

# Pengembangan Pemeliharaan Transformator Daya 150/20 kV dan 70/20 kV Berbasis Risiko Berdasarkan Health Index Transformator dan Risiko Gempa = Development Of 150/20 Kv And 70/20 Kv Power Transformer Risk-Based Maintenance By Using Transformer Health Index And Seismic Risk

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## Abstrak

Berdasarkan hasil survey terkait Failure Rate dari Transformator oleh CIGRE dilakukan pada 2015, penyebab kegagalan komponen transformator adalah belitan (40%) kemudian tap-changer (27%) dan HV Bushing (14%). Beberapa penelitian untuk pengukuran kondisi transformator telah dilakukan dengan metode pengukuran Health Index dan Identifikasi risiko dari penyebab eksternal khususnya risiko dari bencana alam. Sehingga pada penelitian ini dilakukan perhitungan Health Index berdasarkan data hasil Uji Dissolved Gas Analysis (DGA), umur transformator serta salah satu risiko eksternal dari bencana gempa dengan mengambil kasus pada populasi transformator yang ada di Sulawesi, Indonesia. Diharapkan dengan adanya pemeliharaan berbasis risiko dapat membuat prioritas pemeliharaan serta melihat hubungan-hubungan antara kondisi Health Index dengan umur operasi, gangguan (Outage Transformator) dan risiko gempa dalam Peak Ground Acceleration (PGA).

.....Based on the results of a survey related to the Failure Rate of Transformers by CIGRE conducted in 2015, the cause of failure of transformer component failure is winding (40%) then tap-changer (27%) and HV Bushing (14%). Several studies for measuring the condition of transformers have been carried out using the Health Index measurement method and identifying risks from external causes, especially risks from natural disasters. So that in this study, the calculation of the Health Index is carried out based on data from the Dissolved Gas Analysis (DGA) test results, the age of the transformer and one of the external risks of earthquake disasters by taking cases in the population of transformers in Sulawesi, Indonesia. It is expected that risk-based maintenance can prioritize maintenance and see the relationships between Health Index conditions with operating life, interference (Transformer Outage) and earthquake risk in Peak Ground Acceleration (PGA).