

발전 보일러내 연소용 공기 공급 불균일의 실험적 측정과 전산해석 비교

고영건[†](KAIST) · 최상민^{*}(KAIST) · 김영주^{**}(KEPRI)

Comparison between Experimental and Computational Simulation of Non-Uniformly Supplied Combustion Air in a Power Plant Boiler

Young Gun Go, Sangmin Choi and Young-Joo Kim

Key Words: Windbox(윈드박스), Power Plant Boiler(발전보일러), Flow Measurement(유동측정)

Abstract : Power plant uses the multi-burner to heat up the boiler and complicated duct called windbox is used to supply combustion air to each burner. Non-uniformly supplied combustion air is induced by unbalanced flow distribution in the windbox. These flow patterns tend to make flame unstable, increase the formation of pollutants and lower the overall combustion efficiency. To prevent these disadvantages, flow patterns in the windbox should be investigated and made to be distributed uniformly. In this study, scaled windbox model was used to measure the velocities at the exit of the each burner and the results were compared with the CFD results.

대향연소식 보일러 단위 응답특성

김성호[†] · 정원희^{*} · 조창호^{*}(두산중공업)

Open Loop Step Response of OWF Boiler of TPP

Sung-Ho Kim, Won-Hee Jung and Chang-Ho Cho

Key Words: boiler(보일러), power plant(발전소), step response(단위 응답)

Abstract : There are several hundred process variables in a typical fossil power plant. It is not possible and not necessary to control all these variables. It is essential to control critical operating parameters that provide the maximum values for each objective. A boiler of power plant typically consists of three control systems, i.e., feedwater control, combustion control, and steam temperature control. Each control logic have to design to consider response of boiler, but it usually depend on the operator's experience or try-error during startup test. The oppose wall firing thermal power plant model was developed and perform the open loop step response test. The result will compare with actual operating data from the power plant and will apply the real project.