LICENSEE EVENT REPORT (LER)

Facility Name (1)	Docket Number (2)	Page (3)
Braidwood, Unit 1	0 5 0 0 0 4 5 6	1 of 0 3

Title (4) Control Room Ventilation Shift to the Emergency Makeup Mode as a Result of Spurious Actuation of a Radiation Monitor Due to Design Deficiency

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 6	1 3	8 7	8 7	---	0 3 1	---	0 2	0 3	3 0	8 8	NONE	0 5 0 0 0
												0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)					
3		___ 20.402(b)	___ 20.405(c)	X 50.73(a)(2)(iv)	___ 73.71(b)		
POWER LEVEL (10)	0 0 0	___ 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		
		___ 20.405(a)(1)(iii)	___ 50.73(a)(2)(i)	___ 50.73(a)(2)(viii)(A)	in Abstract		
		___ 20.405(a)(1)(iv)	___ 50.73(a)(2)(ii)	___ 50.73(a)(2)(viii)(B)	below and in		
		___ 20.405(a)(1)(v)	___ 50.73(a)(2)(iii)	___ 50.73(a)(2)(x)	Text)		

LICENSEE CONTACT FOR THIS LER (12)

Name	TELEPHONE NUMBER
	AREA CODE
Richard Rountree, Tech Staff Engineer Ext. 2487	8 1 5 4 5 8 - 2 8 0 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

SUPPLEMENTAL 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)

At 1908 on June 13, 1987, at 1126 on October 16, 1987, and again at 0225 on December 28, 1987, it was discovered through Main Control Room annunciation that Train OA of the Control Room Ventilation System had shifted to its emergency makeup mode of operation. These actuations were attributed to the pressure switches of Monitors OPR31J and OPR32J which send an electrical impulse which is read by the monitor as a radiation spike. In all three occurrences all monitor channel activity readings returned to normal within 30 minutes and the lineup for Control Room Ventilation was subsequently restored. The first occurence was considered to be an isolated event and no additional action was taken. After the third occurrence, work requests were written to install noise suppressing electrocubes in the monitor circuits.

There have been no previous occurrences due to keying a radio causing an Engineered Safety Feature actuation.

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A. PLANT CONDITIONS PRIOR TO EVENT:

Occurrence 1:

Unit: Braidwood 1 ; Event Date: June 13, 1987 ; Event Time: 1908
MODE 3 - Hot Standby Rx Power 0% RCS [AB] Temperature/Pressure 391°F/1300 psig

Occurrence 2:

Unit: Braidwood 1 ; Event Date: October 16, 1987 ; Event Time: 1126
MODE 2 - Startup Rx Power 3% RCS [AB] Temperature/Pressure 558°F/2235 psig

Occurrence 3:

Unit: Braidwood 1 ; Event Date: December 8, 1987 ; Event Time: 0225
MODE 3 - Hot Standby Rx Power 0% RCS [AB] Temperature/Pressure 557°F/2235 psig

B. DESCRIPTION OF EVENT:

Occurrence 1:

At 1908 on June 13, 1987, it was discovered through Control Room annunciation that Train OA of Control Room Ventilation System [VI] shifted to its makeup mode of operation due to a high radiation signal from the OPR32J ventilation radiation monitor [IL] sampling from this train of ventilation. No degraded structures or failed components contributed to this event. Plant conditions remained stable throughout the duration of the event. Operator actions had no influence on the severity of the event. All monitor channel activity readings returned to normal by 1910 that evening. The monitors were never declared inoperable throughout the duration of the event. This event is reportable per 10CFR50.73(a)(2)(iv).

Occurrence 2:

At 1126 on October 16, 1987, the Main Control Room Outside Air Intake Train OA Radiation Monitor (OPR31J) spiked into high radiation alarm, causing the Train 'A' Ventilation of the control room to shift to its makeup mode of operation. This event was also discovered via Control Room Annunciation. There were no degraded structures or failed components contributing to the event, and again, there was no effect on plant conditions. Operator action had no impact on the severity of the event. Channel activity readings returned to normal by 1152 that morning. This time, the monitor was declared inoperable pending the outcome of Nuclear Work Request #A16694. LCOAR BwOS 3.3.1-1a was entered. The monitor was returned to service at 2246 on October 20, 1987.

Occurrence 3:

At 0225 on Dec 8, 1987, Train OA of the Control Room Ventilation System automatically switched over to its emergency makeup mode of operation, as discovered by control room annunciation. A check of Radiation Monitoring System Control Console (RM-11) showed that the particulate and gaseous channels on OPR32J had both spiked to ALERT radiation levels, hence the alarm at the RM-11. There was no actual failure mode except for the noise spike; the monitor continued to function after the event. Also, the realignment of the Control Room HVAC is the safety system actuation associated with this monitor. Operator action was to check the alarm status of the redundant monitor OPR31J, which showed no alarm. Operations then had the security card log history pulled, which revealed that a security guard asserted that he did not key his radio within the exclusion area of the monitor. Operations then had Radiation Chemistry take samples of the filters on the monitor. The results of the count showed no quantifiable peaks on either channel. Operations then wrote Nuclear Work Request A17895 to initiate troubleshooting. Plant conditions remained stable throughout the duration of the event.

AUSE OF EVENT:

he root cause for all three events has been attributed to the monitor's pressure switch, which has been epeatedly demonstrated to generate noise spikes when the monitor vacuum level fluctuates around a high vacuum evel (approx. 10 in. Mercury below atmospheric).

AFETY ANALYSIS:

June 13, 1987)

here was no impact on plant or public safety, because there was no actual activity present. A sample of the articulate filter on 0PR32J was taken at 2040 hours by the Radiation Chemistry Department, and this sample File #018613665) verified that there was no radioactivity. If this event had occurred during commercial plant peration, the same consequences would have arisen. Throughout the duration of the event, the 0PR31J radiation onitor was available for redundant coverage; this monitor also registered the noise spike.

October 16, 1987

gain, there was no impact on plant or Public Safety, because it was established that activity didn't cause the ctuation. Also, the redundant 0PR32J was operational throughout the duration of this event.

December 12, 1987)

here was no impact on plant or public safety. The count taken by Radiation Chemistry showed levels of adiation well within acceptable limits. Also, the redundant monitor 0PR31J was operable throughout the uration of the event. If this event had occurred during the worst case condition of a loss of cooling ccident, the automatic switchover to the makeup mode still would have occurred.

CORRECTIVE ACTIONS:

nder Nuclear Work Requests A18829 (0PR31J) and A18721 (0PR32) noise suppressing electrocubes were installed nto the monitors pressure switch assemblies. This work was completed on January 15, 1988. There have been no epeat occurrences of this type of event to date. No further action will be taken.

PREVIOUS OCCURRENCES:

VR 20-1-87-335 Control Room Ventilation Switchover Due to Spurious Noise on Channel ORE-PR033B.

VR 20-1-87-244 Engineered Safety Feature Actuation of Control Room Ventilation Due to Noise Spike From Train 'A' Radiation Monitor 0PR32J.

VR 20-1-86-111 Main Control Room Ventilation Makeup Actuation Due to a Spike on ORE-PR031.

COMPONENT FAILURE DATA:

one

Commonwealth Edison
Braidwood Nuclear Power Station
Route #1, Box 84
Braceville, Illinois 60407
Telephone 815/458-2801

BW/88-184

April 8, 1988

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

Dear Sir:

The enclosed Licensee Event Report from Braidwood Generating Station is being transmitted to you as a Supplemental Report to LER 87-031-00.

This report is number 87-031-02; Docket No. 50-456.

Very truly yours,

for R. E. Querio
Station Manager
Braidwood Nuclear Station

REQ/PMB/jab
(6915z)

Enclosure: Licensee Event Report No. 87-031-00

cc: NRC Region III Administrator
T. Tongue, NRC Resident Inspector
INPO Record Center
CECo Distribution List

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