DESIGN AND SOFTWARE DEVELOPMENT OF A POWER QUALITY MONITORING DATABASE

Thesis is presented in partial fulfillment for the award of the

Bachelor of Electrical Engineering (Honors)

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ACKNOWLEGMENT

Bismillahirahmannirahim. . . . .in the name of ALLAH s.w.t, the most Gracioust, 4he ever merciful. Praised to Prophet Muhammad s.a.w. my everlasting thank to ALLAH s.w.t, lord of the universe for granting my patience and hope in completing this project.

First of all, I wishes to express my highest appreciation to DR. Zuhaina bt Zakaria as my project supervisor for encouragement and invaluable suggestion, guidance, advice, construction idea and critics towards the completion of this project.

I express my deepest thanks and appreciation to my family for their moral support and encouragement. They really believe that I can deliver the best work that I could.

Last but not least, a special thank you and appreciation goes to all my friends, for their limitless patience and understanding and always give me full of support for all the time to me to finish and completing this project. So many memories during the process of completing this project among us makes me realize what a wonderful friends I have in this life. That will be nostalgia in our mind.

Honestly, no words could make up for the thing that they all have done for me. Thank you, may ALLAH Subhanahu Wa Ta'ala the Almighty be with us all the time and bless them.

Thank you, God blesses.

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ABSTRACT

The major drawback in collecting power quality data is the management and integration of the resulting databases. The objective of the project is to develop a power quality data management and analysis software which is designed to store data, analyze large quantities of power quality related disturbances and to print the report of that data. The database will store site characteristics and event information, provide the means of to automate both the loading of new data and generate summary and reports. The design of the database is outlined including the inputs to and outputs from the database as well as the data processing required by using Microsoft®Access for this application. The use of Visual Basic macros within Access is presented.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Power Quality can be defined as any problem manifested in voltage, current or mal-operation of customer equipment. There are many causes of power quality problem such as voltage sag/swell, harmonics, fast impulses or subcycle impulses, neutral to ground, high frequency noise etc. But the major power quality problems are related to voltages dips (or voltage sag), transient, swell and harmonics. Power quality investigations often require monitoring to identify the exact problem and then to verify the solutions which are implemented. There are various types of power quality monitoring instruments, such as flicker meters, harmonic analyzers and disturbances analyzers monitors. Power quality monitoring system for data used in this paper is to monitor the disturbances analyzers which monitor the voltage events (sags, swells, transient, under voltage, over voltage and outage). The recorded voltage events were obtained from monitoring devices like permanent power quality recorder and portable power quality recorder. In Tenaga Nasional Berhad (TNB) system the permanent power quality used is PQMS, (PQ/voltage recorder at PMU/PPU) and the portable power quality recorder used is POLY, PQR 128, and DRANETZ (PQ/voltage recorder at Consumer Premise).

The major drawback in collecting power quality data is the management and integration of the resulting databases. At present, all this monitoring data was manually keyed in excel spreadsheet and the reports are generated manually by TNB.

By the reviews of previous data and previous annual report from TNB, it is found that the errors occur in recording the data of monitoring. Therefore, the report will containing errors too.