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GB/T 42393-2023

Drawing method of wind damage map of area in power grid in consideration of high altitude microtopography and micrometeorology

高海拔微地形微气象条件下电网区域风害分布图绘制方法

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Table of Contents

1 Scope 1
2 Normative references 1
3 Terms and Definitions 1
4 Principles of Wind Hazard Classification 2
14 Reference 20

Foreword

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Zhihong, Sun Lixiong, Chen Yong, Fan Songhai, Zhang Yiyi, Liu Ziyu, Wang Zhipeng, Li Yong, Ma Xiaomin: Under high-altitude micro-topography and micro-meteorological conditions Drawing method of wind damage distribution map in power grid area

1 Scope

GB/T 42393-2023 gives the method for drawing regional wind damage maps of the power grid under high altitude microtopographic and micrometeorological conditions. Transmission lines crossing the western plateaus fail at particular places rather than uniformly: a saddle, a valley mouth or a ridge crossing accelerates the wind far beyond what the regional wind map predicts, and the towers that fall are the ones sited in them. A map drawn at meteorological station resolution cannot show this. The standard sets the principles for classifying wind hazard and the drawing of the regional wind damage distribution map, with a normative annex giving the wind damage risk assessment method for line towers and informative annexes on the main types of microtopographic area and on the drawing process with worked examples. It took effect on 1 October 2023.

This document describes the principle of regional wind damage classification for power grids and the drawing method of regional wind damage distribution maps under high-altitude micro-topography and micro-meteorological conditions: This document is applicable to 1000m~4000m altitude, 110kV~1000kV AC transmission lines, and ±500kV DC transmission lines Line design and operation and maintenance:

2 Normative references

This document has no normative references:

3 Terms and Definitions

The following terms and definitions apply to this document: 3:

1 Basic wind speed referencewindspeed According to the observation data of the 10-min average maximum wind speed at a height of 10m on the local open and flat ground, the 30-year, 50-year The wind speed determined after the maximum value is encountered once in 100 years or 100 years: [Source: DL/T 2237-2021, 3:1] 3:2 wind speed at a certain moment:

Note: In automatic meteorological observation, it refers to the average value of wind speed 3s before a certain moment: [Source: GB/T 35227-2017, 3:2] 3:3 A small local area within a large terrain area:

Note: The micro-topography areas are mainly classified into pass type, mountain watershed type, water vapor increase type, terrain uplift type, canyon wind channel type, etc: [Source: DL/T 741-2019, 3:5, with modifications] 3:4 A part of a large area:

Note: due to special changes in terrain, location, slope, temperature, and humidity, it is different from large areas that are more special and have a serious impact on power grid security: local weather area: [Source: DL/T 741-2019, 3:4, with modifications]