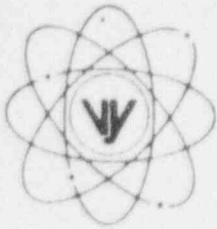


# VERMONT YANKEE NUCLEAR POWER CORPORATION



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November 27, 1996

BVY 96-153

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 96-006, Supplement 1

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 96-006, Supplement 1.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Robert J. Wanczyk  
Plant Manager

c: 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  <b>LICENSEE EVENT REPORT (LER)</b>				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 20566-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.							
FACILITY NAME (1) VERMONT YANKEE NUCLEAR POWER STATION						DOCKET NUMBER ( ) 05000271		PAGE (3) 01 OF 03			
TITLE (4) Potentially Inoperable Residual Heat Removal Service Water Valves due to the Bolts Holding the Valve Operators being Insufficiently Tight											
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)	
02	14	96	96	-- 006 --	01	11	27	96	N/A	05000	
OPERATING MODE (9)		N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: CHECK ONE OR MORE (11)							
POWER LEVEL (10)		100		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)	
				20.2203(a)(1)		20.2203(a)(3)(i)		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)		X	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					.....	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 February 14, 1996, with the plant at 100% power, during the planning process to repair a slightly loose valve operator on the "B" Residual Heat Removal Service Water (RHRSW) Heat Exchanger outlet isolation valve, a Planner discovered that the same condition existed on the "A" RHRSW Heat Exchanger outlet isolation valve. In each case the bolts holding the valve operator onto the valve bonnets had loosened slightly. The RHRSW system is required to be operational following a design basis Loss of Coolant Accident (LOCA). It is conservatively postulated that with the system continuously running the bolts would be subjected to normal system vibration and could loosen such that the operators become detached from the valves. The design of the valve would allow flow to close the valves with the operators detached, with the loss of Service Water (SW) flow to the RHR heat exchanger. Containment Cooling and Shutdown Cooling could be lost and not be immediately repaired. The radiation levels following a LOCA could prohibit entry into the Reactor Building to repair the valves, for an extended period of time. As this system is used to remove residual heat and could have potentially not fulfilled its safety function it is reportable under 50.73(a)(2)(v).

The root cause of this event is a manufacturing-fabrication deficiency in that the vendor did not adequately torque or use a thread locking material or device.

Corrective actions included inspecting and torquing the bolts, and checking similar valves for loose bolts.

As the valves were functional during the period that the bolts were slightly loose and there was no LOCA, there was no danger to the health and safety of the public and no safety consequences resulted from this event.

NRC Form 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION  <div style="text-align: center;">LICENSEE EVENT REPORT (LER)</div>		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 20566-0001, 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)
VERMONT YANKEE NUCLEAR POWER CORPORATION	05000271	YEAR	SEQUENTIAL NUMBER	REV #
		96	-- 006 --	01
				02 OF 03

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

### DESCRIPTION OF EVENT

On February 14, 1996, at 1015 hours, with the plant at 100% power, during the maintenance planning process to repair a slightly loose valve operator on the "B" Residual Heat Removal Service Water (EHS = BS) (RHRSW) Heat Exchanger outlet isolation valve, a Planner discovered that the same condition existed on the "A" RHRSW Heat Exchanger outlet isolation valve. At 1015 hours, on 2/14/96, a priority Work Order was written to repair the valves and the RHRSW A and B subsystems were declared inoperable per Technical Specification (TS) 3.5.C.4, (24 hour Limiting Condition for Operations [LCO]), Containment Cooling subsystems A and B were declared inoperable per TS 3.5.B.2 (24 hour LCO) and the Alternate Cooling subsystem was declared inoperable per TS 3.5.D.3 (7 day LCO). The "B" RHRSW loop was tagged out and repairs made to the valve operator in that loop. At 1407 hours, on 2/14/96, the "B" RHRSW loop was restored to service and the "A" RHRSW loop was tagged out and repairs made to the valve operator in that loop. At 1455 hours, on 2/14/96, the RHRSW "A" loop was returned to service. At 1500 hours on 2/14/96, following post maintenance testing, the "A" and "B" RHRSW loops, the "A" and "B" Containment Cooling loops and the Alternate Cooling System was declared operable.

The bolts holding the manual valve operators to the valve bonnets had loosened slightly but not sufficiently to prevent operation of the valve operators. The valves remained functional during the time that the bolts were slightly loose such that Containment Cooling and Shutdown Cooling were functional. The design of the valves is such that if the operators became detached, the direction of flow through the valves could cause them to shut and stop cooling water flow to the RHR heat exchangers. This could result in a loss of Containment and Shutdown cooling.

### CAUSE OF EVENT

The root cause of this event was determined to be a manufacturing-fabrication deficiency in that the vendor did not adequately torque or use a thread locking material or device.

### ANALYSIS OF EVENT

The RHRSW System is designed to provide cooling water for the RHR System during normal shutdown conditions and during a loss of off-site power. Its safety function is to provide sufficient cooling capacity for the RHR System during a design basis accident and minimize the probability of a release of radioactive contaminants to the environs. Contrary to the above, it was determined that the heat exchanger discharge isolation valves would close if the operators became detached from the valves and the system would subsequently become inoperable. If a LOCA were to occur during the time period that the valves were inoperable, the dose rates in the Reactor Building could make it inaccessible for an extended period of time thereby preventing any corrective maintenance to return the valves to service. This would prevent the containment from being cooled using the RHRSW System. To provide for proper cooling, Emergency Operating procedures for Torus temperature control and drywell flooding would be followed by the operators.

During the period that the bolts were slightly loose, the valves remained operable and no events occurred to warrant the use of Containment or Torus cooling.

At no time was there any danger to the health and safety of the public and no safety consequences resulted from this event.

### CORRECTIVE ACTIONS

#### Immediate

- 1) Priority Work Orders were written to inspect and torque the bolts on the valves. This activity was

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VERMONT YANKEE NUCLEAR POWER CORPORATION	05000271	96	-- 006 --
			REV #
			01
		PAGE (3)	
		03 OF 03	

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

completed on 2/14/96

- 2) The heat exchanger flow control valves as well as the upstream isolation valves were immediately check for any looseness. All bolts on these valve were found to be tight.

#### Long Term

- 1) The torque on the bolts for the isolation valves on both heat exchangers were re-checked. The results of the check was satisfactory. This was completed on 6/27/96.
- 2) A copy of the report for this event was sent to the Yankee Nuclear Services Division Vendor Audit Group and the Vendor QA Group as well as appropriate plant personnel to use for future inspections. This was completed on 11/13/96.

#### ADDITIONAL INFORMATION

No similar event have been reported to the Commission in the last five years.