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## EXPERIMENTAL STUDY OF MINOR ACTINIDES DATA AT BFS FAST CRITICAL ASSEMBLY WITH METAL FUEL

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The problem of refining of minor actinides (MA) fission cross-section and, especially, MA capture cross-section is rather actual, since at present their uncertainties are several times more than it is required. The BFS-73-1 critical assembly was the benchmark model of KALIMER design, based upon uranium metal fuel less than 20% enrichment and sodium coolant and represented the specific class of neutron spectrum in long-time IPPE MA programme investigations [1]. Several most important MA representatives (Np-237, Am-241 and Am-243) were studied on BFS-73-1. The experiments involved fission cross-section ratios of Np-237, Am-241 and Am-243 to Pu-239; Np-237 capture to Pu-239 fission cross-sections ratio; Np-237 samples central reactivity coefficients normalized to U-235 or Pu-239. The results of the experiments, so as the assembly description prepared for the analysis.

Calculations of the measured parameters are carried out using Russian calculation codes and the most modern versions of nuclear data libraries (ABBN-93, FOND-2.2, ENDF/B-6, JEF-2.2, JENDL-3.2 etc.).

Calculation benchmark models of the experiment are constructed. They are used for testing of precise (with detailed description of geometry and neutrons transition) and engineer (with homogeneous core description and diffusion theory of neutrons transition) neutron physics codes and MA neutron data. Correction factors necessary to adequate comparison with the measurements are obtained for a simpler model and their uncertainty are estimated. Corresponding recommendations on their uncertainties and/or correction will be worked out.

### References

1. V.Doulin I.Matveenko, A.Kochetkov et al., "Experimental Studies of MA Nuclear Data Correction on Critical Assemblies" - 7 th Information Exchange Meeting on Actinide and Fission Product P&T, October 2002, Jeju, Korea.