



# VERMONT YANKEE NUCLEAR POWER CORPORATION

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VERNON, VERMONT 05354

April 7, 1992

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 92-010

Dear Sirs:

As defined by 10 CFR 50.73, we are reporting the attached Reportable Occurrence as LER 92-010.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Donald A. Reid  
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 (8-89)										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 (F-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20603.															
LICENSEE EVENT REPORT (LER)																									
FACILITY NAME (1)										DOCKET NO. (2)					PAGE (3)										
VERMONT YANKEE NUCLEAR POWER STATION										0 5 0 0 0 2 7 1					0 1 OF 0 3										
TITLE (4) 1992 Appendix J Type B and C Failure Due to Seat Leakage																									
EVENT DATE (5)					LER NUMBER (6)					REPORT DATE (7)					OTHER FACILITIES INVOLVED (8)										
MONTH	DAY	YEAR	YEAR	SEQ #	REV#	MONTH	DAY	YEAR	FACILITY NAMES N/A					DOCKET NO. (8)											
0	3	0	8	9	2	9	2	0	1	0	0	0	0	0	4	0	7	9	2	N/A	0	5	0	0	0
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO REQ'TS OF 10 CFR §: CHECK ONE OR MORE (11)																							
		20.402(b)					20.405(c)					50.73(a)(2)(iv)					73.71(b)								
POWER LEVEL (10)		20.405(a)(1)(i)					50.36(c)(i)					50.73(a)(2)(v)					73.71(c)								
		20.405(a)(1)(ii)					50.36(c)(2)					50.73(a)(2)(vii)					OTHER:								
		20.405(a)(1)(iii)					X 50.73(a)(2)(i)					50.73(a)(2)(viii)(A)													
		20.405(a)(1)(iv)					50.73(a)(2)(ii)					50.73(a)(2)(viii)(B)													
		20.405(a)(1)(v)					50.73(a)(2)(iii)					50.73(a)(2)(ix)													
LICENSEE CONTACT FOR THIS LER (12)																									
NAME  DONALD A. REID, PLANT MANAGER										TELEPHONE NO.															
										AREA CODE															
										E 0 2 2 5 7 - 7 7 1 1															
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																									
CAUSE	SYST	COMPONENT			MFP			REPORTABLE TO NPRDS	...	CAUSE	SYST	COMPONENT			MFP			REPORTABLE TO NPRDS	...						
	W D			V	W	0	3	0	YES	...		B	S	J			V	A	9	1	YES	...			
X	A	A		V	C	6	3	1	YES	...							V					...			
SUPPLEMENTAL REPORT EXPECTED (14)															EXPECTED SUBMISSION DATE (15)					MO	DAY	YR			
YES (If yes, complete EXPECTED SUBMISSION DATE)															X NO										

**ABSTRACT** (Limit to 1400 spaces, i.e., approx. fifteen single-space typewritten lines) (16)

On 3/8/92, 3/12/92, and 3/17/92 while performing Type C Leak Rate Testing with the Plant shutdown for the 1992 refuel outage, Liquid Radwaste Valve LRW-83 (EIIIS=WD), Feedwater Check Valve FDW-28B (EIIIS=SJ), and Control Rod Drive Valves CRD-413A & 413B (EIIIS=AA) were found to have seat leakage above that permitted by Technical Specification 3.7.A.4.

On 3/12/92 the sum total leakage for Type B (penetrations) and Type C (valves) exceeded that allowed by 10 CFR 50 Appendix J. The assigned maximum pathway leakage exceeded that allowed by Appendix J as a result of the leakage through check valve FDW-28B. Appendix J limits the total B and C penetration leakage to 0.60 La.

Vermont Yankee has performed maintenance on the valves that were found to be leaking to determine the cause of the failure. The valves have been retested to verify that seat leakage is within allowable limits.

The root cause evaluation for the failure of CRD-413A & 413B is ongoing and the results will be reported in the Type A Test Report.

NRC FORM 366A U.S. NUCLEAR REGULATORY COMMISSION (10-89)		APPROVED OMS NO. 3150-U104 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 (F-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20603.	
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION			
FACILITY NAME (1)	DOCKET NO. (2)	LER NUMBER (8)	PAGE (3)
VERMONT YANKEE NUCLEAR POWER STATION	05000271	YEAR: 92 SEQ #: 010 REV #: 002	OF 03

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

#### DESCRIPTION OF EVENT

On 3/8/92, 3/12/92, and 3/17/92 while performing Type C Leak Rate Testing with the Plant shutdown for the 1992 refuel outage, Liquid Radwaste Valve LRW-83 (EIIS=WD), Feedwater Check Valve FDW-28B (EIIS=SJ) and Control Rod Drive Valves CRD-413A & 413B (EIIS=AA) were found to have seat leakage above that permitted by Technical Specification 3.7.A.4.

The following information is for the affected valves:

LRW-83	3"	300# Walworth co. Air Operated Gate Valve
CRD-413A/B	3/4"	1500# Conval Check Valve
FDW-28B	16"	900# Anchor Darling Check Valve

The measured leakage for the valves were:

Penetration X-18	LRW-83	Leakage = 0.99 pounds mass per hour
Penetration X-31F	CRD-413A	Leakage = 0.788 pounds mass per hour
Penetration X-32F	CRD-413B	Leakage = 0.873 pounds mass per hour
penetration X-9B	FDW-28B	Leakage Exceeded Test Apparatus Capacity

Allowable single valve leakage is limited to 0.522 pounds mass per hour.

On 3/12/92 the sum total leakage for Type B (penetrations) and Type C (valves) exceeded that allowed by 10 CFR 50 Appendix J. The assigned maximum pathway leakage exceeded that allowed by Appendix J as a result of the leakage through check valve FDW-28B. Appendix J limits the total B and C penetration leakage to 0.60 La.

#### CAUSE OF EVENT

LRW-83: The root cause of the failure is equipment wear/age. The LRW air operated gate valves were evaluated during the 1989 outage. This evaluation determined that the valves needed to be replaced. The failure is a result of valve wear and a failure to properly seat.

CRD-413A & 413B: The cause of the failures was found to be a piece of teflon tape fouling each of the valve seats. The tape prevented proper seating of the disc to the seat. The root cause of the failure is unknown at this time. The root cause evaluation is continuing and the result will be reported to the Commission in the Type A Test Report.

FDW-28B: The root cause of the failure was a manufacturing defect. The casting of the valve had excess material that stuck out far enough to cause the disc to stick in the full open position. The valve was repaired by removing the excess material and assuring proper clearances. The other three feedwater check valves were also inspected for this defect. Valves FDW-27A and 96A, outboard isolation valves for penetrations X-9A/B, do not have the defect. Valve FDW-28A was found to have the defect and the valve could be manually made to stick in the open position. A similar repair was made to valve FDW-28A; however, during as-found leak rate testing, the valve performed adequately and the valve satisfied the Technical Specification acceptance criteria.

NRC Form 366A 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-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20603.	
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FACILITY NAME (1)	DOCKET NO (2)	LER NUMBER (6)	
VERMONT YANKEE NUCLEAR POWER STATION	05000271	YEAR	REV #
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TEXT (If more space is required, use additional NRC Form 366A) (17)

#### ANALYSIS OF EVENT

Vermont Yankee calculates total penetration leakage using the maximum pathway leakage method (summing the largest Type C valve leakage for each penetration). Due to the leakage through FDW-28B, Vermont Yankee conservatively assumes that the Appendix J criteria of 0.6 La was exceeded.

Calculating total penetration leakage using the minimum pathway leakage method (the sum of the Type B and the smaller of the Type C) is currently yielding a total penetration leakage below the allowable limits.

For each of the valves that failed the Type C test, a second valve in the same line met the leakage criteria in the Technical Specifications and Appendix J.

Based on the above, the potential adverse effects on the public health and safety as a result of these events was minimal.

#### CORRECTIVE ACTIONS

Corrective Actions implemented prior to plant startup:

1. Replaced LRW-83 and successfully tested valve, and
2. Repaired and successfully tested failed valves CRD-413A/B and FDW-28B.

Long Term Corrective Action:

1. Identify root cause for the CRD-413A/B failures and report it as part of the Integrated Local Rate Test Report.

#### ADDITIONAL INFORMATION

A similar event was reported to the Commission for Liquid Radwaste Valves in 1987 (LER 87-07) and 1989 (LER 89-07).

A similar event was reported to the Commission for Feedwater Check Valves in 1989 (LER 89-07) and 1990 (LER 90-12).

A Similar event was reported to the Commission for total as-found B & C leakage in 1987 (LER 87-07), 1989 (LER 89-07), and 1990 (LER 90-12).