



NRC-99-086

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December 6, 1999

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 1999-005-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report (LER) for reportable occurrence 1999-005-00 is being submitted.

Sincerely,

A handwritten signature in black ink that reads "M. Marchi".

Mark L. Marchi
Vice President-Nuclear

GIH

Attach.

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

Handwritten initials "JED" in black ink, slanted to the right.

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LICENSEE EVENT REPORT (LER)

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

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
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TITLE (4)
Internal Power Supply Failure for Radiation Monitor R-19 Results in Steam Generator Blowdown Isolation

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
11	05	1999	1999	-- 005	-- 00	12	06	1999		05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)											
POWER LEVEL (10) 096	20.2201(b)			20.2203(a)(2)(v)			50.73(a)(2)(i)			50.73(a)(2)(viii)		
	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 – Engineering and Technical Support – Licensing	TELEPHONE NUMBER (Include Area Code) (920) 388-8559
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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	JX	N330	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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). On November 5, 1999 while the plant was operating at full power, radiation monitor system channel R-19, "Steam Generator Blowdown Sample Radiation Monitor" failed. As a result, inadvertent blowdown isolation occurred. R-19 failed due to an internal power supply failing.

The radiation monitor was repaired, tested and returned to service on November 8, 1999.

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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 November 5, 1999, at 0232, with the plant at full power. The event occurred when radiation monitor system [IL] channel R-19, "Steam Generator Blowdown Sample 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, BT2-B, 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-19 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. The R-19 radiation monitor actuation signal was subsequently defeated and steam generator blowdown and sampling flow was re-established.

CAUSE OF EVENT

The ESF actuation was caused by a failure of channel R-19 radiation monitor. The monitor failed due to an internal power supply [JX] failure. The cause of the power supply failure is indeterminate. It appears that an overload condition occurred as indicated by a discolored and heat damaged resistor in the power board supply circuit. The overload condition was also evident by a blown fuse in the radiation monitor's power supply circuit.

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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. 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 and the blowdown and blowdown sample valves are containment isolation valves. The circuitry that initiates closure of the blowdown isolation valves on a high radiation signal is not an engineered safety feature. This event was reported in accordance with 10CFR50.72(b)(2)(ii) on November 5, 1999 at 0232 hours.

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 serves as a backup to radiation monitor channel R-15, the main condenser air ejector exhaust gas radiation monitor. The automatic actuation signals provided by R-19 are duplicated by R-15. R-15 is also more sensitive to radiological in-leakage to the steam generators than R-19.

CORRECTIVE ACTIONS

The failed power supply for R-19 was replaced, tested and the monitor returned to service on November 8. A redundant power circuit board associated with the R-19 unit was inspected to see if there was any indication of a similar failure potential. No abnormal indications were noted.

Since this was a repeat failure of a power supply with similar indications on the power supply circuit board, the vendor who provided the equipment was contacted to assist in determining the cause of the power supply failure. To date, no definitive cause has been found. Pursuit of the root cause of failure will continue and the results will be captured in Kewaunee's internal corrective action program.

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

ADDITIONAL INFORMATION

The power supplies for the radiation monitors have been in service since they were installed in 1994, at which time Kewaunee's radiation monitor system was completely upgraded with new equipment provided by Nuclear Research Corporation (NRC).

SIMILAR EVENTS

- LER 95-004-00, "Key Switch Failure on Radiation Monitor R-19 Results in Partial Steam Generator Blowdown Isolation."

In August 1999, a similar power failure caused a different radiation monitor, Channel R-18, to fail. This monitor provides indication and automatic isolation protection on the radiological liquid waste disposal system. Since the R-18 failure and the R-19 failure involved the same circuit board designs and the appearance of the boards' resistors were similar after the failures, further cause determinations are warranted. Kewaunee's engineering staff is soliciting vendor support in this regard. The R-18 failure did not involve ESF equipment and was not a reportable event.

EQUIPMENT FAILURES

Radiation Monitor: Manufactured by Nuclear Research Corporation, Model # ADM-600A V11