

발전소 증기 및 급수 제어밸브의 음향방출 누설진단 적용 연구

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Study on the Application of Leak Diagnosis Technique Using AE for Steam and Water Control Valve in Power Plants

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Key Words: Valve(밸브), Leak(누설), Acoustic Emission(음향방출), Frequency Analysis(주파수분석), Power Plant(원자력발전소)

Abstract : In this study, acoustic emission tests are performed when the pressurized temperature water and steam flowed through main steam dump valve and check valve on the normal size of 12 and 18 ". The valve internal leak monitoring system for practical field was designed. The acoustic emission method was applied to the valves at the site, and the background noise was measured for the abnormal plant condition. To improve the reliability, a judgment of leak on the system was used various factors which are AE parameters, trend analysis, frequency analysis, voltage analysis and amplitude analysis of acoustic signal emitted from the valve operating condition internal leak.

혼합 단계에서의 용융물 입자 크기 분포를
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The Steam Explosion Calculation Focused on the Mixing Particle Size Distribution

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Key Words: Steam Explosion(증기폭발), Breakup Model(파쇄 모델), Mixing(혼합), Particle Size Distribution(입자 크기 분포),

Abstract : The reactor steam explosion calculations generally were done by the conventional approach, in which the code verification parameter was a pressure. That conventional approach seemed not to give the consistent result. The explosion pressure by new breakup model is quite different from the explosion pressure by old breakup model even though those two models were tuned for L-14 pressure. The primary reason is that the verification by the pressure could distort the mixture condition. The explosion pressure generally is believed to be the function of mixture conditions such as the fuel particle size distribution and the void fraction, but tuning code to fit mixing pressure data could not guarantee the another mixture condition. The new approach to use the particle size distribution as the comparison parameter was suggested.