

IEEE Standard Requirements for Conversion of Power Switchgear Equipment

Circuits and Devices

Communications Technology

Computer

*Electromagnetics and
Radiation*

IEEE Power Engineering Society

Sponsored by the
Switchgear Committee

Industrial Applications

IEEE C37.59-1991



Published by the Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, NY 10017, USA.

June 8, 1992

SH15321

IEEE Standard Requirements for Conversion of Power Switchgear Equipment

Sponsor
**Switchgear Committee
of the
IEEE Power Engineering Society**

Approved December 5, 1991
IEEE Standards Board

Approved April 20, 1992
American National Standards Institute

Abstract: Directions and requirements for the conversion of power switchgear equipment from the original manufacturers' designs, whether the conversion is performed in manufacturing plants or at installation sites, are provided. Low-voltage power circuit breakers, high-voltage outdoor and drawout indoor-type power circuit breakers, and metal-enclosed switchgear are covered. Existing design standards are fully referenced with appropriate guidance on what type of design testing is necessary to design-verify the conversions. Reconditioning, which concerns the maintenance of existing equipment without alteration, is not covered.

Keywords: switchgear; switchgear equipment, conversion of

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Printed in the United States of America

ISBN 1-55937-227-3

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Foreword

(This foreword is not a part of IEEE C37.59-1991, IEEE Standard Requirements for Conversion of Power Switchgear Equipment.)

This is a new standard written specifically to provide directions and requirements for conversion of power switchgear equipment. The word *conversion* means the process of altering existing equipment design to any different or newly manufactured design for the purpose of enhancing electrical and/or mechanical performance; expansion of equipment capabilities; or replacement of obsolete equipment.

Experience has indicated that there can be design oversights in conversions as well as misinterpretation as to the necessity for and extent of design testing for any conversion work accomplished. "ANSI tested" statements can be misleading, indicating that a full range of certification testing was accomplished when it was not. Alteration to a design of power switchgear equipment requires technically correct conversions; design testing of the conversions; and design verification of the conversions.

There are many forms of conversion, and it is intended that this document provide the outline to cover all C37 power equipment that may be converted, with the following examples of current areas of conversion and testing. However, it is recognized that as different products are added, appropriate detail requirements for the specific products may have to be included in this standard.

Circuit Breakers

- Frame
- Insulation structures
- Contacts, supports, and primary disconnects
- Arc-interrupting structures
- Direct-acting trip devices
- Drawout parts/interlocking and auxiliary functions
- Mechanism parts and control wiring

Switchgear Vertical Sections

- Basic vertical sections
- Bus, bus connections, and insulation
- Drawout parts/interlocking and auxiliary functions
- Instrumentation and control wiring

This document is not intended to cover maintenance procedures when *reconditioning* power switchgear equipment in accordance with manufacturers' instruction manuals. However, in these cases, appropriate production/field testing should always be conducted.

This standard was prepared by a working group of the ADSCOM Subcommittee of the IEEE Switchgear Committee, consisting of members from the HV Circuit-Breaker, Low-Voltage Switchgear Devices, and Switchgear Assemblies Subcommittees.

Suggestions for improvement gained in the use of this standard will be welcome.

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