

ABSTRAK
PASOKAN DAYA GENERATOR *EMERGENCY* DARI
PELEPASAN BEBAN SAAT GENERATOR UTAMA PADAM DI PT PUPUK
SRIWIDJAJA PALEMBANG

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JURUSAN TEKNIK ELEKTRO

PROGRAM STRUDI DIII TEKNIK LISTRIK

POLITEKNIK NEGERI SRIWIJAYA

Penelitian ini membahas pasokan daya generator *emergency* dari pelepasan beban saat generator utama padam di PT Pupuk Sriwidjaja Palembang. Tujuan penelitian adalah mengidentifikasi beban kritis yang harus tetap disuplai, menghitung total daya beban penuh dan daya terpakai pada setiap *Automatic Transfer Switch* (ATS), serta menentukan persentase pemanfaatan kapasitas generator *emergency*. Metode yang digunakan meliputi studi literatur, observasi lapangan, wawancara, dan analisis data sistem kelistrikan perusahaan. Generator *emergency* berkapasitas 1000 kVA digunakan sebagai sumber daya cadangan ketika Gas Turbine Generator mengalami gangguan. Analisis dilakukan terhadap kelompok beban yang terhubung pada ATS untuk mengetahui kebutuhan daya selama kondisi darurat. Hasil penelitian menunjukkan bahwa penerapan load shedding memungkinkan generator *emergency* memprioritaskan suplai pada beban kritis sehingga kontinuitas operasional tetap terjaga. Persentase pemanfaatan kapasitas generator menunjukkan bahwa daya cadangan masih mampu memenuhi kebutuhan beban prioritas tanpa melebihi kapasitas operasi generator pada kondisi darurat perusahaan secara aman dan menjaga kestabilan tegangan serta keandalan sistem kelistrikan.

Kata Kunci: generator *emergency*, load shedding, ATS, beban kritis, kapasitas generator.

ABSTRACT
EMERGENCY GENERATOR POWER SUPPLY FROM LOAD SHEDDING
DURING MAIN GENERATOR OUTAGES AT PT PUPUK SRIWIDJAJA
PALEMBANG

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This study discusses emergency generator power supply through load shedding when the main generator fails at PT Pupuk Sriwidjaja Palembang. The objectives were to identify critical loads that must remain energized, calculate total connected load and actual power consumption on each Automatic Transfer Switch (ATS), and determine the utilization percentage of emergency generator capacity. The research employed literature review, field observation, interviews, and analysis of electrical system data. A 1000 kVA emergency generator was used as a backup source when the Gas Turbine Generator experienced a disturbance. Analysis was performed on load groups connected to the ATS to determine power requirements during emergency conditions. The results indicate that load shedding enables the emergency generator to prioritize critical loads, thereby maintaining operational continuity. Generator capacity utilization shows that the backup source can adequately supply priority loads without exceeding its operating capacity during emergency conditions within the company safely and reliably overall.

Keywords: *Emergency generator, load shedding, ATS, critical loads, generator capacity.*