

IEEE Guide for Multifactor Stress Functional Testing of Electrical Insulation Systems

Sponsor
**Multifactor Stress Committee
of the
IEEE Dielectrics and Electrical Insulation Society**

Approved June 12, 1991
IEEE Standards Board

Abstract: A guide for developing test procedures for the functional testing of insulation systems used in long-life electrical equipment exposed to more than one factor of influence in service is presented. Included are descriptions of technical problems and practical possibilities that may be helpful either for guidance or as a check list. A sequence of action is recommended, and details of the procedures required for the specification of such tests are provided. The emphasis is on realistically modeling service aging in functional tests and making the tests as simple and practical as possible. Mechanisms of interaction between the factors influencing aging are reviewed.

Keywords: Interaction, multifactor testing.

The Institute of Electrical and Electronics Engineers, Inc.
345 East 47th Street, New York, NY 10017-2394, USA

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Printed in the United States of America

ISBN 1-55937-149-8

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Foreword

(This Foreword is not a part of IEEE Std 1064-1991, IEEE Guide for Multifactor Stress Functional Testing of Electrical Insulation Systems.)

The Multifactor Stress Committee of the IEEE Dielectrics and Electrical Insulation Society was charged with the development of a guide for endurance tests on electrical insulation where insulation life is influenced by more than the simple factor of temperature. Factors of influence or stresses that operate on electrical insulation in equipment during normal operation can be identified as thermal, electrical, environmental, and mechanical. Multifactor stress can be defined as the simultaneous application of more than one of these stresses to an electrical insulation system. The need to comprehend the actual aging and failure mechanisms of the insulation in service and to simulate them appropriately in laboratory tests is leading to new approaches regarding methods of aging, diagnostic procedures, and the final interpretation of the test results. This document is a culmination of the committee's efforts to address this need by providing guidelines for standardized test procedures for the insulating materials and the methodology for functional tests of insulation used in long-life electrical and electronic equipment.

At the time that this guide was approved, the Working Group had the following membership:

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The final conditions for approval of this guide were met on June 12, 1991. This guide was conditionally approved by the IEEE Standards Board on March 21, 1991 with the following membership:

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