

February 20, 2001

Mr. William A. Horin
Counsel to the Nuclear Utility Group
on Environmental Qualification
Suite 800
1400 L Street, NW
Washington, D.C. 20005-3502

Dear Mr. Horin:

I am writing in response to your letter of January 15, 2001, in which you provide comments on the NRC staff's presentation to the Advisory Committee on Reactor Safeguards (ACRS) regarding cable research test results and Generic Safety Issue 168 (GSI-168).

First, I wish to thank you for your detailed comments and for the interest your organization has shown in our cable research program. We feel that we have benefitted from your active participation during the public meetings we have held to discuss the test plans and results. We look forward to continuing this interaction as we explore resolution paths for GSI-168.

With regard to your specific comments, let me start by emphasizing that we do not feel we have in any way intentionally mischaracterized the results of the research or the requirements of the industry standards that serve as a basis for environmental qualification of electric cables. Clearly, your group and the staff disagree on some of this information and we would welcome an opportunity to discuss these areas of disagreement in an effort to bring about a timely and definitive resolution to GSI-168.

We agree with your characterization of the conservatism in the qualification process. In fact, the staff has relied on precisely the points you raise in determining that the cable test results do not constitute an immediate safety issue and that they can and should be addressed as part of the generic safety issue resolution process.

However, we do not agree with your assessment of the research test results. We believe that the characterization of the test results presented to the ACRS was accurate and appropriate. We believe the 20-, 40-, and 60-year characterizations were clear to the ACRS and that the issue subsequently raised (ACRS letter dated November 15, 2000, addressed to Chairman Meserve) relates to their belief that testing naturally aged cables is preferable to testing artificially aged cables. We have emphasized from the early stages of our research program that we recognized the weakness introduced by linearly extending the aging from the original 40-year qualification to 60 years. However, we felt the tests, if successful, could provide a basis for license renewal evaluations that did not rigorously address cable aging. However, our tests show that a conservative bounding qualification envelope cannot be extended from 40 to 60 years, and that plant specific consideration of extending cable qualification appears to be necessary. We believe that these are areas where further dialogue is warranted.

With regard to the staff's concern about the single prototype test acceptability, this is an issue that has emerged as the staff has considered the test "failures" from our research. Clearly, single prototype testing has been used for many applications and will almost certainly be used in future applications. However, the staff feels that the use of a single cable specimen for environmental qualifications warrants further discussion. The staff is aware that at least in one case, multiple samples were preaged but the samples to be subjected to the LOCA test were selected on the basis of physical condition first and insulation resistance second. Our concern also arises because of the test "failures" we have encountered in our research. It is surprising to us that we have found multiple "failures" in the very few cable samples we have examined--cables that had been previously qualified and for which we were merely duplicating the original qualification.

In summary, we agree with your characterization of the conservatism inherent in the original cable qualification tests but do not agree with your evaluation of the cable test data from the NRC's research programs. Based on the information available to us, both from the qualification reports and our research results, we believe we have correctly characterized the cable aging and qualification issues to the ACRS. However, we also believe that further dialogue with your organization and the other interested stakeholders will contribute positively to a resolution to GSI-168.

I suggest that we enter into a limited series of public meetings to fully discuss our respective views of the research results and cable qualification. Based on our recent conversation, I have asked my staff to begin preparations for these meetings.

Sincerely,

/RA/ by Michael E. Mayfield

Michael E. Mayfield, Director
Division of Engineering Technology
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cc: D. Power, ACRS
G. Apostolakis, ACRS

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