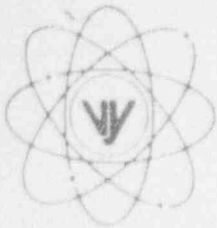


VERMONT YANKEE NUCLEAR POWER CORPORATION



P.O. Box 157, Governor Hunt Road
Vernon, Vermont 05354-0157
(802) 257-7711

November 3, 1994
BVY 94-107

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

REFERENCE: Operating License DPR-28
Docket No. 50-271
Reportable Occurrence No. LER 94-11

Dear Sirs:

As defined by 10 CFR 50.73, we are reporting the attached Reportable Occurrence as LER 94-11.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Robert J. Wanczyk
Robert J. Wanczyk
Plant Manager

cc: Regional Administrator
USNRC
Region I
475 Allendale Road
King of Prussia, PA 19406

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NRC Form 366 U.S. NUCLEAR REGULATORY COMMISSION (6-89)										APPROVED OMS NO. 3150-0104 EXPIRES 4/30/92 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-350), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20603.																																							
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TITLE (4) FAILURE TO PROPERLY IDENTIFY ALL AREAS REQUIRING EMERGENCY LIGHTING UNITS IN ACCORDANCE WITH 10 CFR 50 APPENDIX R, SECTION III.J																																																	
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ABSTRACT (Limit to 1400 spaces, i.e., approx. fifteen single-space typewritten lines) (16)

On October 4, 1994 Vermont Yankee identified that emergency lighting units were not provided in all areas needed for operation of safe shutdown equipment and in all access and egress routes thereto. The condition was discovered during an investigation resulting from a Plant Operating Review Committee (PORC) follow item which was generated during a review of the Alternate Cooling System operating procedure. The plant was in hot shutdown at the time, and compensatory actions were instituted prior to start-up of the plant. The cause of the event was failure to properly identify all areas required to be provided with Appendix R safe shutdown lighting. The focus of the evaluation of Appendix R lighting requirements had been on only those areas required to support alternate and dedicated shutdown capability (10 CFR 50 Appendix R, Section III.L). Vermont Yankee did not evaluate the Appendix R lighting requirements for all possible fire scenarios where remote manual actions were required to support shutdown from the control room.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION			
FACILITY NAME (1)	DOCKET NO (2)	LER NUMBER (6)	
		YEAR	SEQ #
			REV #
VERMONT YANKEE NUCLEAR POWER CORPORATION	05000271	94-011-00	00204

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

DESCRIPTION OF EVENT

On October 4, 1994, with the plant in hot shutdown for the performance of maintenance activity, it was concluded that Vermont Yankee (VY) was not in full compliance with 10 CFR 50 Appendix R, Section III.J, Emergency Lighting (EIS = FH). This conclusion was based on a review of design changes, licensing documents and the Vermont Yankee Safe Shutdown Capability Analysis (SSCA). The condition was discovered during an investigation resulting from a Plant Operating Review Committee (PORC) follow item which was generated during a review of the Alternate Cooling System (EIS = BI) operating procedure. The Alternate Cooling System is credited for Service Water Cooling in analysis of events, including fires, that disable equipment in the Intake Structure (EIS = MD).

Appendix R emergency lighting units were installed at Vermont Yankee primarily, but not exclusively, for response to a cable vault fire, switchgear room fire or other event which required evacuation of the control room and shutdown of the reactor using the Alternate Shutdown System. All locations required to support the Alternate Shutdown System were supplied with 8-hour Appendix R emergency lighting units, or exemptions were granted for alternate methods of meeting the regulation. It was recently identified that Vermont Yankee did not provide battery powered lighting units, nor request exemptions, in other areas requiring remote operations in support of fires that did not require control room evacuation. Most areas were associated with those fires that require use of the Alternate Cooling System.

A one hour notification was made to the NRC on October 5, 1994 per 10 CFR 50.72(b)(ii)B since the plant was not in full compliance with 10 CFR 50 Appendix R, Section III.J, which is part of the Plant's design basis.

Short term compensatory actions were instituted prior to re-start of the plant.

CAUSE OF EVENT

The root cause of the event was a cognitive human error by engineering personnel to properly define the scope of the analysis necessary to identify all areas required to be provided with Appendix R safe shutdown lighting units. Areas required to accomplish safe shutdown from outside the control room were considered. However, locations where actions are required to support shutdown from the control room were not included in the scope.

ANALYSIS OF EVENT

The events detailed in this report are significant in that they involved non-compliance with a regulatory licensing requirement. However, there were minimal safety implications because no plant equipment was affected. Original plant design incorporated wide spread use of both battery backed lighting units and diesel powered lighting units which were not considered in the safe shutdown analysis but would have been available during a loss-of-offsite power to provide supplemental lighting. Furthermore, operations personnel could have used readily available portable flashlights if necessary.

The original analysis to determine areas required to be provided with safe shutdown lighting was

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conducted under the assumption that a random loss of offsite power need not be assumed. Subsequent discussions with the NRC in 1984 revealed that this assumption was unacceptable and Vermont Yankee agreed to accept the position that a random loss of offsite power would be a basis input for the design. At the time the discussions with the NRC took place they involved only the issue of alternate and dedicated shutdown capability (10 CFR 50 Appendix R, Section III.L). Vermont Yankee subsequently reanalyzed the plant lighting for the alternate and dedicated shutdown capability based on this new design input, added Appendix R lights, and requested exemptions based on acceptability of existing lights. The same criteria, however, was not applied to the evaluation of other fire areas where remote/manual actions were required to support shutdown from the control room (ie: control room was habitable).

By 1988, all Appendix R lighting identified by the analysis and NRC inspection, had been installed. There are presently 47 battery powered 8-hour rated emergency lighting units designated for Appendix R and approximately 90 other similar battery powered 8-hour units installed, but not specifically identified for Appendix R purposes.

CORRECTIVE ACTIONS

Immediate

1. A Potentially Reportable Occurrence (PRO) was generated and the Operations Department Manager and Control Room personnel were made aware of the conditions (10/4/94).
2. Dedicated emergency lighting equipment (battery powered lanterns) were made available in strategic locations throughout the plant, and appropriate administrative controls for operability and maintenance of the lanterns were put in place as an interim compensatory measure (10/5/94).
3. A task team consisting of Engineering and Operations personnel was assembled to review the procedure aspects. It was concluded that existing procedures and training are adequate to achieve safe shutdown in the event of a fire in any plant fire area (10/5/94).
4. The PRO was evaluated and the event was determined to be reportable under 10 CFR 50.73(a)(2)(ii)B. A one hour notification was made to the NRC at 12:38 hours on 10/5/94 per 10 CFR 50.72(b)(1)(ii)B.
5. A Plant Operating Review Committee (PORC) meeting was held prior to plant restart and the lighting and procedural aspects were reviewed. It was concluded that the compensatory measures and administrative controls placed the facility in accordance with the safety intent of the requirements of 10 CFR 50 Appendix R, Section III.J.

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Long Term

- Based on a walkdown of areas where remote/manual actions are required to support safe shutdown from the control room, Vermont Yankee is scheduled to install approximately 23, 8-hour battery backed lights to be in compliance with 10 CFR 50 Appendix R, Section III.J. All lights in locations accessible during power operation will be installed by 12/31/94. Lights in inaccessible locations during power operation will be installed prior to start-up from the 1995 refueling outage.
- If appropriate, exemption requests will be prepared for relief from the requirements of 10 CFR 50 Appendix R, Section III.J. This will be completed by 12/31/94.
- The plant staff, as appropriate, will receive training specific to the licensing basis for Appendix R safe shutdown lighting and its importance to the performance of remote/manual operations. This will be completed by 12/31/95.
- The Vermont Yankee Alternate Shutdown Report will be incorporated into the Safe Shutdown Capability Analysis (SSCA) manual as will the documentation relative to compliance with Appendix R lighting requirements. This will provide a single document for control of all the interrelated requirements of 10 CFR 50 Appendix R, Section G (Fire protection of safe shutdown capability), Section J (Emergency lighting), and Section L (Alternate and dedicated shutdown capability). The SSCA manual will also receive a human factors review and will be revised as necessary to make it a more effective tool for plant staff. This will be completed by 9/30/95.
- Following update of the manual, operator training will be strengthened to assure operators understand the content of the revised SSCA manual and how it should be used in conjunction with the plant normal and emergency operating procedures. This training will be completed by 12/31/95.

ADDITIONAL INFORMATION

No similar events relative to Appendix R lighting requirements have been reported to the Commission in the last five years.