

Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402) 825-3811

NLS950056

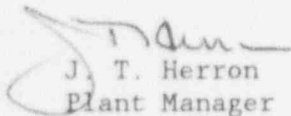
February 8, 1995

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

Dear Sir:

Cooper Nuclear Station Licensee Event Report 94-034, Supplement 1 is forwarded as an attachment to this letter.

Sincerely,


J. T. Herron
Plant Manager

/rkg

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
R. L. Koch

110035

9502150340 950208
PDR ADOCK 05000298
S PDR

JE22

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 INFOR-
MATION 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 STATION DOCKET NUMBER (2) 05000298 PAGE (3) 1 OF 4

TITLE (4) Emergency Lighting System cannot be assured of meeting 8 hour operation
requirement due to design and maintenance deficiencies.

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
11	12	94	94	--034--	01	02	08	95	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)		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)		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 Gautam Sen Senior Staff Engineer, Nuclear
Licensing and Safety 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
E	FH	LF	E356	N	E	FH	BYC	E356	N
E	FH	BTRY	E356	N					

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 15 single-spaced typewritten lines) (16)

On November 12, 1994, after an investigation into the maintenance of 10CFR50, Appendix R Emergency Lighting, the Nebraska Public Power District (District) determined that the Emergency Lighting, as designed and maintained, would not fully satisfy design requirements. Specifically, the investigation revealed potential problems with lamps due to the existing maintenance program not addressing their rated life time, batteries due to inadequate analysis of temperature effects on battery performance and life, and battery chargers due to the use of non, or improperly, temperature-compensated control boards that would adversely affect battery life.

The cause of this event is attributable to a Management\Quality Assurance Deficiency (NUREG-1022, Cause Code E) due to past inadequacies in administrative controls on design practices and preventive maintenance practices.

Corrective action consists of replacement of Emergency Lighting batteries, lamps, and battery charger circuit boards where required and initiating appropriate preventive maintenance for Emergency Lighting. In addition, the design basis of the Emergency Lighting system will be reconstituted and testing will be verified to provide reasonable assurance of system operability.

This supplement is being submitted to provide additional information about inadequate lighting found during corrective actions taken as described in Revision 0.

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 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)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
COOPER NUCLEAR STATION	05000298	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		94	-- 034 --	01	

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

Plant Status

On November 12, 1994 when this condition was discovered, the plant was in cold shutdown at approximately 110 degrees Fahrenheit with the Residual Heat Removal system providing shutdown cooling.

The plant has been in cold shutdown for the duration of this event.

Event Description

On November 12, 1994, after an investigation into the maintenance of 10 CFR 50, Appendix R Emergency Lighting (EIIS: FH), the District determined that the Emergency Lighting, as designed and maintained, would not fully satisfy design requirements. This position was based on the following conditions discovered during this investigation:

- 1) There are numerous recorded failures of either the lamps (EIIS: LF), which are tested each month, or the batteries (EIIS: BTRY), which are tested every 18 months.
- 2) The lamp manufacturer specifies a 50 hour life but there are no preventive maintenance procedures to ensure that the lamps have at least 8 hours of life remaining subsequent to test completion.
- 3) The battery manufacturer specifies a 15 year life at 77 degrees Fahrenheit and changes in temperature can degrade battery performance and life but no evaluation for temperature effects had been performed.
- 4) The existing trickle chargers (EIIS: BYC) would be under/over charging the batteries due to non, or improperly, temperature-compensated circuit boards thereby shortening the battery life.

The investigation determined that the present Emergency Lighting maintenance program fails to provide assurance that the system meets Appendix R design requirements for emergency lighting.

During the performance of corrective actions described in Revision 0 of this LER the design basis of the 10CFR50 Appendix R emergency battery lighting was investigated. A special test procedure was subsequently performed to ensure that all operator actions required for safe shutdown were verified to have proper lighting. The results of this test indicated that there were locations where emergency battery lighting units were not installed or appropriately designated for manual operator actions or access/egress routes.

The results of the special test indicated that emergency lights need to be added in 14 areas and 21 existing "Life Safety" lights need to be upgraded to 8 hour lights in order for CNS to be in compliance with Appendix R.

Safety Significance

The Emergency Lighting conditions described above had a potential safety significance since multiple failures could prevent the ability of plant personnel to safely shutdown the reactor in the event of a fire. However, portable lighting (flashlights) and Life Safety Code emergency lights would have been used to compensate for the installed Appendix R Emergency Lighting deficiencies.

* 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 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)		DOCKET NUMBER (2)		LER NUMBER (6)			PAGE (3)
COOPER NUCLEAR STATION		05000298		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
				94	-- 034 --	01	

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

Cause

The cause of this event is attributable to a Management\Quality Assurance Deficiency due to past inadequacies in administrative controls on design practices and preventive maintenance practices. This was evident in the lack of details on the content of station modifications that existed at the time of the initial Appendix R upgrades.

The emergency battery lighting installation deficiencies are attributable to the same root cause as above due to a lack of Fire Protection Program Management.

Corrective Action

Since the issuance of LER 94-034, Revision 0, the following corrective actions have been completed with respect to the Emergency Lighting System:

- 1) Operators shall carry flashlights while on rounds. This is to be maintained until the system has been fully upgraded.
- 2) Batteries, lamps, and charger circuit cards have been replaced where required. This includes determining the manufacturer's recommended life times to ensure components in the Emergency Lighting system can be considered operable.
- 3) Changes to the preventive maintenance procedures for the Emergency Lighting system have been initiated to ensure that the manufacturer's recommended life times are not exceeded and that good industry practices for Emergency Lighting maintenance have been incorporated.
- 4) The design basis criteria for the Emergency Lighting system have been reconstructed.
- 5) The need to consider Preventive Maintenance (PM) requirements in station modifications has been discussed with corporate (Nuclear Engineering Department) and site engineers. This included validation of existing PMs of components to be installed/replaced are identical or similar to existing components.
- 6) A fire protection engineering evaluation has been performed to address fire protection impact and plant safety significance of reliance on portable flashlights.
- 7) A Design Change to install new Appendix R light in plant areas identified in Special Test Procedure (STP) 94-075 has been completed.

* * 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 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)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
COOPER NUCLEAR STATION	05000298	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
		94	-- 034 --	01	

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

Corrective Action (cont'd)

In order to correct the existing condition of the emergency lighting installation deficiencies, the following corrective actions have to be taken:

1. Surveillance procedures 6.3.13.2, 6.3.13.2.1 and 6.3.13.2.2. will be revised to incorporate re-designated Appendix R and "Life Safety" Emergency Battery Lightings (EBLs) into the correct surveillance based on the results of STP 94-075. This action will be completed on or before April 1, 1995.
2. An evaluation will be performed on or before May 1, 1995 and Appendix R emergency lighting will be installed if required in areas where Multiple High Impedance Faults (MHIF) require safe shutdown power supply breaker operation.

For emergency lighting installation deficiencies, the following actions will be taken to prevent recurrence:

1. The fire protection and Appendix R elements which require update will be defined and clearly assigned responsibilities in Procedure 0.23 to ensure updates are performed for these program elements including emergency lighting. This action will be completed on or before April 1, 1995.
2. The revised emergency lighting design basis information including light Component Identification Code (CIC), plant location and safe shutdown procedure steps (Appendix R function) will be incorporated into Fire Hazard Analysis on or before June 1, 1995.

Similar Events

None.

Correspondence No: NLS950056

The following table identifies those actions committed to by the District in this document. Any other actions discussed in the submittal represent intended or planned actions by the District. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
1. Surveillance procedures 6.3.13.2, 6.3.13.2.1 and 6.3.13.2.2. will be revised to incorporate re-designated Appendix R and "Life Safety" Emergency Battery Lightings (EBLs) into the correct surveillance based on the results of STP 94-075.	April 1, 1995
2. An evaluation will be performed on or before May 1, 1995 and Appendix R emergency lighting will be installed if required in areas where Multiple High Impedance Faults (MHIF) require safe shutdown power supply breaker operation.	May 1, 1995 (Evaluation Only)
3. The fire protection and Appendix R elements which require update will be defined and clearly assigned responsibilities in Procedure 0.23 to ensure updates are performed for these program elements including emergency lighting.	April 1, 1995
4. The revised emergency lighting design basis information including light Component Identification Code (CIC), plant location and safe shutdown procedure steps (Appendix R function) will be incorporated into Fire Hazard Analysis.	June 1, 1995