NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Sequoyah, Unit 1	0 5 0 0 0 3 2 7	1 OF 0 3

TITLE (4)
Control Room Isolation Caused By Simultaneous Contact Of Two Terminals With An Open Alligator Clip Defeating Block Function During Radiation Monitor Testing

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 9	2 4	8 7	8 7	0 6 3	0 1	0 1	2 1	8 8	Sequoyah, Unit 2	0 5 0 0 0 3 2 8
										0 5 0 0 0

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	XX 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 (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		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	TELEPHONE NUMBER AREA CODE	
K. W. Fenn, Plant Operations Review Staff	6 1 5	8 7 0 - 6 5 1 1

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)	XX NO				

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

This report is being revised to provide updated information in the area of corrective action.

On September 24, 1987, at 1057 EST with units 1 and 2 in mode 5 (0 percent power, 3 psig, 120 degrees F and 0 percent power, 65 psig, 119 degrees F, respectively), an inadvertent control room ventilation isolation was initiated. This was caused by an alligator clip accidentally contacting two terminal points simultaneously during performance of a radiation monitor Surveillance Instruction (SI)-82, "Functional Tests for the Radiation Monitoring System." This defeated the block function on the main control room intake monitor 0-RM-90-126 and initiated a high radiation signal. The high radiation signal then generated a main control room isolation.

Upon determination that the signal was invalid, the ventilation system was reset and an investigation to determine the cause was performed. During troubleshooting to determine the cause of the isolation, a preplanned isolation occurred indicating the high radiation signal was generated by an open alligator clip making contact with two terminals. SI-82 has been performed three additional times after this occurrence before the procedure was revised but no additional inadvertent control room ventilation isolations occurred. However, SI-82 has now been revised (approved on January 14, 1988) to ensure alligator-type clips are not used as test leads, and leads are only momentarily contacted to terminals for this application. Since other radiation monitors have similar arrangements, the SI-82 revision also addressed all other applicable radiation monitors in this procedure.

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

This report is being revised to provide updated information in the area of corrective action.

DESCRIPTION OF EVENT

On September 24, 1987, at 1057 EST with units 1 and 2 in mode 5 (0 percent power, 3 psig, 120 degrees F and 0 percent power, 65 psig, 119 degrees F, respectively), an inadvertent control room ventilation (EIIS System Code VI) isolation was initiated. This was caused by an alligator clip accidentally contacting two terminal points simultaneously during performance of radiation monitor functional test Surveillance Instruction (SI)-82. The isolation function of the control room ventilation radiation monitor 0-RM-90-126 (Train B) was removed from service by placing the control room bypass switch (HS-90-136A2) into the block position for this monitor. Following this, the technicians performing SI-82 went to the sample monitor to verify the Hi Rad relay functioned as required. A lead with the alligator clip was being used to attach to terminals 29 and 30 on terminal board TB517 to measure relay contact closure and inadvertently contacted the bypass switch terminal 28 at the same time. This defeated the block function on the main control room intake radiation monitor (0-RM-90-126) (EIIS System Code IL) and simulated a high radiation signal. The high radiation signal then generated a main control room isolation and an alarm which was noted by the control room operators. Upon determination that the signal was invalid, the ventilation system was reset. During troubleshooting to determine the cause of the isolation, a preplanned isolation occurred indicating the high radiation signal was generated by an open alligator clip making contact with two terminals. This event affected both units as the main control room provides control for each unit.

CAUSE OF EVENT

The root cause for this event was a combination of personnel error and lack of procedure clarity. The technician did not exercise sufficient caution to prevent the simultaneous contact of the two terminals, nor did the procedure specify not to use alligator-type clips or give warning of the close proximity of the terminals.

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

ANALYSIS OF EVENT

A control room ventilation isolation is an engineered safety feature (ESF), and any actuation of an ESF that is not preplanned is reportable in accordance with 10 CFR 50.73, paragraph a.2.iv. Since neither the initial control room ventilation isolation nor the isolation initiated during the troubleshooting were caused by an actual high radiation level, there was no threat to control room personnel or the general public. When a control room isolation occurs, the ventilation system automatically diverts the inlet flow through HEPA filters and charcoal absorber banks in the control room emergency ventilation system. In addition to the 0-RM-90-126 main control room intake monitor (Train B), there is a redundant Train A monitor (0-RM-90-125) which had already been tested and remained in service during the time of this event. The potential of this event occurring during any other mode would have been the same since this functional test is required on a monthly schedule during all modes. This was the first performance of this part of SI-82 after it was revised as a result of the channel functional testing concerns addressed in NRC violation 87-36-01 which stated that the isolation of the control room (the chlorine detection system trip function) was not functionally tested using the chlorine detector signal as an initiation signal. The SI-82 was revised to resolve functional test deficiencies on radiation monitor channels discovered during a generic review of technical specifications as a result of the NRC violation.

CORRECTIVE ACTION

The main control room ventilation system was immediately reset upon determination that no high radiation level existed. The test was completed using alligator clips with increased care to not touch more than one contact with the same clip. SI-82 has been performed three additional times after this occurrence before the procedure was revised but no additional inadvertent control room ventilation isolations occurred. However, SI-82 has now been revised (approved on January 14, 1988) to ensure alligator-type clips are not used as test leads, and leads are only momentarily contacted to terminals for this application. Since other radiation monitors have similar arrangements, the SI-82 revision also addressed all other applicable radiation monitors in this procedure.

ADDITIONAL INFORMATION

0-RM-90-126 is a General Atomic Model RP-30.

There have been nine previous control room ventilation isolations initiated by radiation monitors: SQRO-50-327/84004, 84039, 85021, 85037, 86002, 86060, 87043, -328/84003, and 86009. None of these were known to be caused by use of alligator-type clips.

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TENNESSEE VALLEY AUTHORITY
Sequoyah Nuclear Plant
Post Office Box 2000
Soddy-Daisy, Tennessee 37379

January 21, 1988

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-50-327/87063 REVISION 1

The enclosed revised licensee event report provides updated information in the area of corrective action. This event was originally reported in accordance with 10 CFR 50.73, paragraph a.2.iv.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

S. J. Smith
Plant Manager

Enclosure
cc (Enclosure):

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