《电力系统工程》

图书基本信息

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前言

《电力系统工程》于1994年出了第1版，在印度和世界许多国家发行，很受广大师生和电力工程技术人员的喜爱。2008年出的第2版在第1版的基础上有很多扩充，主要增加了电力工程领域的最新发展。　　本书由印度工学院Kothari教授和贝拉理工学院。Nagrath教授共同编写。　　全书有22章和10篇附录。第1～15章是电力系统工程的基础知识，这一部分在第1版的基础上有更新与扩充，内容包括输电线参数和特性、潮流计算、故障分析、电力系统优化运行和自动发电控制、电弧和断路器、电力系统稳定和保护等。与第1版相比，第1章进行了较多的扩充和重写，新增了非常规和可再生能源、能源保存、能源管理、电力改革和重组、分布式发电及环境约束的影响等内容；在第2章和第3章中分别增加了磁场感应和静电感应；第4章中增加了电力变压器的内容；在第5章中引入了新的电压控制方法；第6章中增加了包含电力电子控制设备的AC-DC潮流计算；在第7章中包括了维修计划和电力系统可靠性；在第8章中，增加了电力市场下的自动发电控制；在第14章中增加了隔离器、熔断器和接触器等的介绍；在第15章中引入了数字继电器及其新趋势。　　第16～22章分别是地下电缆、架空线绝缘子、输电线机械设计、电晕、HVDC输电、配电系统和电压稳定性，其中大部分章节在第一版中是作为附录的，而电压稳定性是新加的1章。

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内容概要

《电力系统工程(第2版)》内容简介：本版电力系统工程较上版进行了广泛的修订，新增若干专题的介绍并更新了与最新技术发展相关的内容。此外，所有的专题都有多母线结构的例子进行说明。突出特点:系统地解释现代电力系统运行、控制和分析相关的基本原理。
详细介绍电力系统暂态、断路器和保护。
给出多个系统研究的算法。
附录给出MATLAB和SIMULINK用于电力系统分析的仿真程序。

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作者简介

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章节摘录

Intensification of Efforts to Develop Alternative Sources of Energy Including Unconventional Sources like Solar, Tidal Energy, etc. Distant hopes are pitched on fusion energy but the scientific and technological advances have a long way to go in this regard. Fusion when harnessed could provide an inexhaustible source of energy. A break-through in the conversion from solar to electric energy could provide another answer to the worlds steeply rising energy needs. Recycling of Nuclear Wastes Fast breeder reactor technology is expected to provide the answer for extending nuclear energy resources to last much longer. Development and Application of Antipollution Technologies In this regard, the developing countries already have the example of the developed countries whereby they can avoid going through the phases of intense pollution in their programmes of energy development. Bulk power generating stations are more easily amenable to control of pollution since centralized one-point measures can be adopted. Electric energy today constitutes about 30% of the total annual energy consumption on a worldwide basis. This figure is expected to rise as oil supply for industrial uses becomes more stringent. Transportation can be expected to go electric in a big way in the long run, when non-conventional energy resources are well developed or a breakthrough in fusion is achieved. To understand some of the problems that the power industry faces let us briefly review some of the characteristic features of generation and transmis- sion. Electricity, unlike water and gas, cannot be stored economically （except in very small quantities——in batteries）, and the electric utility can exercise little control over the load （power demand ） at any time. The power system must, therefore, be capable of matching the output from generators to the demand at any time at a specified voltage and frequency. The difficulty encountered in this task can be imagined from the fact that load variations over a day comprises three components——a steady component known as base load; a varying component whose daily pattern depends upon the time of day; weather, season, a popular festival, etc.and a purely randomly varying component of relatively small amplitude. Figure 1.l（b） shows a typical daily load curve. The character- istics of a daily load curve on a gross basis are indicated by peak load, and the time of its occurrence and load factor defined as

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编辑推荐

“书中的算例和练习题对帮助学生建立进而开发解决问题的分析程序非常有帮助。”　　《电力系统工程(第2版)》的写作风格在很多方面都非常出色：讲解清楚、语言流畅并且思路清晰等等。
新增章节　　电压稳定　　地下电缆　　架空线路绝缘子　　输电线路机械设计　　中性点接地　　电晕　　高压直流输电　　配电系统　　新增附录　　电能质量，变电站等

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精彩短评

1、发货的速度非常快，书也很好
2、Gook Book
3、快递不太满意~部分章节内容简单（电压稳定，高压直流输电等），感觉还不错，就是纸质有些脏

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