EMISSION CONSTRAINT ON SHORT-TERM SCHEDULE OF THERMAL UNITS BY USING PARTICLE SWARM OPTIMIZATION METHOD

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ABSTRACT

In unit commitment (UC) problem, power generating units need to be scheduled in order to meet the forecasted load for certain periods of time in a day. The objective is to minimize the total production cost. Nowadays, minimizing the production cost can no longer be the only criterion for dispatching electric power due to increasingly concern over the environment consideration. In this study, the UC problem is solved with consideration of environment protection by calculating the pollutant emission of thermal power plant, due to burning fossil fuels, such as coal, oil or gas to convert into electrical energy. This project presents a methodology for solving the short-term UC with environment consideration problem by using particle swarm optimization (PSO) method. The proposed PSO approach has been successfully tested on the IEEE 26-bus system with 6 generating units and divided into six stages within 24 hours.

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