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CONTENTS

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The research of how capacity optimization of electrically driven feed pumps influences the power saving of air cooling units

LI Xiao-long
(Guangdong Electric Power Design Institute, Guangzhou 510663, China)

Abstract: According to the analysis of the operating characteristics of the air-cooling unit, in terms of the engineering construction of 2 × 300MW subcritical direct air-cooling unit, it's better to configure 3 × 50% of the capacity of the electric feed water pump. To optimize the capacity of the pump electric, each unit is proposed to match 3 electric feed water pump of 50% TRL capacity. Compared with optioning 3 electric feed water pump of 50% BMCR capacity in accordance with the provisions, it can reduce the power consumption of 6.54 × 106 kWh per year. The saving effect is remarkable.

Key words: electric feed water pumps; TRL conditions; thermal-hydraulic coupling

Electric water pump operation mode optimization

YANG Jing-tao, LV Guo-dong
(China Power Investment Group Corp Ningxia Qingtongxia Energy Aluminum Co. Ltd., Yinchuan 750002, China)

Abstract: A considerable amount of plant for the 350 MW supercritical unit 2 pump operation mode of electricity, the output test pump different working parameters, the optimization scheme of low load stage single pump operation. Operation proves: single pump operation mode can meet the demand of safe operation of unit 73% the following load, reduce plant energy consumption effect is obvious, has the important meaning and economic operation of thermal power plant.

Key words: power plart; electrically driven feed pump; operation optimization; low power consumption

Assessment method of coal saving benefit with boiler flue gas waste heat utilization

WANG Jin-wang, ZHANG Yan, ZHANG Jian-zhong
(Shanghai Chengxin Construction Energy Conservation Technology Co. Ltd., Shanghai 201103, China)

Abstract: Coal-fired power plants in technology-improving of energy saving with boiler flue gas waste heat utilization, saved coal amount is the key for economy of energy saving system technology scheme. Magnitude order of saved coal amount is smaller, about 0 ~ 1.5% of coal consumption. In the evaluation of energy saving system technology and economy, Practical and scientific assessment method of coal saving benefit was needed to calculate saved coal amount. Heat balance analysis method has higher reliability in assessment method of coal saving benefit with boiler flue gas waste heat utilization because of its mature thermal engineering theory or credible manufacturer's heat balance diagram.

Key words: waste heat utilization; technology-improving of energy saving; saved coal amount; assessment method; positive balance; heat balance

The experimental study on capillary radiant heating system using solar energy

WANG Yue, ZHANG Zhi-gang
(Tianjin Institute of Urban Construction, Tianjin 300384, China)

Abstract: The capillary radiant heating system using solar energy was presented and analyzed the thermal environment changes in the experimental room. The test shows that the temperature of capillary wall rose faster and the average temperature of experimental room is about 4.5 degrees higher than the non-heating room. Per unit area of capillary heating power can meet the average heating load after stopping solar collector system. At the same time, the experimental room has a better thermal comfort index PMV and the temperature meet the requirement of design. The experimental results provide a reference for the feasibility of this system in the low energy building of Tianjin.

Key words: solar; capillary; radiant heating; experimental study

An energy-saving demonstration project energy saving calculation and economy analysis

YANG Jing-wen
(Nanjing Communications Institute of Technology, Nanjing 211188, China)

Abstract: The paper describes specific examples of projects in the Urban Groundwater-water heat pump used in residential and public buildings, introduces the main contents of the project demonstration, technical features and main equipment, and the projects and two contrast scheme for energy saving calculation, a detailed technical economic analysis and according to the project and conventional energy at project investment, the incremental cost and payback period.

Key words: groundwater-water heat pump; energy conservation demonstration; energy saving calculation; economic analysis

The heating effect analysis of solar air collector heating system

LI Jia, LIU Zhi-qiang, WANG Lei-lei, et al
(Himin solar Co. Ltd, Dezhou 253000, China)

Abstract: Through heating system test and test result analysis for the solar air collector, Thus has carried on the analysis of of heating effect and economic benefit about solar air collector heating system. The system has the advantages of without antifreeze, pipeline blocking, and no transfering heat. But also have problems about the terminal wind and control switch, etc. So this article will also define the problems which appear in the system testing and be paid attention to system designing.

Key words: solar air collector; energy analysis; economic benefit analysis

Causes and countermeasures of low energy efficiency of industrial boiler

LI Wei, JIANG De-long
(Yantai clean energy testing center, Yantai 264001, China)

Abstract: Based on the industrial boiler efficiency test, the thermal efficiency of simple test method for industrial boiler energy efficiency is generally low, carry on the research analysis, advanced energy-saving management and energy-saving technological transformation, can reduce the heat loss, reduce fuel consumption, improve the boiler thermal efficiency, provides important test data for energy saving of industrial boilers.

Key words: energy efficiency test; industrial boiler; energy management

企业名录