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Guide for reclaiming and using turbine oil

涡轮机油再生与使用导则

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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 is required. 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. This document was proposed by the China Electricity Council. This document is under the jurisdiction of the National Electrochemical Standardization Technical Committee (SAC/TC 322). This document was drafted by: Xi'an Thermal Engineering Research Institute Co., Ltd., North China Electric Power Research Institute Co., Ltd., Guangdong Power Grid Co., Ltd. The company's Electric Power Research Institute, State Grid Fujian Electric Power Co., Ltd. Electric Power Research Institute, Jiangsu Shuangjiang Energy Technology Co., Ltd., State Grid Heilongjiang Electric Power Co., Ltd. Electric Power Research Institute, State Power Investment Group Henan Electric Power Co., Ltd. Technical Information Center, Jiangsu Wan Biao Testing Co., Ltd. The main drafters of this document are. Wang Xiaowei, Tang Jinwei, Wang Juan, Wang Yinggao, Qian Yihua, Zheng Dongsheng, Chen Xingyu, Li Guoxing, Feng Liping, Huang Qian, Li Yefeng, Lian Hongsong, Zhang Zhiguo, Xu Yanli, and Chang Jun. Guidelines for Regeneration and Use of Turbine Oil

1 Scope

China's national guide to reclaiming and reusing turbine oil. A steam or gas turbine's lubricating oil system holds tens of thousands of litres, and the oil is not consumed - it degrades. Oxidation produces acids and varnish, water enters from gland seals, and particles accumulate from wear and from the system itself. Replacing the charge is expensive and produces a large volume of waste oil; reclaiming it in service by continuous purification, and periodically by more thorough treatment, keeps the same oil in the machine for decades. The varnish problem is the one that has grown: modern turbine oils with high oxidation stability produce degradation products that are soluble when hot and precipitate when the machine cools, depositing on servo valves and bearings, and a system that looks clean on a particle count can be varnishing badly. The guide addresses both the

monitoring and the treatment.

This document specifies the requirements for turbine oil deterioration classification, purification and regeneration, reuse after treatment, and scrapping disposal. This document is applicable to the purification of turbine oil that is in use or replaced in the turbine lubrication system and cannot meet the operating requirements. Regeneration and reuse. Turbine oil used in other equipment shall be implemented in the same manner. This document is not applicable to the regeneration and use of turbine oils other than mineral oils or those contaminated by other oils.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 264 Determination of acid value of petroleum products

GB/T 265 Determination of kinematic viscosity and calculation of dynamic viscosity of petroleum products

GB/T 3536 Determination of flash point and fire point of petroleum products - Cleveland open cup method

GB/T 6540 Determination of color of petroleum products

GB/T 7596 Quality of mineral turbine oils in power plant operation

GB/T 7600 Determination of moisture content of transformer oil and turbine oil in operation (coulometric method)

GB/T 7602 (all parts) Determination of T501 antioxidant content in transformer oil and turbine oil

GB/T 7605 Determination of demulsibility of steam turbine oil in operation

GB/T 11143 Test method for rust prevention of mineral oil with inhibitor in the presence of water

GB/T 12579 Determination of foam characteristics of lubricating oils

GB/T 14541 Guidelines for the maintenance and management of mineral turbine oils for power plants

GB/T 34580 Determination of insoluble colored matter in running turbine oils - Membrane colorimetry

GB/T 41961 Treatment and disposal methods for waste mineral oil lubricants DL/T 429.1 Determination of transparency of power oil DL/T 429.7 Determination method of sludge precipitation of power oil DL/T 432 Method for determination of particle size in power oil DL/T 1599 Determination of phenolic and amine antioxidants in oils - Voltammetric linear sweep method DL/T 1978 Classification standard for particulate pollution of power oil SH/T 0193 Determination of oxidation stability of lubricating oils - Rotating oxygen bomb method SH/T 0308 Determination of air release value of lubricating oil

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Purification Physical methods are used to remove moisture, gas and solid particles from the oil, so that the relevant quality indicators of the oil (moisture, particle pollution level, etc.)