure to follow Procedure TI-16.1.1, Sampling Methods-Containment Radiation Monitors, Revision 6, which resulted in atmosphere particulate and gaseous radioactivity monitor 2-RM-90-106 being inoperable for about three hours.

On November 4, 1999, Unit 2 received an instrument malfunction annunciator for the lower containment atmosphere particulate and gaseous monitor, 2-RM-90-106. A chemistry technician was dispatched to troubleshoot the monitor. Following the troubleshooting and corrective maintenance, the technician and control room operator concluded that the monitor was working correctly, based on the annunciator having cleared. The monitor was therefore declared operable. However, the technician had failed to appropriately complete a step in TI-16.1.1 which required recording the “before” and “after” output of the monitor as measured in counts per minute (cpm). When the monitor was returned to service, neither the technician nor the control room operator referred to the monitor chart recorder or count rate indicator which indicated that 2-RM-90-106 was reading only 600 cpm, rather than the normal 12,000 cpm, and therefore was still inoperable. The monitor remained inoperable for about three hours before the condition, caused by a particulate filter misconfiguration, was identified by another control room operator while performing routine control room rounds. The inspectors verified that the Technical Specification (TS) allowed outage time of six hours was not exceeded and; therefore, the finding screened out of the SDP process as Green.

TS 6.8.1.a. requires, in part, that procedures shall be established, implemented, and maintained covering the activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, "Quality Assurance Program Requirements (Operations)." Contrary to the above, the licensee failed to follow TI-16.1.1 when the chemistry technician did not verify the cpm on monitor 2-RM-90-106 following corrective maintenance. The failure to verify the monitor output resulted in the undetected inoperability of 2-RM-90-106 for approximately three hours. The NRC is treating this violation as an NCV, consistent with the Interim Enforcement Policy for pilot plants. This violation is in the licensee's corrective action program as PER 99-010869-000. This violation is identified as NCV 50-328/99008-01, Failure to Follow Procedure Resulting in an Inoperable Atmosphere Particulate and Gaseous Radioactivity Monitor 2-RM-90-106.

1R22 Surveillance Testing

.1 Control Room Emergency Ventilation Test

a. Inspection Scope

On December 4, 1999, the inspectors observed the performance and reviewed the results of Surveillance Instruction (SI) 0-SI-SFT-031-144.A, Control Room Emergency Ventilation Test Train A. The test was performed to meet the 18-month surveillance requirement of TS 4.7.7.e.3. The test verified that the control room emergency ventilation system would maintain the control room at a positive pressure of greater than or equal to 1/8-inch water gauge relative to the outside atmosphere at a flow rate of 4000 cfm ± 10%.

b. Observations and Findings

No findings were identified and documented through this inspection.

.2 2A-A Emergency Diesel Generator (EDG) Operability Test

a. Inspection Scope

On December 14, 1999, the inspectors observed SI 2-SI-OPS-082-007, Electrical Power System Diesel Generator 2A-A, which implements the monthly TS required surveillance to ensure that the surveillance met the TS requirements and that the EDG was verified by the surveillance to be operable.

b. Observations and Findings

No findings were identified and documented through this inspection.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary plant modification related to the removal from service of the sudden pressure relays installed on the Unit 1 & 2 main bank and unit station service transformers. The inspectors reviewed this modification to ensure that risk significant functions of the transformers and off-site power were not affected by removing the sudden pressure relays from service. The inspectors also reviewed the maintenance procedure used to return the sudden pressure relays to service, following a design change, and observed the return to service maintenance activities.

b. Observations and Findings

No findings were identified and documented through this inspection.

4 OTHER ACTIVITIES

4OA5 Management Meetings

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on December 3, 1999 and January 6, 2000. 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

ITEMS OPENED AND CLOSED

Opened and Closed

50-328/99008-01	NCV	Failure to Follow Procedure Resulting in an Inoperable Atmosphere Particulate and Gaseous Radioactivity Monitor 2-RM-90-106.

January 27, 2000

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. 50-327/99-08 AND 50-328/99-08

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Sincerely,

(Original signed by Paul E. Fredrickson)

Paul E. Fredrickson, Chief
Reactor Projects Branch 6
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Docket Nos. 50-327, 50-328
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