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**Power fluctuation adaptability testing methods of water
electrolysis system for hydrogen production**

电解水制氢系统功率波动适应性测试方法

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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.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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Test method for power fluctuation adaptability of water electrolysis hydrogen production system Warning. This document does not cover all possible safety issues. Users are responsible for taking appropriate safety, health and protection measures and ensuring Comply with the conditions stipulated by relevant national laws and regulations.

1 Scope

This document specifies the test conditions, reagents, test preparation, measuring instruments, test items, and other requirements for the power fluctuation adaptability test of the water electrolysis hydrogen production system.

Targets and test indicators, test methods and test reports.

This document is applicable to the power wave of alkaline water electrolysis hydrogen production system and proton exchange membrane water electrolysis hydrogen production

system with a hydrogen production capacity of 5m³/h and above.

The power fluctuation adaptability test of the anion exchange membrane water electrolysis hydrogen production system shall be carried out in accordance with the above.

Note. Unless otherwise specified, the standard state in this document is temperature 0°C, pressure 101.325 kPa (absolute pressure), and the gas volumes in this document are all standard Volume in state.

2 Normative references

GB/T 19774

GB/T 24499

GB/T 37562-2019

3.1 Terms and Definitions

The terms and definitions defined in GB/T 19774, GB/T 24499, GB/T 37562-2019 and the following apply to this document.

3.1.1 The ability to adapt to changes in state (loading/unloading) performance

The electrolysis water hydrogen production system is within the maximum power and minimum power range allowed by the manufacturer.

3.1.2

The operating status of the water electrolysis hydrogen production system at the rated pressure, rated temperature and rated current specified by the manufacturer.

3.1.3 coldsteadystate

The main process equipment of the water electrolysis hydrogen production system, such as the power conversion unit, electrolyzer, gas-liquid separation system, etc., are operated without any power input. state.

Note. The electrolyte temperature is consistent with the ambient temperature, the instruments, valves, and pumps are powered on, the control and safety-related auxiliary facilities are in operation, and the hydrogen production system is in operation.

The preparatory work before startup has been completed. The preparatory work before startup includes replacement, purging, water replenishment, alkali solution/pure water circulation, instrument preheating, etc.