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**INFLUENCE OF CORE MODEL PARAMETERS ON THE CHARACTERISTICS
OF NEUTRON BEAMS OF THE RESEARCH REACTOR**

IRT MEFhI reactor is equipped with a number of facilities at horizontal experimental channels (HEC). Knowing of parameters influencing spatio-angular distribution of irradiation fields is essential for each application area. The research for neutron capture therapy (NCT) facility at HEC of the reactor was made. Calculation methods have been used to estimate how the reactor core parameters influence neutron beam characteristics at the HEC output. The impact of neutron source model in Monte Carlo calculations by MCNP code on the parameters of neutron and secondary photon field at the output of irradiation beam tubes of research reactor is estimated. The study shows that specifying neutron source with fission reaction rate distribution in SDEF option gives almost the same results as criticality calculation considered the most accurate. Our calculations show that changes of the core operational parameters have insignificant influence on characteristics of neutron beams at HEC output.

Keywords: neutron-capture therapy, MCNP, Monte Carlo method, dosimetry.