

SVC补偿型定速风电机组模型及其特性分析

范高锋¹, 王纯琦¹, 乔元², 赵海翔¹, 薛锋², 王伟胜¹

1. 中国电力科学研究院, 北京市海淀区 100085; 2. 金风科技股份有限公司, 新疆维吾尔自治区乌鲁木齐市 830026

收稿日期 修回日期 网络版发布日期 接受日期

摘要

在电力系统仿真软件DIgSILENT/PowerFactory中建立了静止无功补偿器(static var compensator, SVC)补偿型定速风电机组的模型, 分析了其稳态和暂态特性以及由SVC补偿型风电机组组成的风电场对电网的影响, 分别采用上述风电机组模型和用电容器组进行补偿的普通定速风电机组模型进行仿真实验, 比较结果表明SVC补偿型风电机组具有快速调节无功功率的能力, 当系统故障时, 该风电机组可快速恢复系统电压, 且风电机组启动过程对系统的冲击较小。

关键词 [风电机组; 风电场; 静止无功补偿器\(SVC\); 稳态特性; 暂态特性](#)

分类号 [TM71; TM614](#)

Model of Fixed Speed Wind Turbine with SVC and Its Characteristic Analysis

FAN Gao-feng¹, WANG Chun-qi¹, QIAO Yuan², ZHAO Hai-xiang¹, XUE Feng², WANG Wei-sheng¹

1. China Electric Power Research Institute, Haidian District, Beijing 100085, China;

2. Goldwind Science and Technology Co., Ltd., Urumchi 830026, Xinjiang Uygur

Autonomous Region, China

Abstract

The fixed speed wind turbine model with static var compensator (SVC) is established in the power system simulation software DIgSILENT/PowerFactory, and its steady and transient characteristics as well as the influence of wind farm consisting of wind turbines with SVC and common fixed speed wind turbine compensated by capacitor bank show that the former possesses the ability of quickly adjusting reactive power and its power factor can vary with a larger range; high voltage recovery speed while power grid is faulty; and smaller impact to power grid while the wind turbine with SVC is started up.

Key words [wind turbine unit; wind farm; static var compensator \(SVC\); steady characteristic; transient characteristic](#)

DOI:

通讯作者

作者个人主页 [范高锋¹; 王纯琦¹; 乔元²; 赵海翔¹; 薛锋²; 王伟胜¹](#)

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