**Investigations of Prompt Fission Neutron Emission (“ЕNGRIN”)**

**Project Review**

Thestudyofspontaneousandnear-barrier-energyfissionofnucleiare attractive for research as the source of new information on the propertiesof a nuclear system obtained immediately before the neck rapture. Experiments, suggestedby the authors of the “ENGRIN” project to be carried out with the use of the resonanceneutrons, assume the study of correlation between the multiplicity and angular distributions, obtained for the prompt fission neutrons, and the data obtained for the fragment energy and mass spectra. Such experiments are challenging for receiving information needed for the estimation of the dimension and shape acquired by the nucleus just before the neck rupture.

Project ENGRINisdeveloped by its authorstaking into account the analysis of experiments carried out at Geel (Belgium). It is notable however, that the expertise obtained as a result of relevant experiments caried out by the authors is of the great importance for the created project.The project authors developed original approaches to the correlation measurements providing the observation dependence between the multiplicity and angular distributions, inherent to the prompt fission neutrons, and the fragment total kinetic energy. The neutron detector composed of 32 liquid-scintillator modules had been created by the authors of project ENGRIN. This setup will be an important constituent part for the ENGRIN detector arrangement. The working models of ionization chambers, providing spectrometry and trajectory measurements were created and tested by the ENGRIN project authors.Thus, the instrumental basis has been created by the project authors for the studies requiring the observation of correlations between the fragment mass-energy spectra and the prompt-neutron multiplicity.Also, theauthorspresentthe results of thorough estimations ofthe time required for the measurements carried out at the resonance neutron beam of IREN setup.

One should recognize that the realization of the ENGRIN project will offer new, specific prospects for the fission dynamic study. The obtained results will undoubtedly become the subject for theory considerations. Setup built for this project can be effective for the experiments aimed at the search for the neutrons emitted at the neck rapture, as well as neutrons emitted at the descent time toward the scission point.

The ENGRIN project authors make a high-qualification team having good operational expertise in the nuclear fission research.

Approval is recommended for the of this project.

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