ANALYSIS OF THYRISTOR CONTROLLED SERIES COMPENSATOR IN POWER TRANSMISSION NETWORK BY USING BEES ALGORITHM TECHNIQUE

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ABSTRACT

This thesis presents Bees Algorithm (BA) technique to seek the optimum size of Flexible AC Transmission System (FACTS) device which is the Thyristor Controlled Series Compensator (TCSC) in a power transmission network. Fast Voltage Stability Index (FVSI) is used to designate the suitable line location of TCSC installation. Using these methods, the location and size of TCSC are optimized simultaneously and can be used to minimize loss in power transmission network. IEEE 26-bus Reliability Test System (RTS) will be use to investigate the effectiveness of the device. This research varies the loading conditions of the IEEE 26-bus system.

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CHAPTER 1

INTRODUCTION

1.1   OVERVIEW

Electrical energy is the most popular form of energy because it can be transported easily at high efficiency and reasonable cost. There are three important role in electrical energy where it generation, transmission and distribution sections. Generation section acts as the factory of producing electrical energy. This section consists of generator, turbine, transformer and other machine related with producing electrical energy. While transmission section is the line connected between generation and distribution. The electrical energy will transfer to the consumer via this transmission. The quantity of electrical energy usually will lose in this transmission network and this thesis will analyze the solving to overcome this problem. The distribution section will use to distribute the electrical energy to the consumer by depend the demand of the consumers.