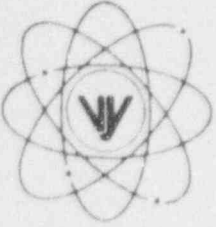


VERMONT YANKEE NUCLEAR POWER CORPORATION



P.O. Box 157, Governor Hunt Road
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November 18, 1996
BVY 96-146

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

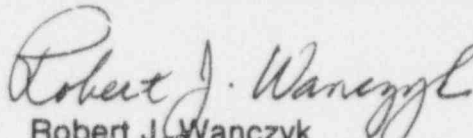
Reference: (a) License No. DPR-28 (Docket No. 50-271)

Subject: Reportable Occurrence No. LER 96-028

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 96-028.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION


Robert J. Wanczyk
Plant Manager

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS

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NRC Form 366 (4-95)				U.S. NUCLEAR REGULATORY COMMISSION				APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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.			
LICENSEE EVENT REPORT (LER)											
FACILITY NAME (1) VERMONT YANKEE NUCLEAR POWER STATION						DOCKET NUMBER (2) 05000271		PAGE (3) 01 OF 03			
TITLE (4) Inadequate field labeling of safety class wiring and drawing updates result in the failure to maintain electrical separation requirements described in nuclear safety system design bases.											
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 NO.(S)	
10	18	96	96	-- 028 --	00	11	18	96	N/A	05000	
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: CHECK ONE OR MORE (11)									
N		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)			
POWER LEVEL (10)		20.2203(a)(1)		20.2203(a)(3)(i)		X 50.73(a)(2)(ii)		50.73(a)(2)(x)			
00		20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71			
		20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER			
		20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		(Specify in Abstract below or in NRC Form 366A)			
		20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)					
LICENSEE CONTACT FOR THIS LER (12)											
NAME ROBERT J. WANCZYK, PLANT MANAGER								TELEPHONE NO. (Include Area Code) 802-257-7711			
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
NA				NO	.....	NA				
NA					.....	NA				
SUPPLEMENTAL REPORT EXPECTED (14)						EXPECTED SUBMISSION DATE (15)		MO	DAY	YEAR	
YES (If yes, complete EXPECTED SUBMISSION DATE)				X	NO						

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

ON 10/18/96, while shut down for refueling, a review of findings from a plant design change installation determined that the cable routing for both Low Pressure Coolant Injection (LPCI) outboard isolation valve actuating circuits was in violation of Vermont Yankee (VY) electrical separation criteria. The non-conforming wiring arrangement was apparently a result of inadequate wire marking and drawing updates relative to circuitry changes made during a 1976 design change installation. This inadequate documentation and inadequate component labeling allowed the wire routings to be altered during a later (1979) maintenance effort in a manner which violated VY's electrical separation criteria. The resulting wiring configuration allowed the actuating circuit wiring for both LPCI outboard injection valves to pass through a single non-safety class cable tray (called a panduct), in close proximity to one another for a very short distance (approximately 8 inches). This configuration is not consistent with the electrical separation required by the VY Final Safety Analysis Report for the affected circuits. The LPCI system had been declared inoperable prior to the time of discovery. The proper electrical separation was established for the affected circuits prior to declaring the systems operable. The as-built configuration was evaluated. It was concluded that the panduct was sufficiently anchored to withstand a seismic event. It was further concluded that the routing did not significantly degrade the operational capability of the system to perform its safety function. Therefore the condition had no impact upon plant operation as analyzed and presented no threat to either the health or safety of the public.

NRC Form 366 U.S. NUCLEAR REGULATORY COMMISSION (4-95)		APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98	
LICENSEE EVENT REPORT (LER)		ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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)	
		YEAR	SEQUENTIAL NUMBER
VERMONT YANKEE NUCLEAR POWER CORPORATION	05000271	96	-- 28 --
		REV #	
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			02 OF 03

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

DESCRIPTION OF EVENT

ON 10/18/96, while shut down for refueling, during a review of findings from a plant design change installation it was determined that the cable (EIS=CA) routing for both Low Pressure Coolant Injection (LPCI, EIS=BN) outboard isolation valve actuating circuits was in violation of Vermont Yankee (VY) electrical separation criteria. The wiring configuration allowed the actuating circuit wiring for both LPCI outboard injection valves to pass through a single non-safety class cable tray (called a panduct, EIS=T), in close proximity to one another for a very short distance (approximately 8 inches). The LPCI system had been declared inoperable prior to the time of discovery. The proper electrical separation was established for the affected circuits using the VY work control process prior to declaring the systems operable.

Historical Account

In the autumn of 1976, new time delay relays were added to the actuating circuits for the LPCI outboard injection valves (V10-27A and 27B). This was performed using the Engineering Design Change Request (EDCR) process. The EDCR utilized spare conductors in existing annunciator cables (C1335AN and C1335AO) to wire the relays. C1335AN (AN) was routed safety class electrical division SI to V10-27B. C1335AO (AO) was routed SII to V10-27A. The cable routing was internal to the control panel, did not utilize the panduct system, and was in compliance with VY's electrical separation criteria. However, the work effort omitted the marking of the affected cables as SI and SII as required by the separation criteria document. Additionally, neither the design package nor the installation documents required cross references to be added to the affected Controlled Wiring Diagram (CWD's).

On 10/24/79 it was discovered that the affected annunciator circuits were wired backwards. That is, the "A" system monitoring circuitry was wired to the "B" annunciator and the "B" monitoring circuit was connected to the "A" annunciator. A maintenance request was initiated to re-route and re-label the affected cables. Cable AN routed to the SII side of Control Room Panel (CRP) 9-3. It was then relabelled C1335AO (still routed SI for V10-27B). C1335AO was re-routed to the SI side of CRP 9-3 and its label changed to C1335AN (still routed SII to V10-27A). This work effort, absent of the knowledge of the true function of the third wire within the cables (shown in drawings to be a "spare") resulted in running both cables, through the common NNS Panduct, in immediate proximity to one another. This work was completed in November of 1981 and drawings submitted for update. CWD's and CRP 9-3 connection drawings were revised, but the applicable Cable and Conduit Listing (CCL) was not updated to reflect either the cable re-route or the cable re-labeling.

On 9/9/86 the CCL was revised to correct the cable numbers identified, and properly reflect the changes made in the above described maintenance request. However the actual cable routing problem was not identified.

On 2/17/87 CWD 335A/B was revised to show conductor and cross references between the annunciator circuits and the LPCI outboard injection valve actuation circuits. However, the cross reference was poorly located making it likely that the information would be overlooked in the future.

On 9/22/89 the Electrical Engineering Group, during work in support of a design change implementation identified there were SI and SII cables run through the NNS panduct system. As a result, on 6/13/90 a field verification walkdown was performed on the affected panduct system and associated cables by the Construction Engineering Group. C1335AN was found in the affected panduct, however C133AO was not. A review of the plant walkdown results dispositioned C1335AN as an annunciator cable with NNS function. The V10-27A actuating circuit was not identified as a function of the conductor. The appropriate CCL was revised (10/11/90) to identify the panduct routing for C1335AN.

On 10/18/96 as a result of issues raised during the installation of an EDCR, it was determined that the cable routing for C1335AN (V10-27A) was in variance with VY's electrical separation criteria. The design was revised to change the wiring to conform with the separation criteria. Wiring for the other LPCI outboard injection valve actuating circuit was then reviewed and

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VERMONT YANKEE NUCLEAR POWER CORPORATION	05000271	YEAR	SEQUENTIAL NUMBER	REV #
		96	-- 28 --	00
				03 OF 03

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found to be running through the same panduct. A work order was initiated and the wiring changed to conform to the requirements for electrical separation and proper support for safety class applications.

CAUSES OF EVENT

The apparent cause for this event is:

1. Inadequate change management...change not adequately communicated. The failure to properly label the affected cables following the 1976 design change, combined with the failure to adequately communicate the change via the appropriate drawing changes resulted in the subsequent activities inadequately assessing the potential effects of those work efforts.

The cause analysis process is continuing for this event. Any significant adjustments made to the cause or proposed corrective actions will be communicated in a supplement to this report.

ANALYSIS OF EVENT

Appendix R requirements were reviewed and it was determined that the installed configuration did not significantly affect assumptions made or conclusions drawn in VY's approach to meeting 10CFR50 Appendix R requirements. The supporting panduct was evaluated during the Seismic Qualification Users Group implementation/evaluation process and determined capable of remaining functional through a seismic event. The run of non-conforming cable was extremely short (approximately 8 inches per cable). The cable is in the Control Room which is a mild environment and required to be continuously manned. There is no credible active component failure which can challenge the affected systems due to the non-conformance. Therefore the operational capability of LPCI was not challenged by this event. The system operating characteristics were at all times consistent with (bounded by) the accident and transient analyses.

Safety Significance

As there was reasonable assurance that the LPCI system was not adversely affected by this non-conformance and capable of performing its design functions, consistent with the transient and accident analyses of record. It is concluded that this non-conformance did not pose a threat to either the health or safety of the public.

CORRECTIVE ACTIONS

Immediate Action:

The affected actuating circuits were rewired so as to conform to the VY electrical separation criteria (this action is complete).

Long Term:

The current VY configuration change processes are significantly more instructive and comprehensive than the processes used during the 1976 design change implementation which fostered this event. It is not expected that this event would occur using the current configuration change and management processes employed by Vermont Yankee. The root cause analysis process for this event continues. Should that analysis identify a need for additional significant corrective actions, or require significant change to the identified cause, a supplement to this report will be issued.

ADDITIONAL INFORMATION

There have been no similar events reported to the Commission in the past five years.