

压水堆硼稀释事故的计算

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摘要 <正> 一、概述 核电厂压水堆的初始过剩反应性是通过控制棒、固体可燃毒物和溶解在主回路冷却剂中的硼酸等三种方式联合控制的。随着反应堆的燃耗和裂变毒物的积累,堆的过剩反应性不断减少,需要通过化容系统,控制硼酸的浓度来进行补偿。如果化容系统发生故障或操作员误操作,就会给回路注入无硼或低于规定浓度的补给水,给反应堆引入正反应性,造成硼稀释事故。按核安全法规的要求,应对换料、冷停堆、热停堆和启动等工况进行计算,并要求在这些

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CALCULATION OF BORON DILUTION ACCIDENTS IN A PRESSURIZED WATER REACTOR

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Abstract According to the equation presented in paper, the intervals from the time the operator is made aware of an unplanned boron dilution accident to the time a loss of shutdown margin occurs on the various conditions are calculated by using the primary coolant volume, the volume flow of boron dilution water and the initial and critical boron concentrations on each condition. The assumptions are conservative and so the results computed are safe. The comparison is made between results of this paper and the safety analysis report of Qin Shan power plant.

Key words [Boron dilution accident](#)[Pressurized reactor](#)[Critical time interval](#).

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