

电力系统

电力系统暂态稳定分析广义负荷模型

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摘要:

随着特高压项目逐步建成, 在全国大电网的东部受端系统(负荷中心)成为典型的广义负荷系统; 另外智能微网以及新能源逐渐应用, 区域性广义负荷系统将越来越多。为了更好地表征其新特性, 提出了适用于广义负荷系统暂稳分析的实用模型。模型中利用区间联络线功率波动以及关键节点电压变化实时表征等效负荷动态特性, 并根据动态负荷以及灵敏度最高的联络线母线电压表征等效发电机动态特性。经PSASP等平台仿真及实验结果表明, 该模型能较好地反映系统动态特性, 模型参数求取方便, 通用性强。

关键词:

A Generalized Load Model for Transient Stability Analysis of Power System

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Abstract:

Along with the building-up of UHV items in steps, the eastern receiving system of nationwide interconnected power grid becomes typical generalized load system; besides, with the application of smart microgrid and new energy there will be more and more regional generalized load systems. To characterize new features of generalized load system, a practicable model suitable to the transient stability analysis of generalized load system is proposed. In the proposed model, the dynamic characteristics of equivalent load is characterized in real-time mode by power fluctuation of inter-regional tie line and voltage variation at key nodes, and the dynamic characteristics of equivalent generator is characterized by dynamic load and the voltage of tie line bus voltage with the highest sensitivity. Results from experiments and simulation on PSASP and Matlab platforms show that the proposed model can reflect the dynamic responses and it is convenient to obtain parameters of the proposed model, besides, the proposed model possesses good versatility.

Keywords:

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