Online Simulator for Power System Optimum Operation
(Dynamic Unit Commitment Economic Dispatch – Optimal Power Flow)

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Abstract:
A good power system planning is used to supply the electrical energy needs. Its planning consists of proper generation units scheduling, adjustment of economic power generated on each generation units, and power flow in the electric power system line. In this final project a software package is designed for power system optimum operation planning consisting of two software; prediction software and online software. This software takes into account the parameters of optimum operation calculation for examples minimum uptime - downtime, start up cost, and ramp rate. Prediction software is used to predict generation units scheduling and adjustment of active power generated economically on each generation units using dynamic unit commitment economic dispatch (DUCED). Online software is used to calculate alternating current optimal power flow (ACOPF) using modified matpower and connected online with the load data. The software in this final project is designed using Matlab R 2013a student version, graphical user interface development environment (GUIDE), and Corel Draw.

Keywords: prediction software, dynamic unit commitment economic dispatch, online software, alternating current optimal power flow, minimum uptime – downtime, start up cost, ramp rate
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