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设备与系统

新型控制棒可动线圈电磁驱动线落棒试验

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摘要 为检验新型控制棒可动线圈电磁驱动线的综合性能，进行了该控制棒驱动线的落棒试验。测量了密封筒内的衔铁及筒外的可动电磁线圈之间的跟随特性、断交流和断直流状态下的快速落棒时间，并对控制棒导向管和控制棒组件之间摩擦方式变化时落棒时间的变化、球阀对控制棒驱动线落棒时间的影响等进行了研究，得到了该控制棒驱动线在不同状态下的落棒时间以及影响快速落棒时间的综合因素等试验数据。试验研究结果可为该驱动线的调试及安全运行提供借鉴。

关键词 反应堆 控制棒 电磁 驱动线 落棒试验

分类号

Rod-Dropping Test of New Control Rod Movable Loop Electromagnetism Driving Route

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Abstract The control rod driving route was driven by movable electromagnetism loop, which operated on the one domestic new reactor. Rod-dropping experiment was carried out in order to test capabilities of the control rod driving route. The response of the movable electromagnetism loop outside the cylinder to the gag bit inside the cylinder and quick rod-dropping time in the condition of direct current broken and alternating current broken respectively were tested in the experiment. Transformation of rod-dropping time with friction mode between control rod oriented tube and control rod assemblies, and effect of sphere valve on the rod-dropping time were also studied. The results include the control rod driving route’s rod-dropping time under different conditions, influence factors, and so on, which would be reference for debugging and operation of the driving route.

Key words reactor _ control rod _ electromagnetism _ driving route _ rod-dropping test

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