عنوان مقاله:

Investigations to Establish a Design for Minimization of Noise Level of CRT Transformers

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خلاصه مقاله:

This paper aims to establish a method to evaluate and minimize mean noise level of transformers prior to fabrication in design phase. Experimental and numerical investigations is implemented to evaluate the effective parameters on overall sound level of a large number of CRT transformers, fabricated in Irantransfo Company. Noise Level of each sample is measured according to criteria of IEC60651. Numerical simulation is done using ANSYS software. Pearson factor shows that there is a robust conjunction between first two natural frequencies and noise level of CRTs. a Novel two-condition equation as a correlation between the numerical and experimental values is proposed insuch a way that knowing dimensions of the core of the transformer and first natural frequency of the core, the main effective parameters, approximate value of the mean noise level could be forecasted. This equation is implemented for 8 other cases as the witness cases to check the repeatability of the experimental tests and also precision of the proposed equation. According to the results and comparison with experimental values it can be deduced that the proposed equation could be used to approximate mean noise level in design phase prior to manufacturing with 10% uncertainty tolerance.

کلمات کلیدی:

experimental; FEM; mean noise level; CRT transformers

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