

# **LOAD SHIPMENT ANALYSIS OF SMU 02 TO SMU FEEDERS 01 TO REDUCE VOLTAGE LOSSES AND DROP IN PT PLN (PERSERO) YOGYAKARTA AREA**

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## **ABSTRACT**

*The increase in the use of electrical energy is clear evidence that the level of quality of human resources is heading towards a better direction. The SMU 02 feeder is part of the Semanu Substation transformer with a capacity of 60 MVA. Based on the peak load data of PT. PLN (Persero) UP3 Yogyakarta in 2020, the average peak day and night feeder load has increased to 348 kW. With the increasing peak load every year, the percentage of voltage drop also increases and causes the reliability of the distribution to decrease and the supply of electrical energy to consumers will not run optimally so that the level of power losses in the distribution channel is increasing. The load transfer method is applied by delegating several loads to feeders who have a smaller load than the feeder loads using ETAP software. The load transfer was carried out by transferring some of the loads on the SMU02 feeder to the SMU01 feeder, which finally resulted in the value of power losses before and after of 269,589 kW and 261,414 kW. While the average value of the percentage of voltage drop both before and after being transferred is 0.34% and 0.31%.*

**Key words :** *Voltage Drop, Power Losses, Load Delegation*