KAJIAN KOORDINASI PROTEKSI ARUS LEBIH DENGAN PENUTUP BALIK OTOMATIS (PBO) PADA PENYULANG DIDIK GARDU INDUK CILEDUG

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ABSTRAK

Penyediaan energi dalam sistem tenaga listrik sangat tergantung kepada keandalan distribusi yang menghubungkan sumber energi dengan pemakai energi. Saluran distribusi banyak melalui daerah terbuka sehingga rawan mengalami gangguan, pada saluran distribusi terjadi gangguan karena sentuhan pohon mengingat saluran distribusi banyak melalui daerah pemukiman. Gangguan saluran udara pada jaringan distribusi ada yang bersifat permanen dan temporer, namun sebagian besar bersifat temporer sehingga penggunaan PBO sangat menolong pengurangan waktu padam pada konsumen. Untuk mengetahui setting relai maka dilakukan perhitungan hubung singkat dan perhitungan setting relai . Adapun hasil dari perhitungan arus gangguan hubung singkat yang didapat pada penyulang didik terbesar dari gangguan 3 fasa sebesar 11987,526 Ampere, sedangkan arus gangguan hubung singkat terkecil pada gangguan 1 fasa tanah sebesar 264,824 Ampere dan Seting OCR dan PBO berdasarkan perhitungan yang didapat pada arus hubung singkat 3 fasa OCR *incoming* tms = 0,33 , t = 0,9 detik, OCR *outgoing* tms = 0,31 , t = 0,5 detik, PBO tms = 0,2 , t = 0,3 detik. Pada arus hubung singkat 1 fasa ke tanah OCR *incoming* tms = 0,4 , t = 0,92 detik, OCR *outgoing* tms = 0,2, t = 0,52 detik, PBO tms = 0,1 , t = 0,28 detik.

Kata kunci : Penutup Balik Otomatis (PBO), *Overcurrent Relay*, Gangguan Temporer, Gangguan Permanen

Coordination Review of Overcurrent Relay With Autorecloser On Repeater Didik Substation Ciledug

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ABSTRACT

The provision of energy in the power system is highly dependent on the reliability of the distribution connecting energy sources with energy users. Distribution channels are many through open areas so susceptible to disturbance, on the distribution channel occurs disturbance due to the touch of trees given the many distribution channels through residential areas. Airway disturbances in the distribution network are permanent and temporary, but most are temporary in nature, so the use of PBOs greatly helps reduce time outages for consumers. To know the relay setting then do the calculation of short circuit and relay setting calculation. The results of the calculation of short circuit current flows obtained in the largest learner of the 3-phase disturbance amounted to 11987,526 Ampere, while the smallest short circuit current interference at ground phase noise of 264,824 Ampere and OCR Setting and PBO based on calculations obtained at the current Short 3 phase OCR incoming tms = 0.33, t = 0.9 seconds, OCR outgoing tms = 0.31, t = 0.5 seconds, PBO tms = 0.2, t = 0.3 seconds. In the short circuit 1 phase to ground OCR incoming tms = 0.4, t = 0.92 seconds, OCR outgoing tms = 0.2, t = 0.52 seconds, PBO tms = 0.1, t = 0.28 Seconds.

Keywords: Autorecloser, Overcurrent Relay, Temporary Disturbance, Permanent Disturbance