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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 20996.2-2020

Replacing GB/Z 20996.2-2007

Performance of high-voltage direct current (HVDC) systems with line-commutated converters - Part 2: Faults and switching

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Foreword

GB/T 20996 "Performance of HVDC System Using Grid Commutation Converter" is divided into 3 parts:

---Part 1: Steady state;

---Part 2: Failure and operation;

---Part 3: Dynamics:

This part is Part 2 of GB/T 20996:

This section was drafted in accordance with the rules given in GB/T 1:1-2009:

This part replaces GB /Z 20996:2-2007 "Performance of High Voltage Direct Current System Part 2: Failure and Operation", and

Compared with GB /Z 20996:2-2007, the main technical changes are as follows:

--- Change the "General Provisions" to "Scope" and "Normative Reference Documents" (see Chapter 1, Chapter 2, Chapter 1 of the:2007 edition);

---Modified the scope (see Chapter 1, 1:1 of the:2007 edition);

---Modified the normative references (see Chapter 2, 1:2 of the:2007 edition);

--- The title of the article "Institution and removal of equipment on the AC side" is revised to "Power on and off equipment on the AC side" (see 4:2,:2007 edition)

3:2);

--- Modified the description of transformer magnetizing inrush current (see 4:2,:2007 edition 3:2);

---Added the opening operation recommendations of the converter transformer, the definition of the highest tapping position of the transformer, the

The description of the charging of the container and the filter bank (see 4:2);

---Added setting suggestions that help remote circuit breaker tripping (see 4:3, 3:3 in:2007 edition);

---Modified the provisions of DC switchgear (see 4:5, 3:5 in:2007 edition);

--- Modified the description of grounding and grounding faults in HVDC converter stations (see 5:2, 4:2 in:2007 edition);

---Added the conditions to be considered for the transient characteristics of DC equipment during AC failure and after recovery (see 5:2, 4:2 in:2007 edition);

--- Deleted the content of the suspended paragraph in the "Relevant Matters Affecting Transient Performance Specifications" (see 4:3 in the:2007 edition);

---Added the description of the measures that can be taken to reduce the commutation failure (see 5:3:2, 4:3:2 of the:2007 edition);

--- Deleted "If the removed reactive power equipment must be renewed before the load of the HVDC system reaches the level before the failure

Investment, this kind of reactive power equipment switching method will cause the restart time of the high voltage DC system to be too long, which is another consideration that needs to be considered:

Questions: "(See 4:3:6 of the:2007 edition);

---Added the precautions when using digital and old type relay protection devices (see 5:3:7);

---Modified the expression of the example of the arrangement of AC filters and shunt capacitors in the bipolar high voltage DC system (see 6:1,:2007 edition

5:1);

--- "The analysis should take into account the system structure that causes the most severe stress: The system includes filters and shunt capacitors:" Amend to

"The most severe stress caused by the system structure including filters and shunt capacitors should be considered in the analysis:" (see 6:3,:2007

5:3 of the year edition);

---Added the description of the bridge wiring of the capacitor bank "H" (see 6:4);