2차 연료 분사를 이용한 예혼합화염의 연소진동 제어

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Control of Combustion Oscillation in Premixed Flame using Secondary Fuel Injection

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Key Words: Combustion Oscillation(연소진동), Secondary Fuel Injection(2차 연료 분사), Premixed Flame(예혼합화염)

Abstract : To establish combustion control scheme, the fundamental characteristics of oscillating swirl-stabilized premixed flame were investigated. The r. m. s. value of pressure fluctuations show significantly large value near stoichiometric condition. The beating of pressure fluctuations is observed for large oscillating flame conditions in present combustor. The beating of pressure fluctuations played important roles in noise generation and nitric oxide emission. The beating of pressure fluctuations could be controlled by injecting secondary fuel into the recirculating region of oscillating flames.

공기구동형 글로브 밸브의 동특성 분석에 관한 연구

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Study on Dynamic Analysis of Air-operated Globe Valve

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Key Words: Air-operated valve(공기구동밸브, AOV), Globe valve(글로브 밸브).

Abstract : Air-operated globe valve is one of the principal valves which are used for controlling the fluid flow and the pressure in nuclear power plants. The periodic diagnosis has been carried out to guarantee the safety of nuclear power plants in spite of much expense. It is meaningful to study on the flow dynamics of globe valves in order to analyze its faults and to predict its performance. In this paper, the dynamic equation is modeled using the force balance equations. The numerical analysis is carried out to find out the exact differential pressure(DP) between the up and down side of the globe valve disk. The experiment is also performed with a 2 inch globe valve. The simulation results show the similar output with the experimental results. The dynamic model is proved through the experiment and the numerical analysis.