

ANALISA PEMASANGAN TRANSFORMATOR DISTRIBUSI BARU (SISIP) PADA (JTR) PENYULANG SMU 2 PT.PLN (PERSERO) RAYON WONOSARI DENGAN SIMULASI ETAP

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ABSTRACT

Distribution transformers play an essential role in the distribution network to transform electrical energy from sources to customers. PT PLN (Persero) as a company that manages the electric power system is responsible for providing the best service to its customers. In maintaining quality and effectiveness, the reliability of the distribution system must be well maintained. For the distribution system to remain reliable, the percentage of distribution transformer loading must not exceed the provisions set by PLN, which is 80% of the nominal load. Likewise, the voltage drop provided is 4% of the nominal voltage. Based on the CEB 230 distribution transformer's measurement results, the transformer is overloaded with a load percentage at peak load time of 85%. In the CEB 230 distribution transformer measurement, the voltage drop at the end of the Peak Load Time is 18.7%. Also, due to overloading the distribution transformer CEB 230, the Power loss in the low voltage network in 1 month is 1,537 kWh. In improving this condition, an in-line distribution transformer installation method is used. After the insertion was implemented, the load was reduced to 58%, and the impact was to improve the voltage drop and reduce the voltage loss.

Keywords: *distribution transformer, transformer insert, overloading, voltage drop, and power loss.*