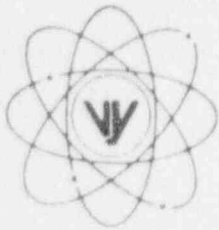


VERMONT YANKEE NUCLEAR POWER CORPORATION



P.O. Box 157, Governor Hunt Road
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(802) 257-7711

April 23, 1997
BVY 97-52

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

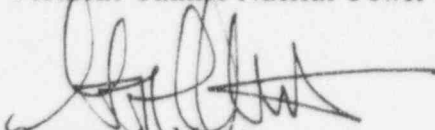
Reference: (a) License No. DPR-28 (Docket No. 50-271)

Subject: Reportable Occurrence No. LER 97-005, Rev. 0

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 97-005, Rev. 0.

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) VERMONT YANKEE NUCLEAR POWER STATION						DOCKET NUMBER (2) 05000271			PAGE (3) J1 OF 03		
TITLE (4) Inadequate design/operating license coordination allows plant configuration which could result in a loss of secondary containment integrity in the event of a LOCA coincident with containment inert/deinert operations.											
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)	
03	24	97	97	-- 005 --	00	04	23	97	N/A	05000	
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)		50.73(a)(2)(i)		50.73(a)(2)(viii)			
POWER LEVEL (10) 100		20.2203(a)(1)		20.2203(a)(3)(i)		X 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 GREGORY A. MARET, 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				NO	NA						
NA					NA						
SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)		MO	DAY	YEAR		
X	YES (If yes, complete EXPECTED SUBMISSION DATE)			NO			06	30	97		

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On 03/24/97 during the review of a plant status report for an occurrence at another station, VY determined that a similar condition existed at VY. Specifically, the potential exists during primary containment inerting and deinerting operations at power to overpressurize the Standby Gas Treatment (SBGT) System filter train housings, should a large break LOCA occur. While the SBGT system will isolate automatically from the primary containment on a LOCA signal, it was determined that the valve stroke times were such that the potential for system overpressurization existed. The potential overpressurization would challenge secondary containment in the event of a LOCA concurrent with containment inerting or deinerting activities. The potential for overpressurization existed because VY Technical Specifications and containment inerting procedures allowed inerting and/or deinerting the primary containment while at power. VY has established administrative controls to preclude the system alignment which creates the potential for overpressurizing the Standby Gas trains. Cause analysis efforts continue. Because plant Technical Specifications only allow normal containment inerting and deinerting operations with the plant in cold shutdown (or for 24 hours after plant startup, or for the 24 hours preceding shutdown) and the postulated LOCA must occur coincident with an inerting or deinerting activity, the probability of the Standby Gas train overpressurization is extremely low. Therefore this event is not considered to have presented an increased threat to public health or safety.

NRC Form 366 U.S. NUCLEAR REGULATORY COMMISSION (4-95)		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.				
LICENSEE EVENT REPORT (LER)						
FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)		PAGE (3)
VERMONT YANKEE NUCLEAR POWER CORPORATION		05000271		YEAR	SEQUENTIAL NUMBER	REV #
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						02 OF 03

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

DESCRIPTION OF EVENT

On 3/24/97, while operating at 100% power, during a review of a plant status report for an occurrence at another station, Vermont Yankee (VY) determined that a similar condition existed at VY. Specifically, the potential exists during primary containment (EIS=NH) inerting and deinerting operations at power to overpressurize the Standby Gas Treatment (SBGT) System (EIS=BH) filter train housings, should a large break LOCA occur.

While the SBGT system will isolate automatically from the primary containment on a LOCA signal, it was determined that the valve stroke times were such that the potential for system overpressurization existed. The potential overpressurization would challenge secondary containment (EIS=NG) in the event of a LOCA concurrent with containment inerting or deinerting activities, where the SBGT system is used. The potential for overpressurization existed because VY Technical Specifications and containment inerting procedures allow for inerting and deinerting of primary containment, for no longer than 24 hours following startup and preceding shutdown.

Upon discovery of this design vulnerability, VY established administrative controls to preclude the system alignment which creates the potential for overpressurizing the Standby Gas trains. The potential for overpressurization of the SBGT system during a LOCA is only present if the 18 inch torus and drywell vent lines are used for inerting or deinerting. Therefore, VY has affixed warning tags to the applicable valve control switches prohibiting the cited configuration.

CAUSES OF EVENT

1. The apparent cause of this event was the failure to identify the design vulnerability during earlier analysis of the SBGT system. The cause analysis investigation for this event continues to determine the root cause.

ANALYSIS OF EVENT

The goal of secondary containment is to minimize ground level release of airborne radioactive materials, and to provide a means for controlled release of building atmosphere should an accident occur. The SBGT system is an integral part of secondary containment. Design basis of the SBGT system is to maintain a negative pressure in the Reactor Building so that any air leakage will be into the Reactor Building, and provide sufficient air filtration in the event of a design basis accident. The SBGT system is designed for a maximum pressure of 2 psi, which is based on the allowable pressure for the filter housing. After a Primary Containment Isolation signal is received the SBGT system aligns to filter Reactor Building atmosphere, and maintains a negative building pressure so that all leakage would be in-leakage. The potential for over pressurization of this system exists if a LOCA was to occur while the SBGT system was being used for inerting/deinerting at power. In this event it was determined that failure of an open 18 inch containment vent valve used for inerting/deinerting during a LOCA could generate a pressure pulse. A LOCA that was able to generate a pressure pulse that was large in magnitude and faster than the closing time of the isolation valve could over pressurize SBGT.

In 1979 at NRC request, VY addressed over pressurization of the SBGT system during a LOCA. The response relayed the conclusions that the SBGT trains could withstand a LOCA with the 3 inch torus and drywell vent valves open. This analysis considered single failure and closing time, but failed to consider that the 18 inch valves may be open for the 24 hour period during startup and shutdown.

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

The potential for this event to manifest itself as an actual overpressurization of the SGBT system, requires low probability conditions/failures to occur simultaneously. The following conditions must be concurrent to threaten secondary containment integrity.

1. Containment inerting/deinerting must be in progress. This would allow the 18 inch inboard isolation valves to be opened. This condition is only permitted with the plant in a cold shutdown condition or within the 24 hours preceding a plant shutdown, or for 24 hours following plant start up. This limits this condition to approximately one half of one percent of plant operating time.
2. A large break LOCA must occur. A large break will cause a primary containment pressure transient potentially allowing high pressures to reach the SGBT system prior to isolation valve closure.
3. The 18 inch inboard isolation valves on the vent path from the torus or drywell must be used during inerting/deinerting process. These large valves provide less restriction to flow and would allow higher pressures to be reached in the SGBT system filter enclosures.

Although existing procedures allow use of the SGBT system for the 24 hour windows mentioned, preliminary interviews with the operating staff and a review of logs show that VY is normally aligned using SGBT for less than 1 hour during inerting/deinerting. Therefore VY was susceptible to this condition for much less than one half of one percent of plant operating time.

Safety Significance

Due to the relative rarity of each individual failure described above, a scenario which requires that each rare event occur simultaneously is considered of extremely low probability. Therefore this event is not considered to have presented an increased threat to public health or safety.

CORRECTIVE ACTIONS

Immediate Actions:

1. Interim plant administrative controls have been implemented to prohibit opening the torus and drywell 18 inch valves, precluding the chance for SGBT overpressurization (this action is complete).
2. An event report was initiated which requires a formal root cause analysis and corrective action recommendation. The results of this analysis, including long term corrective action recommendations will be issued in a supplement to this Licensee Event Report (expected completion date is 06/30/97).
3. An analysis of SGBT system for the conditions described in this event is being performed to determine if overpressurization would occur (expected completion date is 04/25/97).

ADDITIONAL INFORMATION:

Several events reported in the past 5 years have involved original plant design and/or licensing issues. The determination as to which of these are similar to this event will be determined following completion of the cause analysis and communicated in the supplement to this report.