

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

R.J. Adney  
Site Vice President  
Sequoyah Nuclear Plant

June 20, 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) 50-327/97009

The enclosed report provides details concerning the failure to perform a response time test following maintenance activities as required by technical specifications. This condition is 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

200032  
9706260310 970620  
PDR ADOCK 05000327  
S PDR



U.S. Nuclear Regulatory Commission  
Page 2  
June 20, 1997

Enclosure

cc (Enclosure):

INPO Records Center  
Institute of Nuclear Power Operations  
700 Galleria Parkway  
Atlanta, Georgia 30339-5957

W. Hernan, Project Manager  
U.S. Nuclear Regulatory Commission  
One White Flint, North  
11555 Rockville Pike  
Rockville, Maryland 20852-2739

NRC Resident Inspector  
Socoyah Nuclear Plant  
2600 Igou Ferry Road  
Soddy-Daisy, Tennessee 37379-3624

Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region II  
Atlanta Federal Center  
61 Forsythe St. SW, Suite 23T85  
Atlanta, Georgia 30323-3415

**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: 50.0 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 6
--	--	-------------------------------	--------------------

TITLE (4)  
Failure to Perform Response Time Testing of the Containment Radition Monitor Following Maintenance Activities as Required by Technical Specifications.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REPORTING NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	21	97	97	009	00	06	20	97	SQN UNIT 2	05000328
									FACILITY NAME	DOCKET NUMBER
									NA	05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)								
POWER LEVEL (10)	100	<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)					
		<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)					
		<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<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)	<input type="checkbox"/> 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 J. W. Proffitt, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (423) 843-6651
--	--

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE.)	<input checked="" type="checkbox"/>	NO					

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

On May 21, 1997, it was discovered that a Unit 2 containment purge radiation exhaust monitor had not been response-time tested, following completion of maintenance activities, as required by technical specifications. During the extent of condition review, it was identified that a Unit 1 containment purge exhaust radiation monitor had not been response-time tested following replacement of the time-delay relay. The radiation monitors were declared inoperable. A response-time test was performed on the radiation monitors and they were determined to be functioning properly and declared operable. The cause was determined to be a lack of understanding of the response-time surveillance requirements that have to be satisfied for operability of the containment purge radiation monitors following maintenance activities that could affect the response-time of these radiation monitors. Unlike the other radiation monitors, the containment purge radiation monitors require a response-time test for operability. The lessons learned from this event have been communicated with the appropriate personnel. Plant procedures have been revised to require that work order PMTs be structured in two parts: a) for maintenance tests, and b) for TS return to operability. Plant procedures have been revised to add a question to the Operations work pre-approval checklist to address work that could potentially invalidate a previously satisfied TS surveillance requirement. Inconsistencies in the calibration and response-time surveillances as well as in the PMT maintenance test matrix for the containment purge exhaust radiation monitors have been corrected.

## LICENSEE EVENT REPORT (LER)

## TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SQN Unit 1	05000327	97	--	009	2 of 6
		--	--	00	

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

**I. PLANT CONDITIONS**

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

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

On May 21, 1997, it was determined that the Unit 2 containment purge exhaust radiation monitor (2-RM-90-131) (EIS Code IL) had not been response-time tested as required by technical specifications (TSs) following completion of a maintenance activity. The maintenance activity was performed on November 8, 1995. The activity included the replacement of the radiation modifier signal processor (RP-30 module). A response-time test should have been performed to ensure the monitor would initiate a containment ventilation isolation (CVI) (EIS Code JM) within the required timeframe.

During the extent of condition review, it was identified that the Unit 1 containment purge exhaust radiation monitor (1-RM-90-131) had not been response-time tested following replacement of the time-delay relay. The relay was replaced on April 19, 1996. It was also determined electronic components that have the potential to affect the response-time of the containment purge radiation monitors had been replaced on previous occasions without the response-time test being performed.

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

None.

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

October 28, 1994      The Unit 2 containment purge radiation monitor (2-RM-90-131) was successfully response-time tested.

October 7, 1995      The Unit 1 containment purge radiation monitor (1-RM-90-131) was successfully response-time tested.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SQN Unit 1	05000327	97	-- 009	-- 00	3 of 6

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

November 7, 1995 2-RM-90-131 was not responding properly and was declared inoperable .

November 8, 1995 Following replacement of the (RP-30 module) and completion of the post-maintenance test (PMT); 2-RM-90-131 was returned to service. The response-time test was not performed.

April 17, 1996 1-RM-90-131 was not responding properly and was declared inoperable.

April 19, 1996 Following replacement of the time-delay relay and completion of the PMT 1-RM-90-131, it was declared operable and returned to service. The response-time test was not performed.

May 21, 1997 A Systems Engineer identified that the RP-30 module had been replaced on 2-RM-90-131 on November 8, 1995 without a response-time test being performed. A problem evaluation report was initiated to evaluate the condition.

May 21, 1997 Operations was notified of the condition. 2-RM-90-131 was declared inoperable.

May 22, 1997 2-RM-90-131 was successfully response time tested. No operability concerns were identified.

June 10, 1997 During the extent of condition review for the identified condition, it was determined that the high radiation time-delay relay on 1-RM-90-131 had been replaced without a subsequent response- time test.

June 10, 1997 Operations was notified of the condition. 1-RM-90-131 was declared inoperable.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SQN Unit 1	05000327	97	-- 009	-- 00	4 of 6

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

June 11, 1997      1-RM-90-131 was successfully response time-tested. No operability concerns were identified.

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

None.

**E. Method of Discovery:**

The condition was identified during a review of the radiation monitoring system maintenance history.

**F. Operator Actions:**

Main Control room personnel declared the radiation monitors inoperable.

**G. Safety System Responses:**

No safety system responses were required.

**III. CAUSE OF THE EVENT****A. Immediate Cause:**

The immediate cause of the condition was the failure to perform the response-time test as required by TSs following performance of maintenance activities.

**B. Root Cause:**

The root cause was determined to be a lack of understanding of the response-time surveillance requirements that have to be satisfied for operability of the containment purge radiation monitors following maintenance activities that could affect the response-time of these radiation monitors. Unlike other radiation monitors, the containment purge radiation monitors require a response-time test for operability. Some personnel lacked knowledge that the maintenance activity could affect the containment purge radiation monitor response-time.

## LICENSEE EVENT REPORT (LER)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SQN Unit 1	05000327	97	--	009	5 of 6
		--	--	00	

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

**C. Contributing Factors**

Contributing to the identified condition was that plant procedures governing post maintenance testing (PMT) do not require work packages to differentiate between testing for maintenance and testing to satisfy surveillance requirements. Also, contributing to the identified condition are inconsistencies in the calibration and response-time surveillances and the PMT maintenance test matrix for these radiation monitors.

**IV. ANALYSIS OF THE EVENT**

The containment purge radiation monitors are required to initiate a CVI, within the required timeframe, upon its setpoint being exceeded. Following identification of the conditions, the radiation monitors were not response-time tested, it was determined that the radiation monitors would have performed their function as required by TSs. Therefore, the condition did not adversely affect the health or safety of plant personnel or the general public.

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

Upon identification of the condition, Operations was notified and the radiation monitors were declared inoperable. The radiation monitors were response-time tested and declared operable.

**B. Corrective Actions to Prevent Recurrence:**

Plant procedures have been revised to require that work order PMTs be structured in two parts: a) for maintenance tests, and b) for TS return to operability. Plant procedures have been revised to add a question to the operations work pre-approval checklist to address work that could potentially invalidate a previously satisfied TS surveillance requirement.

The lessons learned from this event were communicated to the appropriate site personnel.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
SQN Unit 1	05000327	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	6 of 6
		97 --	009 --	00	

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

Operations has established a permanent function in the Work Control Center for Return To Operability PMT planning. This function requires a review of maintenance work orders that involve TS required equipment for the purpose of specifying the surveillance instructions that must be performed to ensure that surveillance requirements are met.

Inconsistencies in the calibration and response-time surveillances as well as in the PMT maintenance test matrix for the containment purge exhaust radiation monitors have been corrected.

**VI. ADDITIONAL INFORMATION**

**A. Failed Components:**

None.

**B. Previous LERs on Similar Events:**

There was one previous similar event identified. LER 50-327/87007 was associated with the failure to perform response-time testing on portions of electronics in radiation monitors. The containment purge exhaust radiation monitors were included. The cause was determined to be an inadequate procedure. The response-time test procedure was revised to require testing of those electronics. The corrective action could not have prevented this identified condition.

**C. Additional Information:**

None.

**VII. COMMITMENTS**

None.