



UNIVERSITI TEKNOLOGI MARA

STUDY ON THE TRANSFORMER OIL FILTRATION PROCESS

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ABSTRACT

The study was carried out on transformer filtration at Janamanjung Power Plant 3x700MW. The Filtration process offers a practical, proven and economical method to purify the oil and use it again for high voltage equipment. Filtration of insulating oil is the process of removing moisture, dissolved combustible gas and particular matter as determine by oil transformers test.

Test of moisture content, dielectric breakdown, interfacial tension and dissolved gas analysis on the transformer oil were studied to know the time of purifying of changing it. After performing the tests, the oil can classified as reusable with minor reconditioning or disposable and reduces downtime, minimizes the chance of sudden failure and thus allows optimum use of the transformer.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Filtration definitely helps better understanding of the transformer's operation, minimizes hazard to life and property, reduces downtime, minimizes the chance of sudden failure and thus allows optimum use of the transformer [1].

In this thesis, the method of oil filtration process is used to give more accurate information regarding filtration procedure to get the expected or requirement results to reduce the costs for repair and to increase the lifetime of the transformers. Also unexpected breakdowns should be avoided under all circumstances [3]. Insulation Oil is considered to be one of the weakest points on a transformer [5]. This perception must be considered in any maintenance concept.

The lifetime of transformer oil is not equal to the lifetime of a transformer itself. There are several predictive maintenance techniques to take that into account and determine the condition of the insulation oil [7]. The outcome of the Oil analysis exposes the internal condition of the Transformer which also helps in the early recognition of the embryonic faults.