

**DEVELOPMENT OF ECONOMIC DISPATCH SOLUTION FOR
SYSTEM WITHOUT LOSSES**

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ABSTRACT

This paper presents a soft development software economic dispatch solution for the system that includes generator limits and neglecting losses. The method is based on calculating the economic power generation dispatch for generating units using simultaneous equation. The implementing of MATLAB programming is very useful to simplify economic dispatch determination faster than the conventional and manual computation. The power of any generator should not exceed or equal its rating nor should it be below or equal to the maximum power permitted.

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CHAPTER 1

INTRODUCTION

1.0 OVERVIEW

Electrical power system are designed and operated to meet the continuous variation of power demand. The power plants are not located at the same distance from the center of loads and their fuel costs are different. Also under normal operating conditions, the generation capacity is more than the total load demand and losses. Thus, there are many options for scheduling generation. In an interconnected power system, the objective is to find real and reactive power scheduling of each power plant in such a way as to minimize the operating cost. This means that the generator's real and reactive powers are allowed to vary within certain limits so as to meet a particular load demand with minimum fuel cost. This is called the optimal power flow (OPF).problem. The OPF is used to optimize the power flow solution of large scale power system. This is done by minimizing selected objective functions while maintaining an acceptable system performance in terms of generator capability limits the output of the compensating devices. The objective functions, also known as cost functions, may present economic costs, system security, or other objectives. [1]

In order to ensure the economic operation, power generation is scheduled based on two important tasks, namely unit commitment and economic dispatch. Economic Dispatch (ED) is to determine the optimal output of online generating units so as to meet the total demand at the minimum operating cost under various systems and operating conditions

A general survey of the previous status of economic dispatch is done by [2]. The papers and reports reviewed here have been published subsequent to the comprehensive surveys done by Happ and an IEEE Working Group. Both Happ and the IEEE Working Group present the work of authors from the inception of economy loading to the status existing in 1979. Happ reviews the progress of optimal dispatch going as far back as the early