

Ahmad Tamanganro Nur¹. Ahmar Suriadi²

¹Prodi Teknik Elektro Fakultas Teknik Unismuh Makassar

E_mail :ahmadando253@yahoo.com

²Prodi Teknik Elektro Fakultas Teknik Unismuh Makassar

E_mail :suriadahmar@gmail.com

ABSTRAK

Abstrak; Ahmad Tamanganro Nur dan Ahmar Suriadi, (2019) Kesalahan saluran tunggal ke tanah adalah kesalahan yang paling sering terjadi pada sistem tenaga listrik. Efek gangguan tanah ditentukan dengan menghasilkan pengaturan stasiun dan koneksi transformator. Dalam tulisan ini, kinerja generator dalam gangguan *line-to-ground* tunggal di berbagai *Neutral Grounding Resistor* (NGR) dan konfigurasi transformator dipelajari. Simulasi dilakukan di PSCAD (*Power System Computer Aided Design*) dan hasilnya dianalisis. Perbandingan dengan dampak kesalahan pada berbagai koneksi transformator disajikan. Dampak kesalahan untuk generator dengan NGR juga dianalisis. Pada hasil simulasi ini data arus yang di ukur yaitu trafo Y- Δ , Y-Y dan trafo Y- Δ dua fase. Pada titik gangguan yang memiliki arus yang besar berada di Y- Δ dua fase dan arus terendah dititik gangguan yaitu di Y- Δ satu fase. Pada unit generator-transformer, arus gangguan pada generator netral paling besar pada koneksi transformator berada di Y- Δ satu fase dan pada generator-transformer di Y-Y dan trafo Y- Δ dua fase memiliki arus yang kecil berada di skala pico ($10^{-12} \sim 0$).

Kata Kunci: Gangguan tanah, resistor pentanahan netral, konfigurasi transformator, PSCAD.

Ahmad Tamanganro Nur¹. Ahmar Suriadi²

¹Electrical Engineering Study Program Faculty of Engineering Unismuh Makassar

E_mail:ahmadando253@yahoo.com

²Electrical Engineering Study Program Faculty of Engineering Unismuh Makassar

E_mail: suriadiahmar@gmail.com

ABSTRACT

Abstract; Ahmad Tamanganro Nur and Ahmar Suriadi, (2019) Single channel error to the ground is the most common error in the electric power system. The effect of ground disturbance is determined by generating station settings and transformer connections. In this paper, the performance of the generator in a single line-to-ground fault in various Neutral Grounding Resistors (NGR) and transformer configurations is studied. The simulation was carried out at PSCAD (Power System Computer Aided Design) and the results were analyzed. A comparison with the impact of errors on various transformer connections is presented. The impact of errors for generators with NGR is also analyzed. In the results of this simulation the measured current data are Y- Δ , Y-Y and Y-raf two-phase transformers. At the point of interference which has a large current is at Y- Δ two phases and the lowest current at the disturbance point is at Y- Δ one phase. In the generator-transformer unit, the fault current at the largest neutral generator at the transformer connection is at Y- Δ one phase and at the generator-transformer at YY and the Y-raf two phase transformer has a small current at the pico scale (10-12 ~ 0).

Keywords: Ground faults, neutral grounding resistor, transformer configurations, PSCAD.