

反应堆工程

# SPRR-300反应堆大热柱内中子注量率及能谱分布

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**摘要** 利用MCNP程序校核ANISN程序计算出的堆芯分布, 进行一维空间简化的修正; 同时采用延伸横向尺寸的方法近似替代无法在一维模型中建立的反射层, 以进行横向中子泄漏修正。经此修正后, 用一维ANISN程序计算了SPRR-300反应堆热柱内的中子注量率分布和中子能谱。热柱内镉比的程序计算值与实验测量结果基本一致, 两者间的偏差在5%以内, 个别位置处的偏差不大于10%。这一结果表明, 对热柱内中子注量率分布及能谱等深穿透问题, 采用确定论一维离散程序ANISN可获得很好的计算结果。

**关键词** [反应堆热柱](#) [中子注量率](#) [能谱](#)

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## Neutron Fluence Rate and Energy Spectrum in SPRR-300 Reactor Thermal Column

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**Abstract** In order to modify the simple one-dimension model, the neutron fluence rate distribution calculated with ANISN code was checked with that calculated with MCNP code. To modify the error caused by ignoring the neutron landscape orientation leaking, the reflector that can't be modeled in a simple one-dimension model was dealt by extending landscape orientation scale. On this condition the neutron fluence rate distribution and the energy spectrum in the thermal column of SPRR-300 reactor were calculated with one-dimensional code ANISN, and the results of Cd ratio are well accorded with the experimental results. The deviation between them is less than 5% and it isn't above 10% in one or two special positions. It indicates that neutron fluence rate distribution and energy spectrum in the thermal column can be well calculated with one-dimensional code ANISN.

**Key words** [reactor](#) [thermal](#) [column](#) [neutron](#) [fluence](#) [rate](#) [energy](#) [spectrum](#)

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