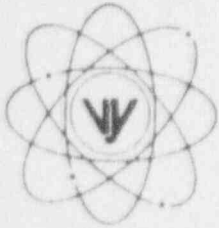


VERMONT YANKEE NUCLEAR POWER CORPORATION



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(802) 257-7711

April 4, 1997
BVY 97-44

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 97-004, Rev. 0

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 97-004, Rev. 0.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Gregory A. Maret
Plant Manager

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

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NRC Form 366 U.S. NUCLEAR REGULATORY COMMISSION (4-95)				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 design allows VY Vital Switchgear to be vulnerable to flooding from Fire Main rupture.											
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) 05000	
03	07	97	97	-- 004 --	00	04	04	97	N/A		
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)		100									
20.2203(a)(1)		20.2203(a)(3)(i)		X		50.73(a)(2)(ii)		50.73(a)(2)(x)			
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)(ii)							
LICENSEE CONTACT FOR THIS LER (12)											
NAME GREGORY A. MARET, 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	
X	YES (If yes, complete EXPECTED SUBMISSION DATE)				NO			05	15	97	

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

On 3/7/97 through 3/20/97 deficiencies were identified during an internal flooding review by Vermont Yankee. The review identified that a break in the fire system piping in areas adjacent to the switchgear rooms could affect equipment in the vital switchgear rooms. Fire header piping in the adjacent compartments includes 3 and 4 inch piping. Flow from a major break in lines this size has been estimated to produce as much as 5,000 gallons per minute resulting in a level of approximately 14 inches in the adjacent office building within approximately 10 minutes. The rated fire door into the switchgear room would act to impede flooding into the rooms. VY engineering has estimated that it would take approximately 20 minutes to accumulate 1 inch of water on the switchgear room floors. A vital 480 volt motor control center sits directly on the floor and could begin to be affected should water level reach approximately 2 inches. A Basis for Maintaining Operation (BMO) was written to support continued safe plant operation. Administrative controls have been put in place to direct operators should a flood condition occur. Because the postulated pipe rupture, 1) has not occurred, 2) would have actuated a fire system monitoring annunciator in the control room which would have prompted an immediate investigation and commensurate actions, and, 3) the probability of the major rupture is very low, this event is not considered to have presented an increased threat to the public health and safety. In addition, two minor discrepancies were noted which will be included in the description of this event for completeness.

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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)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REV #	
VERMONT YANKEE NUCLEAR POWER CORPORATION	05000271	97	-- 004 --	00	02 OF 03

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

DESCRIPTION OF EVENT

On 3/7/97 through 3/20/97, while operating at rated power, deficiencies were identified during an internal flooding review by Vermont Yankee. This review identified the following problems.

The condition of several equipment hatches was not consistent with current licensing bases. Specifically it was determined that VY had committed to establishing the equipment hatches above the Low Pressure Core Standby Cooling System (EISS=BM, BO) corner rooms as water tight. This water tight integrity was established using the formal design change process in 1973. However investigation revealed that the subject hatches were not water tight. An engineering assessment determined that the water potentially introduced via the hatches would not threaten equipment operability. The hatches were sealed using elastomer caulking and an investigation is in process to determine why the hatches were not water tight despite the stated goals of the 1973 Engineering Design Change.

An error was discovered in the current VY internal flooding study. The study stated that the potential effects of a rupture of the Circulating Water Pump (EISS=KE) discharge bellows was not significant as the rupture effluent would simply flow to the river and not result in any major flooding of the affected room. The reviewer determined that there are no openings below the bellows which would provide the described flowpath. Additional engineering assessment concluded that the postulated water intrusion would not threaten the adjacent Service Water Pump area and would therefore not threaten the plant's ability to achieve a safe shutdown condition should the postulated bellows failure occur.

It was further discovered that a break in the fire system piping (EISS=KP) in areas adjacent to the switchgear rooms could affect equipment in the vital switchgear rooms (EISS=EK). Fire header piping in the adjacent compartments includes 3 and 4 inch piping. Flow from a major break in lines this size has been estimated to produce as much as 5,000 gallons per minute resulting in level of approximately 14 inches in the adjacent office building (EISS=MA) within approximately 10 minutes. The rated fire door into the switchgear room would act to impede flooding into the rooms, however the clearance under the door would allow some water intrusion. VY engineering has estimated that it would take approximately 20 minutes to accumulate 1 inch of water on the switchgear room floors. A vital 480 volt motor control center sits directly on the floor and could begin to be affected should water level reach approximately 2 inches. A Basis for Maintaining Operation (BMO) was written to support continued safe plant operation. Administrative controls have been put in place to direct operators should a flood condition occur. The challenge to the vital switchgear rooms by the postulated fire systems pipe rupture is the event requiring this report per 10CFR50.73.

Upon completion of the flooding review VY will issue a supplement to this report to identify any significant discrepancies noted and the corrective actions taken.

CAUSES OF EVENT

The apparent cause of this event was inadequate design review during the original construction of the Front Office Building in that potential flooding of the switchgear rooms was not addressed. The cause analysis investigation for this event continues. A supplement to this report will be issued to report the conclusions of that investigation.

ANALYSIS OF EVENT

Should the water level in the switchgear rooms exceed approximately 2 inches, electrical equipment located in the rooms which is required for safe shutdown could be challenged.

However, several conditions contribute to reducing the probability that the postulated piping systems rupture could actually

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

impact the vital switchgear within the rooms.

1. A rupture of a fire line would result in automatic start of the fire pumps. A start of the fire pumps is alarmed in the control room. Therefore, the operators would be immediately aware of the problem, and an investigation would ensue.
2. The primary fire brigade room is in the basement of the office building where the water from the leak would drain. Upon fire brigade mobilization, at least one member of the fire brigade would report to the brigade room and would detect water on the floor. Thus, the most likely scenario is rapid identification of the break. As part of the response to an identified fire main break, Operators would secure the fire pumps or isolate the leak to stop the flow of water into the area.
3. Opening one of the double doors to the turbine building (EIS=NM, located at the main RP checkpoint) could relieve water to the lower feed pump room where safety systems would not be threatened.
4. Operator response to a fire pump start with a broken pipe would have effectively mitigated this event. Additional clarification has been provided by administrative orders. Therefore, if a break of this line were to occur, plant operators and support staff would rapidly identify the leak and take actions prior to exceeding the critical flood level.

SAFETY SIGNIFICANCE

Because the postulated pipe rupture, 1) has not occurred, 2) would have actuated a fire system monitoring annunciator in the control room which would have prompted an immediate investigation and commensurate actions, and, 3) the probability of the major rupture is very low, this event is not considered to have presented an increased threat to the public health and safety.

CORRECTIVE ACTIONS

Immediate Actions:

1. An Event Report was initiated to document this event and initiate a root cause analysis to determine the root cause and appropriate corrective actions for this event.
2. A BMO has been generated which defines the deficiency, and equipment involved in this event. This BMO provides the conclusions and supporting basis for assuring that the plant may continue to operate safely. The BMO concluded that in-place requirements and practices were adequate for continued safe operation.

Additionally the BMO identified that plant operators had been given specific instructions for actions to be taken to minimize the effects of the postulated Fire Protection System rupture.

ADDITIONAL INFORMATION

The determination as to which of previously reported events are similar to this event will be determined following completion of the cause analysis and communicated in the supplement to this report.

Long term corrective actions will be determined using the VY Root Cause Analysis Process. The resulting corrective actions will be communicated in a supplement to this report.