

TO:
Subject: Seismic Qualification of Transformers

Let me introduce myself. I am chair of the advisory committee of a project to revise the seismic qualification procedures for transformers contained in IEEE 693, "IEEE Recommended Practice for Seismic Design of Substations".

Why should your Company Participate in this Program

It is anticipated that the new requirements will impose requirements on the structural design of transformers. Changes in the design will be related to the structural stiffness of the transformer in the area that supports the bushing, and possible characteristics of turrets that support the bushing. I feel that it is important for utilities with seismic exposure should participate in the program to assure that the proposed changes are technically sound and workable and economically reasonable. Guidance provided by your representative(s) can help direct the program to assure that critical issues are addressed in an appropriate and realistic way.

Why Are Changes Needed

The current standard, used for equipment sold in the United States, has been shown to provide inadequate earthquake protection, as bushings have failed in earthquakes when subjected to ground motion much less than what they have been qualified to. Since bushings are qualified independently of the transformers to which they are installed, it is felt that the qualification procedure has not captured the effect of response of the transformer on the bushing.

What is Needed for your Participation

The advisory committee activities will be conducted by means of email and no meetings are planned. The advisory committee will review and comment on the test plan that is developed to evaluate the effect of transformers on bushing earthquake response and on the proposed changes to the standard.

Who should Participate

The advisory committee will be made up of representatives from transformer manufacturers, utilities, bushing manufacturer, and members of the IEEE 693 committee. The participating individuals should be knowledgeable about issues related to the structural design of their equipment.

At this time representatives of the following utilities are on the advisory committee: British Columbia Hydro (BC Hydro), Bonneville Power Administration (BPA), Pacific Gas & Electric (PG&E), Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), Western Area Power Administration (WAPA), and Tennessee Valley Administration (TVA). Bushing manufacturers who will be participating are Trench and ABB. The following transformer manufacturers have been invited to participate: Siemens Brazil, Siemens Mexico, Siemens Germany, Prolec GE, and ABB Transformers.

How to Get Involved

Please provide me with the name(s) and email address(es) of the representatives in your company who you feel should participate in this important program. When I get this information I will send out a paper that provided more detailed background information. At this time the test plan is being developed and test equipment is being designed. We plan to start tests in April of

this year using shake-table facilities at the Structural Engineering and Earthquake Simulation Laboratory at New York State University at Buffalo. The review of the test plan will start immediately.

I look forward to working with members of your organization in this important project. If you have any questions, please feel free to contact me.