

An Integrated Load Forecasting-Load Management Simulator: Its Design and Performance

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Abstract

An integrated load-forecasting-load-management (LFLM) simulator is constructed that can be used by electric cooperatives and electric utilities alike. Rule-based algorithms have been used for implementing various functions of the simulator. The major elements of the simulator are 24 hour load forecasts, water heater and air conditioner load models, direct load control dispatch, and intelligent databases. The system has been provided with adequate amount of intelligence so that it is able to make the right decisions, revise and update its rules and factors, diagnose problems and take corrective actions without the need for operator intervention in most situations. The load-management simulator consists of a central unit, remote unit, and data sources. Five microcomputers, six monitors, two dot-matrix printers, four modems and a terminal are the main components of the system. The central unit consists of an IBM-RT/PC microcomputer and its communication accessories. The design, implementation, and performance evaluation of the simulator are addressed