



Nebraska Public Power District

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CNSS948392

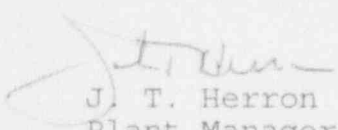
November 17, 1994

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

Cooper Nuclear Station Licensee Event Report 94-016, Revision 1, is forwarded as an attachment to this letter.

Sincerely,


J. T. Herron
Plant Manager

JTH/nc

Attachment

cc: L. J. Callan
G. R. Horn
J. H. Mueller
R. G. Jones
R. A. Sessoms
K. C. Walden
INPO Records Center
NRC Resident Inspector
R. J. Singer
CNS Training
CNS Quality Assurance

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PDR ADOCK 05000298
S PDR

Powerful Pride in Nebraska

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LICENSEE EVENT REPORT (LER)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)
COOPER NUCLEAR STATIONDOCKET NUMBER (2)
05000298PAGE (3)
1 OF 4

TITLE (4) Noncompliance With 10CFR50 Appendix R, Inadequate Isolation of Diesel Generator Control Circuits

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
08	04	94	94	-- 016 --	01	11	17	94	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)		0	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(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	
			20.405(a)(1)(iii)		X 50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)	
			20.405(a)(1)(iv)		X 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)(x)			

LICENSEE CONTACT FOR THIS LER (12)

NAME
John R. Myers
TELEPHONE NUMBER (Include Area Code)
(402) 825-3811

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).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On August 4, 1994, it was determined that Diesel Generator (DG) 2 was not in compliance with Alternate Shutdown requirements. A single fuse and circuit breaker was located in a control power circuit for DG 2, the dedicated Alternate Shutdown DG. A fire affecting Control Room indication circuits could have resulted in a fuse failure or breaker trip rendering the DG unable to start. Additionally, a fire affecting cables associated with the diesel generator speed regulator control could have resulted in the control being mis-positioned prior to being disabled by a fire, resulting in the diesel generator being unable to perform its intended Alternate Shutdown function. At the time this condition was discovered, the plant was in cold shutdown and Alternate Shutdown was not required to be operable.

The cause of this condition was a narrow interpretation of the isolation requirements for the diesel generator during the implementation of Appendix R requirements, and inadequate review of subsequent regulatory guidance issued after the design was complete. A design change was implemented to provide isolation fusing of the circuit, and procedure changes are being implemented to address the potential disabling of the speed regulator. An independent verification of the Appendix R Safe Shutdown Analysis will be performed.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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			YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
COOPER NUCLEAR STATION		05000298	94	-- 016 --	01	2 OF 4

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

A. Event Description

On August 4, 1994, a review of a fire protection self assessment open item regarding the lack of redundant fusing for Diesel Generator (DG) 2 control circuitry confirmed that the starting of DG 2 for Alternate Shutdown purposes could be prevented by fire induced short circuits. A single fuse and circuit breaker in series were located in a control power circuit for DG 2, the dedicated Alternate Shutdown DG. A fire affecting Control Room indication circuits could have resulted in a fuse failure or breaker trip which would have rendered the DG unable to start. The circuit breaker, located inside the local DG control panel, was not identified in the Post Fire Shutdown procedure, and emergency lighting was not available to illuminate the panel as required by Appendix R to facilitate operator action. Appendix R requirements do not permit credit for fuse replacement for equipment required to achieve hot shutdown. Additionally, a fuse failure caused by a fire affecting different cables associated with the motor driven potentiometer in the diesel generator speed regulator control could have resulted in the control being mis-positioned prior to being disabled by a fire, resulting in the diesel generator being unable to perform its intended Alternate Shutdown function.

B. Plant Status

At the time this condition was discovered, the plant was in cold shutdown and Alternate Shutdown was not required to be operable. The deficient condition has existed since the Alternate Shutdown panel was declared operational in July, 1987.

C. Basis for Report

This condition was determined to be reportable per the requirements of 10CFR50.73(a)(2)(i), a condition prohibited by Technical Specifications, and 10CFR50.73(a)(2)(ii), a condition outside the design basis.

D. Cause

The Appendix R requirements were narrowly interpreted, resulting in identifying redundant fusing as a requirement for the Alternate Shutdown room, but requiring only isolation switches for the diesel generator circuitry. This interpretation was based on an inappropriate translation of the generic examples and broadly based guidance provided in the regulatory documents, and the related design changes were based on these interpretations. Prior to the completion of the modifications, NRC Information Notice 85-09 was issued, which discussed and explained the Appendix R requirement of redundant fusing for the diesel generator. The review of this information notice was deficient in that inadequate fusing of these circuits was not identified.

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

E. Safety Implications

The Alternate Shutdown capability is provided to mitigate the effects of a special event (i.e., fire), thus this deficiency does not adversely affect the ability of the DG or the Electrical Distribution System to meet their Design Basis Accident requirements. In the event of a fire, DG 2 could potentially have been rendered inoperable due to a fuse failure or breaker trip resulting from a short circuit in the Control Room indication circuits, or from a fire affecting the diesel generator speed regulator control. Based on the assumption that the redundant systems are rendered inoperable because they are not protected from the effects of a fire in the alternate shutdown areas and repair procedures were not in place to address circuit malfunctions, the ability to reach a safe shutdown condition could have been jeopardized.

Stringent controls are placed on combustible materials and ignition sources. Fire detection and suppression for the areas of concern is provided as listed below:

<u>Fire Area/Zone</u> <u>Description</u>	<u>Fire Detection</u>	<u>Fire Suppression</u>
Auxiliary Relay Room	Smoke	Manual
Cable Spreading Room	Smoke & Heat Activated	Pre-action Sprinkler

The fire detection and associated automatic fire suppression system along with the manual fire fighting capability available in these areas is designed to prevent the fire damage thresholds required to cause cable damage.

F. Safety Significance

The effect of a fire is most significant to Alternate Shutdown capability during power operation. With the plant shutdown, Alternate Shutdown is not required to be operable.

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

G. Corrective Action

A design change was implemented to provide isolation fusing of the indication circuits from the control power. Procedures are being revised to ensure the speed regulator control is positioned to isolate the speed control circuit when the diesel generator is in standby, which will preclude fire induced shorts from disabling the speed control logic.

A review was performed of the other Alternate Shutdown instruments and control circuits to ensure redundant fusing had been provided, resulting in the discovery of the speed control circuit anomaly. The other circuits were found to be satisfactory. The present design change process is improved over that existing at the time Appendix R was issued, and personnel have been assigned specific responsibility in regard to the Appendix R program. An independent verification of the Appendix R Safe Shutdown Analysis will be performed. Additionally, a controlled program document for the Appendix R program will be established to ensure that applicable industry experience is maintained readily available to personnel involved with the Appendix R program.

A wide range of management initiatives are underway to improve safety culture. As identified in previous correspondence, a review of past industry operating experience has been conducted, to ensure that significant issues have been adequately addressed.

H. Similar Events

LER 92-016, Noncompliance with 10CFR50 Appendix R, Inadequate Isolation of Diesel Generator 2 Differential Protection Relaying, discusses a similar problem related to differential protection relaying. This LER was associated with the failure to protect cables from a fire in accordance with design requirements. Since the design was appropriate, corrective actions to investigate the adequacy of the design were not appropriate.