

IEEE Standard Requirements for Conversion of Power Switchgear Equipment

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

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Abstract: Power switchgear equipment that is converted from the original manufacturer's designs, whether the conversion is performed in manufacturing plants or at installation sites, is covered.

Keywords: conversion, power switchgear equipment

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Introduction

(This introduction is not a part of IEEE Std C37.59-1996, IEEE Standard Requirements for Conversion of Power Switchgear Equipment.)

This revised standard is intended to cover conversions of power switchgear equipment only, and has been revised to correct some specific reference errors; to separate low-voltage and medium-voltage conversions for clarity; to include medium-voltage ground and test (G&T) devices; to clarify nameplate modification and additions; as well as to stress the importance of drawout interlocking and auxiliary functions known to have caused field problems.

Medium-voltage converted circuit breakers may or may not be interchangeable with existing non-converted circuit breakers. Where converted circuit breakers are not interchangeable it will be so indicated in the manufacturer's instruction book and the rejection system shall be changed.

Additionally, it is stressed that at least the minimum tests recommended and outlined in specific references are to be carried out as applicable on each model of a converted device.

The known lack of design verification of some conversions was the reason for the creation of this document. Previous reliance only on production tests with "ANSI tested" statements have misled users and can possibly result in field failures. The basic and fundamental criteria of this standard is that a converted product is a new design and must meet its name plate ratings as well as applicable standards. A recommended design verification form is included.

There are many forms of conversion, and this document provides the outline to cover all switchgear power equipment that may be converted, with the following examples of current areas of conversion and testing. As different additional products are converted, criteria for the new conversion products will be added in future revisions of this standard.

A conversion of power switchgear equipment reuses some portion of the original equipment in the final configuration of that equipment. If no portion of the original equipment is reused, this standard is not applicable.

Annex A, though not a required part of this standard, is provided for guidance in the design verification of the converted power switchgear equipment. It provides additional guidance regarding conversion examples and the minimum testing required for design verifications.

Typical conversions include the following:

Circuit breakers

- Frame
- Insulation structures
- Contacts, supports, and primary disconnecting devices
- High-voltage arc-interrupting structures
- Low-voltage arc interrupting structures and 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

Ground and test devices

This standard is not intended to cover maintenance procedures when *reconditioning* power switchgear equipment in accordance with the manufacturer's instruction manuals.

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

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

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