AP&L

Arkansas
Power & Light Company
425 West Capitol
P. O. Box 551
Little Rock, Arkansas 72203
(501) 377-3525

T. G. Campbell
Vice President
Nuclear

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U.S. Nuclear Regulatory Commission
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SUBJECT: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Licensee Event Report 50-313/89-042-01

Gentlemen:

Attached is the supplemental report concerning an inadvertent actuation of the Control Room Emergency Ventilation System initiated by a trip of the chlorine monitors caused by a personnel error.

Very truly yours,

E. C. Ewing
General Manager,
Technical Support
and Assessment

ECE/DM/abw
attachment

cc: Regional Administrator
Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

INPO Records Center
1500 Circle 75 Parkway
Atlanta, GA 30339-3064

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NRC Form 366
(9-83)

U.S. Nuclear Regulatory Commission
Approved OMB No. 3150-0104
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Arkansas Nuclear One, Unit One	0 5 0 0 0 3 1 1 3	1 OF 0 3

TITLE (4) Inadvertent Actuation of the Control Room Emergency Ventilation System Initiated by a Trip of the Chlorine Monitors Caused by a Personnel Error

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)
1 2	0 9	8 9	8 9	0 4 2	0 1	0 1	2 9	0	ANO, Unit 2	0 5 0 0 0 3 6 8
										0 5 0 0 0

OPERATING MODE (9)	N	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)	X	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
	__	20.405(a)(1)(iii)	__	50.73(a)(2)(i)	__	50.73(a)(2)(viii)(A)	Abstract below and
	__	20.405(a)(1)(iv)	__	50.73(a)(2)(ii)	__	50.73(a)(2)(viii)(B)	in Text, NRC Form
	__	20.405(a)(1)(v)	__	50.73(a)(2)(iii)	__	50.73(a)(2)(x)	366A)

LICENSEE CONTACT FOR THIS LER (12)

Name	Telephone Number Area Code
Dana Millar, Nuclear Safety and Licensing Specialist	5 0 1 9 6 4 - 3 1 0 0

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

SUPPLEMENT REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	Month	Day	Year
__ Yes (If yes, complete Expected Submission Date) X No				

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

On December 9, 1989 at approximately 2004 hours, an inadvertent actuation of the Control Room Emergency Ventilation System (CREVS) occurred. The CREVS actuation was caused by the Arkansas Nuclear One, Unit Two chlorine monitors tripping. A hand held radio was keyed in the vicinity of the monitors causing the monitors to trip and initiate the actuation of the CREVS. The system actuated as designed. After determination that the actuation was spurious, the chlorine monitors were reset and the ventilation system was returned to normal. Since no actual high chlorine concentration existed, and because the CREVS actuated as designed, there was no safety significance related to this event. The individual who keyed the hand held radio in the vicinity of the chlorine monitors has been counselled regarding the use of radios in the restricted area. As a result of previous inadvertent CREVS actuations, several system enhancements have been completed. Additionally, an engineering evaluation of the system design was previously initiated to determine if additional corrective actions are necessary. This event is being reported pursuant to 10CFR50.73(a)(2)(iv), as an event that resulted in an automatic actuation of an Engineered Safety Features system.

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 One	0 5 0 0 0 3 1 3	8 9	0 4 2	0 1	0 2 OF 0 3

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

A. Plant Status

At the time of occurrence of this event, Arkansas Nuclear One, Unit One (ANO-1) was in Cold Shutdown. A mid-cycle outage was in progress. Arkansas Nuclear One, Unit Two (ANO-2) was at one hundred percent of rated thermal power, Mode 1 (Power Operation).

B. Event Description

On December 9, 1989 at approximately 2004 hours, an inadvertent actuation of the Control Room Emergency Ventilation System (CREVS) [VI] occurred.

The CREVS is designed to maintain habitability of the ANO-1 and ANO-2 Control Room by automatically isolating the normal Control Room ventilation system and starting upon receipt of an indication of high radiation or high chlorine concentration. The system consists of two redundant filter trains, both of which are located outside the ANO-1 section of the Control Room. Each filter train includes a centrifugal fan, roughing filter, an absolute filter and charcoal adsorbant. The CREVS trains are normally isolated from the Control Room by isolation dampers. System actuation instrumentation consists of two quick acting chlorine detectors located in the normal ventilation supply duct for ANO-1 and two additional detectors at the ANO-2 supply air duct. Also, there is an area radiation monitor located in the ANO-1 Control Room area and a process radiation monitor located in the ANO-2 normal ventilation system outside air intake ductwork. An actuation signal from any of these instruments will initiate operation of the CREVS.

The CREVS actuation which occurred on December 9, 1989, was caused by the ANO-2 chlorine monitors 2CLS-8762-2 and 2CLS-8763-1 tripping. The system actuated as designed. After determination that the actuation was spurious, the chlorine monitors were reset and the ventilation system configuration was returned to normal.

C. Safety Significance

Since no actual high chlorine concentration existed, and because the CREVS actuated as designed, there was no safety significance related to this event.

D. Root Cause

The chlorine monitor trips which initiated the actuation were caused by the keying of a hand held radio in the vicinity of the chlorine monitors by a Health Physics Technician. The area in the vicinity of the chlorine monitors is posted to prohibit the use of hand held radios since testing and previous actuations have proven them to be sensitive to radio frequency interference. Therefore, this event was the result of personnel error. The root cause of this event, however, is directly related to system design. The extreme sensitivity of the chlorine monitors coupled with the actuation logic which requires only one monitor to trip to initiate the CREVS makes the system highly susceptible to inadvertent actuations.

E. Basis for Reportability

This event is being reported pursuant to 10CFR50.73(a)(2)(iv), as an event that resulted in an automatic actuation of an Engineered Safety Features system. The non-emergency event was also reported pursuant to 10CFR50.72(b)(2)(ii) on December 9, 1989 at 2050 hours.

F. Corrective Actions

The Health Physics Technician who keyed the hand held radio in the vicinity of the chlorine monitors has been counselled regarding the use of radios in the restricted area. Additionally, a memorandum has been issued to Health Physics personnel to emphasize the importance of not using radios in the vicinity of the chlorine monitors. A memorandum has been previously issued to inform plant personnel of the events involving the effects of radio frequencies on the chlorine monitors and to ensure personnel are cognizant of the restriction on the use of hand held radios in this area.

Shielding which will decrease the sensitivity of the chlorine monitors to radio frequencies will be installed. The expected completion date for installation is March 1, 1990.

As a result of previous inadvertent actuations, several system enhancements have been completed (see LER 50-313/89-009-01). Additionally, an engineering evaluation of the system design was initiated to determine if additional corrective actions are necessary. This evaluation is planned to be completed by March 31, 1990.

G. Additional Information

Previous inadvertent CREVS actuations were reported in LERs 50-313/89-009-01, 50-313/89-011-00, 50-313/89-014-00, 50-313/89-025-00, 50-313/89-035-00, 50-313/89-036-00 and 50-313/89-042-00.

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