

ABSTRAK

**ANALISA KAPASITAS DAYA GARDU TRAKSI TERHADAP
KEBUTUHAN OPERASI KERETA LRT SUMSEL**

(2025 : xvi + 84 hlm + Daftar Isi + Daftar Gambar + Daftar Tabel + Daftar Pustaka + Lampiran)

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Penelitian ini disusun dengan tujuan melaksanakan perhitungan dan menganalisa daya dan kapasitas daya gardu traksi serta kapasitas daya dukung 5 Gardu Traksi yang dinaungi oleh unit *field service 2 power system* yang dibutuhkan pada pembebanan pola Operasi Kereta LRT Sumsel. Penelitian ini dilakukan dengan sumber data berupa susunan rangkaian kereta, jarak pengisian antar gardu traksi, headway, jenis jalur ganda, rasio konsumsi kereta, dan berat total kereta. Parameter kemampuan daya dukung gardu diukur dengan memperkecil headway 15 dan 10 menit dan pemadaman gardu disebelahnya. Dari hasil perhitungan dan analisa yang telah dilakukan diketahui bahwa konsumsi daya dengan beban tertentu pola operasi per jam maka pada jam sibuk pukul 13:00 dan 14:00 membutuhkan daya yang besar. Daya dukung diukur berdasarkan perbandingan nilai beban rencana terhadap kapasitas eksisting gardu. Hasil dari analisa dan perhitungan kapasitas gardu traksi apabila terjadi pemadam di gardu traksi sebelah dengan *headaway* 10 menit tidak dapat tercover apabila cuman satu gardu yang mengcovernya, harus dengan dua gardu yang di parallel.

Kata Kunci : Kereta LRT, Gardu Traksi, Kapasitas Gardu Traksi, Daya Dukung, Kelistrikan LRT.

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This study was conducted with the aim of calculating and analyzing the power and capacity of traction substations and the carrying capacity of 5 Traction Substations under the auspices of the field service unit 2 power systems required for the loading of the South Sumatra LRT Train Operation pattern. This study was conducted with data sources in the form of train set arrangements, charging distances between traction substations, headway, double track types, train consumption ratios, and total train weights. The parameters of the substation carrying capacity were measured by reducing the headway of 15 and 10 minutes and turning off the substation next to it. From the results of the calculations and analysis that have been carried out, it is known that power consumption with a certain load of hourly operating patterns, then during peak hours at 13:00 and 14:00 requires a large amount of power. Carrying capacity is measured based on the comparison of the planned load value to the existing capacity of the substation. The results of the analysis and calculation of the traction substation capacity in the event of a power outage at the adjacent traction substation with a headway of 10 minutes cannot be covered if only one substation covers it, it must be with two substations in parallel.

Keywords: LRT trains, traction substations, capacity of traction substations, carrying capacity, Electricity LRT.