ERMONT YANKEE NUCLEAR POWER CORPORATION

P. O. BOX 157 GOVERNOR HUNT ROAD VERNON, VERMONT 05354

> September 28, 1989 VYV 89-185

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 89-22

Dear Sirs:

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 89-22.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

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James P. Pelletier Plant Manager

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

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	During	g a revi	ew of the	Reactor Bui	lding	Closed	Coolin	g Water	(RBCCW)	System	(EII	S=BI),
on Au	gust :	31, 1989	(with th	e reactor op	eratin	ig at 10	10% pow	er), it	was ider	ntified	that	the	
outbo	pard is	solation	valve fo	or the coolin	ig wate	er retur	n line	(V70-11	(7) was t	fed from	n Mot	or	
Contr	ol Cei	nter 7A	(MCC 7A)	(EIIS=EC), a	non e	mergenc	у роме	r bus.	The Plan	nt Final	Saf	ety	
Analy	SIS R	eport re	quires th	at this valu	e be f	ed from	one o	of the AC	emerger	icy powe	er bu	ses	
(EIIS	EK).	A just	ification	Tor continu	led ope	ration	(JCO)	was prep	bared and	preser	ited	to t	ne
bacic	the	actions R	configure	tion was as	ontabl	a A T	empone	s, which	i round 1	was im-	a te	ntod	dry
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to have been in the interpretation of requirements in two separate design specifications.

NRC Form 384A (9-63) LICENSEE EVENT REPORT (LER) TEXT CONTINUATION U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMS NO.3150-0104 EXPIRES 8-31-96

UTILITY NAME (1)	DOCKET NO. (2)	LER NUMBER (6)	PAGE (3)	
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DESCRIPTION OF EVENTS

During a review of primary containment isolation provisions for the Reactor Building Closed Cooling Water (RBCCW) System (EIIS=BI), on August 31, 1989 (with the reactor operating at 100% power), it was identified that the outboard isolation value for the cooling water return line (V70-117) was fed from Motor Control Center 7A (MCC 7A) (EIIS=EC), a non emergency power bus. The Plant Final Safety Analysis Report (FSAR), Table 7.3.1 states that Motor Operated Value (MOV) 70-117 is fed from one of the AC emergency power buses (EIIS=EK). During a loss of on-site power, this value could not be remotely closed.

A justification for continued operation (JCO) was prepared and presented to the Plant Operations Review Committee (PORC) on August 31, 1989, which found that on a temporary basis the present configuration was acceptable. A Temporary Modification was implemented on September 15, 1989 to place the power feed for MOV 70-117 on an AC emergency bus (MCC 8B) (EIIS=ED).

CAUSE OF EVENT

The exact root cause of this event is unknown. The suspected root cause appears to be the interpretation of requirements in two separate design specifications. The design engineering firm (General Electric) prepared a RBCCW system specification and a containment isolation system specification (which also contained RBCCW information). Based upon internal documentation, the architect engineer (EBASCO) appeared to have evaluated that the containment isolation aspects of the RBCCW system were already addressed by the closed seismic loop design and focused on constructing the RBCCW system based upon the RBCCW design specification exclusively.

There was a requirement for the Reactor Building Closed Cooling Water Return line to be supplied from an AC emergency bus, on a table in the original GE Primary Containment Isolation System (PCIS) design specification. The GE RBCCW design specification required a check valve on the line entering primary containment and a motor operated valve on the line exiting primary containment. The motor operated valve was specified to be capable of remote operation from the main control room. This specification did not discuss any emergency power requirements for the return line motor operated valve. However, the specification does discuss other equipment in the RBCCW System that is required to receive emergency bus power. Since EBASCO may not have considered MOV 70-117 to be required for primary containment isolation, it was not placed on an emergency power bus.

Contributing Factors

The following factors could have also contributed to the error of assigning the incorrect power source to MOV 70-117:

 The GE RBCCW System design specified mechanical isolation requirements (IE: valves) for the piping that penetrated primary containment but did not specify any electrical requirements for the isolation valve.

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- 2. The GE RBCCW System design specification states that "Systems which are not required for plant operation are shut off from the system as a group by an isolation valve operated from standby power sources." Since the cooling equipment inside primary containment is required for normal plant operation and is highly desirable for mitigating small LOCA/post accident operation, MOV 70-117 did not appear to apply to this requirement.
- The Containment Isolation design specification table did not assign this value a specific number, as was done in almost all other Primary Containment Isolation Values listed in the table.
- 4. The RBCCW System is the only closed loop system that does not communicate directly with the drywell or primary coolant and has only one electrically powered isolation value at a drywell penetration. Because of this, the MOV 70-117 value is unique and the possibility of this error was increased. All other electrically powered containment isolation values are in pairs and are powered from different emergency power buses.

ANALYSIS OF EVENT

The isolation provisions for the RBCCW System were reviewed by the NRC (reference FSAR, Appendix F) and determined to satisfy Criterion 57 of 10CFR Part 50, Appendix A. However, the cooling water return line isolation valve MOV 70-117 is not provided with power from one of the AC emergency buses as required by FSAR Table 7.3.1.

There are no Technical Specification operability requirements for MOV 70-117. For other primary containment penetrations having two isolation valves Technical Specification 3.7.D states that for two valves in one line (two isolation boundaries): "that upon determining that one valve is inoperable, reactor power operation may continue provided at least one valve in each line having an inoperable valve is in the mode corresponding to the isolated condition." The RBCCW penetration is considered to have two isolation boundaries. The first being the closed loop inside containment, the second being the isolation valve. The closed RBCCW loop is designed as safety class and seismic, and based upon system monitoring there is no evidence of RBCCW leakage inside the primary containment. If MOV 70-117 is assumed to be inoperable, the intent of Technical Specification 3.7.D is met in that the second containment boundary is in the isolated condition.

Based upon the above, it is determined that this event presented no adverse consequences on the public health or safety.

CORRECTIVE ACTIONS

The following corrective actions were taken to resolve the discrepancy in the power supply to MOV 70-117:

NRC Form 384	A		U.S. NUCLEAR REGULATORY APPROVED OMS NO.3150-	COMMISSION -0104	
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Immediate Corrective Action

- A justification for continued operation (JCO) was prepared to evaluate the safety significance of this event and its effect on safe plant operation. On August 31, 1989 the JCO was reviewed by the Plant Operations Review Committee and approved by the Plant Manager.
- A Temporary Modification was prepared and implemented to place MOV 70-117 on an AC emergency power bus (MCC 8B), which is supplied from the B Emergency Diesel Generator following a loss of on-site power and meets FSAR Table 7.3.1 requirements for MOV 70-117.
- 3. All electrical Primary Containment Isolation Valves on FSAR Table 7.3.1 were reviewed to ensure power requirements are met. No other discrepancies were found.
- Preliminary review of all RBCCW criteria was completed. No other discrepancies of safety significance were noted.

Long Term Corrective Actions

- Convert the Temporary Modification to a permanent installation using the design change process.
- Complete a detailed review of the RBCCW System to ensure all system design bases are met.
- 3. Review safety system emergency power requirements and verify against actual plant configuration, to ensure all FSAR requirements are met.

Any discrepancies of safety significance identified in 2 or 3 above will be reported as a supplement to this LER.

ADDITIONAL INFORMATION

A similar occurrence was reported to the Commission in LER 89-09.