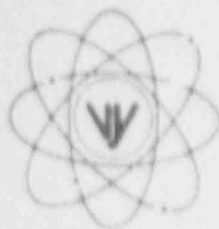


# VERMONT YANKEE NUCLEAR POWER CORPORATION



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February 6, 1992  
BVY 92-10

United States Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

References: a) License No. DPR-28 (Docket No 50-271)  
b) Letter, USNRC to all Licensees, (NVY 91-137), dated July 18, 1991; Generic Letter 91-11, Resolution of Generic Issues 48, "LCOs for Class 1E Vital Instrument Buses" and 49, "Interlocks and LCOs for Class 1E Tie Breakers"

Subject: Response to Generic Letter 91-11, Resolution of Generic Issues 48, "LCOs for Class 1E vital Instrument Buses" and 49, "Interlocks and LCOs for Class 1E Tie Breakers"

Dear Sir:

The following information is provided in response to Generic Issue 48, "LCOs for Class 1E Vital Instrument Buses" and Generic Issue 49, "Interlocks and LCOs for Class 1E Tie Breakers," Reference b). These generic safety issues raise concerns over the operation of the Class 1E 120V ac vital instrument buses and the Class 1E tie breakers at some nuclear power plants. The NRC staff identified conditions that indicate that the licensees at some plants may be violating the single failure criterion for a substantial period by lining up vital buses to alternate sources and by maintaining tie breakers closed for excessive times. The primary objective of the generic issues are to verify that plants are not being operated in violation of applicable regulations.

The generic letter concludes that, unless licensees provide adequate justification that such provisions are not needed, all licensees should have appropriate procedures that include time limitations and surveillance requirements for:

- 1) Vital instrument buses (typically 120V ac buses),
- 2) Inverters or other on-site power sources to the vital instrument buses, and

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- 3) Tie breakers that can connect redundant Class 1E buses (ac or dc) at one unit or that can connect Class 1E buses between units at the same site.

The following discussion describes how Vermont Yankee addresses the concerns of the generic letter. The concerns are addressed either by determining that Vermont Yankee has the required time limitations and surveillance incorporated into their existing procedures; or that justification exists that such provisions are not needed.

#### Generic Issue 48

Generic Issue 48, "LCOs for Class 1E Vital Instrument Buses," raised concerns over the operation of ac vital instrument buses. The "vital instrument buses" described in the generic issue are the ac buses that provide power for the instrumentation and controls of the engineered safety features (ESF) systems and the reactor protection system (RPS) which are designed to provide continuous power during postulated events including the loss of normal off-site power. The NRC found that some operating nuclear power plants do not have any administrative controls governing operational restrictions for their 120V ac vital instrument buses and associated inverters.

The 120V ac buses at Vermont Yankee that were reviewed for applicability to this generic issue are the 120/240V Uninterruptible (Vital) AC Distribution Panel ("vital bus"), the 120/240V AC Instrumentation Distribution Panel ("instrument bus"), the RPS Bus A and the RPS Bus B.

The original design basis of the "vital bus" at Vermont Yankee was to provide uninterruptible power for non safety loads such as the station computer and feedwater system controls. An alternate supply is available from a diesel generator backed bus. In addition to the non safety loads which require an uninterruptible supply, certain Safety Class Electrical loads are connected to the "vital bus" at Vermont Yankee. The Safety Class Electrical loads can withstand the interruption of power associated with the time necessary for the start of the diesel generator. Because the Safety Class loads can be interrupted for the time necessary to start the diesel generator during a loss of off-site power, the requirement for a time limitation on use of the alternate supply for the "vital bus" is not applicable to Vermont Yankee.

The "instrument bus" at Vermont Yankee is not provided with any uninterruptible power but is connected to buses provided with power from the diesel generators. Generic Issue 48 is not applicable to these buses because they do not meet the definition of "vital instrument buses" provided in the safety issue.

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The RPS buses are designed to provide power to RPS loads during reactor operation but the buses are designed to "fail safe" under loss of power. In addition the design of the RPS buses at Vermont Yankee is such that only one RPS bus can be connected to its alternate source of power at one time. Thus the concerns of Generic Issue 48 do not apply to the RPS buses at Vermont Yankee.

#### Generic Issue 49

Generic Issue 49, "Interlocks and LCOs for Class 1E Tie Breakers," was written to assure that licensees have procedures which provide administrative controls and time limitations on the use of tie breakers which connect redundant emergency power systems together. These restrictions are necessary to assure the plants are operating within their design basis.

The breakers at Vermont Yankee that were determined to be applicable to this generic issue are Breakers 3V and 4V in the 4 kV system, Breakers 8T9 and 9T8 in the 480 Volt system and the breakers between buses DC-1 and DC-2 in the 125V dc system.

In the 4 kV system at Vermont Yankee there are two manual breakers, 3V and 4V, which are normally used only to connect either of the two redundant safety class electrical buses to the Vernon Hydroelectric Station in the unlikely event of a loss of off-site power and failure of one or both diesel generators. Interlocks prevent the connection of Vernon Hydroelectric Station to both 4 kV buses simultaneously. A review of the 4 kV circuitry has determined that interlocks would not prevent the operators from closing breakers 3V and 4V during a beyond design basis event. The control circuitry permits closure of the breakers if closure occurs in the proper sequence with one 4 kV bus dead. Plant procedures do not provide for use of this connection. We believe that the concerns of Generic Issue 49 are addressed because plant procedures do not provide for simultaneous closure of these breakers at all, thus providing administrative control and a time limit on their use; and interlocks prevent the breakers from being closed unless an emergency bus is dead, thus providing assurance that the breakers cannot be inadvertently closed.

In the 480V system, tie breakers 8T9 and 9T8 can connect the two redundant safety buses, Bus 8 and Bus 9. These breakers are normally left open; however they can be closed during refueling outages for equipment maintenance, testing and inspection. The surveillance required for monitoring status of breakers 8T9 and 9T8 is provided by plant procedure AP 0155, "Current Valve and Breaker Lineup and Identification." Time limitations exist which govern the closure of these breakers during reactor power operation. The time limitations applicable to these breakers are the Technical Specification time limits associated with operation with inoperable buses as described in T.S.3.10.B.1 and T.S.3.5.H.1.

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In the 125V DC system, Bus DC-1 and DC-2 can be connected together by closing two breakers. Under normal operation the breakers are left open. The breakers are currently used only when it is necessary to feed one of the dc buses from the spare battery charger, Charger CAB, which is connected between the two breakers. Only one breaker is closed to connect the charger. Operating procedures currently prevent closing both breakers at the same time; thus, the two systems remain independent at all times. Vermont Yankee is currently revising its operating procedures to permit closure of both breakers during cold shutdown. This change will provide a connection from the battery of the opposite redundant division during battery discharge testing. The surveillance required for monitoring status of the dc tie breakers is provided by plant procedure AP 0155, "Current Valve and Breaker Lineup and Identification." Time limitations exist which govern the closure of these breakers during reactor power operation. The time limitations applicable to these breakers are the Technical Specification time limits associated with operation with inoperable buses as described in T.S.3.10.B.2 and T.S.3.5.H.

We trust that the information supplied above is satisfactory in answering the concerns raised in subject generic letter. Should you have any questions or require additional information, please do not hesitate to contact us.

Very truly yours,

Vermont Yankee Nuclear Power Corporation

*James P. Pelletier*  
 James P. Pelletier  
 Vice President - Engineering

cc: USNRC Region I Administrator  
 USNRC Resident Inspector - VYNPS  
 USNRC Project Manager - VYNPS

STATE OF VERMONT )

WINDHAM COUNTY )

Then personally appeared before me, James P. Pelletier, who, being duly sworn, did state that he is Vice President - Engineering, of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing document in the name and on the behalf of Vermont Yankee Nuclear Power Corporation, and that the statements therein are true to the best of his knowledge and belief.

*Gina M. Fontaine*  
 Gina M. Fontaine, Notary Public  
 My Commission expires February 10, 1995

