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Interactive Graphic Simulator of the CAREM25 Reactor: A Tool for Design Verification and Operator Training

This paper presents the Interactive Graphic Simulator (SGI) of the CAREM25 reactor, which is used as a tool for verifying its engineering and design. The development of this SGI is part of the design and development of a Full-Scope Simulator (SAT), which will be used for training operators of the CAREM25 nuclear power plant.
The paper describes the models of the systems included in the SGI, along with the graphical user interface, the reactor control configurations, and the tool used for exchanging variables between the different coupled codes involved. It also shows the types of simulations that can be performed with this simulator and the results obtained when performing different transition maneuvers between operating states, emphasizing the procedures and actions carried out to perform these maneuvers.
Finally, the paper concludes with the results found and how they are used to support the reactor design.

Keywords: CAREM25, SMR, nuclear reactor, simulator, design verification, operator training, transient analysis, safety analysis.

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