

LICENSEE EVENT REPORT (LER)

Facility Name (1) Zion, Unit 2	Docket Number (2) 0 5 0 0 0 3 0 4	Page (3) 1 of 0 3
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Title (4) Inadvertent Trip of Unit 2 Purge Due to Spurious 2RIA-PR40 High Radiation Alarm

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	0	1	0	8	5	0	2	1		
1	0	1	0	8	5	0	0			
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OPERATING MODE (9) 5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)				
POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	Other (Specify in Abstract below and in Text)
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)	
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)		
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)		
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)		
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

Name Greg Kassner, Health Physicist	TELEPHONE NUMBER
	AREA CODE 3 1 2 7 4 6 - 2 0 8 4

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	
X	I K	R C P	E O 7 0	N							

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	Expected Submission Date (15)
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On October 10, 1985 Unit 1 was at power and Unit 2 was in cold shutdown with a containment purge in progress. Health Physics supervision began preparations to perform an electronic operability check and source calibration on the high range noble gas channel (no. 9) of the U-2 Containment Separate Particulate Iodine and Noble Gas (SPING) Radiation Monitor, 2RIA-PR40. At approximately 0715 hours, Health Physics began to set up a pulse generator at the SPING monitor. First, a cable was connected to the channel 9 detector interface box and then a grounded Alternating Current (AC)-extension cord was connected to the SPING AC accessory outlet located on the rear of the SPING unit. The mini-pulser was then plugged into the AC cord and turned on. Approximately 5 seconds later, at 0720 hours, a high alarm occurred which tripped the purge fans and closed the 2RV-0001 through 2RV0004 purge valves.

Inspection showed that channels 1, 5, and 7, the particulate, low range noble gas, and mid range noble gas channels respectively, had elevated count rates. Channel 1 had caused the high alarm and, as designed, actuated the containment isolation control function. Health Physics suspected that a power surge or electrical short had caused the elevated channel count rates. A caution card was placed on the SPING accessory AC power box to alleviate the potential for recurrence before the accessory circuit could be investigated. Investigation showed the root cause was a defective accessory receptacle on the SPING. The monitor was not damaged and was returned to normal operation shortly after the incident. All automatic actions resulting from a high radiation alarm condition of the Containment SPING Radiation Monitor occurred as designed, hence, no safety implications resulted.

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TEXT

On October 10, 1985, Unit 1 was at power and Unit 2 was in cold shutdown with a containment purge in progress. Health Physics supervision began preparations to perform an electronic operability check and source calibration on the high range noble gas channel (no. 9) of the U-2 Containment Separate Particulate, Iodine and Noble Gas (SPING) Radiation Monitor, 2RIA-PR40. At approximately 0700 hours, Health Physics discussed with shift supervision the work to be performed. Because channel 9 actuates no control functions, Health Physics informed Operating that the U-2 Containment purge would not have to be secured until the electronic check was complete and the source calibration was to begin.

At approximately 0715 hours, Health Physics began to set up a mini-pulser at the SPING monitor. First, a cable was connected to the channel 9 detector interface box, then a grounded AC-extension cord was connected to the SPING AC accessory outlet located on the rear of the SPING unit. The mini-pulser was then plugged into the AC Cord and turned on. Approximately 5 seconds later, at 0720 hours, a high alarm occurred which tripped the purge fans and closed the 2RV-0001 through 2RV0004 purge valves. Health Physics immediately turned the mini-pulser off and then acknowledged the monitor status. Investigation showed that channels 1, 5, and 7, the particulate, low range noble gas, and mid range noble gas channels respectively, had elevated count rates and the monitor's sample pump was off. Channel 1 had caused the high alarm and, as designed, actuated the containment isolation control function.

After the monitor was inspected, the monitor's sample pump was turned on, the detector check sources were inserted, and the monitor was returned to normal status. Health Physics suspected that a power surge or electrical short had caused the elevated channel count rates so the pulse generator and AC cord were removed shortly after the monitor was returned to normal.

At approximately 0735 hours, Health Physics notified shift supervision of the suspected cause of the spurious high alarm. Shortly thereafter, a caution card was placed on the SPING accessory AC outlet box to alleviate the potential for recurrence before the accessory circuit could be investigated. A battery powered pulse generator was later used on 10-10-85 to complete the electronic check. No other monitor abnormalities were found to exist subsequent to the channel 9 calibration.

Because work was being performed on the monitor and the incident was not due to a valid high radiation condition, the shift supervision did not recognize the incident as a reportable event which also required a 4 hour Red phone call. Additional review by Licensing, Radiation/Chemistry, and Operating management on 10-11-85, concluded that the incident required a Red phone call and a thirty day report. The Red phone call was made at 1005 hours on 10-11-85.

On 11-1-85, Instrument Maintenance, Tech Staff, and Health Physics investigated the cause of the spurious alarm. The investigation showed the root cause was a defective AC receptacle (EIIS code RCP) on the SPING accessory box. The monitor abnormalities observed on 10-10-85 were easily reproduced by applying a small electrical load, such as a mini-pulser or string of temporary lights to the SPING AC accessory receptacle with a heavy grounded extension cord. When such a load was applied, the count rates on channels 1, 5, and 7 increased by a factor greater than 1000.

The effect of elevated count rates on the channels was due to interference resulting from voltage spiking which was induced by an electrical short in the AC receptacle. The electrical short did not, however, actually trip the sample pump off. Health Physics had turned the sample pump off in the process of acknowledging the audible alarm.

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TEXT										

The monitor was not damaged from the use of the defective AC receptacle and was returned to normal operation shortly after the incident. The defective receptacle will be replaced with a heavy duty type receptacle. Until replacement is complete, a caution card will remain on the monitor outlet box to block use of the receptacle. The monitor was only off for a few minutes. The SPING circuitry performed the conservative action in halting the purge, and there was no actual high radiation condition. For these reasons, there were no safety implications.

This is the first occurrence of this type of incident. The Shift Supervisors have reviewed LER reporting requirements. No additional corrective action is necessary. The receptacle replacement is tracked by commitment number 304-200-85-87.



Commonwealth Edison

Zion Generating Station
101 Shiloh Blvd.
Zion, Illinois 60099
Telephone 312/746-2084

November 8, 1985

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

Dear Sir:

The enclosed Licensee Event Report (LER) from Zion Generating Station is being transmitted to you in accordance with the requirements of 10CFR 50.73 (a)(2)(iv) which requires a thirty day written report when an event or condition results in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS).

This report number is 85-021-00, Docket number 304 DPR-48.

Very truly yours,

for E. J. Pliml

G. J. Pliml
Station Manager
Zion Generating Station

GJP/dn

Enclosure: Licensee Event Report No. 85-021-00

ttachment

cc: J. G. Keppler, NRC Region III Administrator
M. Holzmer, NRC Resident Inspector
INPO Record Center
CECo Distribution List

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