

考虑节点负荷波动的静态电压稳定预防控制方法

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摘要

介绍了考虑节点负荷波动的节点静态电压失稳概率指标, 提出了一种降低节点静态电压失稳概率指标的预防控制方法。该方法以薄弱节点的电压幅值最小为目标函数, 通过调整发电机出力 and 切负荷降低节点静态电压的失稳概率指标。某682节点系统的仿真计算结果表明, 该方法考虑了负荷功率因数的变化和负荷波动, 具有计算量小、计算速度快、程序设计简单等优点。

关键词 [电力系统; 静态电压稳定; 预防控制; 节点负荷; 波动](#)

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A Preventive Control Method of Static Voltage Stability Considering Node Load Stochastic Fluctuation

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Abstract

Considering node load fluctuation, the probability index of node voltage instability is presented, and a preventive method to reduce the probability index of node voltage instability is proposed, in which the minimum of voltage magnitude of weak node is taken as objective function, and by means of adjusting generator outputs and load shedding the probability index of node voltage instability is reduced. Simulation results of a certain 682-bus system show that because of considering the variation of power factor of loads as well as load fluctuation, the proposed preventive method can reflect the fluctuation of power factor and load level, and possesses following advantages: higher calculation speed, less calculation amount and simplicity of program design, etc.

Key words [power system; static voltage stability; preventive control; node load; fluctuation](#)

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