CONDITION MONITORING ON 33kV OVERHEAD LINES AT BUKIT KAYU HITAM KEDAH DARUL AMAN USING INFRARED THERMOGRAPHY CAMERA
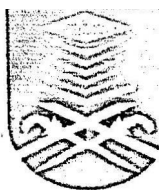
Thesis is presented in partial fulfillment for the awards of Bachelor
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ABSTRACT

In view of increasing demand for reliable and high quality power supply, Tenaga Nasional Berhad Distribution (TNBD) are interested in avoiding transmission failures by identifying problem at an early stage. The monitoring and location of incipient failures on overhead lines, known as Condition Monitoring (CM) is thus imperative.

This project about a Condition Monitoring technique for 33KV over headlines using Infrared Thermography Camera and also presented an Artificial Neural Network. So this thesis shows how to define the pole and weather by using the binary code.

A review is given of the techniques of condition monitoring available for 33kV over headlines. The results obtain from infrared camera are given which help *assess* replacement the condition of 33kV over headlines.

The condition monitoring against the operation of over headlines using infrared camera at 33kV level will give data's that is used to determine the overheating and conduction effects in temperature at Bukit Kayu Hitam .The data is also considered to make comfortable condition in the routine test of utilities.

Nowadays, electrical utilities are facing a nerve-racking problem. The continuous increase of aged electrical plant population. Serious accidents have occurred worldwide, which caused millions of dollars damages to power industry.

Unfortunately, in the current economical climate, no utility can afford replacing all aged equipment according to their designed lifetime. Even for relatively new equipment, insulation failures often occur due to various problems such as manufacture defects and in appropriate maintenance. It is therefore important to closely monitor the insulation condition and to implement advanced maintenance strategies for electrical plant.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In today's increasingly competitive market, low costs and reduced manufacturing times are expected without compromising production quality. These high specifications can only be reached by implementing a preventative approach to production machinery maintenance. This reduces machine down time and also improves production consistency and quality. Monitoring does this and, where possible, controlling factors that may accelerate wear resulting in machine failure.

In the power system, there are many kinds of electrical equipment such as circuit breaker, insulator, transformer and etc. This equipment such as plays important role in power supply system [1].

Every dynamic system - electrical, hydraulic, mechanical or thermal possesses a normal characteristic 'signature' when operating in the desired fashion. When the condition changes, even in a very subtle fashion, it may herald the onset of a failure mode. The small differences between normal and abnormal condition have often been hidden by 'noise' in the system. Modern transducers and associated signal-analysis techniques can now discriminate between truly random variations and significant trends. Which, with knowledge of the system parameters and normal characteristics, can be used to predict time to failure. Such an approach is called Condition Monitoring.