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WORAPONG DEEAROM : EVALUATION OF RELIABILITY INDICES AND INTERRUPTED ENERGY RATES IN ELECTRICAL DISTRIBUTION SYSTEMS.
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This thesis emphasizes on an evaluation of reliability indices and interrupted energy rates (IER) in distribution systems taking into account statistical operating performance of all equipments. The matrix relationship and minimum cut set techniques are used in the calculation. Then the sensitivity analysis of failure rate and outage time having impacts on reliability indices and IER are calculated.

The reliability of distribution system is presented in various form of indices, e.g. SAIFI, SAIDI, CAIDI, etc. From the analysis, CAIDI and interrupted energy rate are independent from failure rate of equipment but depending on outage time of equipment. The results also illustrate that the reliability of distribution system depends on equipment and configuration of the distribution system.

A computer program using the proposed method has been developed and tested with the RBTS system. The program has also been used in the study of reliability indices and IER of distribution system in industrial estates of the Provincial Electricity Authority (PEA).

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