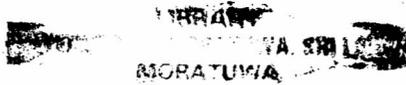


LB/DON/147/04

**EFFECT OF EMBEDDED GENERATORS ON
SRI LANKA POWER SYSTEM FREQUENCY
FLUCTUATIONS**



MASTER OF SCIENCE

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SRI LANKA

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Executive Summary

The purpose of this research was to review the current utility operating methods and associated technical issues, basically on frequency stability in Sri Lanka when considering embedded generation connected to distribution network, and to examine the prospects for future active operation and control of the network.

A comprehensive software based study was done which allowed identifying some prospective modifications for a more active approach to the operation of the power system to accommodate the expected amount of embedded generation that is likely to be connected in the coming decade in order to meet the government targets.

Different loading conditions based on the load curve was assessed and technical issues on protection, basically Rate of Change of Frequency (ROCOF) protection and load shedding were covered in detail, and a new load shedding scheme was proposed.

Guidelines were suggested to the future modifications and control of the network. These will allow the embedded generation developers and the Ceylon Electricity Board (CEB) to maximize the potential of embedded generation and improve the utilization of their network.

DECLARATION

The work submitted in this thesis is the results of my own investigation, except where otherwise stated.

The work included in the thesis in part or whole has not been submitted for any other academic qualification at any institution.

Miss L.N.W. Arachchige

(Author)



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10/08/2004

Date

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Dr. D.P.N. Nanayakkara

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Date

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