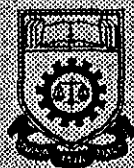


**POWER QUALITY AND SUPPLY INTERRUPTION STUDIES AT
SELECTED LOCATION OF ITM MULTI-STOREY AND
ENGINEERING BUILDINGS**

Thesis presented in partial fulfilment for the award of the
Advanced Diploma in Electrical Engineering of
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ABSTRACT

The introduction of modern technology incorporating the use of non linear loads and rapid rise in demand of electricity has contributed to the rise in power related problem. The growth of power related problem can be directly linked to the growth of computer based loads and it is the intention of this studies to certify the above mentioned phenomena towards the power problem in ITM. The electrical utility has long be viewed as the major source of power disturbance and this is not generally true. Electrical problem within the facility such as aged wiring, malfunction protective device, poor discrimination of protection system, large switching loads do contribute to the power disturbance apart from the stress placed upon the electrical system by the non linear loads. It is the intention of this studies to determine the power quality and the cause of supply interruption that occurs in ITM. The site chosen to conduct this studies were based on immediate requirement by the relevant departments and the high frequency of supply interruption. Two major sites chosen are multi storey supply system to level 9 and Engineering Block A. This studies are classified under the category of parameter identification and data collection.

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CHAPTER 1

1. INTRODUCTION

Many commercial and industrial power distribution systems are being burdened by the proliferation of sensitive computing equipment and other non linear loads. Possible effects include neutral bus overloading, machine overheating, low power factor, voltage distortion, failure of power factor correction banks, transformer overheating, etc. [1]. Previous studies on power quality monitoring on distribution system had been conducted by Niagara Mohawk Power Corporation to embark on a comprehensive power quality monitoring study [17]. In recognition of this issues, ITM have become increasingly concerned about power quality and have established student projects to promote power quality education. There had been a study to measure the harmonic level at selected location of ITM previously which can be regarded as a starting point on power quality studies. This project was to conduct an engineering study on power quality at selected location and to ascertain whether power quality is indeed the culprit of outages and failures.

ITM receives 11kV supply system from Tenaga Nasional (TNB) via a main substation located near Hotel ITM. The outgoing feeders are then connected radially to about 26 substations located in the campus with one off point. The off