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EXPERIMENTAL CAPABILITY FOR INVESTIGATIONS OF THERMAL-HYDRAULIC PROCESSES AND CRITICAL HEAT FLUXES ON FULL-SCALE MODELS OF ROD ASSEMBLIES FOR SMALL MODULAR REACTORS
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The paper gives a brief summary of the experimental facilities available in the Leypunsky Institute for Physics and Power Engineering (IPPE) for justification of safety margins in operation of advanced small modular reactors (LWSMR). There are two experimental facilities SVD-1 and SVD-2 among other ones that are specifically focused from the view point of their unique characteristics to perform experiments to justify both new nuclear water reactor designs and to introduce changes into existing ones.

Electric power up to 10 MW, which the SVD-2 has, makes it possible:
- to study thermal-hydraulic parameters including critical heat fluxes in the full-scale fuel assemblies (FA) models of light water small modular reactors (LWSMR) actively developed around the world. Such works are being successfully carried out at the present time in the IPPE, including within the framework of international projects.
- to carry out experiments to study critical heat fluxes and post-dryout heat transfer on full-scale height models of FA consisting of up to 25 rods for PWR and up to 37 rods for for VVER. Data obtained on such models are the most representative for the justification of reactor designs.

Besides:
- High pressure loop (HLP) of SVD-2 allows pressure value to achieve up to 25 Mpa that allows to carry out thermal-hydraulic studies on FA models of generation IV reactors at near- and super- critical pressures (SCWR).
- For decades the SVD-1 has been used to study thermal-hydraulic processes in fuel assemblies (FA) during core refilling under conditions of loss of coolant design accident (LOCA).

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