

用于核电厂蒸汽发生器传热管SCC试验的浓碱高压釜装置

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收稿日期 1988-4-14 修回日期 网络版发布日期:

摘要 <正> 一、前言 核电厂蒸汽发生器传热管的应力腐蚀破裂(SCC)至今时有发生,造成很大经济损失。因此,它一直是各核电发展国家所关心的重要问题之一。蒸汽发生器传热管发生SCC的原因与纯水介质中杂质钠离子或氯离子在材料受力部位的浓集作用有关。采用磷酸盐水处理工艺以及冷凝器泄漏是造成二回路系统水质遭到钠离子和氯离子沾污的原因。通常,采

关键词 [蒸汽发生器](#) [应力腐蚀破裂](#) [浓碱](#) [高压釜](#)

分类号

DEVELOPMENT OF EQUIPMENT FOR TEST OF CAUSTIC STRESS CORROSION CRACK (SCC) OF STEAM GENERATOR TUBE IN NUCLEAR POWER STATION

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Abstract In nuclear power station, reactor is often forced to shut down for maintenance due to serious stress corrosion crack of steam generator tube. To study the tendency of steam generator tube to SCC, a type of autoclave device for SCC test in caustic solution is developed. The container fabricated from Nickel with welding seal is used for placing caustic solution and material specimens. The container is put in the autoclave, connected with autoclave outside with pipe, and filled in with pure argon at 2-3 kg/cm². C-type of specimen is used for SCC test. Incoloy 800 alloy specimens with shot peening and without shot peening are tested in 50% (wt) NaOH solution at 300°C, and SCC is observed on specimens without shot peening after 200 h exposure to above condition. The results show that this autoclave device is reliable and safe in use, it will be able to meet the needs of caustic SCC testing of materials for steam generator tube in nuclear power station.

Key words [Steam generator](#) [SCC](#) [Caustic solution](#) [Autoclave](#)

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