

عنوان مقاله:

Design and Make of Intelligent Automatically Controller Set for Nuclear Reactor Control Rods

محل انتشار:

بیست و سومین کنفرانس بین المللی برق (سال: 1387)

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خلاصه مقاله:

This article is inclusive of design and implementation studying of a microcontroller based system for the automatic control of control rods of nuclear reactors. With the help of this system, we can take over this matter. This system itself is controlled automatically and is linked to a personal computer system. Important features of this system are: automatic scrambling of control rod, activation of alarm in emergency situations, and also tuning of control rod moving course in up and down directions. Also, in this system a virtual pool is provided as a reactor coolant pool for adjusting the water level. This system eliminates the need for an operator in charge of control rods in a nuclear power plant such as the one in the Amirabad research centre. This system can be used for the control of controlling rods of the types: controller, regulator, and safety rods. This system controls and stabilizes the nuclear reactors and in emergency situations causes the scrambling of the control rod and shutdown of reactor.

کلمات کلیدی:

Nuclear reactor; control rods; circuit; controlling system; reactivity

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