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Improving efficiency of electro filters (EF) of coal HPP at energy saving technologies
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Dissertation work is devoted to methods of rising of efficiency of electro filters (EF) of coal HPP by perfection of its aerodynamic and constructive and technological parameters and to definition of general conditions of its rational operation of on principles of energy saving technologies and ecological efficiency because modern orientation on coal for HPP demands perfection of technologies of gas clearing.

Generalization of the literary information on development, research and operation industrial EF devices is executed and ways and methods of their perfection are established in view of modem requirements of economy of energy and protection of an environment.

The mathematical modelling of processes in electro filters of coal HPP are carried out and main factors which influence on power consumption for regeneration of electrodes are established. It is proved how degree of uniformity of distribution of speed in EF influences on its inactive zones EF and on power consumption, accordingly. Ways and methods of increase of power and ecological efficiency of EF are worked out. Methods of perfection of open ashes-dust catching system which bases on optimization of aerodynamic, regime and ecology-economic parameters are elaborated.

At the basis of experimental researches of aerodynamic and constructive parameters of industrial EF its influence on configuration of inactive zones on over expenditure of energy for regeneration of electrodes is established The double rise of degree of uniformity of speed distribution in unit section that results in growth of efficiency and economy of energy accordingly in 1.6 and 1.7 times is established. At the basis of experiment the methods of reduction of inactive zones length and reduction of charge of technical water for ashes removal and also improvement of ecological parameters on 1...2 % are elaborated.

At the basis of theoretical and experimental researches the regime card of EF which provides optimum operating modes at criterion of minimal power consumptions on regeneration of electrodes with rise of efficiency of work of ashes removal system is worked out.

The method of calculation of ecology-economic parameters of gas purification system for coalHPP is developed and efficiency of use of power resources of HPP is established. Realization of energy saving technologies at all coal power units of Krivorozhskoj HPP allows receive the revenue 296250 € from sale of quotas on harmful emissions.

Due to perfection of aerodynamic characteristics of EF the power consumption for clearing of smoke gases decreases from 3 to 1.2 kW/m^3 and annual economic benefit for one power unit equals 96.3 million UAH.

Keywords: system of the gas cleaning, electric filter, gas distributive system, speed, ash.