

ABSTRAK
PENGUJIAN *BREAKDOWN VOLTAGE* MINYAK ISOLASI
PASCAKEBOCORAN *BUSHING* PADA TRANSFORMATOR
47 PT. PUPUK SRIWIDJAJA PALEMBANG
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Keandalan transformator sangat bergantung pada kualitas sistem isolasinya. Penelitian ini bertujuan untuk menganalisis pengaruh Kebocoran minyak pada komponen *bushing* terhadap penurunan nilai *breakdown voltage* (tegangan tembus) minyak isolasi pada Transformator 47 di PT. Pupuk Sriwidjaja Palembang. Metode penelitian yang digunakan meliputi observasi lapangan, pengambilan sampel minyak, dan pengujian dielektrik menggunakan *Oil Dielectric Test Set* sesuai dengan standar pengujian. Hasil analisis menunjukkan bahwa Kebocoran pada *bushing* mengakibatkan masuknya kontaminan dan kelembapan ke dalam sistem isolasi. Hal ini terbukti dari hasil pengujian dimana nilai *breakdown voltage* mengalami penurunan menjadi 28 kV/2.5mm, angka ini berada dibawah standar minimum operasi yang diizinkan yaitu 30 kV/2.5mm. Sehingga terdapat korelasi langsung antara keborocoran minyak pada *bushing* dengan degradasi kekuatan dielektrik minyak transformator. Direkomendasikan untuk segera melakukan penggantian *seal/Gasket bushing* dan tindakan purifikasi minyak guna mengembalikan kualitas isolasi dan mencegah potensi kegagalan pada Transformator 47.

Kata Kunci: Transformator 47, *Bushing*, Kebocoran Minyak, *Breakdown Voltage*, Minyak Isolasi.

ABSTRACT
***BREAKDOWN VOLTAGE TESTING OF INSULATING OIL
FOLLOWING BUSHING LEAKAGE ON TRANSFORMER 47 AT
PT. PUPUK SRIWIDJAJA PALEMBANG
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The reliability of a transformer highly depends on the quality of its insulation system. This research aims to analyze the effect of oil seepage in the bushing component on the decrease of the breakdown voltage of the insulating oil in Transformer 47 at PT. Pupuk Sriwidjaja Palembang. The research methods used include field observation, oil sampling, and dielectric testing using an Oil Dielectric Test Set in accordance with testing standards. The results of the analysis indicate that seepage in the bushing causes the ingress of contaminants and moisture into the insulation system. This is evidenced by the test results, which show the breakdown voltage value decreased to 28 kV/2.5mm, a figure below the minimum allowable operating standard of 30 kV/2.5mm. Therefore, there is a direct correlation between oil seepage in the bushing and the degradation of the dielectric strength of the transformer oil. It is recommended to immediately replace the bushing seal/gasket and carry out oil purification to restore insulation quality and prevent potential failure in Transformer 47.

Keywords: Transformer 47, Bushing, Oil Seepage, Breakdown Voltage, Insulating Oil.