

Numerical analysis of a commercial circulating fluidized bed boiler for low grade coal combustion

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Recently a circulating fluidized bed(CFB) boiler in which various fuels, such as coal, combustible wastes, pet-coke, and biomass could be combusted or consumed is remarkably growing or expanding its share in power generation industries. Especially CFB boilers might be recognized as a promising solution for harnessing energy from low grade coals. However the optimization of operation conditions for CFB boilers with low grade coals has not finished yet until now. Therefore, we have investigated the effect of low grade coals on combustion characteristics for a commercial scale CFB boiler by using a IEA-CFBC numerical model which had developed for simulation of commercial CFB boilers. In this study, the configuration of CFB boiler has been changed and low grade coals and limestones supplied for domestic power plants have been used for computational simulation.