

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8901190248 DOC.DATE: 89/01/12 NOTARIZED: NO DOCKET #  
 FACIL:50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315  
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SUBJECT: LER 88-014-00:on 880915,design deficiency results in failure  
 to relocate control cables & violation of Appendix R.  
 W/8 ltr.

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

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	ARM/DCTS/DAB	1 1	DEDRO	1 1
	NRR/DEST/ADE 8H	1 1	NRR/DEST/ADS 7E	1 0
	NRR/DEST/CEB 8H	1 1	NRR/DEST/ESB 8D	1 1
	NRR/DEST/ICSB 7	1 1	NRR/DEST/MEB 9H	1 1
	NRR/DEST/MTB 9H	1 1	NRR/DEST/PSB 8D	1 1
	NRR/DEST/RSB 8E	1 1	NRR/DEST/SGB 8D	1 1
	NRR/DLPQ/HFB 10	1 1	NRR/DLPQ/QAB 10	1 1
	NRR/DOEA/EAB 11	1 1	NRR/DREP/RAB 10	1 1
	NRR/DREP/RPB 10	2 2	NRR/DRIS/SIB 9A	1 1
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EXTERNAL:	EG&G WILLIAMS,S	4 4	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		

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## 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) Design Deficiency Results in Failure to Relocate Control Cables and Violation of Appendix R Requirements																																																	
EVENT DATE (5) MONTH DAY YEAR 0 9 1 5 8 8										LER NUMBER (6) YEAR SEQUENTIAL NUMBER REVISION NUMBER 8 8 0 1 4 0 0										REPORT DATE (7) MONTH DAY YEAR 0 1 1 2 8 9										OTHER FACILITIES INVOLVED (8) FACILITY NAMES DOCKET NUMBER(S) D.C. Cook - Unit 2 0 5 0 0 0 3 1 6																			
OPERATING MODE (9) POWER LEVEL (10) 0 9 1 0										THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																																							
										20.402(b)										20.405(c)										50.73(a)(2)(iv)										73.71(b)									
										20.405(a)(1)(i)										50.38(c)(1)										50.73(a)(2)(v)										73.71(c)									
										20.405(a)(1)(ii)										50.38(c)(2)										50.73(a)(2)(vi)										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)(vii)(A)																			
										20.405(a)(1)(iv)										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 R.F. Kroeger Group Manager, Electrical Systems																				TELEPHONE NUMBER AREA CODE 6 1 4 2 2 3 - 1 9 2 0																													
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																																	
CAUSE SYSTEM COMPONENT MANUFACTURER REPORTABLE TO NRCDS															CAUSE SYSTEM COMPONENT MANUFACTURER REPORTABLE TO NRCDS																																		
SUPPLEMENTAL REPORT EXPECTED (14)																				EXPECTED SUBMISSION DATE (15)										MONTH DAY YEAR																			
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)																				<input checked="" type="checkbox"/> NO																													

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

On 9/15/88, while conducting an Appendix R review of various motor control centers, it was discovered that two cables, intended to be re-routed as a result of our original Appendix R design changes (Engineering completed in February of 1985), were not re-routed out of the fire zone of concern as intended. This event was determined to be reportable per 10 CFR 50.73 on 12/13/88 following review of the event investigation and verification of Appendix R impact.

The Appendix R review revealed that although the controls were relocated out of their respective opposite unit control rooms, two of the associated cables were not relocated out of the opposite unit control room cable vaults. One cable associated with the Unit 2 West Essential Service Water (ESW) pump discharge valve is still routed in the Unit 1 cable vault and another cable associated with the Unit 1 East ESW pump discharge valve is still routed in the Unit 2 cable vault.

This event occurred as a result of a design deficiency. A review of the design changes in question has been completed, no additional cable routing problems were identified. The routing of the 2 ESW cables will be corrected by: Unit 1 - the conclusion of the upcoming refueling outage (tentatively scheduled for 6/16/89), and; Unit 2 - 2/28/89. No specific compensatory action has been deemed necessary; existing administrative requirements for control room cable vault fire detection and suppression capability ensure adequate protection.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED QMS NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
D.C. Cook Nuclear Plant - Unit 1	105000315	88	014	00	02	OF	04

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

Conditions Prior to Occurrence

Unit One was operating at the administrative power limit of 90 percent reactor thermal power.

Unit Two was in Mode 6 (Refueling). No fuel in the reactor vessel, no fuel being moved, no requirement for containment integrity, and the containment equipment hatch removed.

Description of Event

On 9/15/88, while conducting an Appendix R review of various motor control centers, it was discovered that two cables (EIIS/BE-CBL4), intended to be re-routed as a result of our original Appendix R design changes, were not re-routed out of the fire zone of concern as intended. This event was determined to be reportable per 10 CFR 50.73 on 12/13/88 following review of the event investigation and verification of Appendix R impact.

Design changes (RFCs) 01-2668 and 01-2669 relocated Unit 1 Essential Service Water (ESW) pump controls (EIIS/BI-JC) out of the Unit 2 control room (EIIS/NA) and placed them on the Unit 1 Hot Shutdown (HSD) Panel (EIIS/NA-PL). RFCs 02-2685 and 02-2686 relocated Unit 2 ESW pump controls out of the Unit 1 control room and placed them on the Unit 2 HSD Panel. The engineering for these RFCs was completed in February of 1985. This was done in order to unitize the controls so that a fire in one units' control room or control room cable vault (EIIS/NA) would not have the potential to eliminate remote control of all four ESW pumps (EIIS/BI-PP). Our Appendix R Analysis presently shows that for a fire in either units' control room or control room cable vault, two of four ESW pumps and the ability to properly align their flow is free from fire damage as required for Safe Shutdown (SSD).

The 9/15/88 Appendix R review revealed that although the controls were relocated out of their respective opposite unit control rooms, two of the associated cables were not relocated out of the opposite unit control room cable vaults. One cable associated with the Unit 2 West ESW pump discharge valve is still routed in the Unit 1 cable vault and another cable associated with the Unit 1 East ESW pump discharge valve is still routed in the Unit 2 cable vault.

Our verification of this condition reveals that because of this routing, we have the potential for losing flow from three of four ESW pumps due to a fire in either units' control room cable vaults where credit is taken for two of the four ESW pumps being available for a fire in either of these areas.

There were no inoperative structures, components or systems that contributed to this event.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

TEXT (If more space is required, use additional NRC Form 368A's) (17)

Cause of Event

This event occurred as a result of a design deficiency. In this case, Engineering did not adequately communicate the entire scope of the changes to the Design Group. The objective of relocating the controls overshadowed the objective of providing inter-unit separation of both controls and cabling in order to protect against vulnerabilities in the fire-event.

Analysis of Event

This condition has been determined to be reportable per 10 CFR 50.73 a 2 ii B (a condition that was outside the design basis of the plant).

As a result of this condition, the potential for loss of 3 of the 4 ESW pumps exists in the case of a fire in either of the unit's control room cable vaults. This would be caused by the fire-induced closure of one of the opposite unit's ESW pump discharge valves. Our "Safe Shutdown Capability Assessment (SSCA)" report (Appendix R report) takes credit for 2 of the 4 ESW pumps in the alternative shutdown scenario.

One ESW pump's flow would be sufficient and the alignment would exist to cool all equipment required on the unaffected unit for some time. However, without isolation of flow to the fire-affected unit and isolation of non-essential ESW and CCW loads on the unaffected unit, unacceptably high ESW system temperatures would be expected. Our EOP for Emergency Remote Shutdown (1, 2-OHP 4023.001.001, Revision 8) does not provide instructions for such "load Stripping." We do believe, however, that such a situation would be recognized, due to the resulting alarms, and properly mitigated.

In a restoration attachment to the above referenced procedure, the operator is instructed to ensure proper alignment of the ESW pump discharge valves. If they cannot be positively verified open, then appropriate local operator actions are specified. This would occur prior to the alignment of the RHR system on the fire-affected unit.

Corrective Action

A review of the design changes in question has been completed, no additional cable routing problems were identified. The routing of the 2 ESW cables will be corrected by: Unit 1 - the conclusion of the upcoming refueling outage (tentatively scheduled for 6/16/89), and; Unit 2 - 2/28/89. No specific compensatory action has been deemed necessary, existing administrative requirements for control room cable vault fire detection and suppression capability ensure adequate protection.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
D.C. Cook Nuclear Plant - Unit 1	05000315	88	014	00	04	OF	04

TEXT (If more space is required, use additional NRC Form 368A's) (17)

Corrective Action cont.

This problem is not expected to recur due to the current Appendix R design change verification process. To ensure Appendix R compliance is maintained, we have enhanced procedures involving communication between Engineering and Design (implemented 8/28/86).

Failed Component Identification

None

Previous Similar Events

LERs 50-315/87-20  
50-315/87-23  
50-315/87-24

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



January 12, 1989

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:

88-014-00

Sincerely,

W. G. Smith, Jr.  
Plant Manager

WGS:clw

Attachment

cc: D. H. Williams, Jr.  
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Handwritten initials 'TEP' and a vertical line.