

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) McGuire Nuclear Station, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 6 9 1	PAGE (3) 1 OF 0 1 2
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TITLE (4)
Loss of Rod Position Indication on Rod B-12

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 NAMES		DOCKET NUMBER(S)
0 4	2 6	8 4	8 4	0 1 5	0 0 0	0 5	2 9	8 4			0 5 0 0 0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											

OPERATING MODE (9) 3	20.402(b)	20.406(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 0 0	20.406(a)(1)(ii)	50.38(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)
	20.406(a)(1)(iii)	50.38(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
	20.406(a)(1)(iii)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)	
	20.406(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Phillip B. Nardoci, Licensing Engineer	TELEPHONE NUMBER 710 14 317131-17141312
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
X	I U I M O I D	W 1 1 2 1 0		N					

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15) MONTH: DAY: YEAR:
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On April 26, 1984 the "Procedure For Full Length Rod Control Cluster Assembly Drop Timing" was performed to verify Digital Rod Position Indication (DRPI) accuracy and proper operation of the Control Rod Drive System. At 0830 the Control Operator opened the reactor trip breakers in accordance with the Action Statement of Technical Specification 3.1.3.3 when rod B-12, in Shutdown Bank A, failed to indicate its correct position.

Unit 1 was in Mode 3 with the Control and Shutdown Banks inserted except Shutdown Bank A, which was 18 steps withdrawn.

This event is attributed to Component Failure because a circuit on the detector/encoder card failed. This card failure gave an incorrect indication for the location of rod B-12.

The faulty card was replaced with a spare and the drop timing procedure was successfully completed. The reactor remained subcritical throughout the event.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		- 0 1 5	- 0 0 0	0 2	OF	0 2	

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

On April 26, 1984 the "Procedure For Full Length Rod Control Cluster Assembly Drop Timing" was performed to verify Digital Rod Position Indication (DRPI) [EIIS:IU] accuracy and proper operation of the Control Rod Drive System [EIIS:AA]. At approximately 0820 Shutdown Bank A was withdrawn 6 steps. At approximately 0825 Shutdown Bank A was withdrawn 6 more steps (12 total steps). Rod [EIIS:ROD] B-12 still indicated 6 steps withdrawn. At 0830 Shutdown Bank A was withdrawn 6 more steps (18 total steps). Rod B-12 indicated "Rod at Bottom" and a "General Warning" which gave an "RPI Urgent Failure" alarm. The Control Operator immediately opened the reactor trip breakers [EIIS:BRK] in accordance with the Action Statement of Technical Specification 3.1.3.3 when rod B-12, in Shutdown Bank A, failed to indicate its correct position.

Unit 1 was in Mode 3 with the Control and Shutdown Banks [EIIS:JD] inserted except Shutdown Bank A, which was 18 steps withdrawn.

This event is attributed to Component Failure because a circuit on the detector/encoder card [EIIS:IMOD] failed. This card failure gave an incorrect indication for the location of rod B-12.

The purpose of the DRPI system is to accurately detect and display the position of all rods in the reactor core. A rod whose position cannot be calculated (because of data errors) is indicated by flashing "General Warning" and "Rod at Bottom" light emitting diodes (LEDs) for that rod. These two alarms along with an "RPI Urgent Failure" alarm indicate that the rod position data from the two data cabinets (A and B) is insufficient to determine rod position within six steps of the other rods, which correspond to one light position.

Troubleshooting found that the incorrect indication for rod B-12 originated from a faulty circuit on a detector/encoder card in Data Cabinet B. The faulty card (Type 1047F28G01) was replaced with a spare. Component(s) failed on the card, causing the incorrect indication for rod B-12. The failure may have occurred because control power was removed from the DRPI system to prevent possible damage during the refueling outage. After the 60 day outage, the DRPI system was reenergized. Electronic components are more susceptible to failure when power is applied because of power surges. The failure of a weak component would probably occur when being energized rather than during normal operating conditions.

After opening the reactor trip breakers, the Control Operator verified that all Shutdown Banks were fully inserted into the reactor core. Replacing the faulty detector/encoder card with a spare restored the DRPI System to operability and the drop timing procedure was successfully completed.

The reactor remained subcritical throughout the event. Rod B-12 never exceeded 18 steps withdrawn. The health and safety of the public were unaffected by this event.

DUKE POWER COMPANY

P.O. BOX 33189
CHARLOTTE, N.C. 28242

May 29, 1984

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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

Subject: McGuire Nuclear Station, Unit 1
Docket No. 50-369
LER 369/84-15

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 369/84-15 concerning a loss of rod position indication on rod B-12 resulting in manual initiation of the reactor protection system which is submitted in accordance with §50.73 (a)(2)(iv). Initial notification of this event was made (pursuant to §50.72 Section (b)(2)(ii)) with the NRC Operations Center via the ENS on April 26, 1984. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H.B. Tucker / HBU

Hal B. Tucker

PBN:glb
Attachment

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