

电力系统

考虑系统可靠性和经济性的机组组合方法

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摘要

提出一种将购买旋转备用费用计入运行成本的机组组合的数学模型和求解方法。其特点是在保证系统可靠性的前提下, 考虑机组随机停运率和燃料微增率的影响, 使机组组合运行总成本最低。其中负荷经济分配子问题采用单纯形-模拟退火法进行求解。算例表明该方法能有效降低运行成本。

关键词 [机组组合; 旋转备用; 随机停运率; 单纯形-模拟退火法](#)

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Unit Commitment Considering System Reliability and Economy

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Abstract

A new model of unit commitment that counts the charge of purchasing spinning reserve in operation cost and corresponding solution are proposed. The feature of the proposed model is to make the total operation cost of the units minimum under the presupposition of ensuring power system reliability while the influences of forced outage rate of units and the and fuel increment rate are considered. In the proposed model, the sub-problem of economic load allocation is solved by simplex-simulated annealing algorithm. Calculation results of a 26-machine test system show that by use of the proposed method the operation cost of the test system can be effectively reduced.

Key words [unit commitment; spinning reserve; forced outage rate; simplex-simulated annealing algorithm](#)

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