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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 34577-2024

Replacing GB/T 34577-2017

Technical guide for by-pass working on distribution networks

配电网旁路作业技术导则

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. This document replaces GB/T 34577-2017 "Technical Guidelines for Bypass Operation of Distribution Lines". In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) The scope of application has been changed (see Chapter 1, Chapter 1 of the.2017 edition);
- b) The definition of bypass operation has been changed (see 3.1, 3.1 of the.2017 edition)
- c) Deleted bypass flexible cable, bypass cable connector, bypass load switch, quick-swap bypass cable connector, bypass cable terminal Terminals, quick-plug bypass cable terminals, bolt-on bypass cable terminals, plug-in bypass cable terminals and bypass cable drain clamps Terms and definitions (see 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10 of the.2017 edition);
- d) Added load transfer operations, mobile power supply devices, mobile power supply device power supply operations, non-stop power operations, short-term power outage operations, and Terms and definitions for network and mobile power supply device decoupling (see 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8);

- e) Added classification of work items (see Chapter 4);
- f) Added requirements and responsibilities for work coordinators (see 5.1.2, 5.1.4);
- g) Changed the requirements for work leaders and team leaders (see 5.1.3, 5.1.4, 4.1.2, 4.1.3 of the 2017 edition);
- h) Added requirements for the issuer of work permits (see 5.1.5);
- i) Added technical requirements for nighttime emergency lighting (see 5.2.3);

1 Scope

GB/T 34577-2024 is the Chinese technical guide to by-pass working on distribution networks: the technique by which a section of live medium voltage cable or overhead line is taken out of service for work without interrupting supply, by rigging a temporary parallel path with insulated cable, connectors and a mobile switching unit, transferring the load onto it and only then isolating the section. It is how a Chinese utility replaces a cable, a switch or a transformer in a city street without a planned outage, and the reason it needs a standard is that the work involves making and breaking connections on an energised network with temporary equipment. The document sets the classification of the work items, the general requirements, the working arrangements, the technical requirements, the requirements for the on-site operations, the typical work items with the safety precautions specific to each, and the testing, transport and storage of the tools and equipment. The 2024 edition replaces GB/T 34577-2017. For a distribution utility, a live-line contractor or an equipment supplier in China, this is the governing text.

This document specifies the general requirements, work system, technical requirements, on-site operation requirements and precautions for distribution network bypass operations. The classification of work items and work processes are listed. This document is applicable to bypass operations carried out in distribution networks with voltage levels of 0.4kV~20kV.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 2900.55 Electrical terminology - Live working

GB/T 14286 Terminology of tools and equipment for live working

GB/T 18269 Hand tools for live working at voltage levels up to 1 kV AC and

GB/T 18857 Technical Guidelines for Live Working on Distribution Lines

GB 26859 Electricity Safety Work Regulations - Power Lines DL/T 974 Tool room for live working DL/T 976 Preventive testing procedures for tools, devices and equipment for live working DL/T 2555 (all parts) Distribution line bypass operation tools and equipment DL/T 2555.1 Distribution line bypass operation tools and equipment Part

3 Terms and definitions

The terms and definitions defined in GB/T 2900.55, GB/T 14286 and the following apply to this document.

3.1 Bypass working Build a temporary power supply circuit to achieve construction and maintenance methods that provide uninterrupted or short-term power supply to users. Note

1.Live working refers to work where workers come into contact with live parts, or any part of the worker's body or the tools, devices or equipment used enters the live working area. During bypass operation, a temporary power supply circuit needs to be built for power supply. During the construction of temporary power supply, live working may be required. Way. Note

2.The methods for building a temporary power supply circuit mainly include using bypass operation tools and equipment to build a power supply circuit in parallel with the line (equipment) to be repaired, There are three options. temporarily drawing power from the nearby power grid and using a mobile power supply device to temporarily supply power to the load. Note

3.Bypass operation includes load transfer operation and mobile power supply device power supply operation.

3.2 load shift working During the operation, use bypass operation tools and equipment to build a temporary power supply circuit, or temporarily take power from the nearby power grid to transfer the load. After that, the power outage construction and maintenance operation mode is carried out on the lines (equipment) that have been taken out of operation.