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Department of Electrical Engineering

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لخص البحث الثاني

ملخص البحث باللغة الإنجليزية:

Incipient fault diagnosis of a power transformer is greatly influenced by the condition assessment of its insulation system oil and/or paper insulation. Dissolved gas-in-oil analysis (DGA) is one of the most powerfull techniques for the detection of incipient fault condition within oil-immersed transformers. The transformer data has been analyzed using key gases, Doernenburg, Roger, IEC and Duval triangle techniques. This paper introduce a MATLAB program to help in unification DGA interpretation techniques to investigate the accuracy of these techniques in interpreting the transformer condition and to provide the best suggestion for the type of the fault within the transformer based on fault percentage. It proposes a proper maintenance action based on DGA results which is useful for planning an appropriate maintenance strategy to keep the power transformer in acceptable condition. The evaluation is carried out on DGA data obtained from 352 oil samples has been summarized into 46 samples that have been collected from a 38 different transformers of different rating and different life span.