

ABSTRACK

Name : Deya Surya Diraja
Study Program : *Electrical Engineering*
Title : *Analysis of the Effect of Load Imbalance on Neutral Currents and Losses on Distribution Transformers at PT. PLN (Persero) Ciamis*

The need for electricity in the current modernization era is directly correlated with the growth and development of the population, which is increasing every day. Initially, the load distribution was evenly distributed, but due to time mismatch and load usage, it caused a load imbalance that caused current to flow in the neutral conductor of the transformer. Neutral currents flowing through the transformer conductors can cause losses and reduced efficiency. Therefore, it is necessary to maintain the distribution network, especially with load balancing because the load conditions are always changing. According to the research results, the unbalance percentage decreased from 26.66% to 11.66% when the load was balanced. Loss of the average measurement load is 10.401% to 5.1%, at an average calculation load of 8,285% to 3,658%, and to transformer load of 2,883% to 0,448%. Efficiency at an average load measurement is 82.48% to 92.10%, at an average load calculation is 92,34% to 96,47%, and at transformer load is 97,19% to 99,51%, For cost savings obtained at an average load measurement of Rp. 4,208,194.905/month, with an average calculation load of Rp. 3.743.787,025/month, and the transformer load is Rp. 2.061.429,155/month.

Keywords: *Imbalance, Efficiency, Losses*