

ABSTRAK

ANALISA *UPRATING* TRANSFORMATOR DISTRIBUSI AKIBAT BEBAN LEBIH DI PT. PLN (PERSERO) ULP KENTEN (2026 : xvi + 50 Halaman + Daftar Gambar + Daftar Tabel + Daftar Lampiran)

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Transformator distribusi merupakan peralatan penting dalam sistem distribusi tenaga listrik yang berfungsi menyalurkan energi listrik kepada pelanggan. Pertumbuhan beban yang terus meningkat dapat menyebabkan transformator mengalami beban lebih (*overload*), sehingga menurunkan keandalan dan mempercepat kerusakan peralatan. Penelitian ini bertujuan menganalisis pergantian transformator akibat beban lebih pada Gardu PB 0148 PT PLN (Persero) ULP Kenten. Metode yang digunakan meliputi observasi lapangan, wawancara, studi literatur, serta analisis data hasil pengukuran arus dan tegangan sebelum dan sesudah pergantian transformator. Hasil analisis menunjukkan bahwa transformator 100 kVA mengalami pembebanan sebesar 91,96% sehingga berada pada kondisi overload. Untuk mengatasi permasalahan tersebut dilakukan pergantian transformator menjadi 160 kVA. Setelah pergantian, persentase pembebanan menurun menjadi 57,68%, sehingga transformator dapat beroperasi dalam kondisi normal dan lebih andal dalam melayani beban pelanggan.

Kata kunci : Transformator, pembebanan, *uprating*, listrik, distribusi.

ABSTRACT

ANALYSIS OF DISTRIBUTION TRANSFORMER UPRATING DUE TO OVERLOAD AT PT PLN (PERSERO) ULP KENTEN

(2026 : xvi + 50 Page + List of Figures + List of Tables + List of Appendices)

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Distribution transformers are important equipment in the electric power distribution system that functions to distribute electrical energy to customers. Continuous load growth can cause transformers to experience overload, thereby reducing reliability and accelerating equipment damage. This study aims to analyze transformer replacement due to overload at Substation PB 0148 PT PLN (Persero) ULP Kenten. The methods used include field observation, interviews, literature studies, and analysis of current and voltage measurement data before and after transformer replacement. The analysis results show that the 100 kVA transformer experienced a load of 91.96% so that it was in an overload condition. To overcome this problem, the transformer was replaced with a 160 kVA transformer. After the replacement, the loading percentage decreased to 57.68%, so that the transformer could operate in normal conditions and more reliably in serving customer loads.

Keywords: Transformer, loading, distribution, uprating, electricity.