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PEOPLE'S REPUBLIC OF CHINA**

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**1 000 MW class hydro-generators -- Part 2: Testing and
inspecting guide
(English Translation)**

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Foreword

GB/Z 32519 "1000MW-class hydro-generator" is divided into the following three parts.

- Part 1. Technical guidelines;
- Part 2. Tests, test guidelines;
- Part 3. Installation of quality inspection guidelines.

This section GB/Z 32519 Part 2.

This instructional document has been drafted in accordance with the rules given in GB/T 1.1-2009.

This guidance document is proposed by China Electrical Equipment Industry Association.

This guidance document is organized by the National Large Scale Generator Standardization Technical Committee (SAC/TC511).

The drafting of the guidance of technical documents. Harbin Institute of Electrical Engineers, Dongfang Electric Group Dongfang Electric Co., Ltd., China Electric Construction Mission East China Institute of Investigation and Design Co., Ltd., Harbin Electric Works Co., Ltd., China Three Gorges Corporation, China Power Building Group Beijing Survey and Design Institute Co., Ltd., China Hydropower Engineering Consulting Group Co., Ltd., Yangtze River Design Company, China Electrical Equipment Industry Association.

Introduction

Hydropower construction in China's energy development has an important strategic position, plays an important role in the national economy. With the market for power generation the requirements for the development of high capacity, high parameters, high efficiency and low consumption, safety and environmental protection are continually increasing, and the requirements of the state in the "12th Five-Year Plan" Indeed proposed to vigorously develop hydropower, China will have a group of 1000MW super-large hydropower unit design and manufacture. To this end has prepared the following series Standard. "1000MW-class hydro-generator", for hydro-generator, there are GB/T 7894 "hydro-generator basic technical conditions" GB/T 8564 "Technical Specifications for Installation of Hydro-generating Sets", GB/T 1029 "Three-phase synchronous motor test methods" and related manufacturing, testing, etc.

Standards and norms, but these standards and norms are aimed at the general large and medium-sized hydro-generating units. When the generator stand-alone capacity increased to at 1000MW level, the operating conditions, performance parameters, overall structure and material application of hydroelectric units will all change greatly. by the size of the unit, operating conditions, performance parameters have undergone major changes in these existing hydropower national test, the test will not be able to end all applicable. Therefore, it is necessary to make corresponding researches on the special characteristics of 1000MW generators on the basis of the existing standards and specifications, and to develop suitable for 1000MW hydropower unit test, inspection standards and norms.

This guidance document is based on the research results and summary of the 1000MW giant vertical hydro-generator in recent years 700MW large-scale vertical hydro-generator test, inspection experience compiled.

The technical specifications not specified in these technical documents shall comply with GB/T 755 "Rotating Electrical Machines, Quotations and Performances", GB/T 7894 "Hydro-generator basic technical conditions" and GB/T 1029 "three-phase synchronous motor test method." If there are special requirements, users and manufacturers can Specified in a special technical agreement.

1000MW water turbine generator Part 2. Tests, Tests and Guidelines

1 Scope

The guidance of technical documents on the 1000MW three-phase salient pole synchronous generator (hereinafter referred to hydroelectric generator) test, test applicable Factory inspection test, on-site handover test, start-up test, performance test and type test.

This Guidance Document is applicable to hydroelectric generators of 800 MW and above.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB 755 Rotating electrical machinery quota and performance (GB 755-2008, IEC 60034-1:2004, IDT) GB/T 1029 three-phase synchronous motor test method GB/T 2521 cold-rolled oriented and non-oriented electrical steel strip (film) GB/T 2900.25 Electrotechnical terminology rotary motor (GB/T 2900.25-2008, IEC 60050-411:1996, IDT) GB/T 5321 calorimeter determination of large AC motor loss and efficiency GB/T 5843 flange coupling GB/T 6075.5 Measurement and evaluation of mechanical vibration of a unit on non-rotating parts - Part 5 Hydraulic power plant and pumping station unit GB/T 7894 hydroelectric generator basic technical conditions GB/T 8564 turbine generator installation technical specifications GB/T 10069.1 rotary motor noise measurement methods and limits - Part 1. Rotor electrical noise measurement method (GB/T 10069.1-2006, ISO 1680:1999, MOD) GB/T 11348.5 Rotating Machinery - Measurement and Evaluation of Radial Vibration of Shafts - Part 5. Hydroelectric Power Plants and Pumping Station Units GB/T 13394 Electrotechnical rotary motors with letter symbols GB/T 14298 indexable spiral end mill GB/T 20160 rotating motor insulation resistance test GB/T 20833 generator stator bars and windings off-line partial discharge measurement methods and evaluation guidelines GB/T 20835 generator stator core magnetization test guidelines GB 50150 electrical installations installation of electrical equipment handover test standards GB/T 32519.1 1000MW turbine generator Part 1. Technical Guidance DL/T 298 Generator stator winding end corona detection and evaluation guidelines DL/T 330 Water conservancy and hydropower projects metal structures and equipment welded joints diffraction time difference method ultrasonic testing DL/T 507 hydro-generator set to start the test procedures DL/T 1067 evaporative cooling hydro-generator (power generation/motor) basic technical conditions JB/T 3334.1 Hydro-generator brakes - Part 1. Vertical brakes for hydroelectric generators JB/T 6204 large high voltage AC motor stator insulation voltage withstand test specification JB/T 7356 tube oil cooler JB/T 7608 high voltage AC motor winding dielectric loss tangent test methods and limits NB/T 42003 high voltage motor core punching insulation test method NB/T 42004 high voltage AC stator coil insulation aging test method