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ACCESSION NBR:9308200131 DOC.DATE: 93/08/13 NOTARIZED: NO DOCKET #
 FACIL:50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana M 05000315
 AUTH.NAME AUTHOR AFFILIATION
 BREWER,S.J. Indiana Michigan Power Co.
 BLIND,A.A. Indiana Michigan Power Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 93-010-01:on 900824, routing of cable for Units 1 & 2 not
 in compliance w/10CFR50, App R. Initiat plant modifications
 for cable compliance. Rev corrects error in identified
 control room instrumentation during fire.W/930813 ltr.

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August 13, 1993

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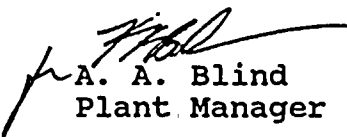
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Docket No. 50-315

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:

90-010-01

Sincerely,


A. A. Blind
Plant Manager

/sb

Attachment

c: J. B. Martin, Region III
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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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 5		
TITLE (4) 10CFR50 Appendix R Deficiencies Resulting in Potential Loss of Local Shutdown Indication Panel Function																	
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)				
									D. C. Cook - Unit 2				0 5 0 0 0 3 1 6				
0 8	2 4	9 0	9 0	0 1 0	0 1	0 8	1 3	9 3					0 5 0 0 0				
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)															
1		20.402(b)				20.406(c)				50.73(a)(2)(iv)				73.71(b)			
POWER LEVEL (10)		20.406(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)			
1 0 0		20.406(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)			
		20.406(a)(1)(iii)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(A)							
		20.406(a)(1)(iv)				50.73(a)(2)(iii)				50.73(a)(2)(viii)(B)							
		20.406(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)							
LICENSEE CONTACT FOR THIS LER (12)																	
NAME S. J. Brewer - Nuclear Safety, Licensing and Assessment, Manager										TELEPHONE NUMBER							
										AREA CODE 6 1 4							
										2 2 3 - 2 0 2 0							
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																	
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS							
SUPPLEMENTAL REPORT EXPECTED (14)																	
YES (If yes, complete EXPECTED SUBMISSION DATE)										X NO			EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR

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

The purpose of the revision is to correct an error in the identified control room instrumentation available during a fire in Unit 2 fire area 29. The revision also is in response to a commitment in LER 50-316 #93-005 dated 5/20/93. The commitment in LER 50-316 #93-005 was to revise this LER upon re-evaluation of the Appendix R compliance strategy for the subject fire areas.

On August 24, 1990, with Unit 1 operating at 100 percent power and Unit 2 in Mode Six, it was discovered that the routing of cable associated with the Unit 1 Local Shutdown Indication (LSI) panels was not in compliance with 10CFR50 Appendix R. On September 6, 1990, it was subsequently discovered that a similar condition existed for the Unit 2 LSI panels.

The immediate corrective action taken was initiation of plant modifications to bring the subject plant cabling into compliance with 10CFR50 Appendix R.

All identified areas are provided with adequate fire detection and suppression to substantially mitigate the impact of a fire on normal and LSI instrumentation. Therefore, this event did not adversely impact the health and safety of the public.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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			
		9 0	0 1 0	0 1	0 2	OF	0 5

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

Conditions Prior to Occurrence

Unit 1 in Mode 1 at 100 percent Rated Thermal Power
Unit 2 in Mode 6.

Description of Event

On August 24, 1990, it was discovered that the routing of cables associated with the Unit 1 Local Shutdown Indication (LSI) panels was not in compliance with 10CFR50 Appendix R requirements. A postulated fire in any of three Unit 1 fire areas could have resulted in an inability to maintain power to the LSI panels. The following describes the analysis performed.

Unit 1 Fire Areas 40 (Zone 41), 48 (Zone 55), and 49 (Zone 56).

The area analyses performed identified that a fire in any one of these fire areas could have eliminated both the Unit 1 and Unit 2 power to the Local Shutdown Indication (LSI) panels. The discrepant cable in question was cable 1-29685G (EIIS/ED-CBL3) which runs between panels 1-LSI-6 and 1-LSI-6X. A fault of this cable due to a fire would have eliminated the Unit 2 Alternate feed to the Unit 1 LSI panels. The Unit 1 normal power feed to the LSI panels was already assumed lost for a fire in any of these areas because various cables associated with the availability of MCC 1-ABC-B would have been lost.

On September 6, 1990, it was subsequently discovered that a similar condition existed for the Unit 2 LSI panels. A postulated fire in one of the Unit 2 fire areas could have resulted in an inability to maintain power to the LSI panels. The following describes the analysis performed.

Unit 2 Fire Area 29 (Zones 24, 25)

The area analyses performed identified that a fire in Fire Zone 24 would have faulted both the Unit 1 and Unit 2 power to the LSI panels. The discrepant power source to the Unit 2 LSI panels runs in Fire Zone 24 which also contains the Unit 2 normal source cable 2-12467 (EIIS/ED-CBL3). Although 2-12467 also runs in Zone 25, 1-1936R does not. Fire Zones 24 and 25 are separated by a three-hour fire-rated wall.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

D. C. Cook Nuclear Plant - Unit 1

DOCKET NUMBER (2)

0 5 0 0 0 3 1 5

LER NUMBER (8)

YEAR SEQUENTIAL NUMBER REVISION NUMBER

9 0 - 0 1 0 - 0 1

PAGE (3)

0 3 OF 0 5

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

Cause of Event

The condition was the result of insufficient scoping for 10CFR50 Appendix R design changes. Insufficient controls were in place to ensure that new cables added to the plant complied with 10CFR50 Appendix R requirements.

Analysis of Event

This event is being reported in accordance with 10CFR50.73 (a)(2)(ii)(B) and 10CFR50.73 (a)(2)(ii)(C) in that the condition was outside the design basis and not covered by the plant's operating and emergency procedures respectively.

Unit 1 Fire Areas 40, 48 and 49 Analysis

a. Fire Area 40:

Our Safe Shutdown System Analysis (SSSA) shows that for a fire in Area 40 control room indications equivalent to those found on the LSI cabinet would be lost. Due to cable misrouting, the LSI panel indications would also have been lost.

Further investigation revealed the reason that the control room indication would have been lost is because one of the alternate sources to the CRID panels, the isolimeters, is located in this area. What the SSSA does not show is that the preferred source to the CRID panels would have been available. The inverters are located in Fire Area 41 (Fire Zone 42C). Therefore, normal control room indication of process monitoring would have been available for fire in Area 40.

b. Fire Areas 48 and 49:

Under conservative assumptions of loss of function for an area fire, the SSSA shows that for a fire in Areas 48 and 49 both the control room and the LSI panel indications would have been lost. However, Fire Areas 48 and 49 are provided with adequate suppression and detection to substantially mitigate the impact on normal and LSI instrumentation.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-830), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

D. C. Cook Nuclear Plant - Unit 1

DOCKET NUMBER (2)

0 5 0 0 0 3 1 5

LER NUMBER (6)

YEAR SEQUENTIAL NUMBER REVISION NUMBER

9 0 - 0 1 0 - 0 1

PAGE (3)

0 4 OF 0 5

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

Analysis of Event

Unit 2 Fire Area 29 (Zones 24 and 25) Analysis:

Although power to the LSI panels would be lost for a fire in zone 24, necessary control room indication would still have been available with the exception of RCS temperature (RCS cold leg temperature could have been derived indirectly from the available steam generator pressure instrumentation. According to our Safe Shutdown Systems Analysis, a fire in Fire Area 29 (Zones 24 and 25) would not have eliminated process monitoring indication in the control room for steam generators 1 and 4. The following indication would have been available in the Unit 2 control room:

2-BLP-112	SG 1 Water Level (normal range)
2-BLP-142	SG 4 Water Level (normal range)
2-MPP-210	SG 1 Pressure
2-MPP-240	SG 4 Pressure
2-M31	Source Range Monitoring Channel 1
2-NLP-151 or 2-NLP-153	Pressurizer Water Level
2-NPS-121	RCS Pressure (wide range)*

- * Subsequent investigation indicates that 2-NPS-121 would not have been available since the cable for 2-NPS-121 was unprotected and is also routed through zone 24. Loss of 2-NPS-121 during a potential fire in zone 24 could have been compensated for through the use of a contingency procedure within the emergency operating procedures. This procedure provided for the use of test instruments connected to the RVLIS cabinet in the control room to read RCS pressure. Control room operators were trained on the use of this procedure.

These indications could provide an indirect means of determining RCS temperature. This area is provided with adequate detection and suppression to substantially mitigate the impact on normal and LSI instrumentation.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	- 0 1 0	- 0 1	0 5	OF	0 5

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Conclusion

In conclusion, the condition did not adversely impact the health and safety of the public due to the fact that Areas 40, 48 and 49 of Unit 1 and Area 29 of Unit 2 and provided with suppression and detection to substantially mitigate the impact on normal and LSI instrumentation. Also, a large portion of the station's normal instrumentation would remain functional since fires propagate at a finite rather than causing an instantaneous loss of function for an entire area.

Corrective ActionsUnit One

A plant Temporary Modification was initiated which installed a 1 ampere fuse in 1-LSI-6 on the load side of the 1-29685G cable. This way a fire in the fire areas of concern would not eliminate the ability of providing Unit 2 power to the LSI panels.

Unit Two

A plant Minor Modification was initiated to provide a one-hour fire enclosure (wrapped) around Conduit 2-12467 that exists in Fire Zone 24. Conduit 2-12467 was in 10CFR50 Appendix R compliance on 9/20/90. Subsequent investigation has revealed that when modifications 2900-B.04 (October 5, 1990) and 12-3053 (December 19, 1990) were completed/installed the subject cable no longer needed to be wrapped because zone 24 could now be categorized as meeting Appendix R III.G.1 criteria due to the installation of additional instrumentation. In addition, there is suppression and detection in the area.

General

Our program for ensuring continued 10CFR50 Appendix R compliance will be revised. It is anticipated that this revision will be in place by March 1, 1991.

Failed Component Identification

None

Previous Similar Events

050-315/90-008: 10CFR50 Appendix R deficiencies resulting in potential loss of auto-start of service water pumps due to incorrect implementation of design change.