



Tennessee Valley Authority, Sequoyah Nuclear Plant, P.O. Box 2000, Soddy Daisy, Tennessee 37384

April 26, 2017

10 CFR 50.73

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

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

**Subject: Licensee Event Report 50-327 and 50-328/2017-001-00, Breached Door  
Renders Both Trains of the Auxiliary Building Gas Treatment System  
Inoperable**

The enclosed licensee event report provides details concerning discovery of a breached door associated with the auxiliary building secondary containment enclosure (ABSCE) boundary that resulted in both trains of the Auxiliary Building Gas Treatment System being declared inoperable. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B), as any operation or condition which was prohibited by the plant's Technical Specifications and in accordance with 10 CFR 50.73(a)(2)(v), as an event or condition that could have prevented the fulfillment of a safety function of structures or systems that are needed to: (C) control the release of radioactive material and (D) mitigate the consequences of an accident.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact Michael McBrearty, Site Licensing Manager, at (423) 843-7170.

Respectfully,

A handwritten signature in black ink, appearing to read 'Anthony L. Williams', written over a circular scribble.

Anthony L. Williams  
Site Vice President  
Sequoyah Nuclear Plant

Enclosure: Licensee Event Report 50-327 and 50-328/2017-001-00  
cc: NRC Regional Administrator – Region II  
NRC Senior Resident Inspector – Sequoyah Nuclear Plant



LICENSEE EVENT REPORT (LER)

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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@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.

<b>1. FACILITY NAME</b> Sequoyah Nuclear Plant Unit 1	<b>2. DOCKET NUMBER</b> 05000327	<b>3. PAGE</b> 1 OF 6
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**4. TITLE**  
Breached Door Renders Both Trains of the Auxiliary Building Gas Treatment System Inoperable

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
03	03	17	2017	- 001	- 00	04	26	17	Sequoyah Nuclear Plant Unit 2	05000328
									FACILITY NAME	DOCKET NUMBER
									NA	05000

<b>9. OPERATING MODE</b>  1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>											
	<input type="checkbox"/> 20.2201(b)			<input type="checkbox"/> 20.2203(a)(3)(i)			<input type="checkbox"/> 50.73(a)(2)(ii)(A)			<input type="checkbox"/> 50.73(a)(2)(viii)(A)		
	<input type="checkbox"/> 20.2201(d)			<input type="checkbox"/> 20.2203(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(ii)(B)			<input type="checkbox"/> 50.73(a)(2)(viii)(B)		
	<input type="checkbox"/> 20.2203(a)(1)			<input type="checkbox"/> 20.2203(a)(4)			<input type="checkbox"/> 50.73(a)(2)(iii)			<input type="checkbox"/> 50.73(a)(2)(ix)(A)		
<b>10. POWER LEVEL</b>  100	<input type="checkbox"/> 20.2203(a)(2)(i)			<input type="checkbox"/> 50.36(c)(1)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(iv)(A)			<input type="checkbox"/> 50.73(a)(2)(x)		
	<input type="checkbox"/> 20.2203(a)(2)(ii)			<input type="checkbox"/> 50.36(c)(1)(ii)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(A)			<input type="checkbox"/> 73.71(a)(4)		
	<input type="checkbox"/> 20.2203(a)(2)(iii)			<input type="checkbox"/> 50.36(c)(2)			<input type="checkbox"/> 50.73(a)(2)(v)(B)			<input type="checkbox"/> 73.71(a)(5)		
	<input type="checkbox"/> 20.2203(a)(2)(iv)			<input type="checkbox"/> 50.46(a)(3)(ii)			<input checked="" type="checkbox"/> 50.73(a)(2)(v)(C)			<input type="checkbox"/> 73.77(a)(1)		
	<input type="checkbox"/> 20.2203(a)(2)(v)			<input type="checkbox"/> 50.73(a)(2)(i)(A)			<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)			<input type="checkbox"/> 73.77(a)(2)(i)		
	<input type="checkbox"/> 20.2203(a)(2)(vi)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)			<input type="checkbox"/> 50.73(a)(2)(vii)			<input type="checkbox"/> 73.77(a)(2)(ii)		
			<input type="checkbox"/> 50.73(a)(2)(i)(C)			<input type="checkbox"/> OTHER			Specify in Abstract below or in NRC Form 366A			

**12. LICENSEE CONTACT FOR THIS LER**

LICENSEE CONTACT Scott T Bowman	TELEPHONE NUMBER (Include Area Code) 423-843-6910
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**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
N/A									

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR

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

On March 3, 2017, at 2232 eastern standard time (EST), Door A212 was improperly breached to facilitate a continuous fire watch. On March 7, 2017, at 0830 EST, a senior reactor operator discovered Door A212 blocked open during a walk down of the Auxiliary Building. The open door created a breach of the auxiliary building secondary containment enclosure (ABSCE) boundary. The identified breach exceeded the allowed ABSCE breach margin. As a result, both units entered Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.12, Condition B for two trains of the Auxiliary Building Gas Treatment System (ABGTS) inoperable due to an inoperable ABSCE boundary in Mode 1, 2, 3, or 4. At 0949 EST, on March 7, the door was closed and both units exited LCO 3.7.12, Condition B. Both trains of ABGTS were inoperable longer than allowed by TS. There were no actual safety consequences as a result of this event.

An evaluation determined the cause to be a less than adequate single barrier breaching standard exists at Sequoyah Nuclear Plant. A contributing cause was an inconsistent approach to entry into the barrier breaching process. Corrective actions include revising the breaching procedure to address all possible breaches and include a matrix for doors and their associated impacts, and addressing potential knowledge deficiencies.



**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Sequoyah Nuclear Plant Unit 1	05000-327	2017	- 001	- 00

**NARRATIVE**

I. Plant Operating Conditions Before the Event

At the time of the event, Sequoyah Nuclear Plant (SQN) Unit 1 and Unit 2 were in Mode 1 at 100 percent rated thermal power.

II. Description of Event

A. Event Summary:

As a result of fire protection [EIS: KF] piping inspections, the fire protection for the Fuel Handling Exhaust Fan (FHEF) [EIS: FAN] Filter [EIS: FLT] Enclosure was authorized to be isolated under a clearance. The isolation required a continuous fire watch to inspect the inside of the FHEF Filter Enclosure. With the FHEF in service, excessive differential pressure across Auxiliary Building [EIS: NF] Door [EIS: DR] A212 hindered opening the door for the inspection. Therefore, a fire protection impairment permit was generated to breach Door A212; however, the door was not evaluated as a breach of the auxiliary building secondary containment enclosure (ABSCE) boundary. On March 3, 2017, at 2232 eastern standard time (EST), Door A212 was breached to facilitate the continuous fire watch.

On March 7, 2017, at 0830 EST, a senior reactor operator (SRO) discovered Door A212 blocked open during a walk down of the Auxiliary Building. The open door created a breach of the ABSCE boundary. The identified breach exceeded the allowed ABSCE breach margin. As a result, both units entered Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.12, Condition B for two trains of the Auxiliary Building Gas Treatment System (ABGTS) [EIS: VF] inoperable due to an inoperable ABSCE boundary in Mode 1, 2, 3, or 4. At 0949 EST, on March 7, the door was closed and both units exited LCO 3.7.12, Condition B.

An 8-hour non-emergency event notification (EN 52597) was made to the NRC in accordance with 10 CFR 50.72(b)(3)(v) as an event or condition that could have prevented fulfillment of a safety function of structures or systems that are needed to: (C) control the release of radioactive material and (D) mitigate the consequences of an accident. This LER documents the reportable event under 10 CFR 50.73(a)(2)(v)(C) and 10 CFR 50.73(a)(2)(v)(D).

Additionally, it was determined that both trains of ABGTS were inoperable from March 3, 2017, at 2232 to March 7, 2017, at 0949. LCO 3.7.12, Condition B requires restoration of the ABSCE boundary within 24 hours. Upon failure to meet the Required Action and associated Completion Time of Condition B, LCO 3.7.12, Condition C requires the unit to be in Mode 3 within 6 hours. Because both trains of ABGTS were inoperable for approximately 83.3 hours and remained in Mode 1, this is a condition prohibited by TS and is therefore being reported in accordance with 10 CFR 50.73(a)(2)(i)(B), as any operation or condition which was prohibited by the plant's TS.



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Sequoyah Nuclear Plant Unit 1	05000-327	2017	- 001	- 00

B. Status of structures, components, or systems that were inoperable at the start of the event and contributed to the event:

No inoperable structures, components, or systems contributed to this event.

C. Dates and approximate times of occurrences:

Date/Time (EST)	Description
03/03/17, 2232	Door A212 was breached to facilitate a continuous fire watch.
03/07/17, 0830	An SRO discovered Door A212 breached. The identified breach exceeded the allowed ABSCE breach margin. Both units entered LCO 3.7.12, Condition B.
03/07/17, 0949	Door A212 was closed. This restored both the ABSCE boundary and both trains of the ABGTS to operable status. Both units exited LCO 3.7.12, Condition B.

D. Manufacturer and model number of each component that failed during the event:

There was no component that failed during the event.

E. Other systems or secondary functions affected:

There were no systems or secondary functions affected by this event.

F. Method of discovery of each component or system failure or procedural error:

While performing a walk down of the Auxiliary Building, an SRO discovered Door A212 blocked open.

G. The failure mode, mechanism, and effect of each failed component, if known:

There was no component that failed during the event.

H. Operator actions:

Both trains of ABGTS were declared inoperable due to the identified breach exceeding the allowed ABSCE breach margin. Both units entered LCO 3.7.12, Condition B.

I. Automatically and manually initiated safety system responses:

There were no automatic or manual system responses associated with this event.



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CONTINUATION SHEET**

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III. Cause of the Event

A. Cause of each component or system failure or personnel error:

There was no component or system failure associated with the event.

An evaluation determined the cause to be a less than adequate single barrier breaching standard exists at SQN. A contributing cause was an inconsistent approach to entry into the barrier breaching process. Individuals enter into the barrier breaching process using the applicable standard that they are most familiar with rather than using the barrier breaching governing procedure.

B. Cause(s) and circumstances for each human performance related root cause:

There was no identified human performance related root cause.

IV. Analysis of the Event:

The ABGTS filters airborne radioactive particulates from the area of the fuel pool following a fuel handling accident or loss of coolant accident (LOCA). In Mode 1, 2, 3, or 4, the ABGTS is required to be operable to provide fission product removal associated with Emergency Core Cooling System leaks due to a LOCA and leakage from containment and annulus.

The ABGTS is a standby system that consists of two independent and redundant trains. Each train consists of a heater, a prefilter, a high efficiency particulate air filter, an activated charcoal adsorber section for removal of gaseous activity, and a fan. The system initiates filtered ventilation of the auxiliary building following receipt of a high radiation signal from the fuel handling area radiation monitors, a high radiation signal from the train-specific Auxiliary Building exhaust vent monitor, a Phase A containment isolation signal from either reactor, or a high temperature signal from the Auxiliary Building air intakes.

The breached door exceeded the allowed ABSCE breach margin rendering the ABSCE inoperable. This configuration could have prevented the ABGTS from maintaining a pressure greater than or equal to -0.25 inches water gauge with respect to atmospheric pressure during the post accident mode of operation.

V. Assessment of Safety Consequences

There were no actual safety consequences as a result of this event. The SQN probabilistic risk assessment model does not specifically credit the use of the ABGTS when calculating the probability of core damage or large early release. Accordingly, the risk associated with this event is considered to be very small.



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A. Availability of systems or components that could have performed the same function as the components and systems that failed during the event:

There were no components or systems that failed during the event.

B. For events that occurred when the reactor was shut down, availability of systems or components needed to shutdown the reactor and maintain safe shutdown conditions, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident:

The event did not occur when the reactor was shutdown.

C. For failure that rendered a train of a safety system inoperable, an estimate of the elapsed time from discovery of the failure until the train was returned to service:

Both trains of ABGTS were inoperable for approximately 83.3 hours. The elapsed time from discovery of both trains of ABGTS being inoperable until both trains were restored to operable status was approximately 79 minutes.

VI. Corrective Actions

Corrective Actions are being managed by the Tennessee Valley Authority (TVA) corrective action program under Condition Report 1269767.

A. Immediate Corrective Actions:

Door A212 was closed and both units exited LCO 3.7.12, Condition B.

B. Corrective Actions to Prevent Recurrence or to reduce probability of similar events occurring in the future:

Corrective actions include revising the breaching procedure to address all possible breaches and include a matrix for doors and their associated impacts. Additionally, a performance analysis worksheet will be performed to identify knowledge deficiencies associated with the ABSCE and door postings.



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VII. Previous similar events at the same plant:

A review of SQN LERs identified an event in which a penetration affecting the ABSCE was breached without required compensatory measures. LER 327/2013-01, associated with the event, identified the root cause as ineffective procedures for controlling containment penetration breaches during Modes 5 and 6. A corrective action was to develop and implement a governing procedure for controlling breaches of the shield building, ABSCE, control room boundaries, and design basis flood barriers.

VIII. Additional Information

None.

IX. Commitments:

None.

