FAULT ANALYSIS AND RELIABILITY MONITORING SYSTEM (FARMS)

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Declaration

We declare that this thesis is our own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

N. C. M. A. Attanayake

Date: 16th June 2017

Supervised by

Saminda Premarathne

Date: 16th June 2017

To my parents, Husband Wijekoon and two daughters Viyathma and Sesathma

for their encouragement and love

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Abstract

Ceylon Electricity Board (CEB), established by an act of Parliament in 1969, is the statuary body responsible for most of electricity power generation, Transmission and major part of distribution of electricity in Sri Lanka. At present 98.5% of the population has access to electricity. Once the electrification is completed, attention would be mostly paid to power supply reliability.

Power supply reliability could be defined as the availability of power supply at a given time duration with adequate quantity and good quality. In order to improve power supply reliability and maintain the reliability level at specified level, it needs comprehensive monitoring and analysis of power supply failures in the electricity network including individual consumer premise.

At present CEB has adopted a hard copy based power supply failure analysis system which has many drawback such as lack of information about the past and current power supply failures, process is handlled by ad-hoc method, information flow is difficult to identify, longer time for power failure record searching and processing, report preperation is difficult and time consuming etc.

In order to rectify the drawbacks in the present system, Failure Analysis and Reliability Monitoring System (FARMS) has been developed in this project. The proposed system was a client server model based system for handling power supply failures in the consumer service center of Ceylon Electricity Board. The main database of the FARMS is created by using the Ms SQL Server 2008, because it supports client/server approach and provide multi user access for the system. This provides performance wise much better with the Microsoft based systems and compatible with other third party controls.

The proposed system has many features which has eliminated almost all the drwabacks in the prsesent system. The System has been evaluated developing a software and validated for actual collected data.

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