

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Sequoyah, Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 2 7				PAGE (3) 1 OF 0 2		
TITLE (4) Auxiliary Building Ventilation Isolation																
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 NAMES				DOCKET NUMBER(S)			
0 1	1 2	8 4	8 4	0 0 2	0 0	0 2	0 8	8 4					0 5 0 0 0			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)														
3		20.402(b)				20.406(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)		
POWER LEVEL (10)		20.406(a)(1)(i)				50.38(c)(1)				50.73(a)(2)(v)				73.71(e)		
0 1 0 1 0		20.406(a)(1)(ii)				50.38(c)(2)				50.73(s)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
20.406(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)								
20.406(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)								
20.406(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)								
LICENSEE CONTACT FOR THIS LER (12)																
NAME Glenn E. Duggin, Compliance Section Engineer										TELEPHONE NUMBER						
										AREA CODE						
										6 1 5		8 7 0 - 6 1 4 6				
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM NA*	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS						
E	J	- I - R I G	0 6 3	N												
X	I	- I - P G	0 6 3	N												
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO				

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

A high radiation alarm was actuated which caused an auxiliary building ventilation isolation (ABI) to occur. Investigation revealed that a voltage spike caused by switch actuation generated some electromagnetic interference (EMI) to cause a high radiation trip. Also, one of three channels were blocked when a filter was changed to prevent a spike, but one of the unblocked channels had a spurious spike. All radiation levels were normal, below setpoint, during this time.

The spurious high radiation alarm was reset and the monitor was returned to service. Rubber mounts are being added to switches and a block switch is being modified to block all three channels, total gas, particulate and iodine, instead of just one channel at a time. Also, the switches are being connected with polyflow tubes instead of stainless to prevent vibration. Better coordination between Maintenance and Operations when work such as filter changes is done will also help prevent spurious spikes.

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*NA - IEEE Standard 805-1983 not available.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Sequoyah, Unit 1	0 5 0 0 0 3 2 7	8 4	- 0 0 2	- 0 0	0 2	OF 0 2

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

This LER involves three separate incidents. The first auxiliary building isolation (ABI) occurred at 0700C on 01/12/84 while unit 1 was in mode 3 (0% power, 2100 psig, 525 degrees F), the second ABI occurred at 1020C on 01/12/84 while unit 1 was in mode 3 (same conditions), and the third ABI occurred at 1451C on 01/18/84 while unit 1 was in mode 1 (100% power, 2235 psig, 579 degrees F). In the first incident, the monitor was returned to service at 0720C, the second incident at 1040C, and the third incident at 1734C. All associated equipment operated normally during the ABIs. The operator responded to the annunciator (RM-90-101) and determined that the alarm was in fact caused by a spurious spike and not by a high radiation level. Maintenance personnel were notified to check the monitor, reset the alarm in the control room, and repair or reset the monitor. In the first two incidents, no equipment or other failure was found, and the monitor was reset. In the third incident, a vacuum pump was found to have failed, giving a low flow alarm. The backup pump was turned on while the primary pump was replaced. None of these incidents should have generated an ABI. All equipment and personnel responded and performed as expected.

The plant manager has identified the problem of spurious actuations of ABIs and CVIs as the plant's number one priority to resolve. A committee has been established involving the plant sections of Operations, Chemical Engineering, Instrument Maintenance, and Compliance, as well as Engineering Design. Meetings have been held with these personnel to determine possible causes and corrective actions. The alarms were caused by spurious signals on the radiation monitor which may have been caused by a combination of vibration and EMI. The exact cause of these spurious signals has not definitely been determined; however, several likely possibilities are being acted upon. The vibration and EMI problems were concluded because the low flow alarm switch was found actuated in two of the above incidents, and a filter was changed out in the other incidents. Switch actuation can generate EMI noise and vibration. The present block switch used when a filter is changed out only blocks one of three channels (total gas, particulate, iodine). When the filter was changed, a spike came through one of the unblocked channels. Some immediate corrective actions to prevent the spurious signals from occurring are mounting the switches on rubber mounts, hooking a recorder to the actuation channels to determine spurious signal origin, and replacing stainless tubes to the switch with polyflow tubes. Worksheets will be finalized for precautions and coordination with Operations for change out of filters on the monitors. Operations will update procedures for daily surveillance of the monitors and actions to take for low flow. Instrument Maintenance will continue to evaluate effectiveness of the modification to the mounting of flow switches. Maintenance, Chemical, and Operations have been told, verbally and through procedures, to coordinate maintenance source checks and sample gathering so that the isolation signal can be blocked to prevent an unnecessary (not real) high radiation signal. These immediate actions have been initiated and most are complete. Long-term actions presently under consideration are: (1) NCO will determine if a flow switch with sufficient deadband to reduce chattering at low flow is available and will initiate paperwork to change them out; (2) Instrumentation will remove the isolation function from the ABI monitor and add a time delay to the actuation signal; (3) NCO will evaluate and specify a filter for the AC cables to the monitors; (4) Engineering Design will begin preliminary work on implementing a time delay of CVI and ABI and also changing the flow alarm circuit from AC to DC power. Some or all of these actions will be implemented as appropriate.

There was no effect on public health or safety and no plant safety margins were exceeded. Radiation levels were not above normal during this time.

Previous occurrences - none.

TENNESSEE VALLEY AUTHORITY

Sequoyah Nuclear Plant
Post Office Box 2000
Soddy Daisy, Tennessee 37379

February 8, 1984

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 1 - DOCKET NO.
50-327 - FACILITY OPERATING LICENSE DPR-77 - REPORTABLE OCCURRENCE REPORT
SQRO-50-327/84002

The enclosed licensee event report provides details concerning the inadvertent auxiliary building ventilation isolation caused by spurious spikes on the radiation monitor. This event is reported in accordance with 10 CFR 50.73, paragraph a.2.iv.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

C. C. Mason
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Power Plant Superintendent

Enclosure
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NRC Inspector, NUC PR, Sequoyah

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