VERMONT YANKEE
NUCLEAR POWER CORPORATION

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January 16, 1997
BVY 97-10

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 96-01, Rev. 2

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 96-01. Rev. 2

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 (4-95) U.S. NUCLEAR REGULATORY COMMISSION LICENSEE EVENT REPORT (LER)	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.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
VERMONT YANKEE NUCLEAR POWER STATION	05000271	01 OF 06

TITLE (4) Technical Specification 4.6.E Not Met Due to Components Not Included in the Inservice Test Program Scope

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
02	02	96	96	-- 01 --	02	01	16	96	N/A	

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)	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 NO. (Include Area Code)
GREGORY A. MARET, PLANT MANAGER	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
N/A					N/A				
N/A					N/A				

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 2/2/96, while operating at 100% power, an in-depth Vermont Yankee review of our Inservice Test (IST) Program initiated as a result of corrective actions for LER 95-17, identified additional valves which should have been included in the IST Program plus additional valves which were in the program but were not having all functions tested or were at the incorrect frequency. On 3/28 and 07/09 additional valves were identified which were not included in the IST Program. Since these valves were not included within the scope of the IST Program, the requirements of Technical Specification Surveillance Requirement 4.6.E were not met. Root causes were identified as a failure to provide the necessary focus on the IST Program to ensure that all required components were included and an inadequate review performed during the 1993 program update. Bases for Maintaining Operation evaluations were prepared which concluded that the plant could continue to operate safely even though the subject valves were not previously tested in the Vermont Yankee IST program. Where possible the valves were tested satisfactory. Valves which VY was unable to test at power were tested prior to startup from the 1996 refueling outage. A comprehensive review of the IST Program is complete. Its adequacy has been verified by an audit performed by the site Quality Assurance Department. The Audit confirmed the effectiveness of recent IST program upgrade efforts in meeting code requirements. One remaining program weakness was cited in that the VY IST Program Plan had not been updated to reflect the recently made IST program improvements. This weakness had been identified by the IST group and Program Plan development was in progress. The updated IST Program Plan has since been approved as revision 18 to that document.

DESCRIPTION OF EVENT

As reported in LER 95-17, Short Term Corrective Action 2, Vermont Yankee committed to perform a comprehensive review of the IST program scope to verify compliance with ASME/ANSI OMa-1988 Parts 1, 6 and 10. On 2/2/96, while operating at 100% power, this review identified thirteen additional valves which should have been included in the scope of the Vermont Yankee IST Program. The valves identified include Reactor Building Closed Cooling Water (RBCCW) (EIIS=CC) heat exchanger relief valves SR-70-1A & B and SR-70-2A & B (EIIS=RV); Fuel Pool Cooling Heat (FPC) (EIIS=DA) Exchanger Relief Valves, SR-70-6A & B and RV-70-260A & B (EIIS=RV); Standby Fuel Pool Cooling (SFPC) (EIIS=DA) Isolation Check Valve, V19-224 (EIIS=V); and Safety Relief Valve Exhaust Line Vacuum Breakers, SR-2-14A, B, C, and D (EIIS=V).

In addition to the above thirteen valves which were not included in the IST Program, the review identified four valves which were in the program but had safety functions which were not being tested and thirteen valves that are tested in the IST Program at a deferred frequency without adequate justification. These valves were identified on 2/2/96 with the above valves but at that time the errors in testing were considered to be deficient testing which was not required to be reportable. Further evaluation has determined this was not correct and they are therefore being included in this supplement.

The four valves which did not have all safety functions tested included High Pressure Coolant Injection (HPCI) (EIIS=BJ) Pump suction check valve V23-32, Reactor Core Isolation Cooling (RCIC) (EIIS=BN) pump suction check valve V13-19, and Standby Liquid Control (SLC) (EIIS=BR) pump discharge check valves V11-43A/B.

The thirteen valves which do not have adequate justification for the deferred test frequency include Primary Containment Atmosphere Control (PCAC) (EIIS=BD) Containment Isolation Valves SB-16-19-8/10/23, and Drywell to Torus Vacuum Breakers (EIIS=BF) V16-19-5A thru 5J.

Additionally, On 3/28/96, while operating at 100% power, during the continuing review of the IST Program Scope it was discovered that two thermal relief valves in the Service Water (SW) (EIIS=BI) system (SR-70-16A/16B) which provide overpressure protection for the Emergency Diesel Generator Jacket Water Coolers were not included within the scope of the IST Program as required.

On 07/09/96, it was determined that a number of devices in the Control Rod Drive Hydraulic (CRDH, EIIS=AA) system were not tested in accordance with IST program requirements. The components not adequately tested were; Hydraulic Control Unit (HCU) scram discharge riser check valves, HCU drive water riser check valves, HCU nitrogen accumulator over pressure rupture disks, and Scram Discharge Volume vent and drain valves.

The above cases were either; 1) the valves/components were not included in the Vermont Yankee IST program, 2) not all safety functions were being tested, or 3) the testing was not being done at the correct frequency. Each of these result in the requirements of Vermont Yankee Technical Specification 4.6.E not being met.

As previously stated, code testing requirements were reviewed in detail against in-place IST testing practices and requirements. Several changes were made to specific component testing requirements and methodologies. The overall adequacy of VY's IST Program scope and implementation were reviewed by the on-site Quality Assurance organization. This audit was completed on 12/18/96.

The recent IST audit cited one remaining weakness in the failure to have updated the VY IST Program Plan to reflect the changes in the program which have resulted from the comprehensive program review performed throughout 1996. This was an acknowledged condition. The 1996 IST Program upgrade efforts were prioritized, focusing first upon system and component

evaluations, ensuring the plant component testing was consistent with code requirements and adequately supported by plant procedures. The second priority was the updating of the Program Plan. It was recognized by the IST group that the long term health of the IST Program would require that the Program Plan be updated. The cited weakness has since been corrected via Revision 18 to the IST Program Plan.

CAUSES OF EVENT

The root cause of the failure to include the thermal relief valves in the IST Program was due to an inadequate technical review performed during the 1993 IST Program update.

The root cause for the failure to previously identify the valves identified on 3/28/96 was determined to be a failure to use referenced drawings during the 1992 effort to prepare for the 1993 update to the IST Program and again during the 1995 rescoping effort.

The apparent cause for failure to include the Standby Fuel Pool Cooling Isolation Check Valve (V19-224) in the IST program at the time of installation has been determined to be an inadequate review of the design change which installed the check valve in 1990.

The root cause for the failure to include other valves or functions in the IST Program is determined to be a failure to provide the necessary comprehensive focus required to ensure that all required components were captured by the program. Contributing to this was a failure to provide adequate attention to the IST program and ineffective oversight of program activities.

ANALYSIS OF EVENT

Section 4.6.E of the Vermont Yankee Technical Specifications specifies that the inservice testing (IST) of safety related pumps and valves be performed in accordance with Section XI of ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a, except where specific written relief has been granted by the NRC pursuant to 10 CFR 50, Section 50.55a. Vermont Yankee adopted the 1989 Edition of Section XI during its required third interval update in 1993. Subsections IWV and IWP of ASME Section XI reference the use of the ASME Operations and Maintenance (OM) Standards through the 1988 addenda (Oma-1988) for the testing requirements of pumps and valves. Oma-1988 Part 10 "Inservice Testing of Valves in Light-Water Reactor Power Plants" specifies in subsection 1.1 that "The pressure relief devices covered are those for protecting systems or portions of systems which perform a required function in shutting down a reactor to the cold shutdown condition, in maintaining the cold shutdown condition, or in mitigating the consequences of an accident." Additionally, subsection 1.1 also states that "The active or passive valves covered are those which are required to perform a specific function in shutting down the reactor to the cold shutdown condition, in maintaining the cold shutdown condition, or in mitigating the consequences of an accident."

SR-70-1A & B and 2A & B (RBCCW Heat Exchanger Relief Valves); SR-70-6A & B and RV-70-260 A & B (Fuel Pool Heat Exchanger Relief Valves); protect portions of the RBCCW and Fuel Pool systems which perform a function in mitigating the consequences of an accident. V19-224 (Standby Fuel Pool Cooling Isolation Check Valve) has a function to support the operation of the Standby Fuel Pool Cooling System which performs a function in mitigating the consequences of an accident. SR-2-14 A, B, C & D (Safety Relief Valve Exhaust Line Vacuum Breakers) have a safety function to remain closed to prevent steam from entering the containment during relief valve operation.

V23-32 and V13-19 (HPCI and RCIC Pump Suction Check Valves) have safety functions to open to provide flow to the pump

and to close and prevent backflow from the torus to the Condensate Storage tank when the suction is being transferred to the torus. The closure function of the valves was not being tested. These valves were immediately added to the check valve radiography program and tested satisfactorily.

V11-43A/B (SLC Pump Discharge Check Valves) have safety functions to open and provide SLC flow to the reactor and to close to prevent bypass flow from one pump in the event of a single failure of the opposite pump relief valve. The closure function was not being tested.

SB-16-19-8,-10 & 23 (PCAC Containment Isolation Valves) have been tested on a once per cycle frequency. Since the valves are Primary Containment Isolation valves which receive an automatic close signal the code requires that these valves be tested quarterly. The test frequency has been changed for these valves and quarterly testing completed satisfactorily.

V16-19-5A thru 5J (Drywell to Torus Vacuum Breakers) have been partial stroke tested monthly and had full stroke testing and breakaway force testing performed at a frequency of once per cycle. The ASME Code requires that full stroke testing quarterly and breakaway force testing be performed every six months.

Bases for Maintaining Operation (BMO) were prepared which determined that the plant will continue to operate safely even though the subject valves were not tested in the Vermont Yankee IST Program.

It was determined in the BMO for the RBCCW and Fuel Pool relief valves that overpressurization of the RBCCW or Fuel Pool pipework was unlikely due to the limited sources of high pressure fluids and the inherent reliability of relief valves. External visual inspection of the subject relief valves has revealed that there is no evidence of excessive corrosion, leaks, or mechanical binding which would degrade the valves ability to perform their safety function.

The BMO concludes the Standby Fuel Pool Cooling Check Valve would operate as it is a stainless steel check valve that operates in a mild service environment and is relatively new as it was installed in 1993. It is unlikely that this valve has seen significant wear and has not been subjected to a corrosive environment. Thus there is a reasonable assurance that the valve would operate as required. Additionally, the valve is located upstream of a redundant Safety Class 3 check valve which is tested in accordance with the requirements of OM-10.

The BMO identifies the safety function of the SRV Relief Valve exhaust line vacuum breakers is to stay closed. Closure of these valves is visually verified during drywell closeout inspections at the end of each refueling outage. During the 1995 inspection there were no abnormal indications noted concerning the status of these valves. The relief valves are exercised during each startup from refueling, and a review of Control Room Logs revealed no abnormal indications, providing assurance that the check valves are closed.

The BMO concluded that the Standby Liquid Control Pump Discharge Check Valves would function in the closed direction based upon observations made during the quarterly SLC Pump surveillance testing. Significant degradation of the valves would have been expected to be detected during this quarterly pump test.

The BMO concluded that the valves which were not being tested at the required frequency (Drywell to Torus Vacuum Breakers, V16-19-5A thru 5J) would operate as required because all of the testing requirements (except frequency) for the valves have been met satisfactorily.

It was determined in the BMO for the Diesel Generator Jacket Water Cooling relief valves that overpressurization of the jacket water coolers and associated pipework was unlikely due to the limited sources of high pressure fluids and the

inherent reliability of relief valves. External visual inspection of the subject relief valves has revealed that there is no evidence of excessive corrosion, leaks, or mechanical binding which would degrade the valves ability to perform their safety function.

A BMO was also performed to assess continued operation with the deficiencies identified in the CRDH HCU components and Scram Discharge Volume vent and drain valve testing. The BMO concluded that the IST program deficiencies did not challenge continued safe operation of the plant. The necessary procedure changes were initiated and testing performed as required.

Based upon the above there was no danger to public health or safety as a result of this event.

CORRECTIVE ACTIONS

1. Operability assessments were performed for the subject systems and components. These assessments concluded that the plant could continue to operate safely until the corrective actions were completed.

2. The valves identified in this LER were identified by the comprehensive review of the IST Program committed to in LER 95-17. This review was performed on a system by system basis. Discrepancies were identified in the IST Program and testing requirements, operability assessments were performed and appropriate actions taken. These actions are complete. Adequacy of this effort has been confirmed by independent audit. Completed 12/18/96.

3. Until an alternate testing method that meets the requirements of ASME Oma-1988 Part 10 is developed the Standby Fuel Pool Cooling check valve (V19-224), the High Pressure Coolant Injection check valve (V23-32) and the Reactor Core Isolation Cooling check valve (V13-19) have been added to the list of valves subject to quarterly radiography.

4. The relief valves and the SRV check valves have been added to the IST Program. These valves were tested prior to startup from the 1996 refueling outage.

5. As a result of previous concerns relative to design changes affecting plant programs a change was made to the design change review process to require review of design changes by the applicable plant program coordinator prior to approval.

6. Training has been provided to all personnel involved in the IST Program upgrade effort on the use of referenced drawings during the review.

7. Under the recent Engineering Department reorganization additional resources and focus were applied to plant programs and many are currently undergoing comprehensive reviews to identify and correct any program deficiencies. Two major projects currently in process at VY will improve component design basis documentation:

   a. The Design Basis Documentation project.

   b. The Component Safety Classification project.

8. The Vermont Yankee IST Program is in compliance with code.

ADDITIONAL INFORMATION

A similar event was identified by the NRC as a violation of the requirements of 10 CFR 50.55a in Inspection Report 95-22 dated 10/20/95. Vermont Yankee responded to this violation by letter (BVY 95-124) dated 11/16/95. LER 95-17 and LER 95-17 Supplement 1 also identified certain valves which were not included in the scope of the Vermont Yankee IST Program. Programmatic concerns have been identified in the IST, ISI, Appendix J, and Fire Protection Programs. These were reported to the NRC in LER's 95-17, 95-14, 96-02, AND 96-04. All of these programs are presently undergoing comprehensive reviews. The following LER's describe previous similar events at VY; LER 96-11, Failure to perform IST testing on valves that should have been included in the IST Program; LER 95-18, Inadequate IST surveillance...misinterpretation of configuration during program development.