

Heat Distribution Simulation on Transformer Using FEMM Software

Authors : N. K. Mohd Affendi, T. A. R. Tuan Abdullah, S. A. Syed Mustaffa

Abstract : In power industry transformer is an important component and most of us familiar by the functioning principle of a transformer electrically. There are many losses occur during the operation of a transformer that causes heat generation. This heat, if not dissipated properly will reduce the lifetime and effectiveness of the transformer. Transformer cooling helps in maintaining the temperature rise of various paths. This paper proposed to minimize the ambient temperature of the transformer room in order to lower down the temperature of the transformer. A simulation has been made using finite element methods programs called FEMM (Finite Elements Method Magnetics) to create a virtual model based on actual measurement of a transformer. The generalization of the two-dimensional (2D) FEMM results proves that by minimizing the ambient temperature, the heat of the transformer is decreased. The modeling process and of the transformer heat flow has been presented.

Keywords : heat generation, temperature rise, ambient temperature, FEMM

Conference Title : ICPSE 2014 : International Conference on Power Systems Engineering

Conference Location : Kuala Lumpur, Malaysia

Conference Dates : February 13-14, 2014