INTISARI

Tujuan pembuatan proyel akhir yang berjudul "Analisa *Overhead Ground Wire* Sebagai Perlidungan Gangguan Surja Petir Pada Gardu Induk 150 kV Bantul PT.PLN (Persero) P3B Jawa Bali 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 ground wire* (kawat tanah) ,kondisi dan tahanan pentanahan *overhead ground wire* (kawat tanah) yang terpasang pada gardu induk.

Dalam pembuatan protek akhir ini, dilakukan beberapa tahapan agar mendapat hasil pembahasan yaitu : pencarian data sekunder, studi literature serta data pengukuran di lapangan. Hasil data yang diperoleh kemudian dianalis 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 Elechtronical Commissioning* (IEC) 1024-1-1.

Hasil dari analisa data yang didapat sehingga dapat disimpulakan 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 (E) sebesar 0,945 sehingga tingkat kebutuhan 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 : petir,*overhead ground wire*,gangguan, tahanan tanah

ABSTRACT

The purpose of making the final proyel entitled "Analysis of Overhead Ground Wire As Lightning Surge Protection Disturbance At 150 kV substation Bantul PT PLN (Persero) P3B Java-Bali APP Salatiga Yogyakarta Basecamp" is aware of the needs of overhead ground wire as protection against lightning , the level of protection of overhead ground wire attached, the amount of interference that occurs due to failure of protection by overhead ground wire , and detention conditions grounding installed in substations.

In the making of this final protectionism, 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 Regulations (PUIL) 2000, the Indonesian National Standard (SNI) 03-7015-2004, and the International Elechtronical 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 index R of more than 14 (R = 15), From the analysis Data, substations 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 of overhead ground wire which is attached as disturbance 0.1683 / year, Earth resistance which tested a total of 12 points on an overhead ground wire already meet the standards of the General Rules Installation Lightning.

Keywords: lightning, overhead ground wire, interference, resistance