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## Temperature Sensitivity Analysis of Nuclear Cross Section using FENDL for Fusion-Fission System

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Fusion energy has been presented as a clean alternative way of energy source. Furthermore, the neutronics features from fusion reactors make favorable the fuel regeneration and actinide transmutation due to the high-energy neutron flux. This work proposes a fusion-fission system (FFS) based on a Tokamak at operating temperature for transmutation of MA using reprocessed fuel by UREX+ technique spiked with thorium. The purpose is to follow the burnup of the MA inventory at operating temperature. Thorium choice was due to the conversion from fertile to fissile nuclide and its abundance in crust earth. In this work, NJOY99.364 used to process the cross section at operating temperatures and the Monteburns, which links the ORIGEN2.1 and the MCNP to perform the depletion and modeling of the system. The results show a temperature sensitivity analysis of a FFS closest to its real material conditions at operating temperatures and one simulated at room temperature. The work establishes the neutronic modelling differences in the system, as well as, the temperature effect on the MA depletion and production nuclides for FFS.

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Brazil

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