

ABSTRAK

EVALUASI KEBUTUHAN DAYA LISTRIK DI AREA WORKSHOP PT KILANG PERTAMINA RU III PLAJU

(2025: xv + 50 Halaman + Daftar Gambar + Daftar Tabel + Lampiran)

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JURUSAN TEKNIK ELEKTRO

PROGRAM STUDI TEKNIK LISTRIK

POLITEKNIK NEGERI SRIWIJAYA

Listrik merupakan sumber energi utama dalam mendukung aktivitas industri, termasuk di area workshop PT Kilang Pertamina RU III Plaju. Laporan ini membahas evaluasi kebutuhan daya listrik yang mencakup perhitungan daya terpasang, daya terpakai, serta analisis keseimbangan beban antar fasa. Penelitian ini menggunakan pendekatan kuantitatif deskriptif dengan metode pengukuran langsung di lapangan menggunakan alat Power Meter, Clamp Meter, dan Multimeter Digital. Hasil penelitian menunjukkan bahwa total daya terpasang mencapai 388,1 kW, sementara konsumsi daya bervariasi berdasarkan waktu operasional, dengan daya aktif tertinggi tercatat pada Panel 3 sebesar 50.589 W saat beban puncak. Analisis keseimbangan fasa menunjukkan ketidakseimbangan beban yang cukup signifikan pada beberapa panel, seperti Panel 1 dengan ketidakseimbangan mencapai 38,7%. Berdasarkan hasil tersebut, disarankan dilakukan penataan ulang pembagian beban dan pemasangan sistem monitoring real-time agar distribusi daya menjadi lebih efisien dan andal.

Kata kunci: Daya, keseimbangan, beban, ketidakseimbangan, efisiensi.

ABSTRACT

EVALUATION OF ELECTRICAL POWER REQUIREMENTS IN THE WORKSHOP AREA OF PT REFINERY PERTAMINA RU III PLAJU

(2025: xv + 50 Pages + List of Figures + List of Tables + Attachements)

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ELECTRICAL ENGINEERING DEPARTEMENT

ELECTRICAL ENGINEERING STUDY PROGRAM

SRIWIJAYA STATE POLYTECHNIC

Electricity is a primary energy source that supports industrial activities, including in the workshop area of PT Kilang Pertamina RU III Plaju. This report discusses an evaluation of electrical power requirements, covering calculations of installed power, utilized power, and an analysis of load balance between phases. The study employs a quantitative descriptive approach through direct field measurements using a Power Meter, Clamp Meter, and Digital Multimeter. The results indicate that the total installed power reaches 388.1 kW, while power consumption varies depending on operational hours, with the highest active power recorded on Panel 3 at 50,589 W during peak load. The phase balance analysis reveals a significant load imbalance in several panels, such as Panel 1 with an imbalance reaching 38.7%. Based on these findings, it is recommended to reorganize the load distribution and install a real-time monitoring system to ensure more efficient and reliable power distribution.

Keywords: Power, balance, load, unbalance, efficiency.