In the Name of Allah the Most Beneficent the Most Merciful

Intelligence Power Sharing of Transformer with Auto Protection Using Microcontroller

Session 2011-2015

August 2015

Group Members

Haris Naveed **111619-103**

Muhammad Ali Khan **111619-166**

Saad Murtaza **111619-161**

Project Supervisor

Engr. Arif Saeed

School Of ENGINEERING

UNIVERSITY OF Management & TECHNOLOGY Lahore

TABLE OF CONTENTS

Chapter I

1. Introduction of the project

Chapter II

2.Substations

Chapter III

3 Series and parallel operation

Chapter IV

4 Hardware Design

Chapter V

5 Pic Microcontroller Programming

Chapter VI

6 Future Scope

Chapter VII

Chapter VIII

List of Figures

Chaper-1

Chapter-2

Chapter-3

Chapter-4

Chapter-5

List of Software's

- **Mat lab**
- WPL v2.36
- Arduino-To-Atmega8-Pins
- Proteus v8
- Pic Microcontroller

Certificate

This is to certify that Haris Naveed , Saad Murtaza and M. Ali Khan have successfully completed their final year project. This project"**Intelligence Power Sharing of Transformer with Auto Protection**" had been assigned to them to fulfill the partial requirements for the bachelor degree of **Electrical Engineering**.

Engr. Arif Saeed

Project Supervisor

Professor Jamel Ahmad

Professor

Undertaking

We certify that project work titled "**Intelligence Power Sharing of Transformer with Auto Protection**" is our own work. The work has not, in whole or in part, been presented elsewhere for assessment. Where material has been used from other sources it has been properly acknowledged / referred.

_____

Haris Naveed

(111619-103)

_____

Muhammad Ali Khan

(111619-161)

_____

Saad Murtaza

(111619-166)

Acknowledgements

We would like our total submission and eternal gratitude to **ALLAH ALMIGHTY**, The Most Gracious, without whose mercy and grace this endeavor could not been possible. We bow before our compassionate endowments. Peace be Upon **HOLY PROPHET MUHAMMAD** (PBUH) who is ever a torch of guidance and knowledge for humanity as a whole.

We would to like to acknowledge with appreciation the contribution of new sections problems and numerous valuable comments, suggestions, constructive criticisms and praise from the elevators and reviewers.

Their suggestions have greatly helped to improve the quality of text. We also would like to thank instructors who provided plenty of feedback from students and users perspectives and to our teachers who support us throughout the preparation of the project.

Special Thanks to:

Engr. Arif Saeed

Engr. Ahmad Malik

Engr. Muhammad Atif

Engr. Salman Khalid

Engr. Waseem Iqbal

Abstract

The objective of the project “Intelligent Power Sharing Transformers”

At peak times when the load requirements increases, the transformers whether they be power transformers at substations or some specific distribution transformers, tend to overload, meaning they heat up their losses (copper and iron) increases and if the transformer continues to run in this overload state…its secondary winding can burn up, thus reducing the life or destroying the transformer altogether.

When designing low-voltage power systems to supply large load currents, paralleled lower-current modules are often preferred over a single, large power converter for several reasons. These include the efficiencies of designing and manufacturing standard converters which can be combined in whatever number necessary to meet a given load requirement.

At present load sharing of transformer is done by paralleling the transformer. That is primary of the transformer is always energized. This method is following on olden days also. The challenge in paralleling modular supplies is to insure predictable, uniform current sharing-regardless of load levels and the number of modules.