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物理与热工

高温堆磁悬浮轴承备用氦风机热工实验研究

赵钢;马艳秀;符晓铭;王捷;于溯源

清华大学 核能与新能源技术研究院，北京100084

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摘要

高温堆磁悬浮轴承支承的备用氦风机是国内首次磁悬浮轴承的工业级应用，也是世界上首次将磁悬浮轴承应用在反应堆领域。为了验证磁悬浮轴承氦风机在热态工况下的性能以及整套系统的可靠性，进行了磁悬浮轴承氦风机的台架实验。在磁悬浮轴承氦风机的热工实验中，通过静态加热、动态加压、动态加热等实验，证明系统能够在热态工况下稳定运行，最后，磁悬浮轴承氦风机顺利通过了100 h热态考核出厂实验。

关键词 磁悬浮轴承 氦风机 热工实验

分类号

Helium Circulator Supported by AMB for HTR-10 Thermal Test

ZHAO Gang;MA Yan-xiu; FU Xiao-ming; WANG Jie;YU Su-yuan

Institute of Nuclear and New Energy Technology, Tsinghua University, Beijing 100084, ChinaInstitute of Nuclear and New Energy Technology, Tsinghua University, Beijing 100084, China

Abstract Backup helium circulator for HTR-10 is supported by active magnet bearing (AMB). It is the first industry application in nuclear field in China. In order to verify the availability of helium circulator supported by AMB, a test facility was built in Shanghai. Some thermal test was conducted to simulate the working condition of the reactor. The experiment results show that system can work well under the high temperature conditions. Finally, helium circulator supported by AMB is succeeded in 100 h hot test.

Key words active magnet bearing _ helium circulator _ thermal test

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