

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Sequoyah, Unit 1 DOCKET NUMBER (2) 05000327 PAGE (3) 1 OF 04

TITLE (4) Opening Of Unit 1 Containment Results In Secondary Containment Envelope Outside The Boundary Set For Surveillance Testing Of Auxiliary Building Gas Treatment System

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | |
|----------------|-----|------|----------------|-------------------|-----------------|-----------------|-----|------|-------------------------------|--|--|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAMES | | |
| 01 | 24 | 88 | 88 | 007 | 01 | 08 | 25 | 88 | Sequoyah, Unit 2 | | |
| | | | | | | | | | DOCKET NUMBER(S) | | |
| | | | | | | | | | 05000328 | | |
| | | | | | | | | | 05000 | | |

OPERATING MODE (5) 5 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)

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|-------------------|-------------------------------------|------------------|--------------------------|----------------------|--------------------------|--|--------------------------|
| 20.402(b) | <input type="checkbox"/> | 20.405(e) | <input type="checkbox"/> | 50.73(a)(2)(iv) | <input type="checkbox"/> | 73.71(b) | <input type="checkbox"/> |
| 20.405(a)(1)(i) | <input type="checkbox"/> | 50.38(e)(1) | <input type="checkbox"/> | 50.73(a)(2)(v) | <input type="checkbox"/> | 73.71(e) | <input type="checkbox"/> |
| 20.405(a)(1)(ii) | <input type="checkbox"/> | 50.38(e)(2) | <input type="checkbox"/> | 50.73(a)(2)(vii) | <input type="checkbox"/> | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | <input type="checkbox"/> |
| 20.405(a)(1)(iii) | <input checked="" type="checkbox"/> | 50.73(a)(2)(i) | <input type="checkbox"/> | 50.73(a)(2)(viii)(A) | <input type="checkbox"/> | | |
| 20.405(a)(1)(iv) | <input type="checkbox"/> | 50.73(a)(2)(ii) | <input type="checkbox"/> | 50.73(a)(2)(viii)(B) | <input type="checkbox"/> | | |
| 20.405(a)(1)(v) | <input type="checkbox"/> | 50.73(a)(2)(iii) | <input type="checkbox"/> | 50.73(a)(2)(x) | <input type="checkbox"/> | | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|---|------------------|
| Don Siska B. E. Kilgore, Plant Operations Review Staff | 615 871 0170 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPROS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPROS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
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SUPPLEMENTAL REPORT EXPECTED (14) YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15) MONTH 1 DAY 01 YEAR 88

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

This LER is being revised to change the date in which a supplemental report will be submitted. On January 24, 1988, at 1800 EST with units 1 and 2 in mode 5, it was discovered, via a tour of the refueling floor and discussions with test personnel, that the Auxiliary Building secondary containment enclosure (ABSCE) was not being maintained within the configuration set during the implementation of technical specification (TS) surveillance requirement (SR) testing, used to determine Auxiliary Building gas treatment system (ABGTS) operability. When TS SR testing was done to ensure the ABGTS can maintain the required negative pressure in the ABSCE, the blast doors (BDs) to unit 1 and 2 Reactor Buildings (RBs) were closed and the containment purge system (CPS) was secured. Opening the BDs will encompass the RB in the ABSCE boundary. When a unit is in mode 5 or 6, it is normal to have the BDs open for that unit, and it was possible that the CPS could be in operation. Increasing the ABSCE boundary potentially causes more leakage into the ABSCE. Considering the additional potential leakage, there was no assurance that the ABGTS would be able to satisfy TS SR with the increased ABSCE boundary or when the CPS is operating. The cause of this condition, is the lack of adequate controls to ensure the ABSCE boundary is maintained within the condition set by SR testing and an inappropriate design assumption made during plant construction on how breaches would be controlled. As short-term corrective actions, the BDs were closed before unit 2 entered mode 4 on February 6, 1988, the procedures governing ABSCE breaches were changed, and the unit 1 CPS was tagged out of service. Following subsequent leak testing of the unit 1 annulus, the unit 1 BD was reopened. As long-term corrective actions, a programmatic review of the procedures controlling ABSCE breaches will be conducted, and a design change will be implemented to isolate containment purge on an Auxiliary Building Isolation.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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| | | 88 | 007 | 01 | 02 | OF 04 |

TEXT (If more space is required, use additional NRC Form 368A's) (17)

DESCRIPTION OF CONDITION

This LER is being revised to change the date in which a supplemental report will be submitted. Because the corrective actions necessary to resolve this issue have not been finalized, TVA must delay the submittal of the supplemental report until November 1, 1988.

On January 24, 1988, at approximately 1800 EST with units 1 and 2 in mode 5 (0 percent power, 4 psig, 121 degrees F and 0 percent power, 310 psig, 118 degrees F, respectively), a potential deficiency in the Auxiliary Building secondary containment enclosure (ABSCE) (EIIS Code WF) was discovered during a tour of the refueling area and subsequent discussions with test personnel. The plant configuration used when testing of the ABSCE to meet Technical Specification (TS) Surveillance Requirement (SR) 4.7.8.d.3, to determine the operability of the Auxiliary Building gas treatment system (ABGTS) (EIIS Code VF), was not consistent for various modes of two unit operation.

The ABGTS and the ABSCE are common to units 1 and 2, which share a common Auxiliary Building, and both trains of the ABGTS are required to be operable before either unit can enter mode 4 from a mode 5 condition. One ABGTS train is required for unrestricted fuel handling operations while irradiated fuel is in the spent fuel pool. The ABGTS maintains negative pressure in the ABSCE and filters the ABSCE air before it is released to the environment.

TS SR 4.7.8.d.3 requires the verification that the ABGTS can maintain the spent fuel storage area and the engineered safety feature (ESF) pass rooms within the ABSCE, at a pressure equal to or more negative than minus 1/4-inch water gage while maintaining a vacuum relief flow greater than 2000 cfm and a total system flow of 9000 cfm \pm 10 percent. Implementation of TS SR 4.7.8.d.3 is done via the performance of Surveillance Instruction (SI)-149, "Auxiliary Building Gas Treatment System Vacuum Test."

SI-149 was performed with unit 1 and unit 2 blast doors (refueling floor to containment annulus doors on the 734 feet elevation) in the Reactor Building shield walls closed and containment purge on both units shut down. However, whenever a blast door is open, the ABSCE boundary is increased by the addition of the annulus and primary containment (if the equipment hatch is open) of the unit with the open blast door. The additional boundary potentially causes additional leakage into the ABSCE that was not accounted for during the performance of SI-149. Open blast doors are normal for a unit that is in modes 5 or 6 (cold shutdown or refueling). If the opposite unit is in modes 1, 2, 3, or 4 concurrent with a blast door open on the unit in mode 5 or 6, the actual plant configuration would not be the same as tested during the performance of SI-149.

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TEXT (if more space is required, use additional NRC Form 366A's) (17)

The containment purge system (EISS Code VA), when it is operating, will provide a large amount of air into the Reactor Building. Air contributed from the containment purge system was also not accounted for during the performance of SI-149, and its operational status was not being controlled with the opening of the blast doors and the equipment hatch. Thus, there was no assurance that TS SR 4.7.8.d.3 would be met for these conditions. Subsequent to the discovery of this condition, the blast doors were shut to restore the ABSCE envelope to the boundary set during the performance of SI-149.

CAUSE OF CONDITION

This condition was caused by a failure to ensure the ABSCE configuration is maintained or controlled to the configuration set during performance testing of the ABGTS to ensure operability. TS 3.6.1.1 requires primary containment integrity only for a unit that is in modes 1 through 4. TS 3.7.8 requires the ABGTS to be operable whenever either unit is in modes 1 through 4. However, operability of the ABGTS was tested by SI-149, performed on an 18-month frequency, with the blast doors closed. Breaches of the ABSCE are controlled by Technical Instruction (TI)-77, "Breaching the Shield Building, ABSCE, or Control room Boundaries," but it did not properly evaluate the condition when the Shield Building Boundary (Reactor Building) becomes part of the ABSCE via an open blast door and the primary containment if the equipment hatch is open or when the containment purge system is operating. It is therefore concluded that the lack of effective coordination of these conditions contributed to the root cause of this event. As an additional cause of this event, improper design assumptions were made during the period of plant construction to address breaches in the ABSCE. It was recognized at that time that breaches in the ABSCE could pose operational problems for one unit, but it was inappropriately dispositioned as a concern that could be addressed by installing temporary ABSCE boundaries in lieu of design controls such as the Auxiliary Building isolation logic.

ANALYSIS OF CONDITION

This condition is being reported under 10 CFR 50.73, paragraph a.2.i.B, as a condition prohibited by TS.

TS SR 4.7.8.d.3 is performed as a partial verification that the ABGTS is operable and capable of performing its design function. Since the plant configuration was nonconservatively different from the configuration set in complying with TS SR 4.7.8.d.3, there was no assurance that the ABGTS would have met its design function. The condition as discovered, however, is not considered to have had a significant safety consequence to the health and safety of the public because units 1 and 2 were in cold shutdown, and ABGTS is not required to satisfy TS SR 4.7.8.d.3 in mode 5 or 6 and no fuel handling operations were in progress in the spent fuel pool area.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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However, there have been occasions when the blast doors have been open while the opposite unit was not in mode 5 or 6. If a LOCA had occurred while a unit was in modes 1, 2, 3, or 4, fission products could have been released to the ABSCE. If the fission products were released to the ABSCE with a blast door open in the opposite unit and the opposite unit was not maintaining containment integrity, as allowed by TS while in modes 5 or 6 or the opposite unit was operating its containment purge system, there would be no assurance that all radioactive materials leaking from the ESF equipment or from primary containment leakage into the ABSCE, would be filtered by the ABGTS filters before reaching the environment. This postulated event would then be outside the assumptions made in the offsite dose calculations for accident analysis. However, the ABGTS filters were available for filtration of air released from the ABSCE, and containment exhaust filters are used to filter air released from the primary containment when the containment purge system is operating.

CORRECTIVE ACTIONS

As short-term corrective action, the blast doors were closed and the unit 1 containment purge system was tagged out of service before unit 2 entered operational mode 4 which occurred on February 6, 1988. To allow opening the blast doors of a unit in modes 5 or 6 while the opposite unit is in modes 1, 2, 3 or 4, TI-77 was changed via Instruction Change Form 88-0191 to evaluate for the additional inleakage from the primary containment and the annulus. Test data from the most recent performance of SI-264, "EGTS Annulus Vacuum Draw Down Test," was utilized to ensure the annulus inleakage was not sufficient to cause the ABGTS be declared inoperable due to an open blast door.

Long-term corrective actions will include a programmatic review of the administrative controls used on the ABSCE boundary to ensure all leakage paths are accounted for during different unit configurations, and to install the logic necessary to isolate containment purge on an opposite unit Auxiliary Building isolation signal. The logic to isolate containment purge is being addressed via Condition Adverse to Quality Report - SQP88090.

A revision to this report will be submitted by November 1, 1988, to provide the actions TVA is taking to address these issues.

ADDITIONAL INFORMATION

There has been one previous occurrence reported in the ABGTS failing to meet TS SR due to improper ABSCE boundary control - SQRO-50-327/84053.

0029Q

TENNESSEE VALLEY AUTHORITY

Sequoyah Nuclear Plant
Post Office Box 2000
Soddy-Daisy, Tennessee 37379

August 25, 1988

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

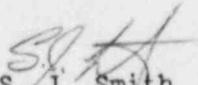
Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 - DOCKET
NOS. 50-327 AND 50-328 - FACILITY OPERATING LICENSE DPR-77 AND -79 -
REPORTABLE OCCURRENCE REPORT SQRO-50-327/88007 REVISION 1

The enclosed licensee event report has been revised to change the date in
which a supplemental report will be submitted. Because the corrective
actions necessary to resolve this issue have not been finalized, TVA must
delay the submittal of a supplemental report until November 1, 1988. This
event was originally reported in accordance with 10 CFR 50.73, paragraph
a.2.i.b. on February 23, 1988.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


S. J. Smith
Plant Manager

Enclosure
cc (Enclosure):

J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Suite 2900
101 Marietta Street, NW
Atlanta, Georgia 30323

Records Center
Institute of Nuclear Power Operations
Suite 1500
1100 Circle 75 Parkway
Atlanta, Georgia 30339

NRC Inspector, Sequoyah Nuclear Plant