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**Stationary proton exchange membrane fuel cell power system
(separate) -- Tests methods for the performance
(English Translation)**

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Foreword

The guidance of technical documents is based on the development of proton exchange membrane fuel cells in China, with reference to foreign similar fuel cell technology and the country International Electrotechnical Commission drafted IEC TC105/58/CDV and IEC 105/79/RVC draft drafted.

Appendix A of this guidance document is a normative appendix, while Appendix B and Appendix C are informative appendices.

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

This guidance document is subject to the National Fuel Cell Standardization Technical Committee (SAC/TC342).

This guidance document is drafted by Dalian Xinyuan Power Co., Ltd.

Participated in the drafting of the guidance of technical documents. Chinese Academy of Sciences, Dalian Institute of Physics, Beijing Institute of Electrical Engineering and Beijing Century Fu original burning Material Battery Co., Ltd. and so on.

Introduction

"Fixed Proton Exchange Membrane Fuel Cell Power Generation System (Independent Type) Performance Test Method" is the National "Tenth Five-Year" Important Science and Technology Project Technical standards research project "new energy and renewable energy key technical standards --- proton exchange membrane fuel cell, solar hot water system, Grid-connected photovoltaic power generation and wind turbine "to study the development, combined with China's" 863 "plan fuel cell electric vehicle major project proton to pay for membrane fuel cell technology, one of the series of national standards. This section provides a fixed proton exchange membrane fuel cell power generation system (independent) (Hereinafter referred to as power generation system) operational performance and its impact on the environment test methods.

Fuel cells are not only suitable for the construction of stationary power plants to provide community and household electricity sources, but more importantly, to provide power for electric vehicles and micro-fuel cells for use in a variety of communications equipment, laptops and handheld computers. And fuel Battery technology is from these aspects of research and development to industrial change, fuel cells in fixed power stations, transport and portable power supply, etc.

Aspects of commercialization are coming. Some technologies related to fuel cells will also be commercialized in the next 5 to 10 years. Some new technologies, New materials and new components will also be rapidly developed on the basis of internationalization of the market. It is foreseeable that fuel cell technology will be sustained and rapid development of.

During the "Ninth Five-Year Plan" and "Tenth Five-Year Plan" period, all the PEMFCs and their related technologies were listed as major projects in the country Scientific and technological breakthroughs include "863" fuel cell vehicles major projects, and has achieved initial results. At present, China's PEMFC technology to colleges and universities and research institutes for technical support to several major high-tech enterprises as a leader, has formed in Dalian, Shanghai, Beijing and Wuhan, etc.

The main research and development base. Some of them have obtained patented technology with independent intellectual property rights and are actively promoting China's fuel cell technology Industrialization and commercialization.

Early development of standards for the promotion of this new technology with unlimited potential for development - the commercialization and commercialization of fuel cells is very heavy need. International Electrotechnical Commission (IEC) established IEC/T C105 to be

responsible for fuel cell professional standards work in recent years, very frequent activities Many, has released a number of international standards. China fuel cell technology in tackling the issue of tackling and tracking international standards at the same time, according to our country the actual arrangements for the development of relevant key technical standards, designed to reflect the standard early intervention in the industrialization of scientific and technological achievements, with the international practice Read Currently completed standard projects are.

- 1) Proton exchange membrane fuel cell terms (GB/T 20042.1-2005)
- 2) Proton exchange membrane fuel cell stack technology (GB/T 20042.2-2008)
- 3) Portable proton exchange membrane fuel cell power generation system (GB/Z21742-2008)
- 4) Fixed proton exchange membrane fuel cell power generation system (independent type) performance test method (GB/Z21743-2008) Fixed proton exchange membrane fuel cell power generation system (Independent type) performance test method

1 Scope

1.1

This Guidance Document specifies the operational performance of a fixed proton exchange membrane fuel cell power generation system (hereinafter referred to as power generation system) Aspects and its impact on the environment test methods.

1.2

The test of the contents of the guidance of technical documents include.

Output power under specified operating conditions;

Power generation efficiency and heat utilization efficiency under specified operating conditions;

Environmental characteristics under specified operating conditions. eg, emissions, noise, etc .;

This technical document does not cover Electromagnetic Compatibility (EMC) requirements and issues to be considered in the future.

1.3

This guidance document is applicable to all types of stand-alone fixed proton exchange membrane fuel cell power generation systems.

1.4

Due to the different fuel types (such as pure hydrogen, hydrogen-rich gas, methanol