

Overview of critical experiments with fast metal cores held on assembly machine FKBN-2

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A brief description given for critical experiments held at RFNC-VNIITF on assembly machine FKBN-2 and ROMB critical assembly specially built for verification of neutron transfer simulation codes. The design of ROMB allows to use it for critical experiments with nuclear materials having fast neutron spectrum (highly enriched uranium, plutonium and its mix). ROMB assembly contains of wide set of construction materials (such as depleted uranium, beryllium, beryllium oxide, steel, titanium, lead, tungsten, vanadium, molybdenum etc.) shape fitted to parts made of nuclear materials. This permits to hold critical experiments with heterogeneous structures which differ in content, including combinations with neutron moderators. Similar critical assemblies may appear in emergency cases concerned with nuclear fuel cell damage. Benchmark critical experiment set up and its features are discussed. Brief description of the experiments held earlier and planned now for verification of neutron transfer simulation codes is given as an example of possibilities of ROMB assembly and experiment using it.

Country/Int. organization

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