

钠冷快堆无停堆保护失热阱固有安全特性

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摘要 采用模块式结构建立了钠冷快堆主回路系统的数学模型, 选用端点浮动法有效克服了点堆方程的刚性问题。堆芯热工和 I H X 计算采用稳定性良好的全稳二阶迎风差分格式。编制了钠冷快堆失热阱瞬态仿真程序 L O H S。该程序可在微机环境下运行, 模型简单、速度快。用 L O H S 对 E B R - II 失热阱瞬态实验的计算结果与安全分析程序 N A T D E M O 的计算结果符合良好。依据计算结果对快堆固有安全特性进行了分析

关键词 [钠冷快堆](#) [失热阱](#) [固有安全](#)

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TRANSIENT BEHAVIOR OF THE LOSS OF HEAT SINK WITH OUT SCRAM AND INHERENT SAFETY OF SODIUM COOLED FAST REACTOR

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Abstract Mathematical models with modular structure are developed for primary system of LM FBR . The effective algorithm are adopted to solve these models, such as the end floating method solving stiffness of point reactor neutron kinetics equation and the fully implicit second order upwind difference solving the core thermal and the IHX. A LOHS simulation program run on microcomputer with a faster than real time simulation speed is developed, and used to calculate the loss of heat sink transience experiment of EBR II . The calculated results coincide well with those by using NATDEMO. Finally, the inherent safety of fast reactor is analyzed according to the calculated results.

Key words [Fast breeder reactor](#) [Loss of heat sink](#) [Inherent safety](#)

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