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Investigation of the GFR2400 Reactivity Control System

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Abstract : The presented paper is related to the design methods and neutronic characterization of the reactivity control system in the large power unit of Generation IV Gas cooled Fast Reactor – GFR2400. The reactor core is based on carbide pin fuel type with the application of refractory metallic liners used to enhance the fission product retention of the SiC cladding. The heterogeneous design optimization of control rod is presented and the results of rods worth and their interferences in a core are evaluated. In addition, the idea of reflector removal as an additive reactivity management option is investigated and briefly described.

Keywords : control rods design, GFR2400, hot spot, movable reflector, reactivity
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