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Stability Characteristics of Gas Filled Surge Arrester in Gamma and X Radiation Field

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Breakdown (dc and pulse) of noble gases at low values of the product of pressure and inter-electrode distance (pd) is investigated in the paper theoretically and experimentally. This range of the product pd is particularly important since the work point of gas filled surge arresters (GFSA) is found in it. The influence of gamma and X radiation on the volt-second characteristics of breakdown will be considered in well-controlled conditions. Experimental parameters will be the type of electrode material, configuration of electrode surfaces and gas pressure. Experimentally obtained results will be processed statistically. Special attention will be devoted to comparison of the influence of ionizing radiation and the influence of design solutions on the pulse characteristics (volt-second) of GFSA during the analysis of the experimentally obtained results. The effect of the long-term deconditioning will also be considered from the same aspect.

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