

ABSTRACT

The purpose of making the final assignment entitled “ Analysis of Overhead Groundwire at 150 kV substation Bantul PT.PLN (Persero) APP SALATIGA ” is aware of the needs of overhead groundwire as protection against lightning, the level of protection of overhead groundwire attached, the amount of interference that occurs due to failure of protection by overhead groundwire and detention conditions overhead groundwire grounding installed in substation.

In the making of this final assignment, made several steps in order to get the results of the discussion are: the search of secondary data, literature studies as well as measurement data in the field. Results of the data obtained and analyzed using formulas that exist and some of the standards that the General Rules Installation Lightning (PUIPP), General Electrical Installation Regulation (PUIL) 2000, the Indonesian National Standard (SNI) 03-7015-2004, and the International Electrotechnical Commissioning (IEC) 1024-1-1.

Results of the analysis of the data obtained so as to concluded that : According to the calculation needs lightning protection according to PUIPP, Substation parent 150 kV Bantul is very necessary to have a lightning protection because the indeks R 14Ω and more than in substation Bantul the indeks R 15Ω . From the analysis data, substation 150 kV Bantul has SPP Efficiency (E) amounted to 0,945 so that the level of need in the Spp protection Level II, SFO or the amount of interference due to the failure of the Protection Level II, SFO or the amount of interference due to the failure of the protection of overhead ground wire (ground wire) which is attached as disturbance 0,1683/ year, Prisoner earthing which tested a total of 12 points on an overhead groundwire already meet the standards of the General Rules Installation Lightning.

Keywords : Overhead Groundwire, interference, resistance

INTISARI

Tujuan pembuatan proyek akhir yang berjudul “Analisa *Overhead Ground Wire* Sebagai Perlindungan gangguan Surja Petir Pada Gardu Induk 150 kV Bantul PT.PLN (persero) APP Salatiga *Basecamp Yogyakarta*” adalah mengetahui besar kebutuhan *overhead ground wire* (kawat tanah) sebagai perlindungan terhadap petir, tingkat proteksi dari *overhead ground wire* yang terpasang, jumlah gangguan yang terjadi akibat kegagalan proteksi oleh *overhead groundwire*, kondisi dan tahanan pentanahan *overhead ground wire* yang terpasang pada gardu induk.

Dalam pembuatan proyek akhir ini, dilakukan beberapa tahapan agar mendapatkan hasil pembahasan yaitu pencarian data sekunder, studi literatur serta data pengukuran di lapangan. Hasil data yang diperoleh kemudian di analisis menggunakan rumus-rumus yang ada dan beberapa standar yakni Peraturan Umum Instalasi Penangkal Petir (PUIPP), Peraturan Umum Instalasi Listrik (PUIL)2000, Standar Nasional Indonesia (SNI) 03-7015-2004, dan *International Electronical Commisioning* (IEC) 1024-1-1.

Hasil dari analisis data yang didapat sehingga dapat disimpulkan bahwa sesuai dari perhitungan kebutuhan proteksi petir menurut PUIPP, Gardu induk 150 kV Bantul sangat perlu untuk memiliki perlindungan petir karena indeks R lebih dari 14 sesuai tabel 2.9 yakni ($R=15$), Dari hasil analisa data, gardu induk 150 kV Bantul mempunyai Efisiensi SPP pada tingkat Proteksi II, SFO atau jumlah gangguan akibat kegagalan perlindungan *overhead ground wire* (kawat tanah) yang terpasang sebanyak 0,1683 gangguan/tahun, Tahanan pembumian yang diuji sebanyak 12 titik pada *overhead ground wire* (kawat tanah) sudah memenuhi standar Peraturan Umum Instalasi Penangkal Petir.

Kata kunci : *Overhead Ground Wire*, Petir, Tahanan Tanah