

Transmutation of minor actinides in a fast reactor with uranium-curium fuel

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As a result of the operation of nuclear reactors, a certain amount of Cm is produced, which is included in the minor actinides series (MA). Among the long-lived Cm isotopes, Cm243 and Cm245 should be noted. Their fission cross section is over 2.5 barn. In this regard, Cm can be used as a fuel in a fast neutron nuclear reactor. For the scientific research, was used a model of the RBEC reactor (a fast natural circulation reactor with a lead-bismuth coolant), developed at the Kurchatov Institute (Moscow, Russia). (U + Cm)N was used as fuel. Uranium - waste uranium with an enrichment of 0.1% in the isotope U235. The efficiency of different approaches to the placement of MA in fuel (homogeneous and heterogeneous) was considered. This was for the transmutation of Cm and other elements from the minor actinides series.

Country/Int. organization

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