UPDATE REPORT - ORIGINAL REPORT DATE 8/26/83

NRC FORM 366 (12-81)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

APPROVED BY OMB 3150-0011 EXPIRES 4-30-82

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | LICENSEE CODE: N C M G S 2 (2) | LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 (3) | LICENSE TYPE: 4 1 1 1 1 (4) | CAT (5)

CON'T 0 1 | REPORT SOURCE: L (6) | DOCKET NUMBER: 0 5 0 0 0 3 7 0 (7) | EVENT DATE: 0 7 2 6 8 3 (8) | REPORT DATE: 0 9 2 1 8 3 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 While in Mode 5, performance of routine surveillance revealed that two of four UHI level switch's setpoints were out of tolerance. This violates T.S.3.5.1.2 (switches assumed to have been out of tolerance during power operation) which is reportable per T.S.6.9.1.11(a) and similar to RO's 369/82-38 and 83-13. The UHI system was not challenged during the period of inoperability. Had the UHI system been challenged the UHI water volume delivered to the core would not have exceeded the maximum assumed in the safety analysis. Health and safety of the public were unaffected.

	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
0 9	S F (11)	B (12)	A (13)	I N S T R U (14)	S (15)	Z (16)

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	8 3	—	0 3 5	/	0 3	X	—	1

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER (26)
E (18)	F (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	L (25)	B 0 8 0

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 This is attributed to Design Deficiency, since there is evidence indicating that the switches (Barton model 288A differential pressure indicating switches) are not capable of consistently actuating within the required tolerance. The switches were recalibrated. Calibration Frequency will be increased until a modification to replace the switches is implemented.

	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
1 5	X (28)	0 0 0 (29)	Maint. Outage	B (31)	Routine Surveillance

	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
1 6	Z (33)	Z (34)	NA	NA

PERSONNEL EXPOSURES

	NUMBER	TYPE	DESCRIPTION (39)
1 7	0 0 0 (37)	Z (38)	NA

PERSONNEL INJURIES

	NUMBER	DESCRIPTION (41)
1 8	0 0 0 (40)	NA

LOSS OF OR DAMAGE TO FACILITY (43)

	TYPE	DESCRIPTION
1 9	Z (42)	NA

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PUBLICITY

	ISSUED	DESCRIPTION (45)	NRC USE ONLY
2 0	N (44)	NA	

NAME OF PREPARER Phillip B. Nardoci PHONE (704) 373-7432

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NUCLEAR PRODUCTION

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September 01, 1983

83 SEP 30 A 9:16

Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street NW, Suite 2900
Atlanta, Georgia 30303

Subject: McGuire Nuclear Station Unit 2
Docket No. 50-370
LER/RO-370/83-35

Dear Mr. O'Reilly:

Reportable Occurrence Report RO-370/83-35 which was transmitted by my letter of August 26, 1983 concerned an incident involving Upper Head Injection (UHI) level instrumentation found out of calibration. This letter is a followup to the original report.

Two of four level switches which actuate to automatically close the UHI isolation valves following a LOCA were set so that the valves would close later than designed. The two valves affected are in series on one of the two injection lines on the UHI accumulator discharge. The allowable setpoint tolerance is $\pm$ 3.3 inches; the two switches would have actuated at -3.34 inches and -4.56 inches later than the nominal setpoint. The remaining switches would have actuated at +0.89 inches and -2.34 inches. The potential safety concern was whether the maximum UHI water volume delivered to the core (1,011 ft^3) would have been exceeded if a LOCA had occurred. (The UHI water volume at the nominal setpoint is 898.5 ft^3.)

The UHI Uncertainty Analysis allows for single train failure and for certain random uncertainties. Single train failure assumes one valve on each parallel injection line does not close. The remaining valves close against a greater differential pressure resulting in more water delivered to the core. Thus, an additional 42 ft^3 is assumed. The random uncertainties are statistically combined by the Root Sum Square method; setpoint repeatability of 3.3 inches (66 ft^3) is the dominant term.

Because of the rapid closure times of the UHI isolation valves, the valves set at -4.56 and -2.34 would have had little effect on the delivered water volume and, therefore, can be conservatively assumed to have failed open. This is comparable, in terms of delivered water volume, to single train failure. The remaining valves (one on each injection line) would have actuated at -3.34 inches and +0.89 inches. In our judgement, the effect on delivered volume of one valve actuating 4.2 inches above the lowest allowable setpoint (3.3 + 0.89 inches) would have been enough to offset the effect of one valve actuating 0.04 inches low and the effects of the remaining uncertainties. Therefore if a LOCA had occurred, the UHI water volume delivered to the core would not have exceeded the maximum of 1,011 ft^3.

IE 22
1/1

Additionally, McGuire Unit 2 had not operated above 30% rated power level during the period that the instruments were out of calibration. The effect of a LOCA on peak clad temperature would have been much less severe than assumed in the LOCA analysis, and operation of the system would have been within calculated limits.

Please advise if there are any questions.

Very truly yours,

Hal B. Tucker

REH:jfw
Attachment

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

Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
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Mr. W. T. Orders
NRC Resident Inspector
McGuire Nuclear Station