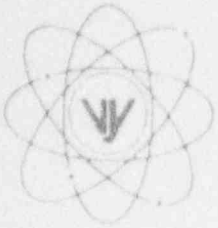


# VERMONT YANKEE NUCLEAR POWER CORPORATION



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February 3, 1994

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 94-01

Dear Sirs:

As defined by 10 CFR 50.73, we are reporting the attached Reportable Occurrence as LER 94-01.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Robert J. Wanczyk  
Plant Manager

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

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PDR ADDCK 05000271  
S PDR

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-350), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20603.

FACILITY NAME (1)

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. (2)

0 5 0 0 0 2 7 1 0 1 OF 0 3

PAGE (3)

TITLE (4) Non-Conservative Technical Specification Setpoint Range Applied to Calibration Procedure for Rod Block Monitor Auto-Bypass Feature Due to Personnel Error.

EVENT DATE (5)

LER NUMBER (6)

REPORT DATE (7)

OTHER FACILITIES INVOLVED (8)

MONTH	DAY	YEAR	YEAR	SEQ #	REV #	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NO. (S)													
0	1	0	6	9	4	9	4	-	0	0	1	-	0	0	0	2	7	1	0	1	OF	0	3
										0	5	0	0	0	2	7	1						
										0	5	0	0	0									

OPERATING MODE (9)

THIS REPORT IS SUBMITTED PURSUANT TO REQ'MTS OF 10 CFR 5: CHECK ONE OR MORE (11)

N	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 1 0 0	20.405(a)(1)(i)	50.36(c)(1)	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)	x 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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

TELEPHONE NO.

ROBERT J. WANCZYK, PLANT MANAGER

AREA CODE

8|0|2|2|5|7|-|7|\*|1|1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYST	COMPONENT	MFR	REPORTABLE TO NPRDS	CAUSE	SYST	COMPONENT	MFR	REPORTABLE TO NPRDS
A	I	G	-	NO					
NA									

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 1/6/94 at 1250 hours, with the reactor operating at 100% steady state power, it was identified that the setpoint for the Rod Block Monitor (RBM) Auto Bypass Logic was potentially set at a value which was slightly non-conservative relative to the specific value contained in Technical Specifications (TS). Following a review of the condition by plant personnel, it was confirmed that an error existed in the calibration procedure, that the setpoint was non-conservatively set, and a 1-hour NRC notification was made at 1524 hours on 1/7/94.

Technical Specifications (TS) allow the RBM to be bypassed when reactor power is  $\leq$  30% rated. Contrary to this requirement, the setpoint range listed in the calibration procedure was 30 to 32.5%. Following confirmation of the setpoint error, the calibration procedure was revised, and the RBM setpoint was recalibrated to the correct value. These actions were completed by 1630 on 1/7/94.

The root cause of this event is personnel error. The error was made during the preparation of revision three to the calibration procedure (dated 4/2/73) which changed the setpoint from 30% to  $\geq$  30% power.

Corrective actions presently being implemented as a result of other recently identified TS non-compliance issues were reviewed and are considered appropriate to prevent recurrence of this event.

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-350), 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 (6)				PAGE (3)					
VERMONT YANKEE NUCLEAR POWER CORPORATION				05000271				YEAR		SEQ #		REV #					
				9 4 - 0 0 1 - 0 0				0 0		0 0		0 2 OF 0 3					

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

DESCRIPTION OF EVENT

On 1/6/94 at 1250 hours, with the reactor operating at 100% steady state power, it was identified that the setpoint for the Rod Block Monitor (RBM) Auto Bypass Logic was potentially set at a value which was slightly non-conservative relative to the specific value contained in Technical Specifications (TS). Following a review of the condition by Engineering, Instrument & Control, and Reactor Engineering personnel, it was confirmed that an error existed in the calibration procedure, that the setpoint was non-conservatively set, and the 1-hour NRC notification was made at 1524 hours on 1/7/94.

Technical Specifications Section 3.2.5, Note 7 allows the RBM to be bypassed when reactor power is  $\leq$  30% rated. Contrary to this requirement, the setpoint range listed in calibration procedure OP4304 "Rod Block Monitor Functional/Calibration Test" was 30 to 32.5%. The erroneous setpoint was identified as a result of a review of the Instrumentation and Control Department calibration procedure by a department engineer.

Per TS Section 3.2 Bases, the Rod Block Monitor System is considered an aid to the reactor operator. The RBM System monitors control rod withdrawal actions of the reactor operator. The RBM System compares localized reactor core power levels around a selected control rod to the core wide Average Power Range Monitor (APRM)(EIS = JE) power levels. When local core power levels exceed preset limits, the RBM System supplies a block signal to the Reactor Manual Control System (EIS = AA) and prevents further control rod withdrawal. The primary purpose of the RBM is to prevent localized fuel damage as a result of the accidental withdrawal of a high worth control rod and to avoid conditions that would require Reactor Protection System (RPS)(EIS = JE) action if allowed to proceed. If any of these conditions are present during control rod withdrawal operations, the RBM produces the block signal. The RBM system auto-bypass logic bypasses its rod block output when reactor power is less than 30%.

Vermont Yankee Technical Specifications Section 3.2.5, Note 7 states that the RBM trip logic for the rod block monitor upscale and downscale alarms may be bypassed when reactor power is  $\leq$  30% power. The portion of the RBM circuitry that provides the reactor power reference signal (APRM) to the logic has been set at or slightly above 30% power since 1973. The potential result of this condition is that had a valid RBM block signal been generated in the past, with the reactor operating between 30 to 32.5% power, the RBM block output signal may have been bypassed by the RBM auto-bypass logic.

Following confirmation of the setpoint error, the calibration procedure was revised, and the RBM setpoint was recalibrated to the correct value. These actions were completed by 1630 on 1/7/94.

CAUSE OF EVENT

The root cause of this event is personnel error. Review of the Rod Block Monitor Functional/Calibration Test procedure history indicates that in the early 1970's the RBM auto-bypass setpoint was to be set at 30% power. It appears that a cognitive error was made during preparation of revision three to the calibration procedure (dated 4/2/73) which changed the setpoint from 30% to  $\geq$ 30% power. In 1978, the procedure setpoint was revised to include a calibration range. The range of 30 to 32.5% was instituted at this time.

ANALYSIS OF EVENT

The primary purpose of the RBM is to prevent localized fuel damage as a result of the accidental withdrawal of a high worth control rod and to avoid conditions that would require RPS action if allowed to proceed (ie: APRM Rod Block, APRM Hi-Flux Scram). At the time that this event was discovered, the plant was operating at 100% power and the bypass was not in effect.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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-350), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20603.

FACILITY NAME (1)	DOCKET NO (2)	LER NUMBER (6)						PAGE (3)							
		YEAR	SEQ #			REV #									
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TEXT (If more space is required, use additional NRC Form 366A) (17)

This event is significant in that the procedure did not provide correct implementation of the TS parameter, however there is no safety significance of this event relative to the health and safety of the public. The setpoints for the rod block monitoring system are chosen so that rod motion is halted well before local fuel damage can occur. The Technical Specification setpoint of  $\leq 30\%$  rated power and the potential non-conservative setting of 32.5% is not significant relative to the large reactivity changes necessary to cause fuel damage.

The RBM Rod Block is the first of several design features in place to limit the affects of a control rod withdrawal error and to limit fuel damage due to large localized reactivity increases. The APRM Rod Block is set to trip at a slightly higher value, approximately 42%, biased to account for recirculation flow conditions. The APRM High-Flux Scram Occurs at approximately 52% power.

CORRECTIVE ACTIONS

Short Term:

1. A Setpoint Change Request was processed and OP 4304 was revised to implement a new setpoint range of 28 +/-1% rated power. The RBM Average Power Range Monitor (APRM) Reference Downscale setpoint was reset to the new value.
2. Although Vermont Yankee is currently in the process of performing a comprehensive review of Technical Specifications to insure compliance, a separate review team was immediately tasked with focusing on Technical Specifications notes to determine if other similar discrepancies existed. No other similar conditions were identified. The results of the this review effort have been factored into the Main Task Force review.

Long Term:

Corrective actions presently being implemented as a result of other recently identified Technical Specification non-compliance issues were reviewed and are considered appropriate to prevent recurrence of this event. This particular condition was identified during the self assessment of a calibration procedure by the responsible department engineer.

Other long term corrective actions previously implemented include:

1. A Task Force was formed to perform a comprehensive review of the Technical Specifications with a focus on compliance methods via plant procedures/policies, this review is expected to be completed by 4/1/94.
2. Plant departments have been instructed to perform self assessments of plant procedures that satisfy Technical Specification requirements to reverify compliance.
3. Department Supervisors are responsible for review of surveillance test data for Technical Specification equipment.

ADDITIONAL INFORMATION

Similar events have been reported to the Commission in LERs 91-04, 93-04, 93-09, and 93-10. These events were similar because they involved a procedure that did not adequately satisfy a testing requirement listed in TS.