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 FACIL: 50-305 Kewaunee Nuclear Power Plant, Wisconsin Public Service      05000305  
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 SCHOMMER, K.      Wisconsin Public Service Corp.  
 SCHROCK, C.A.      Wisconsin Public Service Corp.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 93-016-00: on 930709, SG blowdown isolation valves  
 inadvertently closed due to spurious radiation monitor output  
 signal. Cause of high radiation monitor output undetermined.  
 Printed Circuit Board R-19 replaced. W/930809 ltr.

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**WISCONSIN PUBLIC SERVICE CORPORATION**

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August 9, 1993

10 CFR 50.73

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

Ladies/Gentlemen:

Docket 50-305  
Operating License DPR-43  
Kewaunee Nuclear Power Plant  
Reportable Occurrence 93-016-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report for reportable occurrence 93-016-00 is being submitted.

Sincerely,

C. A. Schrock  
Manager-Nuclear Engineering

KJS/jmf

Attach.

cc - INPO Records Center  
US NRC Senior Resident Inspector  
US NRC, Region III

170046

9308170120 930809  
PDR ADOCK 05000305  
S PDR



**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Kewaunee Nuclear Power Plant	05000305	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		93	- 016	- 00	

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

Description of Event

This report describes an unplanned automatic actuation of the steam generator [SG] blowdown isolation valves [ISV] and steam generator blowdown sample isolation valves, which are engineered safety features.

At 1014 hours on July 9, 1993, with the plant at 100% power, the steam generator blowdown isolation valves (BT-2A, BT-2B, BT-3A, and BT-3B) and blowdown sampling isolation valves (BT-31A, BT-31B, BT-32A, and BT-32B) closed, as designed, due to a high radiation signal from the steam generator blowdown radiation monitor [MON] (R-19). A spurious R-19 output signal exceeded the monitor's high alarm setpoint (3000 cpm) and generated a R-19 high radiation signal.

Approximately one hour prior to closure of the blowdown isolation valves, control room personnel noted several R-19 output signals which were above normal. The condenser [COND] air ejector gas radiation monitor (R-15), which is a more sensitive and redundant monitor to R-19, was immediately observed and did not indicate an increase in steam generator blowdown activity. At this time, the shift supervisor requested that a local steam generator sample be analyzed. The sample results indicated no increase in steam generator secondary side activity.

Subsequent to the actuation, the following actions were taken:

1. The shift supervisor requested the performance of a primary to secondary leak rate calculation.
2. A work request was initiated to investigate the performance of R-19.
3. R-19 was declared out of service.
4. R-19 blowdown isolation signals were bypassed so blowdown could be re-established, as allowed by Kewaunee's technical specifications.

An investigation was initiated to determine the cause of the spurious R-19 output signal.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Kewaunee Nuclear Power Plant	05000305	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
		93	- 016	- 00	

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

Cause of Event

A definitive cause of the high radiation output signal could not be determined. However, the investigation did identify two degraded conditions. A printed circuit board [CBD] from R-19 was noted to have out of specification values for two of the level amplifiers. The zero adjustment for each of the two amplifiers was out of specification and would have caused higher than actual activity indication. However, each amplifier's output value was found to be within specification. The printed circuit board was also found to be loose in its friction socket connections. The exact impact of the above circuit board conditions is not known, however Wisconsin Public Service Corporation believes that the loose socket connection is the probable cause of the event.

Analysis of Event

This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv) as an event that resulted in the automatic actuation of an engineered safety feature. This event was also reported in accordance with 10 CFR 50.72(b)(2)(ii) at 1328 hours on July 9, 1993.

The steam generator isolation valves and sampling isolation valves are required to close on the start of an auxiliary feedwater pump [P] to ensure an adequate secondary heat sink and are designed to close on a high radiation signal from R-19 or R-15 to isolate the steam generator in the event of a primary to secondary leak. The valves functioned as designed. R-15 indication, local blowdown samples, and a primary to secondary leak rate calculation did not show an increase in activity. Therefore, this event had no impact on the health and safety of the public.

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Kewaunee Nuclear Power Plant		05000305		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
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Corrective Actions

Subsequent to the R-19 actuation, the following actions were taken:

1. A primary to secondary leak rate calculation was performed. Activity levels were normal and did not indicate the existence of a primary to secondary leak.
2. A local sample of steam generator blowdown was taken and analyzed as required by technical specification Table 7.1 Item 1.b. When R-19 is out of service, this specification requires a local sample to be analyzed at least once per week. R-19 was returned to service on July 16, 1993.
3. The printed circuit board (rate card A2) in R-19 drawer was replaced.
4. The photomultiplier tube associated with R-19 was replaced.

Additionally, Kewaunee is continuing to implement a design change request to replace the current radiation monitoring system.

Additional Information

Equipment failure: Westinghouse printed circuit board (rate card A2 catalog #3369C47G01) found in radiation monitor drawer model number 1052E62.

Similar Events:

- LER 90-013 Actuation of the Containment Vent Isolation System Due to Age Related Degradation of Radiation Monitoring System.
- LER 88-010 Spurious Radiation Monitor Spike Causes Inadvertent ESF Actuation.