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GB/T 29403-2012

**Technique guide for dealing with sand abrasive
erosion in reaction hydraulic turbine
反击式水轮机泥沙磨损技术导则**

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Foreword

This Standard is drafted according to the rules specified in GB/T 1.1-2009.

This Standard is proposed by the Ministry of Water Resources of the People's Republic of China.

This standard is under the jurisdiction of Water Resources and Hydropower Planning and Design Institute of Ministry of Water Resources.

This standard is drafted by: China Institute of Water Resources and Hydropower Research

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Introduction

Since the sand content is high in many rivers of our Country, sand abrasion problem of the hydraulic turbine is very prominent. To effectively reduce the harm to hydraulic turbine caused by sand and ensure the economic and safe operation of hydropower station, the abrasive erosion issues shall be considered in all links including hydropower station design, water turbine selection, design, manufacture, installment, operation, maintenance, and overhaul etc. and take appropriate measures that is necessary to formulate this standard.

Studies on sand abrasion of hydraulic turbine has been 50 years in China, a large amount of experimental studies and practices have been conducted by the units of research, design, manufacture, operation and overhaul on the aspects of sand abrasion mechanism of hydraulic turbine, two-phase flow theory, model selection, abrasion resisting measures, operating maintenance, and experimental techniques etc. especially in recent 30 years that obtain fruitful results and practical experiences, which have laid a solid foundation for preparation of this standard.

Technique guide for dealing with sand abrasive erosion in reaction hydraulic turbine

1 Scope

This standard is has provided the technical requirements for sand abrasion involved in model selection, design, manufacture, installment, operation, maintenance and overhaul of reaction hydraulic turbine.

This standard is applicable to hydropower station that installed the reaction hydraulic turbine.

Notes: The protection and the attention matters of the hydraulic turbine in the water containing corrosive substances or greater pH should be further considered.

2 Normative references

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (Including all corrections) or revisions made thereafter shall be applicable to this Standard.

GB/T 2900.45 Electrotechnical terminology - Hydroelectric powerplant machinery

GB/T 8564 Specification installation of hydraulic turbine generator units

GB/T 10969 Specification for water passage components of hydraulic turbines storage pumps and pump-turbines

GB/T 15468 Fundamental technical requirements for hydraulic turbines

GB/T 15469.1 Hydraulic turbines storage pumps and pump-turbines cavitation pitting evaluation - part 1: cavitation pitting evaluation in reaction turbines

SL 142 Code of practice for model acceptance tests of hydraulic turbine with sediment water

DL/T 838-2003 Guide of maintenance for power plant equipments

IEC 60193 Hydraulic turbines, storage pumps and pump-turbines - Model acceptance tests

3 Terms and definitions

For the purpose of this standard, the following terms and definitions shall apply.

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