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R.J. Adney
Site Vice President
Sequoyah Nuclear Plant

February 18, 1997

U.S. Nuclear Regulatory Commission
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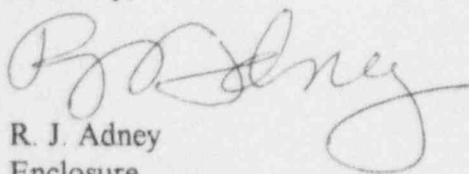
Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT (SQN)
UNIT 2 - DOCKET NO. 50-328 - FACILITY OPERATING LICENSE DPR-79 -
LICENSEE EVENT REPORT (LER) 50-328/97001

The enclosed LER provides details concerning a surveillance requirement (SR) which was not being fulfilled for the reactor trip breaker auxiliary contacts.

The event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as an operation prohibited by the plant technical specifications (TSs).

Sincerely,



R. J. Adney
Enclosure
cc: See page 2

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PDR ADOCK 05000328
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Enclosure

cc (Enclosure):

Mr. R. W. Hernan, Project Manager
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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 2DOCKET NUMBER (2)
05000328PAGE (3)
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TITLE (4) Missed surveillance on the turbine trip contacts of the reactor trip breakers.

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	97	97	001	00	2	18	97	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)						
		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
POWER LEVEL (10)	100	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER
		20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)	
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME
S. D. Gilley, Licensing EngineerTELEPHONE NUMBER (Include Area Code)
(423) 843-7427

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
X						04	30	97

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

On January 17, 1997, with Unit 2 in power operation at approximately 100 percent, personnel discovered that the spare breaker that was installed on August 29, 1996 did not have the P-4 turbine trip contact tested as required by SR 4.3.1.1.1.C.22.G. A second problem was also discovered where the post maintenance test (PMT) procedure used for the replacement of reactor trip breaker "A" (RTA) on August 29, 1996 was inadequate. The procedure only tested the solid state protection system (SSPS) functions of P-4 with the breaker in the as left position, rather than testing in both the open and closed position as required to satisfy the surveillance. However, the surveillance was subsequently satisfied when the breaker was tested in the closed position during a forced outage on October 17, 1996.

In order to perform the necessary tests for the turbine trip contacts on RTA, Unit 2 entered TS LCO 4.0.3 at 2105 hours Eastern Standard Time (EST) on January 17, 1997. The required testing for the turbine trip contacts was performed, RTA was declared operable, and LCO 4.0.3 was exited at 1249 hours EST on January 18, 1997. Recognition of this problem has resulted in the discovery of several other instances in the past where SQN was in noncompliance with SR 4.3.1.1.1.C.22.G.

The apparent cause was that the procedure used as the PMT was inadequate in that it did not properly test the P-4 function. The root cause investigation is continuing. The final root cause and corrective actions to prevent recurrence will be communicated in a revision to this LER.

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

I. PLANT CONDITIONS

Unit 2 was in power operation at approximately 100 percent.

II. DESCRIPTION OF EVENT**A. Event**

On January 17, 1997, with Unit 2 in power operation at approximately 100 percent, personnel discovered that a spare breaker that was installed on August 29, 1996 did not have the P-4 turbine trip contact tested as required by SR 4.3.1.1.1.C.22.G. As a result of this discovery, Unit 2 entered TS LCO 4.0.3 at 2105 hours EST on January 17, 1997, and the required testing for the turbine trip contacts for RTA was performed. RTA was declared operable and LCO 4.0.3 was exited at 1249 EST on January 18, 1997. A second problem was also discovered where the post maintenance test used for the online replacement of RTA on August 29, 1996 was inadequate because it did not test the SSPS functions of P-4 with the breaker in both the open and closed positions as required. As directed by the procedure the P-4 functions of the breaker were only tested with the breaker in the as-left position, which in this event resulted in P-4 being tested with the breaker closed but not with the breaker open. The breaker was subsequently tested in the open position during a forced outage on October 17, 1996. Therefore from August 29, 1996 until October 11, 1996 when the unit entered the forced outage, the SSPS functions of P-4 were inoperable because they had not received the necessary testing to meet the surveillance requirement. These problems have resulted in the discovery of several instances in the past where SQN was in noncompliance with SR 4.3.1.1.1.C.22.G.

The apparent cause was that the procedure used as the PMT was inadequate in that it did not properly test the P-4 functions. The root cause investigation is continuing. The final root cause and corrective actions to prevent recurrence will be communicated in a revision to this LER.

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

The P-4 function from RTA to trip the turbine on reactor trip was inoperable from August 29, 1996, when the spare breaker was installed until January 18, 1997, when LCO 4.0.3 was entered and the required testing to satisfy the 18-month requirement was performed. Based on the inadequate procedure, there have been other similar occurrences in the past where the SRs have not been satisfied.

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The SSPS functions of P-4 on RTA were inoperable from August 29, 1996 until a forced outage began on October 11, 1996. The SSPS functions of P-4 were tested during the forced outage with the breaker in the open position, which completed the necessary testing to satisfy the surveillance requirement.

C. Dates and Approximate Times of Major Occurrences

There are three reactor trip breakers associated with this event. The "A" train breaker, the "B" train breaker and a spare breaker which could be used to replace the A or B breaker. For the sake of clarity in the following sequence of events the breakers that start out as the "A", "B" and spare will be referred to as breaker X, Y and Z, respectively.

August 29, 1996	Breaker X was removed from the "A" location and replaced with the spare breaker Z, while the unit was online. The PMT (SI-90.82) was inadequate because it only tested P-4 to SSPS contact with the breaker in the as left (closed) position and it did not test the turbine trip function of P-4. The P-4 function for the breaker installed in location "A" was inoperable.
September 19, 1996	The X breaker then had preventive maintenance performed on it and was installed in place of breaker Y. This replacement was performed online and the PMT (SI-90.82) was inadequate for the same reasons described previously. Because of problems encountered with breaker X, it was removed and breaker Y was reinstalled. (Reference LER 50/328-96004). The result was that breaker Z was installed in the "A" train location and did not have a proper PMT.
October 11, 1996	Unit 2 shutdown for forced outage. Mode 3 with breakers open.
October 16, 1996	As part of planned maintenance Breaker Y was removed and replaced with breaker X in the "B" location.
October 17, 1996	SI-90.82 performed on breaker X in the "A" location with the breaker in the open position.

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October 19, 1996	SI-93 (Reactor Trip Instrumentation Functional Test Conditional 31 Days Prior to Startup) complete for breakers Z and X in locations "A" and "B" respectively.
January 7, 1997	SQ970034PER was written to document how surveillance requirement 4.3.1.1.2 is satisfied. Specifically, why the turbine trip function logic is not tested every 92 days.
January 10, 1997	A technical operability evaluation was approved that concluded 1,2-SI-IFT-099-0P4.0 adequately satisfied the 18-month SR 4.3.1.1.2 requirement for the turbine trip P-4 function.
January 14, 1997	Technical Support begins gathering information to verify that the previous 18-month surveillance that satisfied SR 4.3.1.1.1.2.2.G was not invalidated. This research concluded that MI-10.9.1 and SI-90.32 adequately tested all components of the P-4 circuit for both breakers and the performances were within the 18-month required frequency.
January 17, 1997	Additional investigation revealed that although the completion date of MI-10.9.1 was within the 18-month frequency, the completion of the steps in Section 6.0 of the procedure (which included contact checks) had been performed for Unit 2 RTA, in 1994, which invalidated the operability conclusions of January 14, 1997. Unit 2 entered TS LCO 4.0.3 at 2105 EST.
January 18, 1997 at 1249 EST	The turbine trip P-4 contacts were checked and reactor trip breaker EST"A" was declared operable. LCO 4.0.3 was exited for Unit 2.

D. Other Systems or Secondary Functions Affected

The following functions are performed by P-4 with the breaker open: actuates turbine trip, closes main feedwater valves on Tavg below setpoint, prevents the opening of the main

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feedwater valves which were closed by a SI or high steam generator water level signal, allows manual block of the automatic reactivation of SI. Since P-4 was only tested with the breaker closed the functions listed above were not verified.

However, on October 17, 1996, these functions, except turbine trip, were tested for RTA with the breaker open and the turbine trip function was tested on January 18, 1997, and in both cases, the tests showed that these contacts would have operated as designed if called upon to do so.

E. Method of Discovery

The problems described in this LER were discovered as a result of the ongoing investigation that was conducted in response to a previous problem with a linkage in the reactor trip breaker that was not installed properly and was not discovered by the PMT. Refer to LER 50-328/96004.

F. Operator Actions

On January 17, 1997 at 2105 hours EST, Unit 2 entered TS LCO 4.0.3 for RTA when it was discovered that the 18-month SR for P-4 to the turbine trip had not been met for this breaker. The surveillance was performed and the breaker was returned to service on January 18, 1997.

G. Safety System Responses

No safety system response was required.

III. CAUSE OF EVENT

A. Immediate Cause

The immediate cause of this condition was that an adequate PMT for the reactor trip breaker was not performed. This invalidated the surveillance requirement for periodic verification of the P-4 function.

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B. Root Cause

The apparent cause was that the procedure used as the PMT was inadequate in that it did not properly test the P-4 function. The root cause investigation is continuing.

IV. ANALYSIS OF EVENT

The inoperability of the P-4 contacts identified in this LER was due strictly to a missed surveillance and not to contacts that were incapable of performing their design function. Since the contacts were later tested and found to function properly with normal contact resistance, it is reasonable to assume the contacts were functional the day the breaker was changed. Also, since the P-4 channel is strictly a switch development, the extended surveillance interval does not subject the P-4 function to drift or accuracy degradation. The main liability of not testing the P-4 contacts when a new breaker is installed is that a failure of the auxiliary switch would not be immediately identified (reference LER 50/328-96004). The successful completion of testing on reactor trip breaker "A" on January 17, 1997 demonstrated that the P-4 contacts would have functioned if called upon to do so. Therefore, based on the above considerations, there were no adverse consequences to plant personnel or to the public as a result of this event.

V. CORRECTIVE ACTIONS

A. Immediate Corrective Action

A multi-disciplinary team was formed to perform an investigation of the event. That investigation is continuing.

Unit 2 entered TS LCO 4.0.3 on January 17, 1997 at 2105 hours EST when it was discovered that the 18-month SR for P-4 to the turbine trip had not been met for this breaker. The instructions necessary to satisfy the surveillance were written and performed and the unit exited LCO 4.0.3 at 1249 hours EST on January 18, 1997.

B. Corrective Action to Prevent Recurrence

The investigation into this event is continuing and corrective actions to prevent recurrence will be reported in a revision to this LER.

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VI. ADDITIONAL INFORMATION

A. Failed Components

None

B. Previous Similar Events

A review of previous reportable events identified a Unit 2 LER (50/328-86039) that documented a condition where two of the five functions that P-4 accomplishes were not being checked to satisfy SR 4.3.1.1.2. These two functions were turbine trip and main feedwater valve closure on low reactor coolant system average temperature with reactor trip. The corrective action from that event included writing a new procedure to test the total interlock function. The procedure that was written tested the turbine trip portion of P-4 but the procedure was written to be performed during refueling outages. When online maintenance of the breakers was performed, the specified PMT did not test the turbine trip feature.

II. COMMITMENTS

None, however, the investigation into this event is continuing and corrective actions to prevent recurrence will be reported in a revision to this LER. Commitments will be delineated at that time. A revision to this LER is expected to be submitted on April 30, 1997.