

ABSTRAK

ANALISA PENGARUH PERUBAHAN BEBAN TERHADAP EFISIENSI GENERATOR DI PT. TANJUNG ENIM LESTARI *PULP AND PAPER* (2025: xvi + 50 Halaman + Daftar Gambar + Daftar Tabel + Daftar Lampiran)

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JURUSAN TEKNIK ELEKTRO

PROGRAM STUDI DIII TEKNIK LISTRIK

POLITEKNIK NEGERI SRIWIJAYA

Generator merupakan komponen utama pada PLTU yang mampu menghasilkan tenaga listrik terutama di dalam industri. Dalam kondisi operasi nyata, beban pada generator tidak bersifat konstan dan mengalami fluktuasi harian dikarenakan target operasi *pulp* harian yang berubah-ubah. Perubahan beban dicatat mulai dari nilai terendah sebesar 44,984 MW pada tanggal 5 hingga mencapai nilai tertinggi sebesar 59,739 MW pada tanggal 16. Data daya input dan output diukur untuk setiap fluktuasi beban harian, kemudian digunakan untuk menghitung efisiensi kerja generator. Efisiensi menggambarkan sejauh mana generator mampu memanfaatkan daya input untuk menghasilkan daya output, dengan kehilangan energi seminimal mungkin. Umumnya, efisiensi akan meningkat seiring bertambahnya beban hingga mencapai titik optimum, sebelum kemudian menurun saat beban melebihi kapasitas kerja ideal. Berdasarkan perhitungan, efisiensi terendah terjadi pada tanggal 5 sebesar 96,95%, sedangkan efisiensi tertinggi tercatat pada tanggal 16 sebesar 97,51%.

Kata kunci : Generator, Beban, Efisiensi

ABSTRACT

Analysis of the Impact of Load Changes On Generator Efficiency at PT. Tanjung Enim Lestari Pulp and Paper

(2025: xvi + 50 Pages + List of Figures + List of Tables + List of Appendices)

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The generator is a key component of a Steam Power Plant (PLTU), responsible for producing electrical energy, particularly within industrial settings. Under actual operating conditions, the generator load is not constant and experiences daily fluctuations due to varying daily pulp production targets. Load variations were recorded, ranging from the lowest value of 44.984 MW on the 5th to the highest value of 59.739 MW on the 16th. Input and output power data were measured for each fluctuation in daily load and were then used to calculate the generator's operational efficiency. Efficiency reflects how effectively the generator utilizes input power to produce output power, while minimizing energy losses. In general, efficiency increases as the load rises, reaching an optimum point before decreasing when the load exceeds the generator's ideal operating capacity. Based on calculations, the lowest efficiency occurred on the 5th at 96.95%, while the highest was recorded on the 16th at 97.51%.

Keywords : Generator, Loads, Efficiency