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KEY WORD: SHORT-TERM LOAD FORECASTING/NEURAL NETWORK
URITH ARCHAKOSITT : SHORT-TERM LOAD FORECASTING USING A NEURAL NETWORK WITH AN ADAPTIVE LEARNING RATE ALGORITHM. THESIS ADVISER : PROF.CHARUAY BOONYUBOL, Ph.D. ,THESIS CO-ADVISER : BUNDHIT EUA-ARPORN, Ph.D.,163 pp. ISBN 974-584-354-7

This thesis presents the results of short-term load forecasting , using a neural network with an adaptive learning rate algorithm. Short-term load forecasting generally concerns the forecast of peak and valley loads, hourly load ,and daily energy ,which determines short-term planning and load-scheduling. In the analysis, a neural network is developed to learn the pattern of maximum (minimum) dry temperature and peak (valley) load. The forecasted peak and the forecasted valley loads are used to predict the hourly load and the energy demanded for the next day.

A computer program is developed on a microcomputer to study and analyse several samples.The results of the forecasting and the learning between a conventional neural network and the neural network with an adaptive learning rate algorithm have been compared.

This study indicates that the errors of the forecasting by the conventional neural network and by the neural network with an adaptive learning rate algorithm are nearly equal but the learning time by the first is longer than the second.