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R.J. Adney
Site Vice President
Sequoyah Nuclear Plant

April 21, 1997

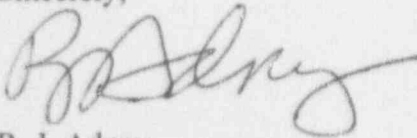
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2 - DOCKET NOS. 50-327 AND 50-328 - FACILITY OPERATING
LICENSES DPR-77 AND DPR-79 - LICENSEE EVENT REPORT (LER) 50-327/97008

The enclosed report provides details concerning the failure to perform a surveillance requirements as required by technical specifications. The conditions discussed in this LER were identified as a result of the reviewed performed in response to Generic Letter 96-01. The conditions are being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as an operation prohibited by the plant's technical specifications.

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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NRC FORM 366 (4-95)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98	
LICENSEE EVENT REPORT (LER)				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK	
FACILITY NAME (1) Sequoyah Nuclear Plant (SQN) Unit 1			DOCKET NUMBER (2) 05000327		PAGE (3) 1 OF 7
TITLE (4) Failure to Properly Perform Surveillance Testing on the Containment Air Return Fan Start Logic and on the Blackout and Auto Sequencing of the Station Fire Pumps.					
EVENT DATE (5)		LER NUMBER (6)		REPORT DATE (7)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
3	22	97	97	-- 008	-- 00
				MONTH	DAY
				4	21
				YEAR	
				97	
				OTHER FACILITIES INVOLVED (8)	
				FACILITY NAME	
				Sequoyah, Unit 2	
				DOCKET NUMBER	
				05000328	
				FACILITY NAME	
				NA	
				DOCKET NUMBER	
				05000	
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
4		<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(2)(v) <input checked="" type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(viii)			
POWER LEVEL (10)		<input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(x)			
0		<input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(3)(iii) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 73.71			
		<input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> OTHER			
		<input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.73(a)(2)(v) Specify in Abstract below or in NRC Form 366A			
		<input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(vii)			
LICENSEE CONTACT FOR THIS LER (12)					
NAME				TELEPHONE NUMBER (Include Area Code)	
J. W. Proffitt, Licensing Engineer				(423) 843-6651	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)
YES (If yes, complete EXPECTED SUBMISSION DATE). X NO					MONTH DAY YEAR
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)					
<p>On March 22, 1997, it was determined that surveillance testing of the blackout and auto sequencing timer circuit for the station fire pumps and the containment air return fan auto start signal circuitry may not have been tested correctly. The method specified in the surveillance instruction for testing of the blackout and auto sequencing timer circuit for the station fire pumps allows an option to either depress and hold the pushbutton for the fire pump start or turn and hold the handswitch until the fire pump starts. The handswitch method bypasses the blackout auto sequencing circuit so that it is not tested when this option is used. The surveillance instruction used to verify that the containment air return fans starts on an auto start signal simulated the auto start signal by placing a jumper in the motor control center of the fan. The jumper simulated the closure of the solid state protection system (SSPS) contacts of a phase B containment isolation signal. The surveillance instruction failed to ensure that the contacts would function properly. The root cause of the identified conditions was determined to be inadequate surveillance instructions. Testing was performed to ensure that the circuits were performing properly. The surveillance instruction for testing the fire pump logic will be revised to remove the option to use the handswitch in the main control room. The surveillance instruction for testing of the containment air return fans logic will be revised to include steps to require testing of the containment air return fans SSPS contacts each outage. Reviews of surveillance instructions, for adequacy of testing of safety-related logic circuits, as committed in response to NRC GL 96-01 has been completed.</p>					

LICENSEE EVENT REPORT (LER)

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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 Mode 4 and Unit 2 was in Mode 1 at approximately 100 percent.

II. DESCRIPTION OF EVENT

A. Event:

On March 22, 1997, it was determined that surveillance testing of the blackout and auto sequencing timer circuit for the station fire pumps (EHS Code KF) and the containment air return fan (EHS Code BK) auto start signal circuitry may not have been tested correctly. The method specified in the surveillance instruction for testing of the blackout and auto sequencing timer circuit for the station fire pumps allows an option to either depress and hold the pushbutton for the fire pump start or turn and hold the handswitch until the fire pump starts. The handswitch method bypasses the blackout auto sequencing circuit so that it is not tested when this option is used.

The surveillance instruction used to verify that the containment air return fans starts on an auto start signal simulated the auto start signal by placing a jumper in the motor control center of the fan. The jumper simulated the closure of the solid state protection system (SSPS) (EHS Code JG) contacts of a phase B containment isolation signal. The surveillance instruction failed to ensure that the contacts would function properly.

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

None.

C. Dates and Approximate Times of Major Occurrences:

October 3, 1991	The surveillance instruction used for testing of the blackout and auto sequencing timer circuit for the station fire pumps was revised to allow the use of the fire pump start handswitch in the main control room.
January 10, 1996	NRC issued GL 96-01, Testing of Safety- Related Logic Circuits.
April 18, 1996	TVA provides NRC with a response to the GL.

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

March 22, 1997

Review of procedures for compliance with guidelines set forth in NRC GL 96-01 identified a potential problem with testing of the blackout and auto sequencing timer circuit for the station fire pumps. The review also identified that the SSPS contacts for the auto start signal on the containment air return fans may not have been tested to ensure that the contacts were functioning properly.

March 24, 1997
at approximately
0356 EST

During performance of the surveillance instruction on 1A-A diesel generator (D/G), as a precautionary measure, the fire-pump start pushbutton was used which properly tested the fire-pump start logic circuit. The circuit was determined to be acceptable.

March 25, 1997
at 1735 EST

It was determined that the response time test for SSPS satisfied the logic testing for the SSPS contact for starting the containment air return fans 1A-A, 1B-B, and 2A-A. The logic for containment air return fan 2B-B had not been tested within the required frequency. Limiting condition for operation (LCO) 3.6.5.6 action was entered.

March 25, 1997
at 1830 EST

It was confirmed that previous testing performed by utilizing the MCR handswitch for testing of the fire pump start logic was inadequate for D/G 1B-B, 2A-A and 2B-B. D/G 1A-A had already been tested using the push button. LCOs 3.8.1.2 and 4.0.3 were entered on both units.

March 25, 1997
at 2218 EST

A special test procedure was prepared and performed for D/G 1B-B, 2A-A and 2B-B utilizing the fire-pump common start logic circuit. The test determined the circuits were acceptable. LCOs 3.8.1.2 and 4.0.3 were exited on both units.

March 27, 1997
at 0025 EST

A special test procedure was prepared and performed for testing the 2B-B containment air return fan SSPS contact. The test determined the circuits were acceptable and LCO 3.6.5.6 was exited.

D. Other Systems or Secondary Functions Affected:

None.

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E. Method of Discovery:

The conditions were identified during review of surveillance instructions for compliance with guidelines set forth in NRC GL-96-01.

F. Operator Actions:

Main Control room personnel entered the appropriate technical specification LCOs.

G. Safety System Responses:

No safety system responses were required for the conditions identified in this LER.

III. CAUSE OF THE EVENT

A. Immediate Cause:

The immediate cause of both of the identified conditions was an inadequate surveillance instruction. The surveillance instruction that tested the fire pump logic contained steps that allowed the operator to use the handswitch which bypasses the blackout auto sequencing logic circuit. The surveillance for testing of the containment air return fan logic failed to ensure that the required SSPS contacts were functioning properly.

B. Root Cause:

The root cause of the identified conditions was determined to be inadequate surveillance instructions.

In October 1991 the surveillance instruction for testing the fire pump logic was revised to allowed the fire pump to be started by either [a] Depress and hold the fire pump start pushbutton until fire pump sequences on, or [b] turn and hold the fire pump start handswitch in the start position until the fire pump sequences on. Using option [b] defeats the load sequence logic during the performance of the surveillance. When the surveillance was changed to allow the use of the handswitch the technical evaluation of the change was not adequate.

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The surveillance instruction for testing the containment air return fan logic failed to ensure that the required SSPS contacts were functioning properly. The SSPS response time testing surveillance instruction normally tests the SSPS contacts on alternate refueling outages for each train.

C. Contributing Factors

None.

IV. ANALYSIS OF THE EVENT

The D/Gs function as the onsite standby alternating current (AC) power source. The safety function of the standby power system is to supply power to permit functioning of components and systems required to assure that (1) fuel design limits and reactor coolant pressure boundary design conditions are not exceeded due to anticipated operational occurrences, and (2) the core is cooled and vital functions are maintained in the event of postulated accidents subject to loss of the preferred power system and subject to any single failure in the standby power system. An undetected failure of the sequencer logic could result in the fire pump being tied to the D/G concurrent with other auto-connecting loads such that the D/G may overload and subsequently fail. The sequencer logic was correctly tested and found to be functioning properly.

The containment air return fans are designed to return air from upper containment to the lower compartments following a design basis accident. Air from these fans is then circulated through the ice condenser and back to upper containment. The containment air return fans auto start on a phase B containment isolation signal after a 10 minute delay. The surveillance instruction did not ensure that the SSPS contacts would function given an auto start signal. However, as part of the SSPS response time testing the contacts were being tested in alternate refueling outages. During the last Unit 1 refueling outage both containment air return fans 1A-A and 1B-B were tested. During the last Unit 2 refueling outage, the 2A-A containment air return fan was tested. The containment air return fan 2B-B contact was not tested in the last outage and was out of frequency. A special test was performed, demonstrating that the containment air return fan 2B-B SSPS contact would function properly.

Based on the testing that was performed ensuring that circuits were functioning properly, the conditions identified in this LER did not adversely affect the health or safety of plant personnel or the general public.

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V. CORRECTIVE ACTIONS**A. Immediate Corrective Actions:**

Upon determination of the conditions the appropriate LCOs were entered. A special test was issued, to properly test the fire-pump auto-connected shutdown loads through the load sequencer for the fire pumps on D/G (1B-B, 2A-A and 2B-B). D/G 1A-A had already been tested using the push button. This was accomplished by starting the fire pumps using the fire pump start push-button instead of the hand switch. Testing determined that each circuit was acceptable.

A special test was prepared and performed to test the SSPS contacts for the 2B-B containment air return fan. The test demonstrated that the SSPS contacts would function properly.

B. Corrective Actions to Prevent Recurrence:

The surveillance instruction for testing the fire pump logic will be revised to remove the option to use the handswitch in the main control room. The surveillance instruction for testing of the containment air return fans logic will be revised to include steps to require testing of the containment air return fans SSPS contacts each outage. Applicable surveillance instructions have been placed on hold to prevent their use until revised.

Reviews of surveillance instructions, for adequacy of testing of safety-related logic circuits, as committed in response to NRC GL-96-01 has been completed.

Lessons learned from the conditions identified as a result of the Generic Letter 96-01 review will be added to the appropriate training curriculum. This action was previously committed to in LER 50-327/97003.

VI. ADDITIONAL INFORMATION**A. Failed Components:**

None.

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B. Previous LERs on Similar Events:

A review of previous reportable events identified one LER (50-327/94013) that was associated with inadequate testing of essential raw cooling water pump start logic circuitry for safety injection and blackout signals. The cause of that condition was an inadequate revision of the surveillance instruction. The actions taken for that LER did not evaluate the type of deficiencies described in GL 96-01.

There have been two previous reportable events that were identified as a result of the GL-96-01 review. LERs (50-327/97001 and 50-327/97003) were identified and were the result of failure to adequately perform surveillance testing.

C. Additional Information:

Due to recent site concerns with the adequacy of procedure reviews, TVA is evaluating the implementation of the technical review process. This evaluation is intended to identify any existing weakness, at which time corrective actions will be taken.

VII. COMMITMENT

The surveillance instruction for testing the fire pump logic will be revised to remove the option to use the handswitch in the main control room. The surveillance instruction for testing of the containment air return fans logic will be revised to include steps to require testing of the containment air return fans SSPS contacts each outage. These surveillances will be revised by September 26, 1997.