反应堆工程

基于THERMIX/BLAST和vPower平台的HTR-PM工程模拟机开发

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摘要　　模块式高温气冷堆示范电站（HTR-PM）在山东荣成石岛湾开始兴建，本文通过将THERMIX/BLAST程序嵌入至vPower仿真平台，开发了HTR-PM工程模拟机。其中两个嵌入vPower仿真平台的THERMIX/BLAST程序模块分别模拟2个由堆芯、一回路和蒸汽发生器组成的蒸汽供应系统模块，与利用vPower仿真平台建立的汽轮发电机系统模块相连接，在平台上实现了数据的管理及人机界面。该工程模拟机可用于模拟和分析HTR-PM的稳态工况、瞬态事故工况。

关键词　　工程模拟机　HTR-PM　THERMIX/BLAST　vPower

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Modeling and Analysis of Engineering Simulator for HTR-PM Based on THERMIX/BLAST Code and vPower Simulation Platform

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Abstract　An engineering simulator of Pebble-bed Modular High Temperature Gas-cooled Reactor (HTR-PM) was developed by embedding THERMIX code into the vPower simulation platform. In the engineering simulator, the two steam supply systems including two reactors, two primary loops and two steam generators were simulated by two THERMIX/BLAST modules respectively, and the simulation model of entire steam turbine generator system was built by using vPower simulation platform. The vPower platform synchronizes the two THERMIX/BLAST modules in executing simulation of two reactor module-structures of HTR-PM. The engineering simulator can simulate the behavior of HTR-PM under steady state, and also can simulate the transient accident conditions of the reactor system.

Key words　engineering　simulator　HTR-PM　THERMIX/BLAST　vPower

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