

反应堆工程

模块式高温气冷堆非能动余热排出系统分析与研究

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摘要 非能动的余热排出系统是高温气冷堆固有安全性的重要体现之一。本文介绍了模块式高温气冷堆余热排出系统热工水力计算方法, 并给出了不同工况、不同环境温度下余热排出系统的运行参数, 为余热排出系统的设计和运行提供了参考。对事故工况下舱室混凝土温度分布进行了数值分析, 结果表明混凝土最高温度低于安全限值。

关键词 [高温气冷堆](#) [余热排出](#) [数值计算](#) [温度场](#)

分类号

Analysis of Passive Residual Heat Removal System of Modular High Temperature Gas-Cooled Reactor

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Abstract The passive residual heat removal system plays an important role for the inherent safety of high temperature gas-cooled reactor (HTGR). The thermal hydraulic calculation method for the residual heat removal system of HTGR was introduced. The operating temperature of the residual heat removal system at different residual heat powers and different environmental temperatures were calculated. The containment concrete temperature was numerically simulated. The results show that the highest concrete temperature is acceptable.

Key words [high temperature](#) [gas-cooled reactor](#) [residual heat removal](#) [numerical simulation](#) [temperature field](#)

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