Abstract

Leakage reactance is one of the most important specifications in transformer that has significant impact on its overall design. Variation in leakage reactance serves as a diagnostic measure to indicate mechanical integrity of power transformers before and after a short circuit test that
demonstrates mechanical strength of transformer windings. This paper presents an approach for leakage reactance computation through finite element method (FEM) and subsequent analysis of winding deformation due to a short circuit. A concentric two winding transformer is considered and reactance computation is made using FEM package. The results of computation are compared against classical method. It is observed that the method can provide sufficient theoretical basis for improving the design.

References


Index Terms

Computer Science

Electrical And Instrumentation
Engineering

**Keywords**
Transformer reactance Calculation fem Mechanical Strength Axial Deformation Radial Deformation.