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COKE DRY COOLING PLANT EXCESS GAS UTILIZATION

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At coke-chemical enterprises, that operate coke dry cooling plants, due to the peculiarities of the technology, an excess of circulating gas is formed, which must be constantly removed from the closed circuit. This article examines two operating plants designed for the utilization of excess circulating gas, and also presents some experience of their exploitations.

In particular, information is provided on the method of disposal of excess circulating gas of coke dry cooling plants in an additional boiler by burning it in a mixture with coke gas. The main equipment of the recycling unit is a KO-10 steam boiler with forced circulation and a U-shaped arrangement of heating surfaces, located in the building of the boiler coke dry cooling plant of coke batteries of one of the coke-chemical enterprises. Tests and operation of the plant confirm the possibility of producing a couple of energy parameters on it with the achievement of high environmental indicators as a result of the utilization of excess gas of the coke dry cooling plant.

The second direction considered is the use of excess gas from the coke dry cooling plant as fuel. The possibility is shown of increasing its calorific value as a result of mixing circulating gas with gas of higher calorific value – in particular with blast furnace gas.

It is shown that the existing positive experience of operating the mentioned installations allows recommending both directions for the utilization of excess circulating gas for use on existing and newly designed coke dry cooling plants.

According to the article, the work experience, a lot of experiments and performed calculations indicate the expediency of maintaining the regime with the maximum permissible content of CO in the circulating gases during the operation of the coke dry cooling plants. This allows to increase the quality indicators of coke. The high content of CO in the circulating gases also makes it possible to significantly reduce losses from coke burning in the process of dry cooling.

Keywords: coke dry cooling, recovery boiler, circulating gas, excess, utilization, additional boiler, increase in calorific value, CO content, coke quality.

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