DEREGULATED POWER SYSTEM FORECASTING USING NEURAL NETWORKS

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Abstract

Deregulation of the power industry introduces competition into the electricity market. As the accuracy of the electricity load forecast in the deregulated industry is crucial in providing better cost effective risk management plans. In a deregulated, competitive power market, utilities tend to maintain their generation reserve close to the minimum required by an independent system operator. So load forecasting has many applications including energy purchasing and generation, load switching, contract evaluation, and infrastructure development. This creates a need for an accurate instantaneous-load forecast for next 24 hours. In the present work, a novel approach to short-time load forecasting by the application of artificial neural networks has been proposed. Two types of neural network algorithms for training have been proposed exploring importance of each. The data used in the both models is the electricity load historical data. These methods provide reliable forecasts. It provides more reliable forecasts, especially when the weather factors also represented in the training data. The simulation results showed that the model was capable of producing a reasonable forecasting accuracy in STLF.