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AN EXPERT SYSTEM FOR FAULT DETECTION IN ELECTRIC NETWORKS

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
master of science in electrical
engineering

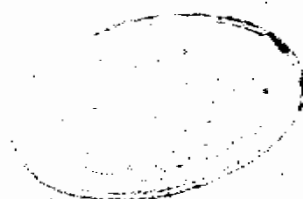
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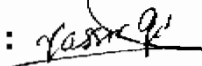


STATEMENT

This dissertation is submitted to Ain Shams University for the degree of Master in Electrical Engineering .

The work included in this thesis was carried out by the author. No part of this thesis has been submitted for a degree or qualification at other university or institution .

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ABSTRACT

In this thesis an Expert System is developed for faulted section estimation and protection scheme diagnosis. Detection and diagnosis are based on information from relays and circuit breakers. A short circuit calculation program is interfaced to the Expert System for strengthening the diagnosis capabilities. The knowledge, rules and heuristics of Expert System are written in PROLOG computer language while, the Electromagnetic Transient Program (EMTP) is used for short circuit calculations. The developed Expert System is tested through different case studies based on a study systems depicted from Egypt Power Network (EPN).

This system makes estimation even on the case of multiple faults as well as mal-function and false operation of relays and circuit breakers.

ACKNOWLEDGEMENTS

I am deeply indebted to my supervisor Dr. Mohamed M. Mansour for his continued guidance, brilliant instructions, signs, help, encouraging words and extremely moral support during the course of this study, he is a person who never hesitates to be consulted.

Also thanks to Dr. M.S.M. Rizk for his untiring efforts clear instructions which have improved the quality of this thesis immeasurably.

Very deep and sincere appreciation to protection expert Dr. Mohamed A.El-Hadidy for his practical guidance, support and advice which played a very vital role in the development of this thesis.

I wish to thank ABB-ARAB Co. leaders, Eng. Kamal Gad the person who leads and supports any development process inside the company and Mr. Amged Moustafa for his fruitful help.

Special thanks should be addressed to Eng. Ismail H. Alla for his leadership support. Also sincere appreciation to Eng. Ali youssef Ali for his continuous support and moral encouragement. I wish also express my appreciation to Eng. M. A. El-Haliem, M. El-Sawy, Eng. and Mr. John for their terrific help.

I wish also appreciate the great support and love of my father, the man who is behind this work . Helps and love given by my mother play a very important role in finalizing this thesis.

Finally, but certainly not the least important, i wish to appreciate the support of my brothers and friends.

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