REDUCING ADDITIONAL LOSSES IN POWER REACTOR WINDINGS

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Abstract

An approach to reduce the additional losses from eddy and circulating currents in the windings of power reactors with non-magnetic multi-gaps in the legs of the magnetic cores is proposed. The approach is based on variations of the values of non-magnetic gaps and their distribution along the leg – decrease of the gaps occurs from the center of the leg to its edges, and decrease of the distance between the gaps takes place from the edges to the center of the leg. As a result, the magnetic leakage fluxes between the legs of the magnetic core are reduced, and additional losses in the windings and their heating are reduced, accordingly. Due to this, expenses on the active materials and the cost of rectors are reduced and efficiency is increased, which increases their competitiveness in the market of electrical equipment. The advantages of the proposed approach are especially effective for reactors while the higher

current harmonics present, in particular, for passive filter reactors. References 9, figure 1.

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