

CLADDING TIGHTNESS CONTROL OF IRT- 4M FUEL ASSEMBLIES

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Cladding tightness control of 12 IRT-4M fuel assemblies with different burnups, which were unloaded from the active core of WWR-SM research reactor were performed during a quarter. Activity of fission products were measured and compared. Activities of some fuel assemblies were measured few times while their burnup increased and their behavior was studied.

To ensure safe operation of reactor all fuel assemblies (FA) loaded into active core of reactor must be leakage free. After some time of exploitation of fuel assemblies and as their burnup grows micropores and microcracks appear on the surface of fuel elements and ^{235}U decay elements come out from fuel elements and this process is called fuel leakage. Some part of ^{235}U decay products come out of fuel assembly to reactor spent fuel assemblies (SFA) storage pool's water or primary loop water and some of it comes into upper reactor space. There are limits for radioactive releases from fuel assemblies exceeding of which can show leakage of fuel.