

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

SESSION NBR: 9010160022 DOC. DATE: 90/09/21 NOTARIZED: NO DOCKET #  
 FACIL: 50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315  
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 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-010-00: on 900824, 10CFR50 App R deficiencies due to  
 potential loss of local shutdown indication panel function.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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INTERNAL:	ACNW		2	2		AEOD/DOA		1	1
	AEOD/DSP/TPAB		1	1		AEOD/ROAB/DSP		2	2
	NRR/DET/ECMB 9H		1	1		NRR/DET/EMEB 7E		1	1
	NRR/DLPQ/LHFB11		1	1		NRR/DLPQ/LPEB10		1	1
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	NRR/DST/SELB 8D		1	1		NRR/DST/SICB 7E		1	1
	NRR/DST/SPLB8D1		1	1		NRR/DST/SRXB 8E		1	1
	REG FILE 02		1	1		RES/DSIR/EIB		1	1
	RGN3 FILE 01		1	1					
EXTERNAL:	EG&G BRYCE, J.H		3	3		L ST LOBBY WARD		1	1
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September 21, 1990

United States Nuclear Regulatory Commission  
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Rockville, Maryland 20852

Operating Licenses 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:

90-010-00

Sincerely,

*A. Alan Blind*

A.A. Blind  
Plant Manager

AAB:clj

Attachment

cc: D.H. Williams, Jr.  
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EXPIRES: 4/30/92

## 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)														
0	8	2	4	9	0	9	0	0	1	0	0	0	9	2	1	9	0	D.C. Cook, Unit 2						0 5 0 0 0 3 1 6					
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																										
POWER LEVEL (10)			20.402(b)					20.405(c)					50.73(a)(2)(iv)					73.71(b)											
1			20.405(a)(1)(i)					50.38(c)(1)					50.73(a)(2)(v)					73.71(c)											
1			20.405(a)(1)(ii)					50.38(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)(ii)					50.73(a)(2)(viii)(A)																
			20.405(a)(1)(iv)					X 50.73(a)(2)(iii)					50.73(a)(2)(viii)(B)																
			20.405(a)(1)(v)					50.73(a)(2)(iii)					50.73(a)(2)(x)																
LICENSEE CONTACT FOR THIS LER (12)																													
NAME										TELEPHONE NUMBER																			
S.J. Brewer, Nuclear Safety and Licensing Section Manager										AREA CODE		6 1 4 2 2 3 1 - 2 0 2 0																	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																													
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC																			
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 August 24, 1990 with Unit One operating at 100 percent power and Unit Two in Mode Six, it was discovered that the routing of cable associated with the Unit One 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 Two 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, the event should not have presented a significant hazard to the public health and safety.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 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	LER NUMBER (8)			PAGE (3)		
		YEAR 9   0	SEQUENTIAL NUMBER 0   1   0	REVISION NUMBER 0   0	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 One Local Shutdown Indication (LSI) panels was not in compliance with 10CFR50 Appendix R requirements. A postulated fire in any of three Unit One 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 Two LSI panels. A postulated fire in one of the Unit Two 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 cable in question was cable 1-1936R (EIIS/ED-CBL3). This Unit 1 alternate 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: 600 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)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
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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

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FACILITY NAME (1)  D.C. Cook Nuclear Plant, Unit 1	DOCKET NUMBER (2)  0   5   0   0   0   3   1   5	LER NUMBER (8)			PAGE (3)		
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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:

According to our Safe Shutdown Systems Analysis, a fire in area 29 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-N31	Source Range Monitoring Channel 1
2-NLP-151 or 2-NLP-153	Pressurizer Water Level
2-NPS-121	RCS Pressure (wide range)

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

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 are provided with suppression and detection to substantially mitigate the impact on normal and ISI instrumentation. Also, a large portion of the station normal instrumentation would remain functional since fires propagate at a finite rate rather than causing an instantaneous loss of function for an entire area.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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9 0	— 0 1 0	— 0 0

D.C. Cook Nuclear Plant, Unit 1

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

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 around the conduit 2-12467 that exists in fire zone 24. There is suppression and detection in the area. Conduit 2-12467 was in 10CFR50 Appendix R compliance on 9/20/90.

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.

