

Flux simulation on 100kVA three-phase transformer core

Abstract

This paper describes the simulation of flux distribution on 100kVA 3 phase distribution transformer assembled with 60°-45° T-joint and mitred lap corner joint with stagger yoke and limb. The core that being used is 3% Silicon Iron Cold Rolled Grain Oriented (CRGO) material. The flux distributions have been simulated using 2 Dimensions Finite Element Method (2DFEM) based on a vector potential formulation. The loss of transformer core lamination is calculated using the hysteresis curve. The simulation shows that 1.78 T flux density was maximum at the centre limb of transformer core, hence produced the losses of 2.54 W/kg. The transformer core assembled with 60°-45° T-joint is more efficient than the transformer core assembled with 90° T-joint. © 2010 Praise Worthy Prize S.r.l.-all right reserved