NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
D. C. COOK UNIT 2	0 5 0 0 0 3 1 6	1 OF 0 2

TITLE (4): REACTOR TRIP

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 1	2 6	8 5	8 5	0 0 3	0 0	0 2	2 5	8 5		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 9 6	20.402(b)	20.405(c)	[X] 50.73(a)(2)(iv)	73.71(b)
		20.406(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.406(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.406(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
A. A. BLIND TECHNICAL ENGINEERING SUPERINTENDENT	AREA CODE 6 1 6 4 6 5 - 5 9 0 1

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	E F	U J X	S 2 5 0	Y							

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 JANUARY 26, 1985, AT 0925 HOURS, WHILE AT 96 PERCENT REACTOR THERMAL POWER, THE FAILURE OF THE 120 VOLT AC VITAL BUS III INVERTER RESULTED IN AN OPEN INDICATION OF THE LOOP 3 REACTOR COOLANT PUMP BREAKER. THE INDICATION IN COINCIDENCE WITH REACTOR POWER GREATER THAT THE P-8 SETPOINT INITIATED A REACTOR TRIP. DURING THE REACTOR TRIP SEQUENCE, THE TURBINE DRIVEN AUXILIARY FEEDWATER PUMP (TDAFP) FAILED TO AUTOMATICALLY START.

THE EXACT CAUSE OF THE INVERTER FAILURE WAS NOT DETERMINED, THEREFORE, ALL SUSPECT COMPONENTS WERE REPLACED. THE INVERTER WAS THEN LOAD TESTED AND RETURNED TO SERVICE.

THE FAILURE OF THE TDAFP TO AUTOMATICALLY START WAS THE RESULT OF EXCESSIVE CLEARANCE IN THE TRIP AND THROTTLE VALVE LATCHING MECHANISM.

TO PREVENT RECURRENCE: 1) A DESIGN CHANGE HAS BEEN APPROVED THAT REPLACES THE EXISTING INVERTERS WITH A DESIGN FEATURING INCREASED RELIABILITY, 2) A PROCEDURE WILL BE WRITTEN BY AUGUST 1, 1985, TO ENSURE THAT PRECISE AND CONSISTENT TDAFP TRIP AND THROTTLE VALVE LATCHING MECHANISM ADJUSTMENTS ARE MAINTAINED, AND 3) AN ACCELERATED TESTING PROGRAM HAS BEEN IMPLEMENTED CONSISTING OF WEEKLY TDAFP STARTS, AND VISUALLY VERIFYING CORRECT TRIP AND THROTTLE VALVE LATCHING DURING EACH OPERATING SHIFT. THIS SUPPLEMENTAL TESTING WILL BE CONTINUED UNTIL TDAFP RELIABILITY IS ASSURED.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
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TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

ON JANUARY 26, 1985, AT 0925 HOURS, WHILE IN MODE 1 (OPERATING) AND AT 96 PERCENT REACTOR THERMAL POWER, THE FAILURE OF THE 120 VOLT AC VITAL BUS (CRID) III INVERTER (IEEE-INVT) RESULTED IN AN OPEN INDICATION OF THE LOOP 3 REACTOR COOLANT PUMP BREAKER. THE INDICATION IN COINCIDENCE WITH REACTOR POWER GREATER THAN THE P-8 SETPOINT INITIATED A REACTOR TRIP. DURING THE REACTOR TRIP SEQUENCE, THE TURBINE DRIVEN AUXILIARY FEEDWATER PUMP (TDAFP) FAILED TO AUTOMATICALLY START.

THE EXACT CAUSE OF THE CRID FAILURE COULD NOT BE DETERMINED. CONSEQUENTLY, THE FOLLOWING INVERTER COMPONENTS WERE REPLACED; ALL SCRS AND DIODES, THE OSCILLATOR CIRCUIT BOARD, AND THE C-2 CAPACITOR. THE INVERTER WAS THEN LOAD TESTED AND RETURNED TO SERVICE.

THE FAILURE OF THE TDAFP TO AUTOMATICALLY START WAS DUE TO EXCESSIVE CLEARANCE IN THE LATCHING MECHANISM OF THE TRIP AND THROTTLE VALVE (IEEE-FCV). THIS CONDITION PREVENTED THE VALVE FROM OPENING, THUS, PROHIBITING THE PUMPS OPERATION. THE LATCHING LINKAGE WAS PROMPTLY ADJUSTED AND CORRECT OPERATION VERIFIED. SINCE BOTH MOTOR DRIVEN AUXILIARY FEEDWATER PUMPS WERE OPERABLE DURING THE INCIDENT, ADEQUATE POST-TRIP FEEDWATER FLOW WAS AVAILABLE.

ALL SYSTEM COMPONENTS FUNCTIONED AS DESIGNED WITH THE EXCEPTION OF THE TDAFP.

TO PREVENT RECURRENCE: 1) A DESIGN CHANGE HAS BEEN APPROVED THAT REPLACES THE EXISTING INVERTERS WITH A DESIGN FEATURING INCREASED RELIABILITY, 2) A PROCEDURE WILL BE WRITTEN BY AUGUST 1, 1985, TO ENSURE THAT PRECISE AND CONSISTENT TDAFP TRIP AND THROTTLE VALVE LATCHING MECHANISM ADJUSTMENTS ARE MAINTAINED, AND 3) AN ACCELERATED TESTING PROGRAM HAS BEEN IMPLEMENTED CONSISTING OF WEEKLY TDAFP STARTS, AND VISUALLY VERIFYING CORRECT TRIP AND THROTTLE VALVE LATCHING DURING EACH OPERATING SHIFT. THIS SUPPLEMENTAL TESTING WILL BE CONTINUED UNTIL TDAFP RELIABILITY IS ASSURED.

PREVIOUS CRID FAILURES WERE REPORTED IN LERS: 50-315/84-008, 50-315/80-020, 50-315/79-022, 50-316/83-081, 50-316/83-052, AND 50-316/81-027.

American Electric Power System
INDIANA & MICHIGAN ELECTRIC COMPANY
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February 25, 1985

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Operating License DPR-74
Docket No. 50-316

Document Control Manager:

In accordance with the criteria established by 10CFR50.73 entitled Licensee Event Reporting System, the following report/s are being submitted:

RO 85-003-0

Sincerely,

W.G. Smith, Jr.
Plant Manager

/cbm

Attachment

cc: John E. Dolan
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