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Furnace thermal calculation of 300MW boiler by oxy-fuel combustion

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Abstract:

Oxy-fuel combustion is a technology which can effectively reduce CO₂ emissions from new combustion technology, into the furnace of the ratio of CO₂ and O₂ is needed to change. This thesis describes the significance of the oxygen rich combustion, the main effect of basic principles, and to 300 MW coal-fired boiler as an example of the oxygen-rich atmosphere of the furnace heat calculation. The main topics of research method is the use of existing boiler furnace method of calculating export through the furnace flue gas temperature of the atmosphere calculated under the different values and different temperatures to compare, compare and draw conclusions. In the calculation of different atmosphere when calculated using excel programming. The results showed that, oxygen-enriched air under the burning and burning than heating surface layout will be changed into the furnace when the ratio of O₂ and the CO₂ increase, the theory of combustion chamber temperature with oxygen and carbon dioxide The ratio of the size of the increase, the theory of combustion chamber temperature is rising gradually, and the great changes in the rate. The radiation-furnace heat is gradually increasing, in the design to increase the proportion of heating surface radiation, thus effectively reducing the size of boiler unit, reduce floor space.

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power 300 MW, oxygen-rich combustion, coal fired boiler, boiler furnace method, furnace flue gas temperature, excel programming, oxygen-enriched air, burning, combustion chamber temperature, carbon dioxide emissions, radiation furnace heat, heating surface radiation, oxy-fuel combustion

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