CHAPTER 1

INTRODUCTION

1.0   Introduction

This chapter would describe the overall overview of the project which includes the project objective, scope, project schedule and the outline of the thesis.

1.1   The Objective of the Project

The main objective of this project is to carry out a study on the electric field distribution of energized silicon rubber insulator under clean and contaminated condition using finite element method which is simulated by SLIM software.

1.2   The Scope of the Project

In order to limit this project under certain degree, the objectives of this project are assisted by certain scopes. Those scopes are as listed below:

a) To appreciate the application of two dimensional linear finite element numerical method in electric field calculation.

b) To observe and investigate the properties of silicon rubber.

c) To implement the finite element method technique using SLIM.

d) To model the contamination layer on the surface of silicon rubber insulator.

e) To study the electric field pattern of silicon rubber insulator under clean and contaminated condition of energized silicon rubber insulator.

1.3   The Project Schedule

This project was accomplished in two consecutive phases which are Project I and Project II where Project II is the continuation from Project I. The theoretical part is being covered mostly within the Project I timeframe while Project II depict the simulation analysis of the project. Those project schedules are given separately by Appendix A.

1.4   Thesis Outline

This thesis is being divided into six consecutive chapters where each chapter review different issues regarding to the project objectives. Chapter 1 covers the introductory section of the project while Chapter 2 and Chapter 3 described the literature review and theoretical background that related to finite element method and silicon rubber respectively. The following chapter is Chapter 4 where this chapter provides the explanation on project methodology used throughout the operation of the project. Simulation results and analysis is explained individually in Chapter 5 and the last chapter, which is Chapter 6, considers the future recommendations in extending the project into a better prospect.