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

GB/T 16927.1-2011

Replacing GB/T 16927.1-1997

**High-voltage test techniques -- Part 1: General definitions and
test requirements**

高电压试验技术 第1部分：一般定义及试验要求
(English Translation)

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Foreword

GB/T 16927 "High voltage test techniques" is divided into three parts.

--- Part 1. General definitions and test requirements;

--- Part 2. Measuring systems;

--- Part 3. Definition and field test requirements.

This section is GB/T Part of 116,927.

This section drafted in accordance with GB/T 1.1-2009 given rules.

The partial modification using IEC 60060-1:2010 "High voltage test techniques - Part 1. General definitions and test requirements." this part is GB/T 16927.1-1997 "High voltage test techniques - Part 1. General test requirements" amendments.

This portion of the GB/T 16927.1-1997 compared, in addition to editorial changes outside the main technical changes are as follows.

--- Increasing the general definitions and terminology;

--- Remove a detailed description of artificial pollution test and original Appendix B "Artificial pollution test procedures";

--- Removed all of approved measuring device calibration measuring device not recognized terms;

- Remove the surge current tests related content;
- Remove the original Appendix C "with a bar - bar clearance check measuring device not recognized";
- Increasing the normative Appendix B "overshoot or oscillations superimposed on a standard lightning impulse parameter calculation procedure";
- Increase the informative appendix C "strike test voltage function of the digital filter, for example";
- Increase the informative Appendix D "function to assess the impact impulse voltage overshoot Background";
- Increase the informative Appendix E "calculation method was repeated to determine the inverse program when atmospheric correction factor";
- Of atmospheric correction has been revised (see 4.3);
- Redefine lightning shock wave through the prescribed limits and calculation methods punch (see Chapter 7);
- Combined voltage test gives specific provisions (see Chapter 9).

This part of IEC 60060-1:2010 The main differences are as follows.

- According to the provisions of GB/T 1.1-2009, the standard language of presentation and format has been modified;
- Remove the preface of international standards, increase the standard of this preface;
- When calculated parameters g , on the "minimum discharge path" add a description "L GB 311.1 refer to Appendix A" (see 4.3.4.3);
- Wet test explicitly given outer 800kV equipment and 1100kV wet insulation test procedure proposed recommended equipment (see 4.4);
- IEC 60060-1 frequency range of 45Hz ~ 65Hz, 60Hz to take into account China's power grid is not applicable, it will be set to the frequency range 45Hz ~ 55Hz, in order to be consistent with GB 311.1 (see 6.2.1.1);
- Before lightning surge oscillation retention requirements wavefront oscillation maximum allowable value, IEC standard which is not required (see 7.2.2);
- Increasing the calculation example. oscillogram obtained when the actual test 1100kV breaker as an example calculation (see Appendix B).

This part of IEC 60060-1:2010 clause above main difference has been involved in an empty space by the outside edge of the vertical single page Line () were marked.

This Part replaces GB/T 16927.1-1997 "High voltage test techniques - Part 1. General test

requirements." this part is proposed by the China Electrical Equipment Industrial Association.

This part of the National high-voltage test technique and insulation with Standardization Technical Committee (SAC/TC163) centralized.

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1 Scope

GB/T 16927 provisions of this part of the terms used, producing general requirements for test procedures and test, the test voltage and current Students, test procedures, test results and treatment trials eligibility criteria.

This section applies to a maximum voltage of U_m above 1kV following test equipment.

- a) DC voltage insulation test;
- b) AC voltage insulation test;
- c) impulse voltage insulation test;

Joint and combined test d) above voltage.

Note 1: For the field test, see GB/T 16927.3.

Note 2: In order to obtain reproducible results and effective, may require the use of an alternative test procedure. By the relevant Technical Committee selects the appropriate test procedures.

Note 3: U_m more than 800kV equipment, to meet some of the provisions of the program, it may not meet the tolerances and uncertainties.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB 311.1 insulation coordination - Part 1. Definitions, principles and rules (IEC 60071-1:2006, MOD) GB/T 4585 high-voltage insulators for ac systems - Artificial pollution tests (IEC 60507:1991, IDT) GB/T 7354 partial discharge measurements (IEC 60270:2000, IDT) GB/T 11022 high-voltage switchgear and control equipment standard common technical requirements (IEC 60694:1996, EQV) GB/T 16896.1 high voltage shock measuring instruments and software - Part 1. requirements for instruments (IEC 61083-1:2001, MOD) GB/T 16896.2 high voltage shock measuring instruments and software Part 2. Software requirements (IEC 61083-2:1996, MOD) GB/T 16927.2 High-voltage test techniques - Part 2. Measuring systems (IEC 60060-2:1994, EQV) GB/T 16927.3 High-voltage test techniques - Part 3. Definition and field test requirements (IEC 60060-3:2006, MOD) GB/T 22707 DC system with artificial pollution tests on high-voltage insulators (IEC/T R61245.1993, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Discharge characteristics

3.1.1

Disruptive discharge and under the action of electrical insulation breakdown phenomenon occurs. The test is completely discharged bridge insulation, and actual voltage drop between the electrodes to zero. Applicable to solid, liquid and gaseous media as well as a composite medium disruptive discharge. Sometimes also called "Electrical breakdown."