

**RERTR 2018 – 39TH International Meeting on
Reduced Enrichment for Research and Test Reactors**

**November 4-7, 2018
Sheraton Grand Hotel and Spa
Edinburgh, Scotland**

**Conversion project of the WWR-K research reactor: summary of
activities**

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ABSTRACT

WWR-K is the light-water tank-type reactor of the design power rating 10MW. Operation of the WWR-K research reactor started in 1967. After the actions undertaken to ensure reactor safety operation in a high-seismicity region, in 1998 its power rating was reduced to 6 MW. In 2003, in frame of the GTRI program (of reduction of global threat on proliferation of high-enriched uranium) The Institute of Nuclear Physics started the feasibility studies of WWR-K reactor conversion to low-enriched uranium without loss of / with improvement of neutron physical parameters. Relevant calculation studies showed that direct reduction of uranium enrichment in existed fuel assemblies (FA) would result in degradation of the reactor neutron-physical parameters. Then several potential designs of new fuel assemblies and core configurations as well as fuel materials were studied via calculations in order to choose the best combination. As a result, the eight-tube FA and the five-tube one with the 2.8 g/cm³ uranium density and the 19.7% enrichment in Uranium-235 were chosen. The next stage of the WWR-K reactor conversion was fabrication of three lead test assemblies (LTA) with LEU fuel and its life test in the WWR-K reactor core with HEU fuel. In all three LTAs burnup of Uranium-235 overruns ~50%, whereas in two of them 60% reaches. During 2015-2016 all HEU fuel was removed from the core, main equipment was upgraded. The physical and power startups were carried out with a success, and WWR-K reactor operation with LEU fuel started, lasting successfully already two years.