



**Entergy Nuclear Northeast**  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
P.O. Box 0500  
185 Old Ferry Road  
Brattleboro, VT 05302-0500  
Tel 802 257 5271

December 01, 2005  
BVY 05-104

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

**Subject: Vermont Yankee Nuclear Power Station**  
**License Number: DPR-28**  
**Docket Number: 05000271**  
**Reportable Occurrence Number: LER 2005-002-00**

As defined by 10 CFR 50.73(a)(2)(i)(B), we are submitting the attached Licensee Event Report for a Reportable Occurrence that was discovered on October 04, 2005 as LER 2005-002-00. This correspondence does not contain NRC Commitments.

Sincerely,

A handwritten signature in cursive script, appearing to read "W. F. Maguire".

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William F. Maguire  
General Manager, Plant Operations

cc: USNRC Region I Administrator  
USNRC Resident Inspector - VYNPS  
USNRC Project Manager - VYNPS  
Vermont Department of Public Service

IE22

# LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [infocollects@nrc.gov](mailto:infocollects@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

<b>1. FACILITY NAME</b> VERMONT YANKEE NUCLEAR POWER STATION (VY)	<b>2. DOCKET NUMBER</b> 05000 271	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
Primary Containment Leak Rate Testing Program Second Barrier Isolation Valve Found Miss-Positioned

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	04	2005	2005	002	00	12	01	2005	N/A	N/A

<b>9. OPERATING MODE</b>  N	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)									
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(l)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
<b>10. POWER LEVEL</b>  100	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ll)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ll)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(lll)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(l)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(l)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

**12. LICENSEE CONTACT FOR THIS LER**

<b>CONTACT NAME</b> William F. Maguire, General Manager Plant Operations	<b>TELEPHONE NUMBER (Include Area Code)</b> (802) 257-7711
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
N/A					N/A				

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="radio"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="radio"/> NO	<b>15. EXPECTED SUBMISSION DATE</b> MONTH: _____ DAY: _____ YEAR: _____
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**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)**

On 10/04/05, with the reactor at full power, a sample line isolation valve, V10-198A on the Residual Heat Removal (RHR) "A" Loop was found open. V10-198A is a second barrier that supports Primary Containment integrity and is required to be closed per the Primary Containment Leakage Rate Testing Program (PCL RTP). Upon discovery, Operators closed V10-198A and placed it under administrative control. This condition was identified while reviewing a Safety Classification Worksheet for a different valve in the RHR system sample line. The RHR System procedure valve line-up listed V10-198A as "open" and the RHR System Piping and Instrumentation Diagram (P&ID) displayed it as "closed". The open valve provided a potential flow path of water from Primary Containment to Secondary Containment. Two air operated valves and a manual sample valve located downstream of V10-198A provided reasonable assurance that effective isolation for this flow path was maintained during plant operation. The cause of this condition was the application of an insufficient change process in 1996 during implementation of the Qualified Closed Loop Outside Primary Containment modification that lacked sufficient documentation and reviews to effectively implement the change. There was no significant increase in radiological risk to plant workers or the public as a result of this condition.

**LICENSEE EVENT REPORT (LER)**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
VERMONT YANKEE NUCLEAR POWER STATION (VY)	05000 271	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2005	-- 002	-- 00	

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

**DESCRIPTION**

On 10/04/05, with the reactor at full power, a 3/4" manual globe valve for the Residual Heat Removal (RHR) "A" Loop sample line (V10-198A) was found open. V10-198A is a second barrier to Primary Containment and is required to be closed as necessary to maintain the RHR system water seal during plant operation per the Primary Containment Leakage Rate Testing Program (PCLRTP). This condition was discovered while reviewing a Safety Classification Worksheet for a different valve in the RHR sample line. The RHR System procedure valve line-up listed V10-198A as "open" and the RHR System Piping and Instrumentation Diagram (P&ID) displayed the valve as "closed". The open valve provided a potential flow path of water from Primary Containment to Secondary Containment for the water seal that serves as part of the second barrier for Primary Containment, during a Design Basis Loss of Coolant Accident with a concurrent seismic event.

Upon discovery of this condition, Operators closed V10-198A and placed it under administrative control by tagging the valve "SHUT". Two normally closed air operated valves (AOV) and a normally closed manual sample valve located downstream of V10-198A provided reasonable assurance that effective isolation for this flow path was maintained during plant operation. The RHR "keep fill" line maintains system pressure during normal operation to continuously demonstrate that Primary Containment Integrity is maintained. Any leakage through the series of closed valves would have been into the Reactor Building Sample Sink which is within the envelope of Secondary Containment and would be detected by Operations or Chemistry personnel.

The three valves located downstream of V10-198A are not credited as Primary Containment Isolation valves within the Program Procedure for the PCLRTP. However, both of the in-line AOVs close on a Primary Containment Isolation System (PCIS) signal and are designed with a fail-safe feature to close on a loss of instrument air. The manual sample valve located downstream of the PCIS valves is also maintained in the closed position. Additionally, the first AOV in the series, FCV10-160, is designed to perform during and after a design bases seismic event.

This condition was determined to be reportable to the NRC as a Condition Prohibited by Technical Specifications in accordance with 10CFR50.73(a)(2)(i)(B). VY Technical Specification 3.7.A.2 states that Primary Containment integrity shall be maintained at all times when the reactor is critical. Technical Specification 4.7.A.2 provides a surveillance requirement to ensure that this is accomplished by stating that Primary Containment integrity shall be demonstrated by the PCLRTP. Also, Technical Specification Definition 1.0.N. for Primary Containment Integrity states that all manual containment isolation valves that are not required to be open during accident conditions, are closed, and may be opened intermittently under administrative controls. V10-198A was not in the required closed position prior to discovery of this condition and was not administratively controlled open by a dedicated operator.

**CAUSE**

The root cause of this condition was determined to be the application of an insufficient change process (Job Order File process) that was utilized in October of 1996 during implementation of the Qualified Closed Loop Outside Primary Containment modification. The process that was used lacked sufficient documentation and reviews to effectively implement the change.

Contributing Causes included the following:

- 1) The inter-relationships between P&ID valve position, operating procedure valve position, and locked valve criteria were not well understood when the event occurred.
- 2) Thirty five successive revisions up to 1989 to the subject P&ID reduced the sharpness of the image quality for V10-198A causing the valve's normal "open" position to appear as "closed".

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

**ASSESSMENT OF SAFETY CONSEQUENCES**

The subject valve is a second barrier for Primary Containment per the PCLRTP. The first barrier valves remained operable and closed as required. There are two AOVs located downstream of V10-198A that are designed to automatically close on a PCIS signal or on a loss of instrument air. A third manually operated sampling isolation valve located downstream of the two AOVs is maintained in the closed position. Additionally, incidental leakage from the system past these three valves would be detected by Operations or Chemistry personnel at the Reactor Building Sample Sink. Therefore, reasonable assurance existed that Primary Containment integrity was maintained. This condition did not result in a significant increase in radiological risk or industrial risk to plant workers or the general public in the event of a design bases accident.

**CORRECTIVE ACTIONS**

The Job Order File process that was used when this condition occurred was superseded by an improved design control process. The procedures that implement the current design control process provide clearer and more concise direction that would likely have prevented this condition from occurring if utilized in 1996.

**Immediate Actions**

- 1) Upon discovery and confirmation of this condition, V10-198A was closed and administratively tagged "SHUT".

**Interim Actions**

- 1) V10-198A was added to the "Current System Valve and Breaker Line Up and Identification" procedure controlled population.
- 2) A drawing change was submitted for the subject P&ID to indicate V10-198A/B normal positions as locked closed.
- 3) The RHR System procedure's appendix for normal system line up was changed to control V10-198A as closed.
- 4) The RHR and Core Spray system procedures were verified to ensure that the valve line-ups contained within them are in agreement with the procedure for the PCLRTP. No additional discrepancies were noted.
- 5) On November 10, 2005, the Vice President of Engineering distributed a memo to all Vermont Yankee site employees titled "Configuration Control at Vermont Yankee". This correspondence described the event, expectations for configuration control, current design control processes employed within the Entergy Fleet, provided a list reference materials and described the relevant points from the reference materials that need to be reinforced to prevent this type of event from recurring.
- 6) Radiation Protection containment sampling procedures were reviewed to ensure compliance with TS 1.0.N.1 and the PCLRTP Procedure administrative controls for manual containment isolation valves. No discrepancies were noted.

**Long Term Actions**

- 1) A review of other Job Order File changes from the same time frame will be performed to assess the potential for similar conditions.
- 2) Evaluate the need to review and as necessary correct the image quality and valve positions for the Control Room P&IDs referenced in the PCLRTP procedure.

**ADDITIONAL INFORMATION**

No similar events have occurred at Vermont Yankee within the past ten years.