

ATOMIC POWER COMPANY •

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May 12, 1983 MN-83-101

JHG-83-104

Director of Nuclear Reactor Regulation United States Nuclear Regulatory Commission Washington, D. C. 20555

Attention: Mr. Robert A. Clark, Chief Office of Nuclear Reactor Regulations Operating Reacturs Branch #3 Division of Licensing

Reference:

- (a) License No. DPR-36 (Docket No. 50-309)
  - (b) USNRC letter to MYAPCo, dated April 8, 1983
  - (c) MYAPCo letter to USNRC, dated February 25, 1982 (MN 82-34)
  - (d) MYAPCo letter to USNRC, dated February 22, 1980 (WMY 80-26)
  - (e) MYAPCo letter to USNRC, dated June 24, 1982 (MN 82-120)

Subject: Environmental Qualification of Electrical Equipment

Dear Sir:

Your letter, Reference (b) transmitted the Safety Evaluation Report (SER)and Technical Evaluation Report (TER) documenting the results of your review of environmental qualification of safety-related electrical equipment at the Maine Yankee plant and requested that we provide additional information for items in NRC Categories I.B, II.A, and IV in the TER.

Justification for continued operation is provided for the following items which have not been addressed in previous submittals.

Category I.B - Equipment Qualification Pending Modification

# Items 27 and 28

These transmitters have been replaced with qualified transmitters.

A048

Item 43

PDR

8305190308 830512 PDR ADOCK 05000309

Installation of the qualified hydrogen analyzer has been completed.

Items 46, 48, 49, 50, 53, 54, 56, 58, 59, 60, 61, 62, 71, 72, 73

These solenoid values have been replaced with qualified units and similarity of the installed units to the tested units has been established by certificates of conformance from the manufacturer.

May 12, 1983 Page 2 MN-83-101

#### Item 55

As indicated in our previous submittal, Reference (c), this item is not required for accident mitigation and will be deleted from the Master List. The function of this valve is to provide control air to the pressure regulator of the steam turbine-driven auxiliary feedwater pump during station blackout, at which time no line breaks are postulated.

### Category II.A - Equipment Qualification Not Established

#### Item 6

The specific deficiency in the TER for these terminal blocks is lack of testing for the steam environment resulting from the letdown line HELB in the Primary Auxiliary Building. The same terminal blocks have been justified for interim use in the LOCA environment in containment per Reference (c), Item ELEC-7. For the terminal blocks in the Primary Auxiliary Building, the environment is much less severe. All terminal blocks are installed in junction boxes which protect the blocks from direct steam impingement and delay any temperature transients. The pressure transient from the line break is only 1 psi for about 30 seconds and the release is terminated in a matter of minutes. Therefore, we believe these terminal blocks will not be exposed to the steam environment.

To provide further assurance, the function of each circuit has been reviewed to evaluate the significance of failure of the terminal blocks. For most of the solenoid valve circuits, the mitigating function will occur despite failure of the circuit. The remaining solenoid valves are associated with the isolation of non-essential lines from containment in the event safety injection should occur, but in this case there is no adverse environment in containment to be isolated. Also, failure of these valves will not affect the mitigating function. The two remaining circuits are for HPSI flow monitors, for which alternate instrumentation is available, and LPSI flow, which is not required for this HELB. This evaluation shows that failure of these components will not degrade the HELB mitigation function or cause the operator to be mislead in mitigating the HELB.

#### Items 8 and 15

Since the submittal of documentation for the TER, additional test information has been obtained to address the concerns in the TER relative to these cables.

### Items 9 and 12

The TER cites lack of correlation between this cable and the tested cable. Since the submittal of the test report for TER review, our

May 12, 1983 Page 3 MN-83-101

consultant has compared the insulation systems of the test specimen and the cables specified for these items and determined that the report is applicable for establishing gualification of the cables.

### Items 10 and 38

These items are TMI requirements as outlined in NUREG-0737, Section II.E.3.1, "Emergency Power Supply for Pressurizer Heaters". This requirement is for the operator to have the capability to maintain circulation at hot standby through the use of pressurizer heaters when off-site power is not available. We have met these requirements as cutlined in our letter, Reference (d). We believe these items should be deleted from the Master List as previously stated in our letter, Reference (e).

# Item 14

The manufacturer has informed us that this cable is identical to the cable tested. This satisfies the concern expressed in the TER.

# Items 18 and 69

These items are the motor-operated block values for the power-operated relief values (PORV) on the pressurizer. The scenarios which may require operation of a pressurizer PORV in a harsh environment are beyond the scope of the identified DBAs for equipment qualification considerations. The function of the block value is to isolate an open PORV. However, a condition in which the PORV would be required to be opened under DBA harsh environmental conditions is not anticipated. Since the PORVs remain closed during DBA conditions, operation of the block values will not be required. In addition, DBA environments cannot result in energizing the PORV to cause spurious opening. Therefore, there will be no significant degradation of any safety function or misleading information to the operator as a result of failure of the block values under the accident environment resulting from a design basis event.

## Items 24, 29, 34, 35, 70

The test reports reviewed for the TER were for Phase 1 testing of these transmitters. Since that submittal, Phase 2 testing has been successfully completed. We have reviewed a summary report of the Phase 2 test results and find it qualified for our applications. The final test report is due to be issued in late May of this year. It should be noted that the NRC has followed the Phase 2 test program and witnessed many of the tests.

May 12, 1983 Page 4 MN-83-101

## Item 37

Additional test data is available for pressure integrity testing of a similar penetration type, and the manufacturer has analyzed the penetration types to evaluate the applicability of the additional testing. We believe this additional information will satisfactorily address the concerns in the TER.

# Item 39

This hydrogen analyzer has been relocated to an area in the Primary Auxiliary Building which is further removed from the radiation levels due to the charging pumps and recirculation piping and is accessible to personnel. In the event this analyzer should fail, the qualified analyzer (Item 43) has been installed and will be available as an alternate indication.

# Item 44

Since the submittal of the documentation for the TER, a calculation of the post-accident radiation dose has been performed for the specific location of the motor control center. The revised calculation demonstrates that the actual radiation dose is less than  $1 \times 10^{4}$ R. This is not considered to be a harsh environment and the worksheets will be deleted.

#### Items 51 and 57

These solenoid values have been replaced with qualified units and similarity of the installed units to the tested units has been established by certificates of conformance from the manufacturer. This resolves the concern expressed in the TER.

# Item 52

These solenoid valves have been replaced with manual valves, so qualification is not required.

# Item 63

The only harsh environment for these motors has been the HELB transient. Since this transient runs its course very quickly, the motor will not experience the temperature spike long enough to cause any degradation. The TER concurs with this analysis. We conclude that these motors do not experience a harsh environment and do not require a worksheet. Aging effects due to normal operation will be addressed as with other equipment located in a mild environment.

May 12, 1983 Page 5 MN-83-101

# Item 64

Additional information is available to demonstrate that the documentation submitted for the TER review is applicable to the motors at Maine Yankee and, therefore, can be related to plant-specific parameters.

### Item 65, 66

Additional information is available to establish similarity between the tested insulation system and the installed equipment. In addition, analysis is available which compares qualified life to the actual plant environment and duty cycle of the motors. Motor lead splice degradation has been and is monitored as part of the plant maintenance and surveillance program. We conclude that this additional information addresses the concerns in the TER.

# Item 67

The manufacturer of the motor has provided verification that the installed motors are similar to the tested motor. This resolves the concern in the TER.

#### Item 68

This item may be deleted as it was included in Item 61.

There are no items to be addressed under Category IV.

Based on the details provided above, we conclude that continued operation is justified in the interim until final resolution of these items is accomplished.

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

Sincerely yours,

MAINE YANKEE ATOMIC POWER COMPANY

John H. Garrity, Senior Director Nuclear Engineering and Licensing

JHG/pjp

Attachments

cc: Mr. James M. Allan Mr. Paul D. Swetland