NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
BIG ROCK POINT PLANT	0 5 0 0 0 1 5 5	1 OF 0 2

TITLE (4)

REACTOR TRIP CAUSED BY FAILURE OF INTERMEDIATE RANGE NEUTRON MONITORING CHANNEL

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)
1 1	2 3	8 7	8 7	0 1 2	0 0	1 2	1 0	8 7	N/A	0 5 0 0 0
									N/A	0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(a)	X	80.73(a)(2)(iv)		73.71(b)
		20.405(a)(1)(i)	80.38(c)(1)		80.73(a)(2)(v)		73.71(c)
		20.405(a)(1)(ii)	80.38(c)(2)		80.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	80.73(a)(2)(i)		80.73(a)(2)(viii)(A)		
		20.405(a)(1)(iv)	80.73(a)(2)(ii)		80.73(a)(2)(viii)(B)		
		20.405(a)(1)(v)	80.73(a)(2)(iii)		80.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
R J Alexander, Technical Engineer	AREA CODE 6 1 6 5 4 7 - 6 5 3 7

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	
B	I G	A M P	G 0 8 0	N							

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 fifteen single-space typewritten lines) (16)

On November 23, 1987 plant startup was in progress following a planned maintenance outage. At 0350 hours, an intermediate range neutron monitoring channel failed upscale causing a short period reactor trip. Power level at the time of the trip was less than 10E-6 percent during an approach to critical. All control rods withdrawn at time of the trip successfully inserted. Cause is attributed to amplifier electronic tube failure due to age.

Following change-out of the amplifier and testing, restart commenced.

This is not considered a reactor trip while critical per INPO reporting criteria.

IE22
1/1

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
BIG ROCK POINT PLANT	0 5 0 0 0 1 5 5	8 7	— 0 1 2	— 0 0	0 2 OF 0 2

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

Description

On November 23, 1987 plant startup was in progress following a planned maintenance outage. At 0350 hours during an approach to critical, an intermediate range neutron monitoring channel (IG) failed upscale causing a short period channel trip. This short period trip (one out of two logic) initiated a reactor protection system (JC) actuation causing a reactor trip. Power level at the time of the trip was less than 10E-6 percent. All control rods (AA) withdrawn at the time of the trip successfully inserted and no other engineered safety features were challenged by the event.

Cause

The cause of the trip is attributed to the failure of a General Electric (G080) intermediate range logarithmic amplifier, Model 105X339G1.

Corrective Actions

Following the trip, the failed logarithmic amplifier was replaced with a spare, tested and channel returned to service. Coupling integrity checks were performed on the control rods and a restart commenced at 1300 hours. Investigation and repair activities of the failed amplifier concluded a failed electrometer tube due to normal in use degradation. Following replacement of the tube the amplifier was calibrated, tested and returned to stock to be used as a spare.

Actions to Prevent Recurrence

Plans are being made to change out the intermediate range neutron channels during the 1988 Refueling Outage to the new General Electric "NUMAC" line. The new components are expected to have a decreased failure rate over the existing tube-type instrumentation in use since 1962. Additionally, the modification will also include an upgrade of the short period "one out of two" logic for reactor trip to a "two out of three" scheme. This will prevent single channel failures from causing a reactor trip and also permit maintenance and testing during reactor operation.

Safety Assessment

There were no adverse safety consequences of this event, since the challenge to the reactor protection system was successful and reactor power was very low.

Consumers Power
POWERING MICHIGAN'S PROGRESS
General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0550

December 10, 1987

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT -
LICENSEE EVENT REPORT 87-012 - REACTOR TRIP CAUSED BY
FAILURE OF INTERMEDIATE RANGE NEUTRON MONITORING CHANNEL

Licensee Event Report (LER) 87-012 (Reactor Trip Caused by Failure of Intermediate Range Neutron Monitoring Channel) is attached. This event is reportable to the NRC per 10CFR50.73(a)(2)(iv).

Ralph R Frisch
Senior Licensing Analyst

CC Administrator, Region III, NRC
NRC Resident Inspector - Big Rock Point Plant

Attachment

IE22
1/1

OC1287-0247-NL04