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

GB/T 6115-1985

Replacing GB/T 6115.1-2008

**Series capacitors for power systems - Part 1: General
(English Translation)**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 6115 "Series Capacitors for Power Systems". GB/T 6115 has already published the following parts.

---Part 1: General Provisions;

---Part 2: Protection devices for series capacitor banks;

---Part 3: Internal Fuse;

---Part 4: Thyristor-controlled series capacitors.

This document supersedes GB/T 6115.1-2008 "Series Capacitors for Power Systems - Part 1: General Rules" and is consistent with GB/T 6115.1-Compared to 2008, aside from structural adjustments and editorial changes, the main technical changes are as follows.

a) Changed "(Capacitor) Ambient Air Temperature", "Capacitor", "Capacitor Cell", "Cooling Air Temperature", and "Fuseless Capacitor Bank".

The terms and definitions of "segment (of a series capacitor)," "sub-segment," and "matching current of a nonlinear resistor" (see 3.1, 3.3, 3.4, 3.7) are as follows.

3.28, 3.32, 3.34 (and 3.1, 3.3, 3.4, 3.7, 3.30, 3.34, 3.36 of the 2008 edition);

b) The terms "insulation level" and "power frequency withstand voltage" have been removed (see 3.14 and 3.20 of the 2008 edition);

c) The normal operating conditions have been changed, with the icing thickness changed to "not exceeding 20mm" and the solar radiation changed to "not exceeding 1100W/m²" (see...).

4.1 (4.1 in the 2008 edition);

d) The non-standard usage conditions have been changed to require earthquake acceleration according to the 'moderate or high earthquake level' specified in IEEE Std 693.

The word "degree" has been changed to "horizontal acceleration greater than 0.2g" to better reflect my country's actual situation (see 4.3, 2008 version 4.3);

e) The acceptance criteria for the thermal stability test have been changed (see 5.9, 2008 version 5.9);

f) The test method for the capacitor unit to withstand three positive impulse voltages in the lightning impulse voltage test between the terminals and the casing has been removed.

(See 5.11 in the 2008 edition);

g) An isolation test for the internal fuse has been added (see 5.2.3);

h) Change "Special Test (Durability Test)" to "Aging Test" (see 5.2.4, 5.2.3 in the 2008 version);

i) The standard insulation level for the system nominal voltage of 1000kV has been increased (see Table 3);

j) The content regarding "creepage distance" has been modified (see 6.2, 2008 version 6.2);

k) The contents of Table 4 have been changed (see Table 4, 2008 version);

l) The contents of Tables 5, 6, and 7 have been changed (see 6.3, 2008 version 6.3);

(m) An altitude correction factor has been added to the external insulation performance of devices installed at altitudes above 1000m (see 10.7.2);

n) The requirement for "long-distance transmission line correction" has been added (see 10.8).

This document is modified to adopt IEC 60143-1:2015 "Series capacitors for power systems - Part 1: General".

Compared with IEC 60143-1:2015, this document has undergone the following structural adjustments.

---The positions of the terms "(capacitor's) internal fuse" and "fuseless capacitor bank" have been adjusted;

---The position of the content related to the labeling method for describing insulation levels has been adjusted.

The technical differences between this document and IEC 60143-1:2015 and the reasons therefor are as follows.

a) The scope has been changed in accordance with the requirements of GB/T 1.1, which describes the main contents specified in this document (see Chapter 1).

b) The terms and definitions of "capacitor", "(capacitor's) internal fuse", and "fuseless