평면에 충돌하는 국한 슬롯형 제트의 비정상 유동에 대한 실험적 연구

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Experimental study of the unsteady flow in a transitional confined slot jet impinging on a flat surface

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Key Words: Impinging jet(충돌제트), Confined slot jet(국한 슬롯형 제트), Reynolds Number(레이놀즈수), Cinematic PIV(시네마틱 PIV), POD(Proper Orthogonal Decomposition : 적합직교분해)

Abstract : The flow characteristics in a confined slot jet impinging on a flat plate were investigated by using cinematic Particle Image Velocimetry technique. The jet Reynolds number was varied from 250 to 1000 for a fixed jet-to-plate spacing of H/W=10. We found that the vortical structures in the shear layer are developed with increase of Reynolds number and that the jet becomes unsteady by the interaction of vortex pairs between 500 and 750 of Reynolds number. Vortical structures and their temporal evolution are verified by using proper orthogonal decomposition and the results is compared with previous numerical study.

급수가열기 추기노즐의 개선된 충격판 모델에 관한 연구

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A Study on Advanced Impinging Baffle in Extraction Nozzle Model of a Feedwater Heater

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Key Words: Flow Accelerated Corrosion(유동가속부식), Wall Thinning(감육), Feedwater Heater(급수가열기), Extraction Nozzle(추기노즐), Impinging Baffle(충격판)

Abstract : Feedwater heater in closed cooling system apply heat up inflow steam and water from High Pressure Turbine(HPT) and Moisture Separator and Reheater(MSR) in Power generation plant. It have recently experienced severe wall thinning damage, which increases as operating time progress. Shell wall thinning of feedwater heater components due to Flow Accelerated Corrosion(FAC) is fatal problem in Nuclear Power Plan(NPT). It is fouded that wall thinging of feedwater Heater Because of being reflicted vapor at existing experiment of impinging baffle model. Reflected vapor crashed specific part of Feedwater Heater, so it acccelerlated corroison on acount of FAC. There is various Method of constrain corrosion, it will be effective that is changed by flow of fluid than charactor of fluid. Therefore It is changed size of pitch and hole on Advanced Impinging Baffle and choiced excellent Impinging Baffle.