

DESIGN AND TESTING OF FLUID RESISTOR FOR REPETITIVE HIGH-VOLTAGE PULSE GENERATOR

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Paper presents design and results of testing of the liquid resistive load for a repetitive high-voltage generator (200 kV, 0.5 ms). The load uses a sealed dielectric case, which must be placed into a vacuum volume (5×10^{-4} Torr) for electrical strength ensuring. Repetitive testing of the generator with the load (10 pps) caused electrolyte heating, load resistance decreasing and changing of the generator mode. Expansion tank is used to compensate thermal expansion of the electrolyte, which make it possible to absorb up to 1 MJ of energy in the load without breaking of seals. Generator load curve can be obtained for one experiment with a help of the fluid load without any additional depressurization of the vacuum volume.

This work was partially supported by RFBR grant No16-32-0028мол_a.

Keywords: *liquid resistive load, high voltage pulse generator, generator load curve.*