



VERMONT YANKEE NUCLEAR POWER CORPORATION

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B.4.2.1

REPLY TO:
ENGINEERING OFFICE
TURNPIKE ROAD
WESTBORO, MASSACHUSETTS 01581
TELEPHONE 617-366-9811
WVY 79-69

June 15, 1979

United States Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Attention: Boyce H. Grier, Director

References: (1) License No. DPR-28 (Docket No. 50-271)
(2) IE Bulletin No. 79-01
(3) VYNPC Letter to USNRC, No. WVY-37, dated
April 4, 1979
(4) VYNPC Letter to USNRC, No. WVY-45,
dated April 24, 1979
(5) IE Bulletin No. 79-01A.

Dear Sir:

Subject: Environmental Qualification of Class 1E Equipment

Reference (2) required action to be taken on providing written evidence of the qualification of electrical equipment required to function under accident conditions at Vermont Yankee. In compliance with this requirement, we are providing the following responses.

I. Inside Containment

The environmental qualifications of electrical equipment located inside the primary reactor containment and steam tunnel which are required to remain operable during and/or subsequent to a Design Basis Accident (DBA) have been reviewed for adequacy. This information is provided in YAEF Report 1179A - "Summary: Environmental Qualification of Safety Related Electrical Equipment Within the Primary Containment and Steam Tunnel at Vermont Yankee Nuclear Power Station" which is enclosed as Attachment 1.

II. Outside Containment

A. The only area subject to abnormal environments outside the primary containment has been identified as the Reactor Building (Secondary

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Containment).

The environmental conditions in the Reactor Building as a result of a postulated accident in the primary containment or steam tunnel are given below. These conditions have been established in FSAR Question/Answer No. 7.7.

Reactor Building Post-Accident Environmental Conditions

Temperature	150°C.
Pressure	0.25 psig
Relative Humidity	90%
Radiation - Maximum Dose Rate	350 R/hr
Integrated dose -12 hr	4200 R
2 day	1.4×10^4 R
30 day	10^5 R
180 day	10^5 R

B. All the equipment in the reactor building which is required to function under the above postulated environmental conditions have been identified. This equipment includes the following categories:

1. Support electrical systems used to operate equipment located within the primary containment and/or steam tunnel which are required to function during a postulated accident
2. Various valves
3. Post accident monitoring instrumentation

C. The electrical components that are part of this equipment are given below:

1. Motors required for
 - a. Residual Heat Removal Service Water Pumps
 - b. Residual Heat Removal Pumps
 - c. Standby Liquid Control Pumps
 - d. Core Spray Pumps
 - e. Standby Gas Treatment Exhaust Fan
 - f. High Pressure Coolant Injection System Auxiliary Oil Pump
 - g. Containment Air Dilution System
 - h. Miscellaneous Limiting Valve Operators
2. Various cables as required for the above equipment
3. Uninterruptible Power System as a power supply for certain ECCS valves

4. Motor Control Centers for the above listed motors
5. Post Accident Monitoring System Transmitters

III. Conclusions

References (3) and (4) identify certain stem mounted limit switches (NAMCO Type EA740, 86700) as lacking adequate environmental qualification. Although not required for the accident situation, these switches are scheduled to be replaced with qualified switches at the next scheduled shutdown following receipt of qualified switches.

In addition, our investigations have revealed that the following items lack sufficient documentation for an adequate review of their qualifications. While we have some indication that they are suitable for operation in their postulated environments, no concrete evidence verifying this fact has been obtainable; at the same time we have come across no evidence stating that they are unqualified.

- (1) ASCO DC Solenoids (Model #WPHT8300B64F) used for the Main Steam Relief Valves RV-2-71A, B, C, D.
- (2) ASCO AC-DC-Solenoids used for inboard Main Steam Isolation Valves AO-V-2-80A, B, C, D and the outboard Main Steam Isolation Valves AO-V-2-86A, B, C, D.
- (3) Thermo Electric Thermocouple (Ceramo-Premium Grade Model CeS16-2-516) used for Primary Containment Atmospheric Temperature Monitoring System, thermocouple number TE-16-19-30.
- (4) ASCO Solenoid (Model 8315C22) used for the Reactor Sampling Flow Control Valve FCV-2-39.
- (5) Overload relays in MCC 8B and 9B for Standby Liquid Control Pumps P-45-1B and P45-1A.

We are continuing our efforts to obtain further information on qualification of this equipment, and are hopeful that this can be obtained in the near future. If, however, no satisfactory qualification data is obtained within the next three months, we will commit to replace this equipment at the next scheduled shutdown following receipt of equipment with adequate qualification documentation. We believe that continued operation is justified because the equipment has not been proven to be unqualified. If replacement becomes necessary, this will be done as a precautionary measure. Furthermore, our records to date have shown no signs of deterioration of this equipment.

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Reference (5) requires that information be provided concerning ASCO solenoid valves used in safety-related systems at Vermont Yankee. We believe that we have answered these concerns in our above responses to Reference (2). In addition, a preventive maintenance program will be conducted in accordance with the requirements of this bulletin (Ref (5)).

We trust that this information is satisfactory; however, should you have any further questions, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Roy E. Moody for
D. E. Moody
Manager of Operations