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核电站工程模拟器用于SGTR事故仿真分析研究

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摘要 核电站数值反应堆系统(DRS)是基于轻水反应堆瞬态系统分析程序RELAP5的工程模拟器。本工作使用该工具模拟恰希玛(CHASHMA)核电站蒸汽发生器传热管破裂(SGTR)事故,对30min不干预和30min内干预分别进行计算。仿真过程及计算结果验证了数值反应堆系统是进行核电厂仿真和分析的有效工具。

关键词 SGTR CHASHMA核电站 事故仿真 安全分析

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Research of SGTR Accident Simulation and Analysis by Engineering Simulator in Nuclear Power Plant

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Abstract The postulated accident of steam generator tubes rupture(SGTR) of CHASHMA nuclear power plant in Pakistan was simulated and analyzed by an engineering simulator, digital reactor system (DRS) which was based on thermal hydraulic system code RELAP5. Two cases of the accdent were simulated by the DRS. One was all actions which were executed by auto control system in 30 minutes, and the other was actions which were taken by operator to mitigate the accident result in 30 minutes. The accident simulation and the results prove that the DRS is very useful for the nuclear power plant simulation and safety analysis.

Key words SGTR CHASHMA nuclear power plant (accident) simulation safety (analysis)

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