LICENSEE EVENT REPORT (LER)

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

Title (4)
CONTROL ROOM VENTILATION ACTUATION DUE TO RADIATION MONITOR OPR31J IODINE CHANNEL SPIKE

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 1	2 6	8 6	8 6	0 0 2	0 1	0 4	0 7	8 6	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)			
1		___ 20.402(b)	___ 20.405(c)	X 50.73(a)(2)(iv)	___ 73.71(b)
POWER LEVEL (10)	0 9 8	___ 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)
		___ 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
F. Hornbeak, Technical Staff Supervisor, Ext. 2243	8 1 5 2 3 4 - 5 4 4 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	
X	I L	M O N	G 0 6 3	N							

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)

On January 26, 1986 at 1403 with the plant in power operation (Mode 1), and on February 4, 1986 at 1245 with the plant in power operation (Mode 1), process radiation monitor 0PR31J (Main Control Room Outside Air Intake 'A') [IL] went into the interlock mode due to a spike on the monitor's iodine channel. This automatically transferred the main control room ventilation system [VI] to its Engineered Safety Features configuration in both events. The monitor's iodine channel high voltage power supply was replaced after the first event and the monitor was returned to service on 1-29-86, however, the monitor spiked again on 2-4-86. The monitor's circuit boards were then replaced in order to try to correct this problem but the iodine channel continued to spike. The microprocessor motherboard was then replaced and the iodine channel has not spiked since this was done. The problem is believed to have been caused by a bad component or edge connector on the motherboard. A similar event has occurred in the past (LER 85-099-00).

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A. PLANT CONDITIONS PRIOR TO EVENT:

MODE 1 - Power Operation Rx Power 98% RCS [AB] Temperature/Pressure Normal Operating

B. DESCRIPTION OF EVENT:

On January 26, 1986 at 1403 with the plant in power operation (Mode 1) at 98% reactor power and on February 4, 1986 at 1245 with the plant in power operation (Mode 1) at 98% reactor power, process radiation monitor 0PR31J (Main Control Room Outside Air Intake 'A') [IL] went into the interlock mode due to a spike on the monitor's iodine channel. The interlock signal caused a control room annunciation and automatically transferred the main control room ventilation system [VI] to its Engineered Safety Features (ESF) configuration in both events. Operators verified that there was not a radiation related event by observing the iodine channel on the redundant radiation monitor of that train (0PR32J) during each event. Operators also verified the proper ESF control room ventilation alignment in both events. As a result of the event on 1-26-86, the monitor was declared inoperable and the Technical Specification Limiting Condition for Operation Action Requirement (LCOAR) 3.3.3.1, which requires the control room ventilation system to be placed in the makeup mode, was entered. The iodine detector high voltage power supply was replaced and the monitor was returned to service on 1-29-86, however, the monitor's iodine channel spiked again on 2-4-86. The applicable LCOAR was entered again at this time. Operator actions were correct in both instances and did not place the plant in an unsafe condition. There were no other systems or components that were inoperable at the beginning of these events that contributed to these events. There was also no effect on the operation of the plant from these events. These events are 30 day reportable per 10CFR50.73(a)(2)(iv).

C. CAUSE OF EVENT:

The characteristics of the iodine channel spikes indicated that the problem was not noise related. The iodine channel spiking is believed to have been caused by a bad component or edge connector on the microprocessor motherboard. The motherboard is the main printed circuit board into which all other microprocessor circuit boards are plugged. There were no personnel errors involved in either of these events.

D. SAFETY ANALYSIS:

There was no effect on plant and public safety. The transfer of the main control room ventilation system to the makeup mode of operation is an ESF actuation which established a safer plant condition. The redundant monitor (0PR32J) on the control room ventilation train was operable throughout these events. Train B main control room ventilation process radiation monitors were also operable throughout these events. A check of the 0PR32J iodine channel also showed that there was not any iodine present during each event.

E. CORRECTIVE ACTIONS:

The iodine channel high voltage power supply was replaced on 1-28-86, but this did not solve the problem since the monitor spiked again on 2-4-86. The five circuit boards in the 0PR31J monitor were then switched with five boards from a similar monitor that was operating correctly to see if the problem would shift to that monitor. The monitor that the original 0PR31J boards were switched to has not spiked since but the 0PR31J monitor continued to spike. The 0PR31J motherboard was then replaced. The motherboard is the main printed circuit board in the monitor's microprocessor into which all of the printed circuit boards are plugged. The 0PR31J iodine channel has not spiked since the microprocessor motherboard was replaced.

F. PREVIOUS OCCURRENCES:

LER NUMBER	TITLE
85-099-00	Actuation of Main Control Room Ventilation System Due to Spiking of the Iodine Channel of the 0PR31J Rad Monitor.

G. COMPONENT FAILURE DATA:

MANUFACTURER	NOMENCLATURE	MODEL NUMBER	MFG PART NUMBER
General Atomic	Motherboard	3572000	

Commonwealth Edison
Byron Nuclear Station
4450 North German Church Road
Byron, Illinois 61010

April 7, 1986

LTR: BYRON 86-0348

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

Dear Sir:

The enclosed Licensee Event Report from Byron Generating Station is being transmitted to you as a Supplemental Report to LER 86-002-00.

This report is number 86-002-01; Docket No. 50-454.

Very truly yours,

R. E. Querio
Station Manager
Byron Nuclear Power Station

REQ/RP/bf

Enclosure: Licensee Event Report No. 86-002-01

cc: J. G. Keppler, NRC Region III Administrator
J. Hinds, NRC Resident Inspector
INPO Record Center
CECO Distribution List

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