VERMONT YANKEE
NUCLEAR POWER CORPORATION

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May 19, 1995
BVY #95-57

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 95-011

Dear Sirs:

As defined by 10 CFR 50.73, we are reporting the attached Reportable Occurrence as LER 95-011.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Robert J. Wanczyk for
Plant Manager

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

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), 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)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
VERMONT YANKEE NUCLEAR POWER STATION	05000271	1 OF 4

TITLE (4)
RPS MG SET "B" OUTPUT BREAKER TRIP DUE TO SETPOINT DRIFT OF OVERVOLTAGE RELAY TRIP CARD

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
04	20	95	95	-- 11 --	00	05	19	95		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	000

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

	20.402(b)		20.405(c)	X	50.73(a)(2)(iv)		73.71(b)
	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)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iv)		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 NUMBER (Include Area Code)
ROBERT J. WANCZYK, 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
B	JC	59	G080	Y						

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)

At approximately 0728 hours on 4/20/95, with the reactor in shutdown due to a scheduled maintenance outage, a Reactor Protection System (RPS) Motor Generator (MG) Set output breaker tripped. The resulting loss of power to a single RPS bus caused a half SCRAM, a Primary Containment Isolation System (PCIS) Group III isolation and shut down of Reactor Building Ventilation. Standby Gas Treatment System (SBGTS) would have normally started, but was isolated due to maintenance.

The cause of the MG Set trip was traced to setpoint drift of the overvoltage relay (OVR) trip card. The drifting setpoint caused the relay trip card to trip the MG Set output breaker. Immediate corrective action consisted of replacing the OVR with a new one. Long term corrective action will be to replace the existing GE OVR with a new type of relay.

The events of this report did not have adverse safety implications. The RPS and Primary Containment Isolation operated as designed upon experiencing a loss of power to a single RPS bus. The RPS bus was promptly placed on to the alternate power supply, half SCRAM and Group III isolation were reset, and the respective ventilation systems restored.

DESCRIPTION OF EVENT

At approximately 0728 hours on 4/20/95, with the reactor mode switch in shutdown due to a scheduled maintenance outage, the "B" Reactor Protection System (RPS) (*EIIS = JC) Motor Generator (MG) Set output breaker tripped. The resulting loss of power to the "B" RPS bus caused a half SCRAM, a Primary Containment Isolation System (PCIS) (*EIIS = JM) Group III isolation and shut down of Reactor Building Ventilation (*EIIS = VA). Standby Gas Treatment System (SBGTS) (*EIIS = BH) would have normally started, but was isolated due to maintenance.

At approximately 0808 hours, after verifying the expected system responses, Control Room personnel transferred the "B" RPS bus on to the alternate power supply, reset the half SCRAM and Group III isolation, and re-started the ventilation systems.

A Work Order was initiated for maintenance personnel to troubleshoot the event. Personnel found that the MG Set trip was a result of setpoint drift on the overvoltage relay trip card. The relay was found to actuate at 118 volts. Since the MG output voltage is 120 volts, drifting of the overvoltage relay setpoint to below 120 volts caused the MG Set to trip.

After replacement of the overvoltage relay trip card at approximately 1630 hours, Control Room personnel returned the RPS "B" bus to its normal operating source of the MG Set.

CAUSE OF EVENT

The cause of the event was setpoint drift of the overvoltage relay trip card. The overvoltage relay trip card is a General Electric (GE) model # 3300A03B0914. Troubleshooting found that the relay was actuating at 118 volts versus the acceptable setpoint range of 126.42 to 131.58 volts. Since the MG's output voltage is set at 120 volts, drifting of the overvoltage relay setpoint to this value caused the MG Set output breaker to trip. A trip of the MG Set output breaker causes a loss of power to its respective RPS bus.

The OVR is approximately 25 years old (original plant equipment). The GE OVR trip cards contain a calibration potentiometer, which has been known to be susceptible to having contaminants (oxidation) build up on the potentiometer surfaces over a period of time. This condition can affect both operation and calibration and result in setpoint drift of the device.

On 4/17/95 (three days prior to this event), while performing preventive maintenance on the RPS MG Set, the OVR trip card was found out of calibration (would not actuate). Adjustments were made, and after calibration and repeatability satisfied, the relay was returned to service. However, based on experience with the design of the relay trip card sub-components, future repeatability was questioned and a Work Order was submitted to replace the relay. At that time spare parts were not immediately available. The relay was expected to be replaced prior to plant startup. The MG Set tripped on 4/20/95. Parts were expedited and a new GE OVR was installed.

* Energy Information Identification System (EIIS) Component Identifier

ANALYSIS OF EVENT

The event of this report did not have any adverse safety implications to the plant or the public. The plant was in an outage with the mode switch in Shutdown. The RPS MG Set output breaker trip is the expected response to an overvoltage condition. A resultant half SCRAM and PCIS Group III isolation was received which is the expected response due to a loss of power to a single RPS bus. The Primary Containment Isolation and Reactor Building Ventilation Systems operated as designed and successfully isolated. Standby Gas Treatment System (SBGTS) would have normally started but was isolated due to maintenance.

Following the trip of the MG set Output breaker, operator action restored power to the "B" side of RPS by using the alternate power supply. The half SCRAM and PCIS Group III isolation were reset, and Reactor Building Ventilation was restarted.

Troubleshooting commenced and determined that the cause of the breaker trip was due to a faulty OVR in the MG set protective circuitry. Once the cause of the event was established, the overvoltage relay was replaced and the RPS bus was returned to the MG Set.

The RPS MG Sets and the associated protection circuitry (including the subject OVR) are non-nuclear safety. The subject OVR is designed to trip the MG set upon an overvoltage condition, however, the design of the RPS power systems employs external safety-class RPS Power Protection Panels which provide the necessary protective functions for the safety-class loads. A failure of the OVR would, at worse case, result in a trip of the MG set which is considered a conservative response.

No testing, surveillance, or systems operations were being conducted during the event.

CORRECTIVE ACTIONS

Immediate Corrective Actions

1. Operators verified the expected Group III isolation. The "B" RPS bus was re-energized from the alternate power supply, half SCRAM and PCIS Group III isolation were reset, and restored ventilation systems.

2. Troubleshooting commenced and determined that the cause of the breaker trip was due to a faulty OVR in the MG Set protective circuitry.

3. The overvoltage relay card was replaced and the RPS bus power was returned to the MG Set.

Long Term Corrective Actions

1. Based on experience with the GE overvoltage relay trip cards in both the RPS and Vital AC MG Sets, the GE relay trip cards will be replaced in the RPS MG Sets with a new type of relay. The relays are expected to be replaced by the 1996 Outage.

2. An Event Report (ER 95-0290) was written which will initiate any additional corrective actions, determined to be appropriate.

ADDITIONAL INFORMATION

Similar events which resulted in a RPS MG Set trip were reported to the commission in LER 91-13. The root cause of that trip was indeterminate.

During the 1995 Outage, the Vital AC MG set also tripped due to setpoint drift on a same model GE OVR trip card. The relay had recently been calibrated approximately 6 months prior and drifted significantly over that period. An Engineering evaluation was performed and a new type of overvoltage relay was installed in the Vital AC circuit.

Based on a search of Nuclear Plant Reliability Data System (NPRDS) data base, it was revealed that there have been two similar problems with setpoint drift of this overvoltage relay in RPS MG Sets at another facilities. The root causes were reported to be unknown. In addition, there was one other case reported of setpoint drift of an overvoltage relay, immediately after calibration, on a RPS MG Set. The root cause was attributed to a dead spot in the potentiometer. It could not be determined if this was the exact same model GE OVR.