

反应堆工程

## 取消二次中子源后的源量程可用性分析

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**摘要** 本工作介绍了大亚湾核电站取消二次中子源的目的及理论计算分析源量程可用性的必要性。研究在缺乏一些重要数据情况下, 如何通过数值模拟方法较准确计算出源量程的中子计数率。理论计算方案表明, 可通过已有大修装料过程中实际测量所得的源量程中子计数数据, 并结合相应的组件燃耗及源强数据来获取近似度因子, 并以此校正蒙特卡罗理论计算出的中子通量和中子计数率。通过与实验值进行比较分析, 验证了本方法的可行性, 并给出与实验较相符的计算结果。

关键词 [大亚湾核电站](#) [二次中子源](#) [源量程](#) [数值模拟](#) [蒙特卡罗方法](#)

分类号

## Usability Analyses of Source Range Detector After Secondary Neutron Source Canceled

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**Abstract** The purpose of canceling the secondary neutron source for Daya Bay Nuclear Power Station was introduced. The necessity of the usability analyses for the source range detector was explained. On the condition of some important data absented, how to calculate the neutron count rates exactly by numerical method was a tough problem. Then, a method was proposed. By using this method, an approximate coefficient was introduced to amend the MCNP calculated results. Some neutron count rates of several fuel assemblies were calculated and compared with the experimental data. The analyses indicate that the method is effective and the calculated results match up to the experiment results.

**Key words** [Daya Bay Nuclear Power Station](#) [secondary neutron source](#) [source range detector](#) [numerical method](#) [Monte-Carlo method](#)

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