Tennessee Valley Authority
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Timothy P. Cleary
Site Vice President
Sequoyah Nuclear Plant

August 28, 2009

10 CFR 50.73

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Sequoyah Nuclear Plant, Units 1 and 2
Facility Operating License Nos. DPR-77 and DPR-79
NRC Docket Nos. 50-327 and 50-328

Subject: **Licensee Event Report 327 and 328/2009-006-00, "Inoperability of Auxiliary Building Gas Treatment System Because of Inadequate Surveillance"**

The enclosed Licensee Event Report provides details concerning an event where Sequoyah Nuclear Plant Units 1 and 2 were operated in a condition prohibited by technical specifications because of insufficient surveillance instructions that could allow the auxiliary building gas treatment system to rely upon nonsafety-related equipment for operability. This report is being submitted in accordance with 10 CFR 50.73 (a)(2)(i)(B).

Respectfully,

Timothy P. Cleary

Enclosure:

cc: Regional Administrator – Region II
NRC Senior Resident Inspector – Sequoyah Nuclear Plant

BAW:JWP:DGS:SKD
Enclosures
bcc (Enclosures):
NRR Project Manager – Sequoyah Nuclear Plant
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G. Arent, EQB 1B-WBN
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NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Sequoyah Nuclear Plant (SQN) Unit 1	05000327	1 OF 6

4. TITLE:
Units 1 and 2 Inoperability of Auxiliary Building Gas Treatment System Because of Inadequate Surveillance

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	27	2009	2009	- 006 -	00	08	28	2009	SQN Unit 2	05000328
									FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE
1

10. POWER LEVEL
100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☒ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER *(Include Area Code)*
Donald Sutton	423-843-6539

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On May 27, 2009, at 2100 Eastern daylight time, on SQN Units 1 and 2 it was determined that the auxiliary building gas treatment system (ABGTS) pressure test surveillance instruction (SI) was not being performed adequately on safety-related auxiliary building secondary containment enclosure (ABSCE) dampers. This is a result of closed in-series nonsafety-related dampers beyond the test boundary could mask leakage through the safety-related dampers. SQN Units 1 and 2 invoked the provisions of Surveillance Requirements (SR) 4.0.3. Subsequently, the ABGTS safety-related dampers were retested and both trains were verified as operable. The ABGTS pressure test SI has historically been performed in an alignment that allows the nonsafety-related dampers that isolate in series with safety-related ABSCE dampers to be closed. Based on further review, it was determined that the application of the provisions of SR 4.0.3 was not appropriate for this situation. As such, the event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B).

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION	
Sequoyah Nuclear Plant (SQN) Unit 1	05000327	2009 --	006 --	00	2 OF 6

17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

I. PLANT CONDITION(S)

Unit 1 was operating in Mode 1 at approximately 100 percent power and Unit 2 was in Mode 3 at 0 percent power when the events described in this LER occurred.

II. DESCRIPTION OF EVENT

A. Event:

On May 27, 2009, at 2100 Eastern daylight time (EDT), it was determined that the auxiliary building gas treatment system (ABGTS) (EIIS code BH) pressure test surveillance instruction (SI) was not being performed adequately on safety-related auxiliary building secondary containment enclosure (ABSCE) dampers (EIIS code CDMP) because closed nonsafety-related dampers outside the test boundary could mask leakage through the safety-related dampers.

B. Inoperable Structures, Components, or Systems that Contributed to the Event:

None.

C. Dates and Approximate Times of Major Occurrences:

Date	Description
May 27, 2009 at 2100 EDT	Upon completion of review of Watts Bar Nuclear Plant (WBN) Problem Evaluation Report (PER) 172256 associated with ABGTS pressure testing, it was determined that closed, in-series nonsafety-related dampers outside the ABSCE boundary could mask leakage through safety-related dampers within the ABSCE boundary for SQN Units 1 and 2. SQN invoked the provisions of Technical Specifications (TS) SR 4.0.3.
May 28, 2009 at 0248 EDT	A B-train auxiliary building isolation was initiated closing the non-safety related dampers, restoring B-train to a tested configuration.
May 28, 2009 at 1737 EDT	The B-train ABGTS pressure testing was completed with the nonsafety-related dampers by-passed. This test verified the B-train of ABGTS operable. Operations personnel exited the provisions of SR 4.0.3 for B-train of ABGTS.

May 28, 2009 at 2015 EDT	An evaluation was performed that concluded the ABGTS and ABSCE were capable of performing their functions.
May 29, 2009 at 1742 EDT	The A-train ABGTS pressure testing was completed and verified operable. Operations personnel exited the provisions of SR 4.0.3 for A-train.
July 21, 2009	A determination was made that the system testing was not in accordance with TSs and did not meet the missed surveillance criteria. Therefore, the condition was not in compliance with technical specifications. As such, this event was determined to be reportable pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B).

D. Other Systems or Secondary Functions Affected:

No other systems or secondary functions were affected by this event.

E. Method of Discovery:

The condition was discovered during review of WBN PER 172256.

F. Operator Actions:

The operators entered SR 4.0.3 based on the initial determination that this condition was a missed surveillance.

G. Safety System Responses:

There were no safety system responses as a result of this condition.

III. CAUSE OF THE EVENT

A. Immediate Cause:

The immediate cause of this event was that the surveillance testing instruction allowed the nonsafety-related dampers that isolate in series with safety-related ABSCE dampers to be closed.

B. Cause:

The cause of this event has been determined to be an inadequate procedure. During the initial SI development, TVA failed to recognize that the auxiliary building general ventilation configuration beyond the test boundary could potentially mask leakage. This condition was not fully realized until May 27, 2009.

C. Contributing Factor:

Contributing to the inadequate procedure was a lack of a questioning attitude when initially writing the test procedure.

IV. ANALYSIS OF THE EVENT

The ABGTS is a fully redundant air cleanup system that is provided to reduce radioactive releases from the ABSCE to the environment during an accident to levels sufficiently low to keep the site boundary dose rates below the requirements of 10 CFR 100. This is accomplished by exhausting air from the ABSCE to maintain a negative pressure within the boundary. Exhaust air leaving the ABSCE is processed by the ABGTS filters before it is discharged to the outside.

Testing performed on May 28, 2009, demonstrated that ABGTS would have performed its intended safety function in the event of an accident requiring ABGTS. The nonsafety-related dampers close automatically upon receipt of an auxiliary building isolation signal, which would place the system into a tested configuration. These dampers close automatically when their associated fans are off, and the dampers fail in the closed position. Trains A and B would have been able to perform their intended safety function to mitigate the consequences and control radioactive releases had a design basis accident occurred, as assumed in the safety analysis.

V. ASSESSMENT OF SAFETY CONSEQUENCES

Based on the above "Analysis of The Event," this event did not adversely affect the health and safety of plant personnel or the general public.

VI. CORRECTIVE ACTIONS

A. Immediate Corrective Actions:

Upon discovery of the inadequate SIs, SR 4.0.3 was entered. A B-train auxiliary building isolation was initiated closing the nonsafety related dampers, restoring B-train to a tested configuration. The SIs were revised to prevent the

nonsafety-related dampers from masking air leakage through ABSCE dampers while testing. Access ports located between the safety-related dampers and the nonsafety-related dampers were opened to prevent the nonsafety-related dampers from performing any boundary function. The revised SIs were performed to verify the adequacy of the ABGTS with ABSCE leakage that was not masked by nonsafety-related dampers.

B. Corrective Actions to Prevent Recurrence:

A review of other heating, ventilation, and air conditioning system SIs that could be affected by a similar configuration was performed. It was determined that the emergency gas treatment system (EGTS) (EIIS code BH) could have been affected because there are nonsafety-related dampers located in series with the safety-related dampers intended to maintain the annulus pressure boundary. A pressure test, that by-passed the nonsafety-related dampers, was performed on the EGTS system and verified the system to be operable. Actions have been established to revise the ABGTS and EGTS SIs to ensure that tests are performed without masking the test results.

VII. ADDITIONAL INFORMATION

A. Failed Components:

None.

B. Previous LERs on Similar Events:

A review of previous reportable events did not identify any previous similar events within the last three years.

C. Additional Information:

SR 4.0.3 provides a delay period to allow performance of a missed surveillance before declaring the limiting condition for operation not met, and requires a risk evaluation if the delay is more than 24 hours. Based on subsequent review of a recent enforcement action and Task Interface Agreement (TIA) 2008-004 for a similar situation at Pilgrim Nuclear Plant, this type of situation will be considered a condition prohibited by TSs in the future.

D. Safety System Functional Failure:

This event did not result in a safety system functional failure in accordance with 10 CFR 50.73(a)(2)(v).

E. Unplanned Scram with Complications:

This condition did not result in an unplanned scram with complications.

VIII. COMMITMENTS

None.