

실측데이터를 활용한 감육배관 평가식의 두께 기준 비교

이정근[†] · 박치용* · 이성호*(한전전력연구원) · 박상규** · 이요섭**(한수원(주))

Comparison of the Evaluation Criteria of the Thinned Pipes by Wall Thickness from the Measurement Data

Jeong-Keun Lee, Chi-Yong Park, Sung-Ho Lee, Sang-Kyu Park, Yo-Seob Lee

Key Words: Carbon Steel Pipe(탄소강배관), Local Wall Thinning(국부감육), Integrity Evaluation(건전성평가기준), Measured Thickness(측정두께)

Abstract : Local wall thinning by the Flow Accelerated Corrosion is one of important factors for the integrity features of the nuclear power plant. So many researches have been followed and various evaluation criteria also have been proposed. In this study, comparison of the evaluation criteria of the thinned pipes by wall thickness were performed. Measured data from the nuclear power plant were applied for a this comparison. And analyzed data by an evaluation criteria were compared with other evaluation criteria by thickness of the pipe. From this comparison, the construction code for the nuclear power plant has enough margin for local wall thinning on the pipe thickness view. And the owner of the nuclear power plant can choose the suitable evaluation criteria as more economic and safety point of view.

X-리프트 스피들의 파괴해석

주석재[†](울산대)

Fracture Analysis of a Spindle in the X-Lift

Seok Jae, Chu

Key Words: Fracture Analysis(파괴해석), Macrofractography(거시적파면특징), Fatigue(피로), Spindle(주축), X-Lift(X자형 승강기)

Abstract : One of the two spindles in the X-lift broke suddenly during normal operation. The location of the breakage is where considerable stress concentration occurs and moreover the bending moment is at the maximum. On the fracture surface, macrofractographic features associated with rotating-bending fatigue are evident. The measured surface strain of the spindle varies cyclically as the spindle rotates and indicates the rotating-bending fatigue. Exactly speaking, the X-lift is not symmetrical with respect to the horizontal plane. Thus the unsymmetrical deformation can occur and cause the bending of the spindle. The 3-D finite element analysis of the X-lift revealed the bending of the spindle.