ABSTRAK

Pada pengoperasian sistem tenaga listrik diperlukan kualitas dan tingkat keandalan yang baik, salah satunya adalah tegangan yang sampai ke pelanggan tidak mengalami drop tegangan atau tegangan turun di bawah standarisasi dari PLN. Permasalahan drop tegangan ujung atau susut tegangan adalah salah satu masalah yang sering dikeluhkan oleh konsumen, terutama pelanggan yang berada di ujung-ujung jaringan. Di PT PLN Area Banten Utara, Rayon Serang terdapat laporan dari warga yang menyatakan bahwa sering terjadinya penerangan lampu yang redup (nyala lilin) dan tidak dapat menyalakan pompa air terutama pada malam hari.

Untuk memperbaiki nilai tegangan terima pada ujung jaringan jurusan B gardu distribusi KRT maka dilakukan perhitungan tegangan ujung dengan menambahkan transformator sisipan. Pada saat sebelum dilakukan pemasangan transformator sisipan perhitungan untuk phasa R sebesar 173,2 V, Phasa S sebesar 177,2 V dan Phasa T sebesar 170,5 V. Setelah dilakukan perancangan transformator sisipan di tiang 25 yang berjarak 1105 meter, maka berdasarkan hasil perhitungan didapatkan tegangan untuk phasa R sebesar 224,46 V, Phasa S sebesar 225,22 V dan Phasa T sebesar 223,49 V.

Kata Kunci : Susut Tegangan, Transformator Sisipan.

ABSTRACT

In the operation of the electric power system, good quality and reliability are needed, one of which is the voltage that reaches the customer does not experience a voltage drop or voltage drops below the standardization of PLN. The problem of tip voltage drop or voltage shrinkage is one problem that is often complained of by consumers, especially customers who are at the ends of the network. At PT PLN North Banten Area, Rayon Serang there is a report from the residents stating that often the lights are dimmed (candlelight) and cannot ignite the water pump, especially at night.

To improve the received voltage value at the end of the network in the direction of the B KRT distribution substation, the end voltage calculation is done by adding the insert transformer. At the time before the installation of transformer insertion calculation for phase R of 173.2 Volts, Phasa S of 177.2 Volts and Phasa T of 170.5 Volts. After designing the transformer inserts on pole 25 which is 1105 meters away, then based on the calculation results obtained the voltage for phase R is 224.46 V, Phasa S is 225.22 Volts and Phasa T is 223.49 Volts.

Keywords: *Drop Voltage, Additionar Transformer.*

ABSTRACT

In the operation of the electric power system, good quality and reliability are needed, one of which is the voltage that reaches the customer does not experience a voltage drop or voltage drops below the standardization of PLN. The problem of tip voltage drop or voltage shrinkage is one problem that is often complained of by consumers, especially customers who are at the ends of the network. At PT PLN North Banten Area, Rayon Serang there is a report from the residents stating that often the lights are dimmed (candlelight) and cannot ignite the water pump, especially at night.

To improve the received voltage value at the end of the network in the direction of the B KRT distribution substation, the end voltage calculation is done by adding the insert transformer. At the time before the installation of transformer insertion calculation for phase R of 173.2 Volts, Phasa S of 177.2 Volts and Phasa T of 170.5 Volts. After designing the transformer inserts on pole 25 which is 1105 meters away, then based on the calculation results obtained the voltage for phase R is 224.46 V, Phasa S is 225.22 Volts and Phasa T is 223.49 Volts.

Keywords: *Drop Voltage, Additionar Transformer.*