

A STUDY ON POWER QUALITY PHENOMENA BY QUANTIFYING INDEXES IN FTMSK, UITM SHAH ALAM

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**MOHD AZIZI SAFUAN CHE ROS
Faculty of Electrical Engineering
UNIVERSITI TEKNOLOGI MARA
40450 SHAH ALAM, SELANGOR**

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ABSTRACT

Power Quality disturbance is considered as “nuisance” in a certain power system. There are various types of Power Quality (PQ) disturbance such as voltage sag (dip), voltage swell, outage, noises, harmonic, surges and flickers. These disturbances will limit on the integrity or damage a certain power system. Due to the today’s rapid growth use of electronic devices, the non-compatibility with power environment is an increasing concern. These may cause by natural climatic, electric utility network operations and internal end user networks [1]. Internal end user (customer) network problems consists of poor grounding, loose or improper wiring and excessive load additions.

In this context, this study marshalling on Power Quality phenomena study on an academic building inside UiTM Shah Alam. The building is the Faculty of Science Information Technology and Science Quantitative which is known as FTMSK. The characteristics and limits of Power Quality (PQ) disturbance such as voltage sag (dip), voltage swell, outage, noises, harmonic, surges and flickers in this building is analyzed and compared to the IEEE and IEC standards.

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Due to the today's rapid growth use of electronic devices, the non-compatibility with power environment is an increasing concern. Most of the common sources of power quality disturbance within the academic buildings are too much capacity of personal computers, data networks, security systems, copy machines and central air conditioners. Power Quality disturbance is considered as "nuisance" in a certain power system. There are various types of Power Quality (PQ) disturbance such as voltage sag (dip), voltage swell, outage, noises, harmonic, surges and flickers. These disturbances will limit on the integrity or damage a certain power system.

1.1 PROBLEMS STATEMENT

Most of the common sources of power quality disturbance within the FTMSK academic building are too much capacity of personal computers, data networks, security systems, copy machines and central air conditioners. In order to analyze on PQ phenomena UiTM Shah Alam, which have PQ disturbance occasionally at University Technology of MARA, the Harmonics and Total Harmonic Distortion of Voltage (THDV) in Faculty of Science Information Technology and Science Quantitative is compared in terms of raw data taken by using Reliable Power Meter (RPM).

The data taken will be analyzed throughout some period of days. This building is chosen as a starter, before analyzing other problematic power disturbance academic building in UiTM Shah Alam.

This paper presents the result and analysis of power quality monitoring at the FTMSK building.