

反应堆工程

10 MW高温气冷堆乏燃料元件的贮存

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收稿日期 2004-5-8 修回日期 2004-11-6 网络版发布日期: 2006-10-17

摘要 10 MW高温气冷堆(HTR-10)在设计寿命内共卸出约9万个乏燃料元件,其放射性裂变产物的活度高达 $1.0 \times 10^{16} \text{Bq}$,必须妥善处置。HTR-10乏燃料元件卸在密封和屏蔽的乏燃料罐内,每罐可容纳2 000个乏燃料元件。这些罐暂存在反应堆建筑物最底层的乏燃料暂存库内,在库内采取通风冷却。若干年后,通过转运小车运至反应堆大厅竖井下方,再用大厅吊车从竖井吊至地面,最后用卡车运至最终贮存库。

关键词 [10 MW高温气冷堆](#); [乏燃料元件](#); [乏燃料暂存库](#)

分类号 [TL352.3](#)

Spent Fuel Storage in 10 MW High Temperature Gas-Cooled Reactor

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Abstract Approximately 90 000 spent fuel elements are discharged from 10 MW High Temperature Gas-Cooled Reactor(HTR-10) in its lifetime. The activity of the radioactive fission products in these spent fuel element reaches $1.0 \times 10^{16} \text{Bq}$, so these spent fuel element should be managed properly. Spent fuel elements in HTR-10 are discharged into seal and shield casks. Each cask can hold approximately 2 000 fuel elements. These casks are stored in the temporary store of spent fuel element inside the reactor building and cooled by air. Over the years, they are shipped to bottom shaft of reactor hall by small shipping vehicle, and are hoisted ground by a crane. Finally, they are shipped to permanent store by a lorry.

Key words [10 MW High Temperature Gas-Cooled Reactor](#); [spent fuel element](#); [temporary store of spent fuel element](#)

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