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**Testing Plan for LEU Fuel and Beryllium Oxide
for the Conversion of the IGR Reactor**

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ABSTRACT

The results of performed theoretical feasibility study for conversion of the IGR reactor from HEU to LEU showed that:

- reduction of fuel enrichment is possible with acceptable performance and traditional field of use for IGR;
- replacement of material of central neutron reflector from graphite to beryllium oxide is necessary for IGR conversion.

Testing samples of the LEU fuel and BeO is the next step in the path toward making a decision regarding converting the IGR reactor from HEU to LEU fuel.

Testing Plan for LEU fuel and Beryllium Oxide was developed to obtain:

- experimental data about operability of constructive parts of core with low enriched fuel and beryllium oxide in the IGR reactor operational conditions;
- experimental data about lifetime of core elements with low-enriched fuel and beryllium oxide under reactor radiation;
- experimental data for verification of neutronic and heat calculations of the IGR.

The Testing Plan also provides the criteria as the basis to determine suitability of LEU fuel and beryllium oxide for IGR conversion.