

反应堆工程

高温气冷堆氦气透平直接循环启动参数分析计算

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摘要 开发了包括堆芯、蒸汽发生器、透平、压气机及换热器等模块在内的高温气冷堆氦气透平直接循环系统的稳态计算程序。对系统的启动过程进行了模拟分析, 并对压气机的喘振问题进行了分析, 考虑了换热能力、温度和压力的影响。结果表明: 在变负荷过程中压气机有足够的裕度。

关键词 [氦气透平](#) [高温气冷堆](#) [启动过程](#) [计算模拟](#)

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Analysis of Startup Parameters for Direct Helium Turbine Cycle System of High-Temperature Gas-Cooled Reactor

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Abstract A steady analysis code on the direct helium turbine cycle system of high-temperature gas-cooled reactor was developed. The model includes reactor core, steam generator, gas turbine, compressor and heat exchanger modular. The startup procedure of gas turbine system was simulated and analyzed. The surge of compressor was also studied and the effects of heat transfer capacity, temperature and pressure were analyzed. The result shows that the compressor has enough safety margins in the load change procedure of gas turbine system.

Key words [helium turbine](#) [high-temperature gas-cooled reactor](#) [startup procedure](#) [computer simulation](#)

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