

NRC Form 366  
(9-83)

U.S. Nuclear Regulatory Commission  
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L I C E N S E E E V E N T R E P O R T ( L E R )

FACILITY NAME (1) Arkansas Nuclear One, Unit Two DOCKET NUMBER (2) PAGE (3)  
0500036810F014

TITLE (4) Failure To Maintain Control Room Ventilation Radiation Monitor Setpoint Value Within Technical Specifications Due To Inadequate Procedural Guidance.

EVENT DATE (5)			LER NUMBER (6)		REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)							
Month	Day	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)						
0	8	2	2	8	0	1	4	ANO-1	0	5	0	0	3	1	3

OPERATING MODE (9) 1 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

POWER LEVEL (10)	20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(c)	50.36(c)(1)	50.36(c)(2)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vii)	50.73(a)(2)(viii)(A)	50.73(a)(2)(viii)(B)	50.73(a)(2)(x)	73.71(b)	73.71(c)	Other (Specify in Abstract below and in Text, NRC Form 366A)	
				X																		

L I C E N S E E C O N T A C T F O R T H I S L E R ( 1 2 )

Name	Telephone Number
Larry Taylor, Nuclear Safety and Licensing Specialist	501196141311010

C O M P L E T E O N E L I N E F O R E A C H C O M P O N E N T F A I L U R E D E S C R I B E D I N T H I S R E P O R T ( 1 3 )

Cause	System	Component	Manufacturer	Reportable to NPRDS	Cause	System	Component	Manufacturer	Reportable to NPRDS

S U P P L E M E N T R E P O R T E X P E C T E D ( 1 4 )

Yes (If yes, complete Expected Submission Date)	No	EXPECTED SUBMISSION DATE (15)	Month	Day	Year
<input checked="" type="checkbox"/>	<input type="checkbox"/>				

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

On 8/22/88 Arkansas Nuclear One, Unit 2 was operating at full power when the control room ventilation system radiation monitor high alarm actuated. The indicated background radiation level in the ventilation system was found to have momentarily increased to the monitor's alarm/actuation setpoint. It was also discovered that an incorrect setpoint value had been recorded on previous daily process monitor logs used to document and verify that the setpoint is as required by the Technical Specifications (TS). An incorrect setpoint of 500 counts per minute (CPM) had been carried forward on the process monitor logs each day from 8/11/88, although the setpoint had been changed on 8/11/88 to 700 CPM. This error resulted in failure to maintain the setpoint in accordance with the TS required value of less than or equal to two times background. The event had no adverse impact on control room habitability; the capability of the monitor to perform its intended function was maintained. The root cause of this event was inadequate procedural guidance for ensuring that the setpoint is maintained at the value required by TS. Subsequent action by maintenance personnel to recheck and readjust the setpoint as necessary was conducted. Procedures which govern maintaining the setpoint within TS limits will be revised to provide additional instructions and controls to responsible personnel.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NA (1) Arkansas Nuclear One, Unit Two	DOCKET NUMBER (2)			LER NUMBER (6)			PAGE (3)
	Year	Sequential Number	Revision Number				
	0 5 0 0 0 3 6 8 8 8 --	0 1 4 --	0 0 2 0 1 4				

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

I. Description of Event

A. Plant Status

At the time of discovery of this event, Arkansas Nuclear One, Unit 2 (ANO-2) was operating at 100 percent power with a reactor coolant system (RCS) temperature of 580 degrees Fahrenheit and an RCS pressure of 2250 psig.

B. Component Identification

The component involved in this event was the normal control room ventilation system radiation monitor (MON), 2RITS-8750-1.

C. Sequence of Events

At approximately 1207 on 8/22/88, while work was being performed on the control room emergency chillers [VI], the control room ventilation system radiation monitor, 2RITS-8750-1, high alarm actuated causing automatic isolation of the normal control room ventilation system and starting of the control room emergency ventilation system. Upon immediate investigation and observation of the monitor, it was discovered that the indicated background radiation level had momentarily increased to the alarm/actuation setpoint for the monitor. Also, the setpoint for the monitor was noted to be set at 700 counts per minute (CPM) rather than 500 CPM as previously recorded on the process monitor logs used to document the setpoint. An investigation was initiated to determine the cause of the alarm activation and of the discrepancy associated with the monitor setpoint.

II. Event Cause

A. Event Analysis

Redundant radiation monitors are provided to initiate, upon actuation, automatic isolation of the normal Unit 1/Unit 2 common control room ventilation system. One monitor is located in the Unit 1 control room area; the other monitor is located in the ventilation system inlet air duct on the Unit 2 side. As part of the ANO-2 radiation monitoring instrumentation, the control room ventilation system radiation monitor, 2RITS-8750-1, is a process monitor used to measure radioactivity in the control room inlet air, provides indication of the radiation level, and initiates automatic isolation of the control room from outside air when the monitor's alarm/actuation setpoint is reached. The monitor has a range of 10 to 1.0 E6 CPM. Normally, the background activity measure by the monitor is approximately 250 CPM to 300 CPM. The alarm/actuation setpoint is required by Technical Specification (TS) 3.3.3.1 to be less than or equal to twice the background level.

The procedure which establishes an inventory of logs to be routinely taken by ANO-2 Operations personnel contains a "Process Monitor Logs" form for recording the control room ventilation monitor reading twice per shift and for verifying on a daily basis that the setpoint is set as required by TS 3.3.3.1. The setpoint is also checked and verified during the performance of a monthly channel functional surveillance test required for ANO-2 radiation monitoring instrumentation.

The Shift Administrative Assistant (SAA), a non-licensed operations administrative assistant, performs a daily calculation to verify that the control room ventilation radiation monitor setpoint is maintained at the correct value. This is accomplished by averaging the monitor readings for the previous 24-hour period to establish an "average" background reading. This average value is then compared to the monitor's setpoint recorded on the Process Monitor Log. If the setpoint is greater than two times the average, a job order is issued to the Maintenance Department for setpoint adjustment to maintain the setpoint at a value less than or equal to twice background.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Arkansas Nuclear One, Unit Two	DOCKET NUMBER (2) 0151010103168	LER NUMBER (A)			PAGE (3) 0101310F1014
		Sequential	Revision		
		Year 88	Number --	Number 01	

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

On 8/11/88 between 0340 and 0441 while ANO-2 was in cold shutdown, a routine monthly channel functional test was performed on the control room ventilation radiation monitor. At the beginning of the test procedure the monitor's setpoint was checked and verified to be correctly set at 500 CPM. However, prior to restoration of the monitor to normal operation after completion of functional testing, the indicated background radiation level had increased slightly causing the monitor to repeatedly actuate at the 500 CPM setpoint. At the Shift Supervisor's direction the maintenance technician checked and reset the setpoint to 700 CPM and documented the change on a placard mounted on a panel below the monitor readout. The Shift Supervisor notified the SAA of the setpoint change. The SAA, however, failed to note the change in the setpoint from 500 CPM to 700 CPM on the Process Monitor Log. Also, during the shift turnover the SAA did not inform the on-coming relief of the setpoint change.

At approximately 1207 on 8/22/88 the monitor's high alarm actuated. While observing the monitor in response to the alarm, the SAA noticed that the setpoint value on the placard below the monitor readout was 700 CPM and not 500 CPM as logged in the Process Monitor Log. At this time the background reading was 500 CPM, and the requirements of TS 3.3.3.1 were met.

Reviews of the Process Monitor Logs for the time period between 8/11/88 and 8/22/88 revealed that within a few hours after increasing the monitor setpoint on 8/11/88, the background level had subsequently decreased and returned to a normal range of approximately 250 to 300 CPM. When this occurred the existing setpoint of 700 CPM became greater than that allowed by the Technical Specifications and should have been decreased as required. However, personnel taking the required Process Monitor Log readings thought that the setpoint was still at 500 CPM; and, therefore no action was initiated to change the setpoint.

The safety significance of leaving the setpoint at a value greater than twice background for a time period greater than allowed by Technical Specifications is considered minimal. With the setpoint remaining at 700 CPM, the control room ventilation radiation monitor was still capable of performing its intended function to isolate the control room from elevated airborne radioactivity if necessary to maintain control room habitability. Since the monitor background occasionally varies such that a setpoint of 700 CPM is not unusual, the monitor would continue to alarm/actuate on airborne radiation levels significantly below occupational exposure limits.

B. Root Cause

Procedural guidance to Operations personnel and maintenance technicians, concerning the actions necessary to maintain compliance with Technical Specifications when the setpoint was changed for the ventilation system radiation monitor, was inadequate to ensure that the setpoint was maintained at the value required by Technical Specifications or adjusted within the allowable time period if necessary.

As a contributing factor, an incomplete SAA shift turnover prevented subsequent SAA shift personnel from being immediately aware that the setpoint value had been changed.

C. Basis for Reportability

TS 3.3.3.1 requires that the control room ventilation system radiation monitor be operable with the monitor setpoint maintained at a value less than or equal to two times background. With the setpoint exceeding the specified value, four hours are allowed to adjust the setpoint to within the limit. Otherwise, within one hour the control room emergency ventilation system must be placed in the recirculation mode of operation. As a result of this event, the monitor was operated with the setpoint above the required limit beyond the allowable four hours and without placing the control room emergency ventilation system in the recirculation mode. Therefore, this event is considered reportable under the provisions of 10CFR50.73(a)(2)(i)(B), as an operation prohibited by TS.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		Year	Sequential Number	Revision Number	
Arkansas Nuclear One, Unit Two	050010368	88	014	00	014 OF 04

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

III. Corrective Action

A. Immediate

At the time of discovery of this event the setpoint was checked by the SAA and found to be within the limit required by TS.

B. Subsequent

A job order was issued for maintenance personnel to check and readjust the setpoint as necessary. The setpoint was subsequently reset to 500 CPM on 8/22/88 based on a slight decrease in the indicated background radiation level.

C. Future

Procedures which govern maintaining the setpoint will be revised to provide additional instructions and procedural controls to the SAAs and maintenance technicians, for ensuring that the setpoint is maintained within the TS limit and properly recorded.

IV. Additional Information

A. Similar Events

A similar event involving the control room ventilation radiation monitor alarm/actuation setpoint exceeding the TS limit was reported in LER 50-368/81-022.

B. Supplemental Information

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].



ARKANSAS POWER & LIGHT COMPANY

October 6, 1988

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

SUBJECT: Arkansas Nuclear One - Unit 2  
Docket No. 50-368  
License No. NPF-6  
Licensee Event Report 50-368/88-14

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i)(B), attached is the subject report concerning control room ventilation radiation monitor 2RITS-8750-1 trip setpoint value found to be greater than two times above normal background radiation.

Very truly yours

*J. M. Levine*

J. M. Levine  
Executive Director,  
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