INTISARI

SETTING KOORDINASI *RECLOSER* SBR06-56 DAN *SECTIONALIZER* SBR06-85 PADA PENYULANG SOLO BARU 06 GUNA MENINGKATKAN KEANDALAN DISTRIBUSI KELISTRIKAN DI WILAYAH KERJA PT PLN ULP GROGOL

Fivta Abidha Nurulita

NIM: 19/447058/SV/16777

Sistem proteksi pada sistem distribusi memainkan peran penting dalam meningkatkan keandalan dan mengurangi pemadaman listrik. Koordinasi antara *Recloser* dan *sectionalizer* menjadi faktor kunci dalam upaya meminimalkan gangguan. *Recloser* berfungsi sebagai relay yang mendeteksi arus gangguan dan mengontrol pembukaan dan penutupan jaringan melalui PMT. Di sisi lain, *Sectionalizer* digunakan untuk memisahkan jaringan yang mengalami gangguan guna mengurangi dampak pemadaman. Penelitian ini berfokus pada pengaturan antara *Recloser* dengan *Sectionalizer* agar dapat berkoordinasi dengan baik. Menggunakan metode perhitungan matematis dengan fokus pada penyulang SBR06, ditemukan pengaturan *Recloser* dengan arus *setting* OCR sebesar 343 A;TMS 0,07 s dan waktu kerja (t) 0,56 s. Arus *setting* GFR sebesar 154 A;TMS 0,19 s dan waktu kerja (t) 0,84 s. Koordinasi antara Relay OCR GFR *Recloser* dan PMT Outgoing dinilai baik karena dalam simulasi menggunakan Microsoft Excel, kurva-kurva tidak saling berpotongan atau berhimpitan. *Sectionalizer* SBR06-85 di*setting* dengan nilai *setting* Phase Fault Detection 247 A dan Ground Fault Current 123 A. Jika arus gangguan yang terdeteksi lebih besar dari arus *setting* di daerah yang dilindungi oleh *sectionalizer*, *Recloser* akan memutuskan sirkuit dengan count (n) 2 kali dengan waktu tunda 0,01 detik. Koordinasi antara *Recloser* SBR06-56 dengan SSO SBR06-85 berpengaruh terhadap nilai keandalan (SAIDI dan SAIFI). Setelah dilakukan koordinasi anatra kedua alat proteksi tersebut, nilai keandalan untuk SAIDI menurun 75% dan SAIFI menurun 81%.

Kata kunci : Proteksi, *Recloser*, *Sectionalizer*, Keandalan

ABSTRACT

RECLOSER SBR06-56 AND SECTIONALIZER SBR06-85 COORDINATION SETTINGS FOR NEW SOLO 06 RECLOSER IN ORDER TO IMPROVE THE RELIABILITY OF ELECTRICITY DISTRIBUTION IN THE WORKING AREA OF PT PLN ULP GROGOL

Fivta Abidha Nurulita

NIM: 19/447058/SV/16777

Protection systems in distribution systems play an important role in increasing reliability and reducing power outages. Coordination between the Recloser and sectionalizer is a key factor in efforts to minimize disturbance. The Recloser functions as a relay that detects fault currents and controls the opening and closing of the network through the PMT. On the other hand, a sectionalizer is used to separate networks that are experiencing disturbances in order to reduce the impact of blackouts. This study focuses on the arrangement between the Recloser and the sectionalizer in order to have good coordination. Using a mathematical calculation method with a focus on the SBR06 feeder, a Recloser setting was found with an OCR setting current of 343 A; TMS 0.07 s and working time (t) 0.56 s. GFR setting current is 154 A; TMS 0.19 s and working time (t) 0.84 s. Coordination between the GFR Recloser OCR Relay and PMT Outgoing is considered good because in the simulation using Microsoft Excel, the curves do not intersect or overlap. Sectionalizer SBR06-85 is set with the Phase Fault Detection setting value of 247 A and Ground Fault Current of 123 A. If the detected fault current is greater than the setting current in the area protected by the sectionalizer, the Recloser will break the circuit with count (n) 2 times with time delay 0.01 sec. Coordination between Recloser SBR06-56 and SSO SBR06-85 affects the reliability value (SAIDI and SAIFI). After coordination between the two protective devices, the reliability value for SAIDI decreased by 75% and for SAIFI decreased by 81%.

Keywords: Protection, Recloser, Sectionalizer, Reliability