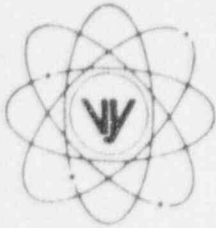


VERMONT YANKEE NUCLEAR POWER CORPORATION



P.O. Box 157, Governor Hunt Road
Vernon, Vermont 05354-0157
(802) 257-7711

March 28, 1996
BVY 96-36

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 96-005

Dear Sirs:

As defined by 10 CFR 50.73, we are reporting the attached Reportable Occurrence as LER 96-005.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Robert J. Wanczyk
Robert J. Wanczyk
Plant Manager

cc: Regional Administrator
 USNRC
 Region I
 475 Allendale Road
 King of Prussia, PA 19406

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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) VERMONT YANKEE NUCLEAR POWER STATION						DOCKET NUMBER () 05000271		PAGE (3) 01 OF 04			
TITLE (4) Failure to Identify and Take Technical Specification Required Actions During Design Change Installation Activities Due to Human Error											
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.(5) 05000	
02	27	96	96	-- 005 --	00	03	28	96	N/A		
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: CHECK ONE OR MORE (11)									
N		20.2201(b)		20.2203(a)(2)(v)		X		50.73(a)(2)(i)		50.73(a)(2)(viii)	
POWER LEVEL (10) 100		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 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 2/27/96, while operating at 100% power, it was identified that during a design change installation on December 7, 1995 the Group 6 isolation for the High Pressure Cooling Injection (HPCI) System (EHS = BJ) was inadvertently degraded without taking the actions required by the Technical Specifications (TS). The root cause of the event is determined to be a personnel error. Corrective actions included a review of all plant processes involved with design change preparation and installation. One plant procedure was identified which requires change to include additional information regarding the evaluation of the impact of design changes during the installation process. Additional training on this occurrence will be provided to plant and contractor personnel involved with design change preparation and installation to enhance their awareness of the issues involved in this event.

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

DESCRIPTION OF EVENT

On 2/27/96, while operating at 100% power, it was identified that during a design change installation on December 7, 1995 the Group 6 isolation for the High Pressure Cooling Injection (HPCI) System (EHS=BJ) was inadvertently degraded without taking the actions required by the Technical Specifications (TS). During the installation of Engineering Design Change (EDCR) 95-408, to replace the HPCI turbine trip pushbutton, the initiation logic for the HPCI system was deenergized by removal of logic power fuses 23A-F1 and 23A-F2. At that time, it was not identified that one of the subchannels associated with the Group 6 isolation was powered by the same power supply as the initiation logic. When this subchannel of the isolation logic was deenergized, in addition to the loss of the designed redundancy in the isolation circuit, one of the parameters of the Group 6 isolation (Low Steam Line Pressure) was totally lost. One unanticipated system action, which occurred at the time that the fuses were removed, was that the HPCI Torus Suction Valves, (V23-57 and V23-58) opened. The HPCI Suction from the Condensate Storage Tank (V23-17) was immediately closed and an investigation started into the cause of the valves opening. Review of the circuit identified that there was one normally energized relay in the circuit which, when deenergized, provided an open signal to the valves. The evaluation of this occurrence determined that this action was in accordance with the system design and in itself it was not reportable due to the HPCI system being removed from service at the time of occurrence. Additional investigation to determine the root cause for the failure to identify the relay function during the preparation of the installation procedure identified that one of the Group 6 isolation subchannels was also affected during the installation and that the TS required actions had not been performed. The TS required actions when instrumentation which provides the Group 6 isolation is not available are to close the isolation valves and comply with the specification for the HPCI system being inoperable. The HPCI logic was deenergized for approximately one hour during the installation.

CAUSE OF EVENT

The root cause of the event is determined to be cognitive human errors on the part of the person who prepared the installation procedure and to a lesser degree the person who prepared the design change. The procedures which govern the preparation of design changes and installation procedures were reviewed and determined to contain appropriate guidance relative to things which should be considered during the preparation of the documents. It was determined that this interaction should have been identified.

A contributing cause was identified as weaknesses in the review process for design changes.

ANALYSIS OF EVENT

The HPCI Group 6 isolation is provided to isolate the HPCI steam line in the event of a HPCI steam line break. The parameters used to provide the isolation are: 1) High steam line space temperature, 2) High steam line flow, 3) Low steam line pressure, and 4) High temperature in the main steam tunnel after a 30 minute delay. The logic is separated into redundant subchannels for three of the four signals, however low steam line pressure only provides a signal to the subchannel which was deenergized.

Unlike most other Primary Containment Isolations where the isolation is provided by the Primary Containment Isolation (PCIS) System and is normally energized logic, the HPCI Group 6 isolation is incorporated into the HPCI system logic and is normally deenergized. When the design change installation deenergized a portion of the HPCI system logic to accomplish the installation, the ability of one subchannel of the Group 6 isolation to function was lost.

At the time of the event the HPCI System was removed from service in accordance with the Technical Specifications and the local steam isolation valve was closed.

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During the time that part of the HPCI logic system was deenergized, remote manual control of the steam isolation valves was available such that if required, the isolation valves could have been remotely closed.

The redundant subchannel of the HPCI isolation circuitry was available and would have provided the isolation from High steam line temperature or high steam line flow had it been required. The only isolation parameter which was not available was low steam line pressure which is primarily designed to secure the system when there is insufficient pressure for system operation.

Based upon the above it is determined that there were no adverse effects to public health or safety as a result of this event.

CORRECTIVE ACTIONS

Short Term Corrective Actions

1. On January 13, 1996 a Documentation of Lesson Learned form was initiated. This action was completed as a portion of the Project Engineering Self Assessment program. The form outlined the initial event which involved the unanticipated opening of the HPCI suction valves. This document was distributed to the VY Project Engineering Department, VY's on-site contractor engineers, YNSD design engineers and the VY Operations Department. This action has been completed.
2. A review of Yankee Atomic Engineering Instruction WE-100, Engineering Design Change Requests, was performed. This review determined that the existing format and content of the procedure adequately addresses this issue. No further action is necessary for this procedure.
3. VYAP 6001, Installation, Test and Special Test Procedure, was reviewed. Adequate controls were identified within the procedure to preclude the occurrence of an event such as this. No further actions are required relative to the I&T procedure.
4. Operations Department procedure VYAP 0140, Vermont Yankee Local Control Switching Rules, was reviewed. Existing procedural controls were found to be adequate. No further action is required relative to this procedure.
5. The lessons learned by this event have been factored into the preparation for other similar on line maintenance and design installation activities. This resulted in an increased sensitivity to the level of advance preparation, review and approval required for on line evolutions. In addition, members from appropriate Departments have been designated to participate in advanced preparation and review for future similar on line maintenance and design installation activities. This action is complete.

Long Term Corrective Actions

1. VYAP 6004, Engineering Design Change Requests, was also reviewed relative to this occurrence. It was determined that the procedural guidelines for design change reviews do not adequately address the impact of design installation on plant structures, systems and components. To resolve this issue, Appendix A (EDCR Review Guide) to VYAP 6004 will be revised to include additional information regarding the impact of design changes during the installation phase. A procedure change form has been generated to initiate the change process. The expected completion date is June 28, 1996.

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

2. This Event will be factored into the 1996 Engineering Support Personnel (ESP) Continuing training to enhance the awareness of personnel responsible for the development, review and implementation of design change and I&T packages. The expected completion date is December 31, 1996.

3. This Event will be factored into the 1996 Contractor Personnel continuing training, to enhance the awareness of personnel responsible for the development, review and implementation of I&T packages. The expected completion date is December 31, 1996.

4. This Event will be factored into the Operations Department continuing operator training to reinforce the importance of maintaining a questioning attitude. The expected completion date is December 31, 1996.

ADDITIONAL INFORMATION

There have been no similar events reported to the Commission in the past five years.