NRC-00-054

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

July 14, 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 2000-011-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report (LER) for reportable occurrence 2000-011-00 is being submitted. This report does not contain any new commitments.

Sincerely,

For

Mark L. Marchi
Vice President-Nuclear

MAR

Attach.

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

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(6-1998)

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.

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TITLE (4)
Target Band Alarm Setpoint Not Updated with the Current Target Delta Flux Difference Value as Required by Technical Specifications

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
										05000
06	13	2000	2000	-- 011 --	00	07	14	2000	FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	N
POWER LEVEL (10)	085

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.2201(b)		20.2203(a)(2)(v)	X	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)		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	TELEPHONE NUMBER (Include Area Code)
Michael A. Ronski – Lead Plant Reactor Engineer	(920) 388-8799

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

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On June 13, 2000 at 1942 hours, the Nuclear Control Operator (NCO) received TLA-3, "Start Outside Target Band." The target flux difference was set at 1.0%. The indicated axial flux difference was 2.3%. Investigations determined that the current target flux difference was not entered into the Plant Process Computer as required. This is a violation of TS 3.10.b.13.

Subsequent to the Operators receiving the alarm, the target flux difference was entered into the plant process computer and the alarm cleared at 2001. A review of the axial flux difference history verified that the plant was operated within the target flux difference. Procedural changes will be made to prevent reoccurrence of this event in the future.

Due to administrative oversight, this LER is being submitted one day late.

LICENSEE EVENT REPORT (LER)

TEXT CONTINUATION

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

DESCRIPTION OF EVENT

On June 13, 2000 at 1942 hours, the Nuclear Control Operator (NCO) received TLA-3, "Start Outside Target Band." This alarm [ALM] annunciates when indicated axial flux difference deviates from the target flux difference by more than 5 percent. In response to the alarm, the operator determined that the indicated flux difference was 2.3% and the target flux difference for this power level per Axial Flux Operator Aid 87-5 was 1.0%. The plant is required to maintain the indicated axial flux difference within a ±5% band about the target flux difference. At the time of the event, the plant was operating at 85% power.

Since the alarm should not have actuated until the indicated axial flux difference exceeded –4% or +6%, the Shift Supervisor contacted the Plant Reactor Engineering group to verify the target delta flux difference was correct. Investigations by Reactor Engineering identified that the target delta flux difference on the Plant Process Computer System (PPCS) [CPU] had not been updated to reflect the current value. Subsequently, the correct value was entered into the PPCS. The alarm cleared at 2001 hours.

The axial flux difference history was reviewed to ensure the reactor was operated in accordance with operator aid 87-5 and the Technical Specifications. The review determined that the plant had not operated outside of the target band.

TLA-3, Start Outside Target Band was declared out of service retroactively from the start of the cycle due to having an incorrect target delta flux difference value.

Due to administrative oversight, this LER is being submitted one day late.

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

CAUSE OF THE EVENT

This event was caused by a procedural deficiency in the Plant Reactor Engineering procedure RXT 6.0, Power Escalation Test. The procedure failed to contain steps that required updating the target flux difference on the PPCS.

The Axial flux difference, ΔI, compares the power produced in the top of the core to the power produced in the bottom of the core. When the power is distributed equally, ΔI is zero. When more power is produced in the bottom half, ΔI is negative. A positive ΔI indicates more power is being produced in the top of the core. The specifications for axial power distribution control are designed to minimize the effects of xenon redistribution on the axial power distribution during load-follow maneuvers. Monitoring of axial power distribution along with other parameters ensures that the hot channel factor limits will be met.

The initial target flux difference following a reactor refueling is determined by the Plant Reactor Engineering procedure RXT 6.0, Power Escalation Test. Step 5.3.3 states:

> Determine an equilibrium 75% power target band using SP 48-046 and extrapolate to 100% to obtain a predicted 100% power target band. If SP 48-004F is used for NI calibration, the predicted target band from the Current Core Physics Report, (BOL, HFP, EQXe) may be used in lieu of SP 48-046.

During the startup of Cycle 24, SP 48-004F, "One Point Nuclear Power Range Channel Quarterly Calibration Data Acquisition," was performed. Therefore, the predicted full power target band value of 1.3% from the Current Core Physics Report was used. The Axial Flux Operator Aid 87-5 was issued using this value.

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

Step 5.3.3 of RXT 6.0 did not instruct the individual to perform all of the necessary steps of SP 48-046 including the updating of the PPCS target flux difference value. As a result, the PPCS target flux difference value did not match the Operator Aid.

ANALYSIS OF THE EVENT

This event is being reported under 10CFR50.73(a)(2)(i)(B). Licensee Event Report 2000-011-00 is being submitted because the requirements of Technical Specification 3.10.b.13 were not satisfied. Technical Specification 3.10.b.13 states:

> Alarms shall normally be used to indicate nonconformance with the flux difference requirement of TS 3.10.b.10 or the flux difference time requirement of TS 3.10.b.11.A. If the alarms are temporarily out of service, the axial flux difference shall be logged, and conformance with the limits assessed, every hour for the first 24 hours, and every half hourly thereafter.

Failure to update the PPCS with the correct target flux difference resulted in the alarm being inoperable. Since compensatory measures were not taken prior to the alarm being inoperable, TS 3.10.b.13 was violated.

There is no safety significance as a result of this event. The reactor core was in increased monitoring mode due to power escalation testing. This ensured that the hot channel factors and the power distribution were within the technical specification limits. Additionally, the Technical Specifications may recognize that target flux difference surveillance is not required during power escalation. The Technical Specification basis states:

> Target flux difference surveillance is initiated after achieving equilibrium conditions for sustained operation.

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

At the time of this event, the plant was in power escalation testing and had not achieved equilibrium conditions for sustained operation.

The axial flux difference history was reviewed to ensure the reactor was operated in accordance with operator aid 87-5. The review determined that the plant had not operated outside of the target band.

CORRECTIVE ACTIONS

- Shortly after receiving the alarm, the Shift Supervisor contacted the Plant Reactor Engineering group to verify the target delta flux difference per Operator Aid 87-5 was correct. It was identified that the target delta flux difference was not entered into the PPCS. Subsequently, the correct value was entered into the PPCS and the alarm cleared.
- The axial flux difference history was reviewed to ensure the reactor was operated in accordance with operator aid 87-5.
- The procedure for power escalation testing will be modified to update the PPCS with the target delta flux difference.

ADDITIONAL INFORMATION

None.

SIMILAR EVENTS

None.