

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8801270277 DOC. DATE: 88/01/21 NOTARIZED: NO DOCKET #  
 FACIL: 50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315  
 AUTH. NAME AUTHOR AFFILIATION  
 BEILMAN, T. P. Indiana Michigan Power Co.  
 SMITH, W. G. Indiana Michigan Power Co.  
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-023-00: on 871109, discovered that fuses required for isolation between various local shutdown & indication panels not incorporated into plant design. Caused by personnel error. Design changes implemented. W/880121 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5  
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD3-3 LA	1 1	PD3-3 PD	1 1
	WIGGINGTON, D	1 1		
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	AEOD/DOA	1 1	AEOD/DSP/NAS	1 1
	AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1
	ARM/DCTS/DAB	1 1	DEDRO	1 1
	NRR/DEST/ADS	1 0	NRR/DEST/CEB	1 1
	NRR/DEST/ELB	1 1	NRR/DEST/ICSB	1 1
	NRR/DEST/MEB	1 1	NRR/DEST/MTB	1 1
	NRR/DEST/PSB	1 1	NRR/DEST/RSB	1 1
	NRR/DEST/SGB	1 1	NRR/DLPQ/HFB	1 1
	NRR/DLPQ/QAB	1 1	NRR/DOEA/EAB	1 1
	NRR/DREP/RAB	1 1	NRR/DREP/RPB	2 2
	NRR/DRIS/SIB	1 1	NRR/PMAS/ILRB	1 1
	<u>REG FILE</u> 02	1 1	RES TELFORD, J	1 1
	RES/DE/EIB	1 1	RES/DRPS DIR	1 1
	RGN3 FILE 01	1 1		
EXTERNAL:	EG&G GROH, M	5 5	FORD BLDG HOY, A	1 1
	H ST LOBBY WARD	1 1	LPDR	1 1
	NRC PDR	1 1	NSIC HARRIS, J	1 1
	NSIC MAYS, G	1 1		

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) **D.C. Cook Nuclear Plant - Unit 1** DOCKET NUMBER (2) **0 5 0 0 0 3 1 5** PAGE (3) **1 OF 0 4**

TITLE (4) **Deficient Design Results in Failure to Provide Electrical Isolation Between Local Shutdown and Indication Panels**

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	0 9	8 7	0 2 3	0 0	0 1	2 1	8 8	D.C. Cook - Unit 2		0 5 0 0 0 3 1 6
											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) <b>1</b>	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) <b>0 9 0</b>	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.405(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME **T. P. Beilman** TELEPHONE NUMBER **6 1 6 4 6 5 - 5 9 0 1**  
**Instrumentation & Control Department Superintendent**

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

SUPPLEMENTAL REPORT EXPECTED (14)  YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR

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

This event was determined to be reportable on December 22, 1987.

On November 9, 1987, during a review of an investigation concerning Regulatory Guide 1.97 compliance, it was discovered that the fuses required for isolation between the various Local Shutdown and Indication (LSI) panels were improperly located on Unit 2 and not incorporated into the existing design on Unit 1. Therefore, a condition existed that, in the event of a fire local to a LSI panel, power (both normal and alternate) to some or all of the same unit's remaining panels could have been lost.

The cause of the event was an oversight (cognitive personnel error) by design engineers in the design and verification process associated with the initial Appendix R modifications.

Fire watches were assigned to tour the affected areas. Design changes have been implemented which provide the necessary isolation in the event of a fire. To prevent recurrence the appropriate engineering procedures have been prefaced to address this specific electrical isolation concern.

8801270277 880121  
 PDR ADDOCK 05000315  
 S PDR

IE 22  
 1/1

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
D.C. Cook Nuclear Plant - Unit 1	0 5   0   0   0   3   1   5	8   7	-   0   2   3	-   0   0	0   2	OF 0   4

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

Conditions Prior to Occurrence

(Conditions date of discovery)

Unit 1 - Mode 1 (power operation) - 90 percent Reactor Thermal Power

Unit 2 - Mode 1 (power operation) - 80 percent Reactor Thermal Power

Description of Event

On November 9, 1987, during an investigation into the feasibility of using existing Reactor Coolant System Wide Range T-Hot and T-Cold indications (EIIS/AB-TI) for Regulatory Guide 1.97 compliance, it was discovered that the fuses (EIIS/FU) required for isolation between the various Local Shutdown and Indication (LSI) panels (EIIS/PL) were improperly located on Unit 2 and were not included in the existing design on Unit 1. Therefore, a condition existed that, in the event of a fire local to an LSI panel, power (both normal and alternate) to some or all of the same unit's remaining LSI panels could be lost. If power was lost to all panels, those indications available locally would be lost. In addition, all Wide Range T-Hot and T-Cold indications, 1 of 4 channels of pressurizer level indication (EIIS/AB-LI), and both trains of the Reactor Vessel Level Indication System (EIIS/AB-LI) would be lost in the control room. This condition is not consistent with the requirements of 10 CFR 50, Appendix R and has existed since initial installation of the Appendix R modifications (Unit 1 - September, 1985; Unit 2 - June, 1986).

This event was determined to be reportable on December 22, 1987. The NRC was notified of the event via ENS at 1650 hours, December 22, 1987.

With the exception of the subject LSI panels, there were no inoperable components, systems or structures that contributed to this event.

Cause of Event

The cause of the event was an oversight (cognitive personnel error) by design engineers in the design and verification process associated with the initial Appendix R modifications.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
D.C. Cook Nuclear Plant - Unit 1	05000315	87	-023	-00	03	OF 04

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

Analysis of Event

The condition is not consistent with the requirements of 10 CFR 50, Appendix R, and as such, is not consistent with our design basis. The event has been determined reportable per 10 CFR 50.73, (a)(2)(ii)(B). Appendix R requires that adequate instrumentation be available to ensure safe shutdown in the case of a single fire. If a fire at one of the LSI panels had led to the loss of power to all of one Unit's LSI panels, Wide Range T-Hot and T-Cold indications would have been lost (both local and control room). According to IE Information Notice 84-09, these process variables are required for safe shutdown. However, sufficient information would have been available to the operator for achieving safe shutdown in the use of the in-core thermocouple indications and/or the use of main steam pressure and saturation temperature curves.

If power was lost to all LSI panels due to a fire at any LSI panel location, all indications on all LSI panels would be lost. However, with the exception of Wide Range T-Hot and T-Cold, all of the process variables indicated locally at the LSI panels would not be required locally due to their availability in the control room and the fact that a fire at any LSI panel location would not require remote shutdown.

Therefore, for the reasons detailed above, it has been concluded that the condition reported in this LER represents neither a significant risk to public health and safety, nor a significant degradation of our Appendix R safe shutdown capability.

Corrective Actions

Roving fire watches were assigned to tour the affected areas on December 22, 1987 (LSI panel locations within both units). The roving fire watches were upgraded to continuous fire watches on December 24, 1987. These steps were taken to serve as an interim compensatory action until the necessary design changes could be implemented.

For Unit 2, design changes were implemented December 30, 1987 that removed the improperly located fuses and installed replacements to remedy the inadequacy. For Unit 1, fuses were installed on December 29, 1987. The existing configuration now provides the electrical isolation necessary in the event of a fire. We believe that this condition is an isolated event. Although consideration

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  D.C. Cook Nuclear Plant - Unit 1	DOCKET NUMBER (2)  0 5 0 0 0 3 1 5	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 7	0 2 3	0 0	0 4	OF 0 4

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

Corrective Actions Continued

of 10 CFR 50, Appendix R electrical isolation criteria in the engineering and design process is required, additional emphasis will be placed on these electrical isolation requirements. The appropriate engineering procedures, dealing with Appendix R design details, have been prefaced (via a letter) to include this electrical isolation concern. The letter was reviewed during a monthly training session (01/21/88) attended by electrical engineering personnel.

Failed Component Identification

None

Previous Similar Events

None

Indiana Michigan  
Power Company  
Cook Nuclear Plant  
P.O. Box 458  
Bridgman, MI 49106  
616 465 5901



January 21, 1988

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 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 Reporting System, the following  
report is being submitted:

87-023-00

Sincerely,

  
W. G. Smith, Jr.  
Plant Manager

WGS:afh

Attachment

cc: J. E. Dolan  
A. B. Davis, Region III  
M. P. Alexich  
R. F. Kroeger  
H. B. Brugger  
R. W. Jurgensen  
NRC Resident Inspector  
D. L. Wigginton, NRC  
R. C. Callen  
G. Charnoff, Esq.  
Dottie Sherman, ANI Library  
D. Hahn  
INPO  
PNSRC  
A. A. Blind  
P. A. Barrett/P. Lauzau

IE22  
11