

## 秦山核电站燃料考验组件在HWRR辐照考验前的物理性能测量

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收稿日期 1985-12-4 修回日期 网络版发布日期:

**摘要** 为测量秦山核电站燃料考验组件的物理性能,设计了专用实验组件。用直接测量芯棒 $\gamma$ 活性的方法,成功地得到了组件功率与大堆功率的关系。用棒栅反应性曲线刻度了组件反应性及失水反应性。用活化箔法测得中子注量率以及芯棒间的功率分配。并采取措施,在满足组件考验热工条件的同时,实现了兼顾Mo-Tc的生产。

**关键词** [秦山核电站](#) [物理性能测量](#) [燃料考验组件](#) [燃料棒 \$\gamma\$ 活性](#) [功率分布](#) [组件功率测定](#)

分类号

## THE PHYSICAL-FEATURE MEASUREMENTS FOR QINSHAN NUCLEAR POWER PLANT TEST FUEL ASSEMBLY BEFORE ITS IRRADIATION TEST AT HWRR

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**Abstract** A special simulant assembly was designed for measuring the physical features of the test fuel assembly of Qinshan Nuclear Power Plant. The power ratio of the designed assembly to the HWRR was determined successfully by means of directly measuring the  $\gamma$ -activity of the fuel rods. The assembly reactivity and the LOCA reactivity were calibrated with the reactivity curve for control rod bank. The neutron flux and the power distribution in fuel rods were obtained by using the foil-detector activation method. In addition, special measures were taken to give the consideration to both Mo-Tc generator production and the requirements of hydro-thermal condition of the tested fuel assembly during the irradiation test period.

**Key words** [Qinshan Nuclear Power Plant](#) [Physical-feature measurement](#) [Test fuel assembly](#)  
 [\$\gamma\$ -activity of fuel rods](#) [Power distribution](#) [Determination of assembly power](#)

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