CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9907200116 DOC.DATE: 99/07/13 NOTARIZED: NO DOCKET #
FACIL:50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana M 05000315
AUTH.NAME AUTHOR AFFILIATION
SNODGRASS,D.D. Indiana Michigan Power Co. (formerly Indiana & Michigan Ele
BAKKEN,A.C. Indiana Michigan Power Co. (formerly Indiana & Michigan Ele
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 99-016-00:on 990615,TS requirements for source range neutron flux monitors not met.Caused by failure to understand design basis of plant.Procedures revised.With 990713 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 4
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	LPD3-1 PD	1	1	STANG,J	1	1
INTERNAL:	FILE CENTER	1	1	NRR/DIPM/IOLB	1	1
	NRR/DRIP/REXB	1	1	NRR/DSSA/SPLB	1	1
	RES/DET/ERAB	1	1	RES/DRAA/CERAB	1	1
	RGN3 FILE 01	1	1			
EXTERNAL:	L ST LOBBY WARD	1	1	LMITCO MARSHALL	1	1
	NOAC POORE,W.	1	1	NOAC QUEENER,DS	1	1
	NRC PDR	1	1	NUDOCS FULL TXT	1	1

NOTE TO ALL "RIDS" RECIPIENTS:
PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LIS OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTR DESK (DCD) ON EXTENSION 415-2083

FULL TEXT CONVERSION REQUIRED
TOTAL NUMBER OF COPIES REQUIRED: LTTR 15 ENCL 15

Indiana Michigan
Power Company
Cook Nuclear Plant
One Cook Plant
Bridgman, MI 49106
616 465 5901

INDIANA MICHIGAN POWER

July 13, 1999

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Operating License DPR-58
Docket No. 50-315

Document Control Manager:

In accordance with the criteria established by 10 CFR 50.73 entitled Licensee Event Report System, the following report is being submitted:

LER 315/99-016-00, "Technical Specification Requirements for Source Range Neutron Flux Monitors Not Met".

There are no commitments identified in this LER.

Sincerely,

A. Christopher Bakken, III
Site Vice President

/mbd
Attachment

c: J. E. Dyer, Region III
R. P. Powers
P. A. Barrett
G. P. Arent
R. Whale
D. Hahn
Records Center, INPO
NRC Resident Inspector

1/1

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Cook Nuclear Plant Unit 1	05000-315	1 OF 3

TITLE (4)

Technical Specification Requirements for Source Range Neutron Flux Monitors Not Met

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
06	15	1999	1999	016	00	07	13	1999	Cook Nuclear Plant Unit 2	05000-316

OPERATING MODE (9)	5
POWER LEVEL (10)	0%

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)	X	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)
Mr. Dennis D. Snodgrass, Compliance Engineer	(616) 465-5901 X1627

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	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE).		NO		09	15	1999

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

On June 15, 1999 at 1700 hours EST with both units in Mode 5, the Source Range Nuclear Instrumentation channels on both Units were determined to be inoperable. The Expanded System Readiness Review identified that the Technical Specification (T/S) 3.3.1.1 and T/S 3.9.2 surveillance tests did not verify the Source Range "High Flux at Shutdown" alarm operable. This alarm function is required to be operable during modes 3, 4, 5 and 6. On June 15, 1999 at 2013 hours EST an ENS report was made in accordance with 10 CFR 50.72(b)(2)(iii)(D) for an event that could have prevented the fulfillment of the safety function of a system needed to mitigate the consequences of an accident. This LER is therefore submitted in accordance with 10 CFR 50.73(a)(2)(v)(D), and is also reportable per the requirements of 10 CFR 50.73(a)(2)(i)(B), as a condition prohibited by the plant's T/S.

The apparent cause of this event is failure to understand the design basis of the plant. Upon declaring the Source Range Nuclear Instrumentation channels inoperable, Operations entered the action statements for T/S 3.3.1.1. Additional compensatory measures implemented by Operations included hourly checks of Source Range instrumentation response and the "High Flux at Shutdown" alarm clear. The surveillance procedures were revised and the "High Flux at Shutdown" alarm was verified operable June 17, 1999 on each Unit.

The Source Range "High Flux at Shutdown" alarm and the containment evacuation horns share common circuitry. When the containment evacuation horns are verified operable by surveillance test, the "High Flux at Shutdown" alarm is received but not documented. Although not verified in the past by surveillance test, it is our belief the alarm has been functional. Therefore, there were minimal implications to the health and safety of the public as a result of this event.

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Cook Nuclear Plant Unit 1	05000-315	1999	016	00	2 OF 3

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

Conditions Prior To Event

Unit 1 Mode 5 in Cold Shutdown
Unit 2 Mode 5 in Cold Shutdown

Description Of The Event

On June 15, 1999 at 1700 hours EST with both units in Mode 5, the Source Range Nuclear Instrumentation (EIIS: IG) channels for both Units were determined to be inoperable. The Expanded System Readiness Review identified that the Technical Specification (T/S) 3.3.1.1 and T/S 3.9.2 surveillance tests did not verify the Source Range "High Flux at Shutdown" alarm (EIIS: IG/RA) operable. This alarm is credited in the licensing basis for detection and mitigation of a boron dilution event and is required to be operable during modes 3, 4, 5 and 6.

During the event investigation, the Source Range "Loss of Detector Voltage" alarm was also identified as not being verified operable by T/S surveillance test. This alarm is not explicitly credited in T/S or the Updated Final Safety Analysis Report, but is relied upon to determine T/S equipment failure.

Cause Of The Event

The apparent cause of this event is failure to understand the design basis of the plant. Misapplication of the IEEE 279, 1968 definition of "channel resulted in the channel "High Flux at Shutdown" alarm being determined as not requiring operability verification. The IEEE 279, 1968 definition of "channel" states that a channel loses its identity when single action signals are combined. The alarm did not meet the IEEE 279, 1968 definition of "channel" for channel functional verification since both Source Range channels share the alarm. It was apparently overlooked that the alarm is credited in the licensing basis for detection and mitigation of a boron dilution. Consequently, operability verification has not been documented for the alarm on either Unit.

Analysis Of The Event

On June 15, 1999 at 2013 hours EST an ENS report was made per 10 CFR 50.72(b)(2)(iii)(D), an event that alone could have prevented the fulfillment of the safety function of a system that is needed to mitigate the consequences of an accident. The Source Range channels on Units 1 and 2 were determined to be inoperable when it was identified that the Source Range "High Flux at Shutdown" alarm was not verified by T/S 3.3.1.1 and T/S 3.9.2 surveillance tests. This LER is therefore submitted in accordance with 10 CFR 50.73(a)(2)(v)(D), and is also reportable per the requirements of 10 CFR 50.73(a)(2)(i)(B), as a condition prohibited by the plant's T/S.

The primary function of nuclear instrumentation is to safeguard the reactor by monitoring the neutron flux and generating appropriate trips and alarms for various phases of reactor operating and shutdown conditions. The Source Range nuclear instrumentation provides control room indication, alarms and recording of signals proportional to reactor neutron flux during core loading, shutdown, startup as well as during subsequent refueling.

T/S 3.3.1.1 requires one channel of the source range neutron flux monitors to be operable in Modes 3, 4 & 5.

T/S 3.9.2 requires two source range neutron flux monitors operable in Mode 6.

T/S definitions requires the verification of "alarm and/or trip functions" to satisfy surveillance requirements. The source range "High Flux at Shutdown" alarm operability verification has not been documented for either Unit.

The containment evacuation horns operability is verified by surveillance test. The containment evacuation horns and the Source Range "High Flux at Shutdown" alarm share common circuitry. The "High Flux at Shutdown" alarm is received but not documented when the containment evacuation horns response to high flux signals is verified by the surveillance test. Although not verified in the past by surveillance test, it is our belief the alarm has been functional. Therefore, there were minimal safety implications as a result of this event.

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Cook Nuclear Plant Unit 1	05000-315	1999	016	00	3 OF 3

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

CORRECTIVE ACTIONS

The Source Range channels were declared inoperable when it was identified that the Source Range "High Flux at Shutdown" alarm was not verified by T/S surveillance tests.

Upon declaring the Source Range Nuclear Instrumentation channels inoperable, Operations entered the action statements for T/S 3.3.1.1. Additional compensatory measures implemented by Operations included hourly checks of Source Range instrumentation response and the "High Flux at Shutdown" alarm clear until the Source Range channels were declared operable on June 17, 1999.

The surveillance procedures were revised to include a documented operability verification of the Source Range "High Flux at Shutdown" alarm and the "Loss of Detector Voltage" alarm. The surveillance tests were performed to verify operability of the Units 1and 2 "High Flux at Shutdown" and the "Loss of Detector Voltage" alarms. The Unit 1 Source Range channels were both declared operable by 2347 hours EST June 17, 1999. The Unit 2 Source Range channels were both declared operable by 2225 hours EST June 17, 1999.

AEP:NRC:1260GH, "Enforcement Actions 98-150, 98-151, 98-152 and 98-186 Reply to Notice Of Violation October 13, 1998", dated March 19, 1999, responded to identified programmatic weaknesses in the Technical Specification Surveillance Program and the plant Design and Licensing Basis. As part of the Restart effort, the adequacy of the T/S surveillance program will be evaluated, This evaluation includes verification that T/S surveillance requirements for all modes of plant operation are incorporated into T/S surveillance test procedures. Also as part of the Restart effort, System and programmatic assessments in the Expanded System Readiness Reviews and Licensing Basis Reviews are reestablishing and documenting the plant's Design and Licensing Basis.

The root cause investigation for this event is ongoing. The investigation will include a review of the Operations procedures associated with the "High Flux at Shutdown" alarm, and the UFSAR sections which address the alarm and the boron dilution event, to determine if any revisions are required. Supplemental information, including any additional corrective actions, will be provided in an update to this LER.

SIMILAR EVENTS

315/99-015-00