

ABSTRACT

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Transmission Line at Tasikmalaya – Ciamis Substation*

The transmission system functions to transfer electrical energy from one point to another, including from electricity generation to substations, from one substation to another. In this implementation system there are power losses or electrical power losses caused by several factors. The calculation of this power loss is very necessary to optimize the distribution of electricity and minimize distributor losses due to losses. Power loss analysis was carried out at the Sambongpari Tasikmalaya – Ciamis substation with a 150 KV high-voltage transmission line with a length of 18 km. The data needed is in the form of the value of the current flowing in the transmission line and also the value of the conductor used. Calculations are made when the peak load occurs on one day, namely at 10.00 WIB (noon) and 19.00 WIB (night). The conductor used in this transmission line is an ACSR-Hawk type conductor with a resistance value of $0.1195\Omega/\text{km}$. The study was conducted for 30 consecutive days. The conclusion from the results of the analysis of power losses carried out on the transmission line from the Sambongpari Tasikmalaya substation to the Ciamis substation, namely the results of measurements and calculations at 10.00 WIB, the highest power losses occurred on October 12 2022 with a Plosses value of 0.245 MW and losses the lowest loss occurred on October 16 and 28 with a loss value of 0.182 MW. In addition, the results of measurements and calculations at 19.00 WIB, the highest power losses occurred on 30 October 2022 with a Plosses value of 0.554 MW and the lowest losses occurred on 29 October 2022 with a Plosses value of 0.216 MW. And it can be seen that the average value of %Plosses during the day (10.00 WIB) is 0.463% with a power efficiency value of 99.54% and the average value of %Plosses for the night (19.00 WIB) is 0.624% with an efficiency value power of 99.02%.

Keywords : Conductor Resistance, Peak Load, Transmission Line Power Loss.