

Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379-2000

R.J. Adney  
Site Vice President  
Sequoyah Nuclear Plant

October 30, 1995

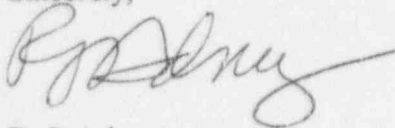
U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT (SQN)  
UNIT 2 - DOCKET NO. 50-328 - FACILITY OPERATING LICENSE DPR-79 -  
LICENSEE EVENT REPORT (LER) 50-328/95006

The enclosed report provides details concerning a failure to maintain two qualified offsite power sources as required by technical specifications (TSs). This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as an operation prohibited by TSs.

Sincerely,



R. J. Adney

Enclosure  
cc: See page 2

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U.S. Nuclear Regulatory Commission

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Enclosure

cc (Enclosure):

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LICENSEE EVENT REPORT (LER)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  
Sequoyah Nuclear Plant (SQN), Unit 2

DOCKET NUMBER (2)  
05000328

PAGE (3)  
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TITLE (4) Failure to Maintain Two Qualified Offsite Power Sources as Required by Technical Specifications (TSs)

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 NAME SQN Unit 1	DOCKET NUMBER	
10	01	95	95	006	00	10	30	95		05000327	
									FACILITY NAME	DOCKET NUMBER	

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
1	100	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 20.405(a)(1)(iii)
		<input type="checkbox"/> 20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.405(a)(1)(vi)	<input type="checkbox"/> 20.405(a)(1)(vii)
		<input type="checkbox"/> 20.405(a)(1)(viii)	<input type="checkbox"/> 20.405(a)(1)(ix)	<input type="checkbox"/> 20.405(a)(1)(x)	<input type="checkbox"/> 20.405(a)(1)(xi)

LICENSEE CONTACT FOR THIS LER (12)

NAME  
J. Bajraszewski, Compliance Licensing Engineer

TELEPHONE NUMBER (include Area Code)  
(423) 843-7749

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

CAUSE	SYS TEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).  NO

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On October 1, 1995, at approximately 0705 Eastern daylight time (EDT), with Unit 1 in a refueling outage and the reactor vessel defueled and with Unit 2 in power operation at approximately 100 percent power, the Unit 1 6.9 kilovolt (kV) unit boards were transferred to an alternate feed that was not a qualified offsite power source. The 6.9 kV unit board transfer switches were left in the manual position to prevent transfer back to normal feed during the performance of maintenance activities. Unit 1 operators who performed the board transfer failed to recognize that the condition resulted in Unit 2 not meeting TS Limiting Condition for Operation (LCO) 3.8.1.1 a. As a result, LCO 3.8.1.1 Action Statement "d" was not performed for Unit 2. After a Unit 2 operator questioned the Unit 1 backfeed condition, it was determined that Unit 2 was affected, and the transfer switches were placed in automatic. This ensured that the boards would transfer to a qualified offsite power source if required. While the transfer switches were in the manual position, the four diesel generators were fully operable. The root cause of the condition was determined to be inadequate training with respect to what constitutes two physically independent circuits between the offsite transmission network and the onsite safety-related electrical distribution system as specified in TS LCO 3.8.1.1 a. Contributing to the condition was the lack of specific procedural guidance on application of the TS LCOs while transferring the 6.9 kV unit boards. Licensed operator training will be provided on the proper application of TS LCOs associated with alternating current offsite power sources for various electrical distribution system lineups. Also, the applicable procedure has been revised to provide the additional guidance for evaluating TS LCOs when transferring 6.9 kV unit boards to the alternate feed.

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

**I. PLANT CONDITIONS**

Unit 1 was in a refueling outage with the reactor vessel defueled. Unit 2 was in power operation at approximately 100 percent.

**II. DESCRIPTION OF EVENT**

**A. Event**

On October 1, 1995, at approximately 0705 Eastern daylight time (EDT), the Unit 1 6.9 kilovolt (kV) unit boards [EIS Code EA] were transferred to an alternate feed that was not a qualified offsite power source. The 6.9 kV unit board transfer switches were left in the manual position to prevent transfer back to normal feed during the performance of maintenance activities. Unit 1 operators who performed the board transfer failed to recognize that the condition resulted in Unit 2 not meeting TS Limiting Condition for Operation (LCO) 3.8.1.1.a. As a result, LCO 3.8.1.1 Action Statement "d" was not performed for Unit 2. After a Unit 2 operator questioned the Unit 1 backfeed condition, it was determined that Unit 2 was affected, and the transfer switches were placed in automatic. This ensured that the boards would transfer to a qualified offsite power source if required. While the transfer switches were in the manual position, the four diesel generators were fully operable. Additionally, the Unit 2 electrical boards were powered by the required qualified power sources throughout the event.

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

None.

**C. Dates and Approximate Times of Major Occurrences**

September 30, 1995 at 1205 EDT	Unit 1 main bank transformers and unit station service transformers (USST) were energized in preparation for backfeed.
October 1, 1995 at 0730 EDT	The Unit 1 6.9 kV unit boards were placed in backfeed from the USSTs. The transfer switches were placed in manual to facilitate maintenance activities.
October 1, 1995 at 1530 EDT	The operator shift turnover briefing was conducted. A Unit 2 ASOS questioned the Unit 1 backfeed condition and the applicability of the condition to Unit 2.
October 1, 1995 at approximately 1630 EDT	Maintenance activities were completed on the Unit 1 normal feeder breaker relays.

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October 1, 1995 at 1721 EDT      It was determined that the Unit 1 condition applied to Unit 2. The Unit 1 6.9 kV unit board transfer switches were placed in automatic. Unit 2 entered and exited LCO Action 3.8.1.1.d.

October 2, 1995 at 0123 EDT      The Unit 1 6.9 kV unit boards were transferred back to their normal feed.

**D. Other Systems or Secondary Functions Affected**

None.

**E. Method of Discovery**

At shift turnover, a Unit 2 ASOS was informed of the Unit 1 backfeed condition. The ASOS reviewed the Unit 1 electrical board lineup and discovered that the transfer switches were in the manual position. The ASOS questioned the condition relative to Unit 2 operation and compliance with TS LCO 3.8.1.1.a. As a result of the questioning attitude, it was determined that the condition was applicable to Unit 2.

**F. Operator Actions**

Once the condition was determined to be applicable to Unit 2, operators placed the transfer switches in automatic to ensure that qualified offsite power was available to the Unit 1 unit boards.

**G. Safety System Responses**

No safety system response was required.

**III. CAUSE OF EVENT**

**A. Immediate Cause**

The immediate cause of this event was the placement of the Unit 1 6.9 kV unit board transfer switches in manual. With the transfer switches in the manual position, the unit boards were not capable of automatically transferring to a qualified offsite power source.

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**B. Root Cause**

The root cause of the condition was determined to be inadequate training with respect to what constitutes two physically independent circuits between the offsite transmission network and the onsite safety-related electrical distribution system. Discussions with other operations personnel determined that many different opinions exist on methods to comply with TS LCO 3.8.1.1.a.

**C. Contributing Factors**

Contributing to the condition was the lack of specific procedural guidance on the application of the TS LCOs while transferring the 6.9 kV unit boards. The instruction contained a vague caution that directed the evaluation of TS LCO 3.8.1.1 but did not provide the operator with guidance relative to the potential impact on both units.

**IV. ANALYSIS OF EVENT**

When the Unit 1 condition existed, the Unit 2 electrical boards were powered from the required qualified power sources. With Unit 1 aligned for station service backfeed, power was supplied to Unit 1 electrical boards from the 500 kV switchyard by the Unit 1 main bank transformers and USSTs. When the 6.9 kV unit boards are capable of automatically transferring from the alternate feed (USSTs) to the normal feed (start busses), a qualified offsite power source is immediately available to supply safety-related loads in the event that an undervoltage condition or fault interrupts the backfeed circuit. When the Unit 1 6.9 kV unit board transfer switches are in the "Manual" position, the boards are not capable of automatically transferring to the qualified offsite power source. Therefore, during the time that the Unit 1 6.9 kV unit board transfer switches were in manual, no qualified offsite power source was immediately available without operator action. If a power loss were to occur, the resulting voltage loss to the Unit 1 electrical boards would cause the four emergency diesel generators to start and the Unit 1 shutdown boards to load and feed safety-related loads.

Although no qualified offsite power was available to the Unit 1 boards while the transfer switches were in the manual position, the four sets of diesel generators were fully operable. Therefore, the on-site emergency power supply to the Unit 1 shutdown boards was immediately available without any operator action required. The Unit 1 shutdown boards only supply a small number of safety-related loads (essential raw cooling water pumps, control room emergency ventilation system, and emergency gas treatment system) that are required for Unit 2 operation. In the unlikely event of an accident associated with Unit 2, power to safety-related Unit 1 loads would have been available from the diesel generators. Therefore, there were no adverse consequences to plant personnel or to the general public as a result of this event.

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**V. CORRECTIVE ACTIONS**

**A. Immediate Corrective Action**

Upon discovery of the condition, the Unit 1 6.9 kV unit board transfer switches were placed in the automatic position. Subsequent to the event, the applicable procedure was revised to provide additional guidance for evaluating TS LCOs when transferring 6.9 kV unit boards to alternate feed.

**B. Corrective Action to Prevent Recurrence**

Licensed operator training will be provided on the proper application of TS LCOs associated with alternating current (AC) offsite power sources for various electrical distribution system lineups.

**VI. ADDITIONAL INFORMATION**

**A. Failed Components**

None.

**B. Previous Similar Events**

A review of previous reportable events identified LER 50-328/88038 associated with a failure to install potential transformer fuses for the alternate feeders to the Unit 2 6.9 kV unit boards preventing automatic transfer. Actions taken for that event would not have prevented the condition described in this LER.

**VII. COMMITMENTS**

Licensed operator training on the proper application of TS LCOs associated with AC offsite power sources for various electrical distribution system lineups will be provided by January 5, 1996.