

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

R.J. Adney
Site Vice President
Sequoyah Nuclear Plant

January 2, 1996

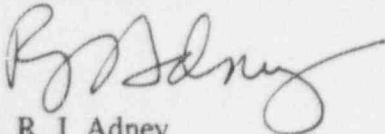
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT (SQN)
UNIT 1 - DOCKET NO. 50-327 - FACILITY OPERATING LICENSES DPR-77 -
LICENSEE EVENT REPORT (LER) 50-327/95016

The enclosed report provides details concerning a condition prohibited by technical specifications. Containment temperature monitoring was not established within one hour following a fire detector trouble alarm. The alarm went off and was acknowledged, but containment temperature monitoring was not established. This report is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by technical specifications.

Sincerely,



R. J. Adney

Enclosure
cc: See page 2

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PDR ADOCK 05000327
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U.S. Nuclear Regulatory Commission

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Enclosure

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 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 1

DOCKET NUMBER (2)
05000327

PAGE (3)
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TITLE (4) Failure to Establish Containment Temperature Monitoring Following Trouble Alarm on Fire Detector Panel

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
12	04	95	95	016	00	01	02	96	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
POWER LEVEL (10)	100	20.402(b)			20.405(c)			50.73(a)(2)(iv)		73.71(b)
		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, Compliance Licensing Engineer

TELEPHONE 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
X	IC	IMOD	P435	NO					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On December 4, 1995, at approximately 1525 Eastern standard time (EST), with Unit 1 in Mode 1 at 100 percent power, an alarm came in for Panel 0-L-629. The UO acknowledged the alarm and reported to the ASOS that the alarm was a trouble alarm for Panel 0-L-629. The zone on the panel that initiated the trouble alarm is for two thermal detectors located on Unit 1 Reactor Coolant Pump (RCP) 4. The UO also reported that the same panel had a trouble alarm earlier in the day and had cleared itself. The UO then proceeded with an earlier task. It was also time for shift turnover, and the UO became involved in turnover activities and failed to check the status of the alarm or pass on the alarm information to the oncoming shift. At 1842 EST, the evening shift personnel noticed the trouble alarm was in for Panel 0-L-629, and when it was determined that the faulted zone was required by technical specifications, the action statements for Limiting Conditions for Operation 3.3.3.8 and 3.7.11.2 were entered. Since the actual instrument is located inside containment, hourly monitoring of containment temperature was begun. The root cause of this event was operator error. A lessons learned was issued for required reading, and the procedure was revised to establish two minutes as the time period to be used to determine whether an alarm on the fire detection system is spurious. Also, constant panel attendance is now required until a decision is made regarding the signal validity. If no determination can be made in that period of time, then the procedural requirements for a valid trouble alarm will be initiated.

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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 1 at 100 percent power.

II. DESCRIPTION OF EVENT

A. Event

On December 4, 1995, at approximately 1525 Eastern standard time (EST), with Unit 1 in Mode 1 at 100 percent power, an alarm came in for fire detection Panel 0-L-629 (EIIIS Code IC). The assistant shift operations supervisor (ASOS) was involved in another matter at the time and asked the unit operator (UO) to acknowledge the alarm. The UO was on the way to another panel to assist a systems engineer in the investigation of an issue on the lower compartment coolers (LCCs). On the way to the panel for the LCC, the UO acknowledged the alarm and reported to the ASOS that the alarm was a trouble alarm for Panel 0-L-629. The zone on the panel that initiated the trouble alarm is for two thermal detectors located in the area of Unit 1 Reactor Coolant Pump (RCP) 4. The UO also reported that the same panel had a trouble alarm earlier in the day and had cleared itself. The UO stated that he was going to wait a short time before implementing the procedural requirement for a malfunctioning detector. The ASOS agreed to this because it was believed that the alarm would clear before personnel could be dispatched to observe the local panel. When a trouble alarm is received, it is necessary to observe the local panel while the trouble alarm is still active to identify the malfunctioning zone. This local panel has ten different zones. The UO then proceeded with the earlier task of assisting the systems engineer. It was also time for shift turnover, and the UO became involved in turnover activities and failed to check the status of the alarm or pass on the alarm information to the oncoming shift. The ASOS incorrectly assumed that the alarm had cleared since he did not receive any subsequent communication on the issue from the UO.

At 1842 EST, evening shift personnel noticed the trouble alarm was in for Panel 0-L-629, and when it was determined that the faulted zone was required by technical specifications (TSs), the action statements for Limiting Conditions for Operation 3.3.3.8 and 3.7.11.2 were entered. Since the instrument is located inside containment, hourly monitoring of containment temperature was begun in lieu of a fire watch. Hourly checks of the panel were also established since any additional trouble alarms for other zones served by this panel would not show up in the control room. These checks were continued until a jumper was installed on the faulty zone to remove the trouble alarm for that zone. This allows any trouble alarms for other zones to show up in the control room.

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

None.

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C. Dates and Approximate Times of Major Occurrences

- December 4, 1995 at 0854 EST The trouble alarm for Panel 0-L-629 came in and was acknowledged.
- December 4, 1995 at 0855 EST The trouble alarm for Panel 0-L-629 cleared out and was acknowledged.
- December 4, 1995 at 1525 EST The trouble alarm for Panel 0-L-629 came in and was acknowledged. Personnel were not dispatched to the panel to determine which zone was at fault.
- December 4, 1995 at 1530 EST The ASOS was relieved by the following shift.
- December 4, 1995 at 1536 EST The UO was relieved by the following shift.
- December 4, 1995 at 1842 EST Operations discovered an alarm in on 0-L-629 and after determining that the affected zone was a TS zone, established hourly monitoring of the containment temperature and hourly checks of the panel so that any additional trouble alarms on the panel would be recognized.

D. Other Systems or Secondary Functions Affected

None.

E. Method of Discovery

The trouble alarm for Panel 0-L-629 was discovered by operators on evening shift during the normal performance of duties in the control room.

F. Operator Actions

Hourly monitoring of the containment temperature was initiated, and hourly checks of the panel were established.

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G. Safety System Responses

No safety system response was required. The fire detection equipment responded to the internal circuitry problem as designed.

III. CAUSE OF EVENT

A. Immediate Cause

The immediate cause of this event was that Operations personnel did not perform the procedural requirements for the alarm nor did they continue to monitor the alarm until it was either confirmed to be spurious or until procedure implementation was initiated.

B. Root Cause

The root cause of this event was determined to be operator error in not carrying out the required actions of the procedure. Since the same trouble alarm had been received earlier in the shift and had quickly cleared by itself, the operator assumed that the trouble alarm condition would clear quickly.

C. Contributing Factors

None.

IV. ANALYSIS OF EVENT

The fire detection panel is designed to issue two kinds of alarms. The first is a fire alarm, and the second is a trouble alarm. The trouble alarm occurs when certain parameters (e.g., zone voltage) fall outside previously established limits. A fire alarm will override a trouble alarm. Once a trouble alarm is in for a panel, any additional trouble alarms generated by other zones on the panel would be indicated at the local panel, but no additional indication would be transmitted to the control room as long as the original trouble alarm for the panel is still in. When the trouble alarm is on for a panel, it means that a zone may or may not be able to perform its intended function depending on what particular problem the zone has. In the event described by this LER, the faulty zone had two thermal detectors in the area around RCP 4. The zone module in the local fire detection panel exhibited a low zone voltage, resulting in the trouble alarm in the control room. Testing of the faulty component could not determine conclusively whether a valid fire alarm would have been transmitted to the control room for this zone. A second zone of thermal detectors for RCP 4 was in operation. Although actuation of this second zone by itself would not initiate a fire pump start, it would have generated an additional alarm in the control room, and the fire pumps could have been started manually. During the period of time for which this zone was unavailable, no fires

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occurred in the area protected by this zone. Therefore, it can be concluded that there were no adverse consequences to plant personnel or to the general public as a result of this event.

V. **CORRECTIVE ACTIONS**

A. **Immediate Corrective Action**

The immediate corrective action was to dispatch personnel to the panel to determine which zone generated the trouble alarm. When it was determined that the zone in question was covered by TSs and the instrument was inside containment, hourly containment temperature monitoring was initiated.

B. **Corrective Action to Prevent Recurrence**

The corrective action taken for this event was to issue a required reading with lessons learned regarding the expectations for procedure implementation when trouble alarms are received on the fire protection panel, spurious or otherwise. The procedure was revised to establish two minutes as the time period to be used to determine whether an alarm on the fire detection system is spurious. Also, constant panel attendance is now required until a decision is made regarding the signal validity. If no determination can be made in that period of time, then the procedural requirements for a valid trouble alarm will be initiated.

VI. **ADDITIONAL INFORMATION**

A. **Failed Components**

The component that failed and was replaced was a ZA 30 zone input module, manufactured by Pyrotronics.

B. **Previous Similar Events**

A review of previous reportable events identified no LERs where control room operators acknowledged a trouble alarm but failed to take the required action or monitor the alarm until it was confirmed to be spurious. An event was identified (LER 50-327/92-024) in which an alarm came in during the performance of a surveillance instruction (SI). Fire Operations personnel were monitoring the panel during the performance of the SI when the alarm came in and acknowledged the alarm but failed to inform the UO of the alarm. The corrective actions taken for this event would not have prevented the event described by this LER.

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VII. COMMITMENTS

None.