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FACIL: 50-305 Kewaunee Nuclear Power Plant, Wisconsin Public Service 05000305
AUTH. NAME AUTHOR AFFILIATION
ROZELL, D.L. Wisconsin Public Service Corp.
SCHROCK, C.A. Wisconsin Public Service Corp.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 92-002-00: on 920203, ESF actuation of steam generator & blowdown & sample isolation valves occurred. Caused by faulty radiation monitor power supply & surge suppressor. Power supply & surge suppressor replaced. W/920303 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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	PD3-3 LA HANSEN, A.	1 1 1 1	PD3-3 PD	1 1
INTERNAL:	ACNW	2 2	ACRS	2 2
	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	AEOD/ROAB/DSP	2 2	NRR/DET/EMEB 7E	1 1
	NRR/DLPQ/LHFB10	1 1	NRR/DLPQ/LPEB10	1 1
	NRR/DOEA/OEAB	1 1	NRR/DREP/PRPB11	2 2
	NRR/DST/SELB 8D	1 1	NRR/DST/SICB8H3	1 1
	NRR/DST/SPLB8D1	1 1	NRR/DST/SRXB 8E	1 1
	REG FILE 02	1 1	RES/DSIR/EIB	1 1
	RGN3 FILE 01	1 1		
EXTERNAL:	EG&G BRYCE, J.H	3 3	L ST LOBBY WARD	1 1
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March 3, 1992

10 CFR 50.73

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

Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reportable Occurrence 92-002-00

The attached Licensee Event Report for reportable occurrence 92-002-00 is being submitted in accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System."

Sincerely,

C. A. Schrock

C. A. Schrock
Manager-Nuclear Engineering

SLB/jac

Attach.

cc - INPO Records Center
Mr. Patrick Castleman, US NRC
US NRC, Region III

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Kewaunee Nuclear Power Plant	DOCKET NUMBER (2) 0 5 0 0 0 3 0 5	PAGE (3) 1 OF 0 5
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TITLE (4) **ESF Actuation of Steam Generator Blowdown and Sample Isolation Valves Due to Faulty Radiation Monitor Power Supply and Surge Suppressor**

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 2	0 3	9 2	9 2	0 0 2	0 0	0 3	0 3	9 2	N/A			0 5 0 0 0
									N/A			0 5 0 0 0

OPERATING MODE (8) **N**

POWER LEVEL (10) **1 0 0**

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(c)	<input checked="" type="checkbox"/> 60.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 60.38(c)(1)	<input type="checkbox"/> 60.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 60.38(c)(2)	<input type="checkbox"/> 60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 60.73(a)(2)(i)	<input type="checkbox"/> 60.73(a)(2)(vii)(A)	
<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 60.73(a)(2)(ii)	<input type="checkbox"/> 60.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 60.73(a)(2)(iii)	<input type="checkbox"/> 60.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Dennis L. Rozell - Plant Nuclear Engineer	TELEPHONE NUMBER
	AREA CODE: 4 1 4 NUMBER: 3 8 8 - 2 5 6 1 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

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) | NO

EXPECTED SUBMISSION DATE (15) **N/A** | MONTH: | DAY: | YEAR:

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

Abstract

At 1410 on February 3, 1992 with the plant at 100% power, an Instrument and Control (I&C) Technician was performing surveillance procedure SP 45-049.17, "Radiation Monitoring System Test Channel R-17" for the component cooling system liquid monitor (R-17). The I&C Technician was decreasing the level adjustment potentiometer to verify the low alarm setpoint. Upon reaching the low alarm setpoint the associated relay began to chatter and at the same time the steam generator blowdown monitor (R-19) spiked high and closed the steam generator blowdown isolation valves and sample isolation valves, both engineered safety features. At 1457 the operators re-established steam generator blowdown and SP 45-049.17 was stopped. At 1155 on February 11, 1992, R-17 was retested in accordance with SP 45-050.17, "Radiation Monitoring System Calibration Channel R-17," and returned to service at 1532 on the same day.

The most probable cause of this event is a faulty dual ± 15 VDC power supply for R-17 coincident with a faulty surge suppressor (K102) associated with the low alarm relay (K202) for R-17.

Corrective actions included replacing the power supply, surge suppressor, and low alarm relay. Long term corrective action is to replace the radiation monitoring system.

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

Description of Event

This report describes the unplanned automatic actuation of the steam generator [SG] blowdown and blowdown sampling isolation valves [ISV], engineered safety features (ESF). The steam generator blowdown isolation valves (BT-2A, BT-2B, BT-3A, and BT-3B) and steam generator blowdown sample isolation valves (BT-31A, BT-31B, BT-32A, and BT-32B) closed when the steam generator blowdown radiation monitor [MON] (R-19) alarmed high. The high alarm was generated during the performance of surveillance procedure (SP) 45-049.17, "Radiation Monitoring System Test Channel R-17," for the component cooling system liquid monitor [MON] (R-17) .

At 1410 on February 3, 1992 with the plant at 100% power, an Instrument and Control (I&C) Technician was performing surveillance procedure SP 45-049.17, "Radiation Monitoring System Test Channel R-17" for the component cooling system liquid monitor (R-17). The I&C Technician had finished verifying the high alarm setpoint for R-17 and was decreasing the level adjustment potentiometer to verify the low alarm setpoint. Upon reaching the low alarm setpoint, the associated relay [74] began to chatter. The low alarm lamp on the alarm drawer [RA] for R-17 illuminated, and at the same time R-19 (located directly below the R-17 drawer) spiked high and initiated steam generator blowdown and blowdown sample isolation. As designed, the high radiation signal caused valves BT-2A, BT-2B, BT-3A, BT-3B, BT-31A, BT-31B, BT-32A, and BT-32B to close. The operators verified the proper response had occurred due to the high alarm on R-19 in accordance with operation procedure A-RM-45, "Abnormal Radiation Monitoring System Operation." Work request 45-53416 was initiated to investigate the cause of this event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

The steam generator blowdown and blowdown sampling isolation valves were maintained closed while the I&C department investigated the problem. By 1429 the event was repeated three times as part of the investigation.

At 1457 the operators re-established steam generator blowdown and SP 45-049.17 was stopped until the affected channel could be repaired. Following channel repairs, on February 11, 1992, at 1155, R-17 was retested in accordance with SP 45-050.17, "Radiation Monitoring System Calibration Channel R-17." The surveillance was successfully completed and R-17 was returned to service at 1532 on the same day.

Cause of Event

The most probable cause of this event is a faulty dual ± 15 VDC power supply for R-17 coincident with a faulty surge suppressor (K102) associated with the low alarm relay (K202) for R-17. The faulty power supply and filter may have caused inductive loading ("ringing") to introduce a spike on the R-19 input signal cable (which is routed near the R-17 circuitry) which then tripped the high alarm relay and initiated steam generator blowdown and blowdown sampling isolation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

Analysis of Event

This event is being reported pursuant to 10CFR50.73(a)(2)(iv) as an event that resulted in automatic actuation of an engineered safety features system. The steam generator isolation valves and sampling isolation valves are required to close on the start of an auxiliary feedwater pump to ensure an adequate secondary heat sink. This incident was reported to the Nuclear Regulatory Commission at 1502 on February 3, 1992 in accordance with 10CFR50.72(b)(2)(ii).

There were no safety consequences as a result of the actuation. Radiation levels remained normal throughout the event. All automatic safety equipment actuated as designed.

Corrective Actions

Short term corrective actions including replacing the power supply, surge suppressor, and low alarm relay. At 1155 on February 11, 1992, R-17 was retested in accordance with SP 45-050.17, "Radiation Monitoring System Calibration Channel R-17," and returned to service at 1532 on the same day.

Long term corrective action is to replace the radiation monitoring system. Installation of the system is scheduled to be completed in 1993. Eight radiation monitors are scheduled to be replaced during the 1992 refueling outage with the remaining radiation monitors (including R-17 and R-19) replaced during the 1993 refueling outage.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

Additional Information

- Similar Events:
- LER 89-13 - Broken wire on R-13 causes ASV actuation

 - LER 89-14 - The age and design of the radiation monitoring system resulted in actuation of the Auxiliary Building Special Ventilation System (an Engineered Safety Feature)

 - LER 90-11 - Actuation of the Containment Vent Isolation System due to age related degradation of the Radiation Monitoring System

 - LER 90-13 - Inadvertent actuation of the Containment Vent Isolation System due to a worn lead on a radiation monitor