ANALISIS REMAINING LIFE ASSESMENT (RLA) TRANSFORMATOR DI PEMBANGKIT TENAGA UAP (PLTU) PACITAN JAWA TIMUR MENGGUNAKAN METODE DISSOLVED GAS ANALYSIS (DGA)

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ABSTRACT

In a power plant, the transformer is one of the most critical equipment in the electrical energy generation system which functions to increase or decrease the voltage rating generated from the generator. In the transformer operation, of course, it cannot be separated from the disturbances caused by excessive transformer loading in continuous time. It brings a negative impact on the condition and characteristics of the transformer and its isolation. As a result of using in continuous conditions, there will be hot spots in the transformer's internal area, which are commonly referred to as hot-spot temperatures, which if left unchecked will cause degradation in the transformer insulation. So it is necessary to identify in analyzing the dissolved gas in transformer oil. DGA (Dissolved Gas Analysis) is a method used to identify and analyze gases dissolved in transformer oil. The analysis method used is TDCG (Total Dissolved Combustible Gas), Roger's Ratio and Duval Triangle. The method is implemented into the Visual Studio application to make it more informative and easy to use. From the DGA analysis on the UAT (Unit Auxiliary Transformator) transformer oil at PLTU Pacitan, it was found that the TDGC value was still in good condition, namely in the form of condition one and condition 2. Then, from the Roger Ratio analysis results, several indications of interference were obtained, such as Flash Over Without Power, Arching With Power Followed, and Current Navel in entanglement. Furthermore, in the Duval triangle analysis, several disturbances were obtained in the form of D1 (Low Energy Discharge), D2 (High Energy Discharge) and DT (Mix of Thermal and Fault).

Keywords: DGA, TDCG, Roger Ratio, Duval Triangle, Visual Studio