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MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

May 7, 1984
PY-CEI/NRR-0107 1.

Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Perry Nuclear Power Plant, Units 1 and 2
Docket Nos. 50-440; 50-441
SER Outstanding Issue (4)
Application of GE Environmental
Qualification Program
(NEDE-24326-P, Revision 1)

Dear Mr. Youngblood:

This letter and its attachment address the NRC Staff's findings and resolve the open item, with respect to the application of the General Electric Environmental Qualification Program (GE Topical Report NEDE-24326-P, Revision 1) to the Perry Nuclear Power Plant, Units 1 and 2. These findings were identified in Supplement 4 to the Safety Evaluation Report, (Section 3.11 and Appendix H.) and your letter dated October 26, 1983.

Our responses to the staff position on the open item and their conclusions are provided in Attachment 1.

We believe this information should enable the remaining portion of SER Outstanding Issue (4) to be resolved. If you have any questions, please let me know.

Very truly yours,

A. Kaplan for M. Edelman

Murray R. Edelman
Vice President
Nuclear Group

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Attachments

cc: Jay Silberg, Esq.
John Stefano
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RESPONSES TO
SAFETY EVALUATION REPORT OF GENERAL ELECTRIC
ENVIRONMENTAL QUALIFICATION PROGRAM NEDE-24326-1-P

OPEN ITEM

4.1 AMPLIFIED POSITION ON TIME MARGIN

General Electric's position on time margin, as expressed in NEDE-24326-1-P does not address the requirement of NUREG-0588 that time margin be a minimum of one hour. It is required that time margin be approached on either this basis or the amplified staff position given in Section 3.2.3, as follows.

NRC POSITION

1. Application of time margins less than one hour will be justified for each piece of equipment, including any judgements regarding survivability limits of the equipment.
2. The required operability time will be justified with consideration for a spectrum of breaks and the potential need for the equipment later in an event or during recovery operations.
3. It will be demonstrated that failure of the equipment after the required operability time will neither mislead the operator to take an improper action nor further degrade the event by causing a failure in systems necessary for mitigation of the event.
4. The margin applied to the required operability time when combined with other test margins will account for the uncertainties associated with the design, production tolerances, testing techniques, and the number of units tested.

RESPONSE

When the minimum time margin of one hour is not used, General Electric will use the time margin evaluation techniques outlined in Section 3.2.3 "Amplified Position on Time Margin" of the SER in the equipment unique qualification report, as discussed below:

1. The Functional Performance Requirements shall document the function times for all Class 1E equipment and the supporting Design Record Files shall contain the justification for the margin for each function time less than ten hours if a time margin less than one hour is used. The qualification reports for Class 1E equipment with time margins less than one hour shall document judgements regarding the survivability limits of the equipment beyond the tested time to the one hour margin limit.

2. The Functional Performance Requirements will document the function times for all Class 1E equipment and the supporting Design Record Files shall contain the justification for the margin for each function time less than ten hours if a time margin less than one hour is used. The applicable function times for all accidents and qualification for all such shall be addressed in the qualification report.
3. The Functional Performance Requirements will contain failure analyses which address failure effects on other, needed equipment for those cases where qualification is based on a time less than the accident duration.
4. For function times less than ten hours with time margins less than one hour, tests shall be performed on more than one sample (size, cost and availability permitting) or margins increased, and the qualification report will clearly state that the equipment is only qualified for the time tested which shall include appropriate time margin. All other margins shall also be applied as required by NEDE-24326-1-P.

NRC CONCLUSIONS

Each applicant referencing the methodology contained in this document (NEDE-24326-P) must insure that specific environmental parameters along with seismic and dynamic input response spectra are properly defined and enveloped for his specific plant.

Further confirmation is required that none of the safety-related equipment qualified within the program reported in NEDE-24326-1-P will have natural frequencies below 4 Hz.

RESPONSE

The Perry Project has submitted plant specific environments consistent with those provided in FSAR Tables 3.11-1 thru 8 including seismic and dynamic input to the General Electric Qualification Program. These inputs were enveloped in General Electric's Qualification program.

The Perry seismic and dynamic qualification of mechanical and electrical equipment is conducted using the guidance of NUREG-0800, section 3.10.