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IEEE Guide for Wind-Loading Evaluation of High-Voltage (>1000 V) Air-Break Switches

IEEE Power and Energy Society

Sponsored by the
Switchgear Committee

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IEEE Std C37.30.2™-2015

IEEE Guide for Wind-Loading Evaluation of High-Voltage (>1000 V) Air-Break Switches

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Abstract: Evaluation methods and application considerations for high-voltage (>1000 V) switches, as covered in IEEE Std C37.30.1, under wind-loading conditions are provide in this guide. Testing methods to meet both usual and unusual wind conditions are also included in this guide.

Keywords: high-voltage switches, ice, IEEE 37.30.2™, outdoor switches, wind

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Introduction

This introduction is not part of IEEE Std C37.30.2™-2015, IEEE Guide for Wind-Loading Evaluation of High-Voltage (>1000 V) Air-Break Switches.

High-voltage air switches are intended to operate under usual service conditions unless otherwise specified. This guide will provide users and manufacturers with a common means of specifying and testing wind loads on high-voltage switches. It is not intended as a guide to verify insulators, support structures, or foundation integrity. This guide does not apply to indoor or enclosed switches.

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IEEE Guide for Wind-Loading Evaluation of High-Voltage (>1000 V) Air-Break Switches

1. Overview

1.1 Background

High-voltage air switches are intended to operate under usual service conditions unless otherwise specified. It is not uncommon for these switches to be exposed to winds that exceed those defined as usual service conditions. Users may find it necessary to define their particular service conditions to coincide with the winds in the geographic area where the switches are to be applied. Worker safety and electric system reliability are often reliant upon the position of a switch regardless of wind and weather conditions. This guide can be used to assist with specifying switches that are expected to operate in areas where wind speeds will exceed the usual service conditions. This guide will provide users and manufacturers with a common means of specifying and testing wind loads on high-voltage switches. Although the tests described in this guide can be applied on any switch, larger switches are more susceptible to the effects of wind loads and are the intention of this guide. It is not intended as a guide to verify insulators, support structures, or foundation integrity. This guide does not apply to indoor or enclosed switches. Wind tunnel testing is beyond the intent of this document.