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**MATHEMATICAL DEPENDENCE FOR THE ^{137}Cs CONCENTRATION
IN SPENT NUCLEAR FUEL AND ITS USING FOR EXPERIMENTAL DATA PROCESSING**

The ^{137}Cs behavior during burn up for VVER and RBMK fuel were analyzing. Mathematical dependence for the ^{137}Cs concentration from fuel burn up in the form of $c_{137} [\text{kg/t(U)}] = 3,9 \cdot 10^{-5} \cdot e^{-\lambda_{137}\tau} \cdot \overline{\text{burn}} [\text{MW} \cdot \text{day/t(U)}]$ is obtained. The formula's calculation results on ^{137}Cs concentration were compared with ORIGEN and STURBUCS of SCALE-5 computer codes system calculations with some RBMK-1000 fuel experimental data. Using offered dependence the RBMK experimental samples cooling time were founded and isotopic compositions calculations were made with proper cooling time. Difference on some isotopes between calculation and experimental data were reducing.

Keywords: fuel burnup, ^{137}Cs , mathematical dependence, VVER, RBMK, fuel assembly, isotopes compositions, spent nuclear fuel.