A Distribution transformer model for calculating transferred voltages

Piantini A. piantini@iee.usp.br

Kanashiro A.G. Arnaldo@iee.usp.br

ABSTRACTS

This paper presents a high frequency distribution transformer model that enables the calculation of transferred surges to the low-voltage side taking into account the effect of the loads connected to the secondary. The model was developed taking into account the compromise between accuracy and simplicity, and had its validity checked by means of comparisons between theoretical and experimental results. The tests comprised nine three-phase transformers and the application, to the primary winding, of the standardised impulse voltage (1.2/50μs) and of typical lightning induced voltage waveforms, as well as impulse currents. Different load conditions were considered, and the comparisons between measured and calculated results showed that model can be satisfactorily used for calculating the voltages transferred to the secondary side.