Modeling of VVER and RBMK fuel elements behavior using computer technology MARC

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The article presents finite element analysis models to describe thermo-mechanical behaviour of light water reactors fuel elements. Modelling of fuel elements behaviour was carried out using MSC.MARC&MENTAT Software. To compute stress and strain distributions in cladding, finite element analysis modelling was performed in the elastic-viscous-plastic statement with due account for fuel swelling under irradiation and contact interaction between construction elements. The paper shows examples and results of simulation of container (pellet) type fuel elements for VVER and RBMK reactor.

Keywords: *nuclear reactor, fuel element, stress and strain state, finite element analysis.*

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