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**STUDIES OF THE OPPORTUNITY
TO CONVERT THE "ARGUS-90" RESEARCH REACTOR
WITH 90% FUEL ENRICHMENT IN U-235
TO LOW-ENRICHED FUEL (~20%)**

Ye. Khvostionov, V. A. Pavshook, V. M. Talyzin
Russian Research Center "Kurchatov Institute"
(RRC "KI")
Moscow 123182, Russia

ABSTRACT

Aiming to assess the consequences of abandoning the employment of highly enriched nuclear fuel (HEU) in the reactor engineering, the opportunity has been studied to convert the "Argus-90" reactor operating with the uranyl sulphate water solution fuel of 90% enrichment in uranium-235 to low-enriched fuel (LEU) of ~ 20% enrichment.

A unified technology for the preparation of a solution fuel of 20% and 90% enrichment in U-235 has been confirmed. The effect of low-enriched fuel on the core neutronics parameters has been studied as well as on the efficiency of operating controls of the reactor control and protection system and radiolytic parameters of the solution fuel.

Contact:

Mr. Vladimir Y. Khvostionov
Russian Research Center
Kurchatov Institute
Kurchatov Square 1
Moscow 123182, Russia
Phone: 7-095-196-9706
Fax: 7-095-196-8891
Email: pavsh@atis.kiee.su

[ARGONNE NATIONAL LABORATORY](#), [Nuclear Engineering Division](#)

9700 South Cass Ave., Argonne, IL 60439-4814

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