

## **Influence of errors in one-group constants and / or neutron flux spectrum on uncertainty of nuclide number densities in the burn-up calculations in cells with different spectrum**

*Thursday, 19 November 2020 14:45 (15 minutes)*

The main researches on the assessment of the influence of uncertainties in nuclear data on re-actor calculations were devoted to the influence of these uncertainties on the effective multiplication factor by introducing the so-called sensitivity coefficients. Only a small part of them were devoted to their influence on the nuclide number densities [1-2].

On the other hand, uncertainties in reaction rates, neutron flux density, and other quantities can lead to significant distortions in the results; therefore, it is important to be able to determine the effect of such uncertainties on different nuclear densities during burn-up calculations.

Computational studies have been performed showing a complex time dependence of the uncertainties of nuclide number densities due the errors in one-group constants and / or neutron flux spectrum in the burn-up calculations in cells with different spectrum.

In our calculations, we used the VisualBurnOut program developed at the IATE NRNU MEPhI, which allows us to estimate these uncertainties arising from inaccurate knowledge, for example, of one-group constants. Uncertainties in one-group constants can be estimated, for example, using the ERROR module, the NJOY software package.

It was found that this uncertainty not only depends on the burn-up time in a complicated way, but also depends on the neutron spectrum. Variants of a cell with a thermal and fast neutron spectrum are considered.

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**Session Classification:** Ядерные энергетические установки и ядерный топливный цикл

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