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Sequoyah Nuclear Plant

April 10, 2000

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

10 CFR 50.73

Gentlemen:

**TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT (SQN)
UNIT 1 - DOCKET NO. 50-327 - FACILITY OPERATING LICENSES DPR-77
- LICENSEE EVENT REPORT (LER) 50-327/2000001, REVISION 1**

The enclosed revised report provides additional conditions where component response time testing was not performed following performance of maintenance activities on the component. Revisions are annotated by a vertical bar to the right of the text.

The original event was submitted to NRC on February 11, 2000. The condition was reported, in accordance with 10 CFR 50.73(a)(2)(i)(B), as an operation or condition prohibited by technical specifications.

Sincerely,



for Masoud Bajestani

Enclosure

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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 mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), 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. If 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.

FACILITY NAME (1) Sequoyah Nuclear Plant (SQN) UNIT 1	DOCKET NUMBER (2) 05000327	PAGE (3) 1 OF 9
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TITLE (4)
Failure to perform response time testing on a refueling water storage tank (RWST) level transmitter.

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	DOCKET NUMBER
01	17	2000	2000	-- 001	-- 01	04	10	2000	SQN UNIT 2	05000328
									NA	05000

OPERATING MODE (9) 1	POWER LEVEL (10) 100	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (Check one or more) (11)								
		20.2201(b)	20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)	50.73(a)(2)(viii)				
		20.2203(a)(1)	20.2203(a)(3)(I)		50.73(a)(2)(ii)	50.73(a)(2)(x)				
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)		50.73(a)(2)(iii)	73.71				
		20.2203(a)(2)(ii)	20.2203(a)(4)		50.73(a)(2)(iv)	OTHER				
		20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A				
	20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)						

LICENSEE CONTACT FOR THIS LER (12)

NAME J. Bajraszewski, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (423) 843-7749
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO						

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

This report is being revised to identify additional components that were not response time tested (RTT) following performance of maintenance activities. On January 18, 2000, during review of an implemented work document, it was determined that Refueling Water Storage Tank (RWST) Level Transmitter 1-LT-63-53 had not been RTT during postmaintenance testing as required by Technical Specification Surveillance Requirement 4.3.2.1.3. On January 17, 2000, Maintenance personnel replaced an RWST level transmitter and calibrated the new instrument. This was followed by a channel check and the new instrument was placed in service. Upon identification of the condition, the instrument was removed from service, response time testing was performed and found acceptable, and the instrument was returned to service. The cause of the condition was an inadequate work package review. Corrective actions include reinforcement of response time test requirements with appropriate plant personnel and coaching and counseling of the involved individuals. On March 10, 2000, during Corrective Action Program extent-of-condition reviews, three additional components (Unit 1 emergency gas treatment system [EGTS] Train B suction valve; and Units 1 and 2 turbine electro-hydraulic, auto-stop interface valves) were identified as not having been RTT following maintenance work. Maintenance was performed in March 1999 on the EGTS valve, April 1997 for the Unit 1 and October 1997 for the Unit 2 turbine control interface valves. Following identification of the condition, the EGTS valve was response timed and found acceptable. Test records documented acceptable testing on the other two valves in October 1998 (Unit 1) and May 1999 (Unit 2).

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

I. PLANT CONDITION(S)

Units 1 and 2 were in power operation at approximately 100 percent.

II. DESCRIPTION OF EVENT

A. Event:

On January 18, 2000, at approximately 0847 Eastern standard time (EST), during review of an implemented work document, it was determined that Refueling Water Storage Tank (RWST) [EIIS Code BP] Level Transmitter 1-LT-63-53 [EIIS Code LT] had not been response time tested during postmaintenance testing (PMT) as required by Technical Specification (TS) Surveillance Requirement (SR) 4.3.2.1.3. On January 17, 2000, Maintenance personnel replaced an RWST level transmitter and calibrated the new instrument. This was followed by a channel check and then the new instrument was placed in service.

On March 10, 2000, with Unit 1 in a refueling outage and Unit 2 in power operation at approximately 100 percent, as part of an extent of condition review the following additional components were identified as not having received response time testing following completion of maintenance work:

Component Number	Component Function	Maintenance Performance Date
1-FCV-065-0030	Unit 1 emergency gas treatment system (EGTS) [EIIS Code BH] Train B suction valve [EIIS Code FCV].	March 1999

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1-FCV-047-0027	Unit 1 turbine electro-hydraulic, auto-stop oil [EIIS Code TG] interface valve [EIIS Code FCV].	April 1997
2-FCV-047-0027	Unit 2 turbine electro-hydraulic, auto-stop oil interface valve.	October 1997

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

None.

C. Dates and Approximate Times of Major Occurrences:

January 16, 2000, at 1111 EST	Unit 1 entered TS Limiting Condition for Operation (LCO) 3.3.2.1, Action 18 for performance of a channel calibration on RWST level Channel IV, Level Transmitter 1-LT-63-53.
At 1512 EST	RWST Level Transmitter 1-LT-63-53 failed calibration.
At 1540 EST	RWST Channel IV was placed in by-pass in accordance with TS LCO 3.3.2.1, Action 18.
January 17, 2000, at 1727 EST	RWST level transmitter was replaced, a new transmitter was installed and calibrated, and RWST Channel IV was returned to service. TS LCO 3.3.2.1, Action 18 was exited.
January 18, 2000, at 0847 EST	It was determined that the new RWST level transmitter was placed in service without response time testing. Unit 1 entered TS LCO 3.0.3 for inoperability of RWST Level Transmitter 1-LT-63-53.

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at 0905 EST Unit 1 exited TS 3.0.3 based on RWST Channel IV being placed in by-pass in accordance with TS LCO 3.3.2.1, Action 18. Unit 1 entered TS LCO 3.3.2.1, Action 18.

at 2047 EST RWST level transmitter response time testing was completed and the channel was returned to service. TS LCO 3.3.2.1, Action 18 was exited.

March 10, 2000 During extent of condition reviews additional components were identified that had not received response time testing following completion of maintenance activities (Unit 1 EGTS Train B suction valve [1-FCV-065-0030]; and Units 1 and 2 turbine electro-hydraulic, auto-stop interface valves [1-FCV-047-0027 and 2-FCV-047-0027]).

March 12, 2000 The Unit 1 EGTS Train B suction valve was response timed and found to be acceptable.

D. Other Systems or Secondary Functions Affected:

None.

E. Method of Discovery:

The condition was identified during review of the work document after the maintenance field activity was completed.

The additional components were identified during the performance of Corrective Action Program extent-of-condition reviews. Maintenance history records were reviewed for components that required response time testing from the last response time testing performance. This review identified the failure to perform response

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time testing on the Unit 1 EGTS Train B suction valve (1-FCV-065-0030). Based on extent-of-condition generic evaluation of a corrective action document from another TVA facility, the Units 1 and 2 turbine electro-hydraulic, auto-stop oil interface valves (1-FCV-047-0027 and 2-FCV-047-0027) were identified. However, test records documented acceptable subsequent response time testing performance on the two interface valves (Unit 1 - October 1998, Unit 2 - May 1999).

F. Operator Actions:

Operations personnel declared the instrument inoperable and entered the appropriate LCOs. Action was initiated to perform response time testing.

No operator action was required for the additionally identified components.

G. Safety System Responses:

None, no safety responses were required.

III. CAUSE OF THE EVENT

A. Immediate Cause:

The immediate cause of the condition was an inadequate PMT specified in the work package.

B. Root Cause:

The root cause of the condition was an inadequate review of the work package PMT requirements as a result of personnel error.

During development of the work document, the Maintenance planner, who develops PMT recommendations for consideration during approval of the work document, failed to identify the response time test requirement.

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Following work document development, the Maintenance foreman misunderstood the review requirements and failed to obtain a technical review of the package before providing the work document to Operations personnel for review. By failing to obtain a technical review, an opportunity was missed that may have identified the need for response time testing.

The Operations person that reviewed the work document, for PMT adequacy, failed to recognize the need for a response time test of the new transmitter to fully satisfy TS SRs.

Review of the historical work documents for the three additional components indicates that the root cause is the same - failure to identify the response time test requirement within the PMT section of the work document during document development and review that resulted in the failure to perform the required testing.

IV. ANALYSIS OF THE EVENT

The RWST is the part of the emergency core cooling system (ECCS) that ensures a sufficient supply of borated water is available for injection by the ECCS in the event of a loss-of-coolant accident. The four RWST level transmitter channels ensure an automatic switch over occurs to the containment sump upon a low RWST level coincident with a high containment sump level and a safety injection. Following identification of the condition, the one level channel was removed from service, response time testing was performed and found acceptable showing that the instrument would have performed its function as required by TSs.

The EGTS is a containment subsystem that consists of two trains of fans, dampers, particulate filters, and charcoal absorbers. The EGTS function is to filter containment vessel leakage into the reactor building annulus area prior to discharge to the outside atmosphere. The FSAR assumes only one train of EGTS to operate during an accident condition. Following identification of the condition, the EGTS Train B suction valve was tested and

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found acceptable showing that the valve would have performed its function as required by TSs.

The turbine electro-hydraulic control (EHC) and auto-stop oil systems provide turbine control including the turbine trip function. The turbine trip function is accomplished by two trains. One train contains a solenoid-operated dump valve that drains EHC fluid on an electrical trip signal, the other train contains a EHC valve that interfaces with the auto-stop oil system and drains EHC fluid as a result of low auto-stop oil pressure. Although the Units 1 and 2 turbine electro-hydraulic, auto-stop oil interface valves were not tested following completion of maintenance work, the valves were tested at a later date and found to be acceptable showing that the valves would have performed their function as required by TSs.

Therefore, these conditions did not adversely affect the health and safety of plant personnel or the general public.

V. CORRECTIVE ACTIONS

A. Immediate Corrective Actions:

Upon identification of the RWST level transmitter condition, Operations personnel were notified and the instrument channel was declared inoperable. Response time testing was performed, the transmitter was found acceptable, and the channel was returned to service.

Following identification of the EGTS valve condition, the valve was response timed and found acceptable. No immediate actions were required for the two turbine electro-hydraulic, auto-stop oil interface valves because they had been tested at a later date following the completion of maintenance work.

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B. Corrective Actions to Prevent Recurrence:

The individuals involved with the RWST level transmitter were coached and counseled on the failure to perform an adequate work document review.

The Corrective Action Program document for the RWST level condition contains actions to reinforce response time test requirements and performance of work document reviews with appropriate plant personnel, and review of the work document review process for process improvements. Process improvements include development of a response time testing matrix and enhancement of the Planners Guide Checklist and the Operations Return-to-Operation matrix to reference the response time testing matrix. Also, the event lessons learned are being presented to the licensed operator curriculum review committee for consideration of additional training.

No additional actions specific to the EGTS valve or interface valves are necessary. The Corrective Action Program document for the RWST level transmitter condition addresses process improvements to prevent recurrence.

VI. ADDITIONAL INFORMATION

A. Failed Components:

None

B. Previous LERs on Similar Events:

There were three previous similar events identified.

- LER 50-327/87007 was associated with the failure to perform response time testing on portions of electronics in radiation monitors. The cause was determined to be an inadequate procedure.

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- LER 50-328/97-001 was associated with an inadequate PMT resulting in the failure to meet TS SRs.
- LER 50-327/97-009 addressed the failure to perform a response time test following replacement of a radiation monitor signal processor. The cause was a lack of understanding of response time SR that have to be satisfied for operability of the equipment.

The corrective actions of the first two LERs would not have prevented this identified condition.

The actions taken in the third LER of restructuring the work order PMT and adding a question to the Operations work preapproval checklist should have prevented the current condition.

C. Additional Information:

None.

D. Safety System Functional Failure:

This event did not result in a safety system functional failure in accordance with NEI 99-02.

VII. COMMITMENTS

None.