



NRC-00-031

Wisconsin Public Service Corporation
(a subsidiary of WPS Resources Corporation)
Kewaunee Nuclear Power Plant
North 490, Highway 42
Kewaunee, WI 54216-9511
920-388-2560

April 17, 2000

10 CFR 50.73

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

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reportable Occurrence 2000-003-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report (LER) for reportable occurrence 2000-003-00 is being submitted. This report does not contain any new commitments.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark L. Marchi", written over a horizontal line.

Mark L. Marchi
Vice President-Nuclear

GIH

Attach.

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

Handwritten initials:
JFol
IE22

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)

Kewaunee Nuclear Power Plant

DOCKET NUMBER (2)

05000305

PAGE (3)

1 OF 4

TITLE (4)

Unplanned ESF Actuation Caused By Radiation Monitor R-15 Detector Failing

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 NAME	DOCKET NUMBER
03	16	2000	2000	-- 003	-- 00	04	17	2000		05000
<p>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)</p>										
OPERATING MODE (9)		N		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)
POWER LEVEL (10)		097		20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
				20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
				20.2203(a)(2)(ii)		20.2203(a)(4)		X 50.73(a)(2)(iv)		OTHER
				20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
				20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME

Gary I Harrington - Plant Licensing Supervisor

TELEPHONE NUMBER (Include Area Code)

(920) 388-8559

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	IL	DET	N330	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

The following event is reportable as an unplanned actuation of steam generator blowdown isolation valves which are engineered safety features (ESF) equipment. On March 16, 2000, while the plant was operating at full power, radiation monitor system channel R-15, "Condenser Air Ejector Gas Radiation Monitor" failed. As a result, inadvertent blowdown isolation occurred. R-15 failed due to a failed radiation detector. The detector was replaced and tested. The monitor was returned to service within two hours of failure.

The consequence of the failure was that steam generator blowdown and blowdown sample isolation actuated as designed. During the short term of the monitor's unavailability the normal continuous steam generator tube leakage monitoring capability was inhibited. Compensatory actions were initiated in accordance with requirements. Since the design function of the system was fulfilled and compensatory actions were initiated, there were minimal safety consequences to this event. The blowdown isolation (motor operated) valves were not adversely challenged by the additional operation caused by the failure.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISIO N NUMBER	
Kewaunee Nuclear Power Plant	05000305	2000	-- 003	-- 00	2 OF 4

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

DESCRIPTION OF EVENT

This report describes an inadvertent actuation of the steam generator [SG] blowdown isolation valves [ISV] that are engineered safety features (ESF)[JE] components. The event occurred on March 16, 2000, at 1332, with the plant at full power. The event occurred when radiation monitor system [IL] channel R-15, "Condenser Air Ejector Gas Radiation Monitor," failed. The failure caused steam generator blowdown isolation.

Blowdown isolation valves BT-2A, BT-3A, BT-2B, and BT-3B closed as designed. Blowdown sample line isolation valves BT-31A, BT-31B, BT-32A and BT-32B also closed as designed. All of the valves are designated containment [NH] isolation valves. BT-2A, BT-2B, BT-3A and BT-3B also have an ESF function to close on Auxiliary Feedwater (AFW)[BA] pump [P] start signals to ensure adequate AFW flow to the steam generators in the event of a loss of main feedwater [SJ] or safety injection. The AFW system was not in operation at the time nor was the AFW system challenged by the R-15 failure.

In response to the situation, the operating shift personnel implemented operating procedure A-RM-45, "Abnormal Radiation Monitoring System." In accordance with the procedure, shift personnel verified that automatic actuations occurred as designed.

CAUSE OF EVENT

The ESF actuation was caused by a failure of channel R-15 radiation monitor. The monitor failed due to a radiation detector [DET] failure. The detector is a GM tube type detector. The specific cause of why the detector failed is unknown. Moisture intrusion to the detector causing an internal detector short is suspected. The detector was new, installed in the system and satisfactorily tested earlier in the day. The detector failed after approximately two and one half hours of operation.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Kewaunee Nuclear Power Plant	05000305	YEAR	SEQUENTIAL NUMBER	REVISIO N NUMBER	3 OF 4
		2000	-- 003	-- 00	

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

ANALYSIS OF THE EVENT

This report is being submitted in accordance with 10CFR50.73(a)(2)(iv) as an actuation of steam generator blowdown isolation valves which are ESF components. The circuitry that initiates closure of the blowdown isolation valves on a high radiation signal is not an engineered safety feature. Blowdown isolation is considered an ESF function because the isolation valves receive a signal to close when an AFW pump receives a signal to start. The blowdown and blowdown sample valves are containment isolation valves. This event was reported in accordance with 10CFR50.72(b)(2)(ii) on March 16, 2000 at 1457 Central Standard Time (CST).

There were no elevated radiation levels present at the time of the event. Therefore, there were no safety implications associated with this event. Additionally, radiation monitor channel R-19, the steam generator blowdown sample radiation monitor, remained available and was returned to service once blowdown and blowdown sampling was restored. The automatic actuation signals provided by R-15 are duplicated by R-19. However, R-15 is more sensitive to radiological in-leakage to the steam generators than R-19.

The R-15 radiation monitor is relied upon to provide timely and the most sensitive steam generator tube leakage indication to the control operators. With R-15 out of service, the capability to monitor steam generator leakage on a continuous basis was inhibited and compensatory air ejector sampling was established per the Off-site Dose Calculation Manual (ODCM). Subsequent to R-15 failing, the sampling frequency for monitoring steam generator tube leakage was increased.

There was no inordinate challenge to the blowdown valves due to the inadvertent actuation. The valves are motor operated and they operated properly.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISIO N NUMBER	
Kewaunee Nuclear Power Plant	05000305	2000	-- 003	-- 00	4 OF 4

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

CORRECTIVE ACTIONS

The failed detector was replaced, tested and the monitor returned to service within two hours of failure. To date, no definitive cause has been found as to why the new detector failed. Pursuit of the root cause of the failure will continue and the results will be captured in Kewaunee's internal corrective action program. Kewaunee's engineering staff is soliciting vendor support in this regard.

ADDITIONAL INFORMATION

The detector that failed was installed earlier in the day. The failed detector was new and withdrawn from warehouse stock. The detector was in warehouse stock for approximately one and one half years.

SIMILAR EVENTS

- LER 95-004-00, "Key Switch Failure on Radiation Monitor R-19 Results in Partial Steam Generator Blowdown Isolation."
- LER 1999-005-00, "Internal Power Supply Failure for Radiation Monitor R-19 Results in Steam Generator Blowdown Isolation."

EQUIPMENT FAILURES

Radiation Monitor: Manufactured by Nuclear Research Corporation, Model # ADM-610A V5
GM Detector, MD-12E, GM Tube Type: TGM N108-FL/500V