VERMONT YANKEE
NUCLEAR POWER CORPORATION

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March 9, 2000
BVY 00-31

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

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Reportable Occurrence No. LER 2000-01, Rev. 0

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 2000-01, Rev. 0.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Michael A Balduzzi

Michael A. Balduzzi
Plant Manager

cc: USNRC Region I Administrator
USNRC Resident Inspector – VYNPS
USNRC Project Manager – VYNPS
VT Dept. of Public Service

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(6-1998)

LICENSEE EVENT REPORT (LER)

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the 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. If 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.

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TITLE (4)

Apparent Degradation of Main Steam Isolation Valve Solenoid Operated Test Valve Leads to a Request for Enforcement Discretion and a Subsequent Violation of Plant Technical Specifications.

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 NUMBER
02	11	2000	2000	01	00	03	09	2000	N/A	

OPERATING MODE (9)	N
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR • : (Check one or more) (11)

	20.2201(b)		20.2203(a)(2)(v)	X	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)		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	TELEPHONE NUMBER (Include Area Code)
Michael A. Balduzzi, Plant Manager	(802) 257-7711

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (12)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
B	SB	XCV	N174	NO		N/A				
N/A						N/A				

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	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 02/11/00, Vermont Yankee (VY) exceeded the Technical Specification (TS) surveillance interval allowed for partial closure testing of a single inboard Main Steam Isolation Valve (MSIV). Additionally VY did not perform TS actions for an inoperable MSIV. Recent data from the twice-weekly test on one of the MSIV's had indicated that a related test solenoid valve is degraded. Industry experience shows that such test valve degradation has resulted in undesirable plant transients at other facilities. Such transients include an inadvertent full closure of the MSIV during the "partial" closure test. A review of the balance of TS MSIV testing requirements, unaffected by the test solenoid valve, shows that the safety function is adequately tested, absent the partial closure test. Additionally, it was recognized that plants of similar design had previously recognized that the test was no longer necessary to adequately demonstrate MSIV functionality and had obtained TS amendments removing it from their TS. Exceeding the prescribed testing interval for the single MSIV was volitional, and followed discussions with the USNRC consistent with the Notice Of Enforcement Discretion (NOED) process. VY obtained Enforcement Discretion prior to exceeding the surveillance interval time limit of TS. The test valve, along with the related MSIV, is within the primary containment making it impracticable to confirm the cause determination, until plant shutdown. Because the related MSIV safety function is being consistently and satisfactorily tested, and the MSIV remains fully functional, this event has no effect upon public health and safety.

DESCRIPTION

On 02/11/00, while operating at 100% of rated power, VY exceeded the TS surveillance interval allowed for partial closure testing of a single inboard MSIV (EIIS=SB, ISV). Additionally, VY did not perform TS actions for an inoperable MSIV (TS 4.7.D.1.d, 3.7.D.2 and 3.7.D.3). Exceeding the prescribed testing interval was volitional, and followed discussions with the USNRC, consistent with the NOED process. Recent data from the twice-weekly test on one of the MSIV's had indicated that a solenoid operated test pilot valve (EIIS=TV) is degraded.

Beginning with a partial closure test, performed on 01/17/00, the operating crew noted that the subject MSIV (MSIV-80C) exhibited a slower than normal re-opening time. The opening time of the MSIV is not a TS controlled feature. However, the trend was indicative of a degraded condition and warranted investigation. A review of previous MSIV-80C test records showed that closing times and the quarterly full stroke testing of this MSIV, conducted in accordance with the in-service testing program, have been acceptable, and showed no adverse trends. During two subsequent partial closure tests, the reopening of MSIV-80C was observed to be unusually long (01/24/00 and 02/07/00).

VY System Engineering, having been notified of the upward trend, and being knowledgeable of related industry operating experience began to investigate possible courses of action intended to reduce the probability of a testing-induced plant transient. Industry experience shows that MSIV test valve degradation has resulted in undesirable plant transients at other facilities, transients such as an inadvertent full closure of the MSIV during the "partial" closure test. A review of past full and partial closure testing records, and the system design, showed the degradation of a solenoid operated test valve within the MSIV pneumatic control system to be the most likely cause of the lengthening reopening times.

Historically, the partial closure testing requirement was established to address industry apprehensions related to the reliability of the MSIV pneumatic controls, rather than concerns related to the MSIV itself. Such concerns are no longer warranted. Design improvements, including pilot valve replacement, implemented since the original system design, have resulted in marked gains in system reliability.

Additionally, it was recognized that plants of similar design had previously recognized that the partial closure test was not necessary to adequately demonstrate MSIV functionality and had obtained TS amendments removing it from their license. Industry experience has shown that full closure testing of MSIV's on a quarterly basis is adequate for ensuring that the valves will perform their safety function upon demand. Both the NSSS supplier and the pneumatic control system manufacturer have taken the position that the current twice-weekly partial closure surveillance frequency is excessive and increases component wear without providing additional assurance of reliability.

On 02/10/00, VY requested that the USNRC exercise enforcement discretion relative to VY's intent to forego the partial closure testing of MSIV-80C because the required test, with the degraded testing pneumatics, could have introduced an unnecessary plant transient. VY was granted a Notice of Enforcement Discretion from the USNRC on that date.

On 02/11/00, the time allowed for VY to perform the partial closure test of MSIV-80C expired. VY continued to operate at rated power. MSIV-80C was not closed, and remains fully capable of performing its intended safety function.

On 02/11/00, VY submitted an exigent Technical Specification change request to remove the partial closure testing requirement for all 8 MSIV's from the VY Technical Specifications.

CAUSE

The apparent cause of the increased reopening times of MSIV-80C, is sluggish or incomplete shifting of a Norgren 3-way solenoid operated test valve (model number C0007A) in the pneumatic control system.

The test valve, along with the related MSIV, is within the primary containment making it impracticable to confirm the cause determination, or go any further in determining the cause for the suspected test valve degradation, until plant shutdown.

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

ANALYSIS

The VY primary containment and the associated isolation system provide a multiple barrier pressure suppression containment that employs defense in-depth principles in the design. The fuel cladding and reactor pressure vessel provide additional barriers against the release of fission products to the environs.

The primary containment consists of a steel drywell, which encloses the reactor vessel and recirculation system, a pressure suppression chamber which stores a large volume of water, a connecting vent system between the drywell and the suppression chamber, isolation valves, containment cooling systems, and other service equipment.

The Primary Containment Isolation System automatically initiates closure of isolation valves to close off potential leakage paths for radioactive material from the primary containment to the environs. This action is taken upon indication of a potential breach in the nuclear system process barrier. The Main Steam Isolation Valves close automatically upon demand from the Primary Containment Isolation System in support of its System Safety Objective.

Although the related MSIV was declared inoperable, because of the omitted surveillance test, the MSIV-80C safety function is being consistently and adequately tested, demonstrating MSIV-80C to be fully functional. The apparent cause of the increasing reopening times, a degraded test valve, has no effect upon the valve's safety function. Therefore, this event has no effect upon public health and safety.

CORRECTIVE ACTIONS

1. VY initiated an internal event report. The event report will ensure that the cause determination is worked to completion when the affected components become accessible, and that appropriate corrective actions are implemented.

2. Enforcement discretion relating the subject TS requirements was requested and granted on 02/10/00.

3. An exigent Technical Specification change request to remove the partial closure testing requirement for all 8 MSIV's was submitted on 02/11/00.

ADDITIONAL INFORMATION

Vermont Yankee has not submitted any similar Licensee Event Reports during the past five years.