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"A review Of Literature Studies On
Advanced Transformer Diagnostic Method" by Mr. Mohd
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Traditional maintenance practice which is time based is fast replaced by the application of condition based maintenance practice particularly by utilities in a deregulated electrical supply industry. The reasons given are the need to reduce maintenance costs, loss of revenue and loss of customer. Condition based maintenance methodology focus on the condition of components deemed to be critical for the availability of electricity to the customer.

For a power transformer, the critical components can be divided into two parts which are transformer oil and cellulose paper insulation. These components that are subjected to degradation – mainly due to dielectric stresses, ageing, ingress of moisture and chemical reaction in transformer oil. The degradation of the insulation material can be detected using condition based diagnostic method which consists of chemical analysis of transformer oil and electrical techniques on insulation and dielectric properties of the critical components.

Dissolved Gas Analysis is renowned as the main line of defense to detect an incipient fault in a power transformer. Along this method, other chemical analysis method are also studied such as degree of polymerization, furan analysis, Karl Fischer titration method, on-site moisture analysis. While the electrical diagnostic methodology studied comprises of techniques such as insulation resistance, power factor, recovery voltage method, partial discharge, frequency response analysis and power factor.

Due to incomplete information gathered by individual diagnostic technique, there are also studies on artificial intelligence which consolidate the chemical diagnostic method and electrical diagnostic method to give a better interpretation and decision based on the result obtained from the individual method.

This paper will review (summarize and discuss) the present literatures, journals and proceeding available on the advance diagnostic methodology for transformer.