

ANALYSIS OF POWER LOSS AND VOLTAGE DROP ON 150 KV TRANSMISSION LINES SUBSTATION MAULafa BAY SUBSTATION BOLOK

Evan Jeremias Pattrick Giri

*Program Studi Teknik Elektro, Fakultas Sains & Teknologi
Universitas Teknologi Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : evhaangiri@gmail.com*

ABSTRACT

In the electric power system, the transmission system is a pathway to transmit electrical energy from the generator to the substation or from the substation to another substation which allows power losses and large voltage drops if the transmission length is relatively far and the overload is very high. affect the reliability of the transmission system. Analysis of power losses and voltage drop on the 150 KV high voltage transmission system at the Maulafa substation to the Bolok substation. The analysis was carried out by conducting a survey at the research location then doing manual calculations and calculations using ETAP 12.6.0 software. The research method used was that the researcher collected voltage and current data at 08.00 and 12.00 WITA in one month and the transmission system supporting equipment specifications to be simulated in ETAP 12.6.0 from Pati and Jekulo substations in order to make comparisons between manual calculations and ETAP. 12.6.0. The conclusion of this study is the calculation of power losses manual calculation and simulation of ETAP 12.6.0 has a difference of 2.5% with the value of manual calculation power losses of 685 KW and the power losses from The simulation results reached 446.5 KW and the calculation of the presentation of power losses in the transmission line of Substation Maulafa - Substation Bolok reached 6.8% exceeding the service percentage variation limit due to losses according to SPLN No. 72 of 1987 a maximum of 5% at least -10%.

Keyword: *High Voltage Transmission, Losses, Drop voltage*