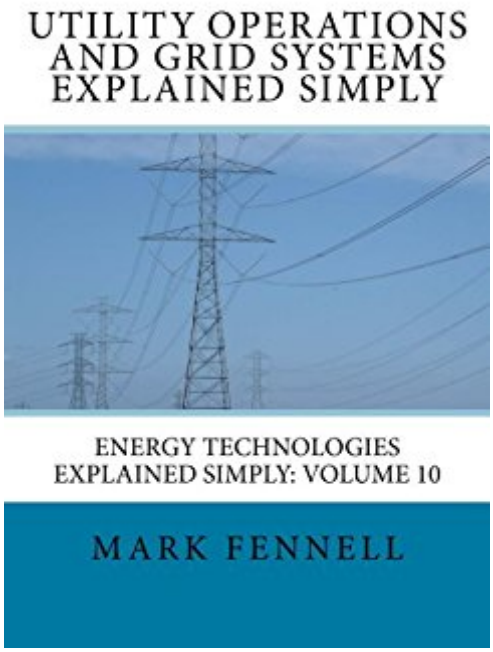
Utility Operations And Grid Systems Explained Simply



Synopsis

Utilities and power grids may seem complex, yet this book will guide you easily through the mysteries. In this book you will learn the basic operations of utilities and the basic operations of grids. You will learn how power is traded in the power markets. You will learn how utilities and grids maintain quality control, including how they monitor the flow of power and how they make adjustments as needed. You will learn how power failures occur and how we can minimize power failures in the future. You will also learn a great deal about the future of power distribution, particularly in the areas of distributed generation and smart grids. No technical background is required; this book will explain everything you need to know about the operation of utilities and power grids in a way that any reader can understand. This book is designed for policy-makers, community activists, and curious citizens. This book is also designed as an essential reference for energy technology students and for anyone working in the electrical power industry.10.1 Utility Company Operation BasicsThe first chapter provides an overview of utility operation, focusing on quality control for utilities. This chapter discusses in detail how to ensure that there is enough power to meet demand at any given time. 10.2 Monitoring and Communications SystemsThe second chapter discusses monitoring and communication systems. This chapter explains the SCADA system, including the components and operation. This chapter also explains the types of translation devices and the options for communication methods.10.3 Quality Control for Utilitiescauses, effects, and protection against significant variations for each factor.10.4 Basic Concepts of GridsChapter four provides a broad perspective of grids, with further clarification by comparing grids to the highway system. You will learn the possible players in a grid and their roles. You will learn the jobs of the grid manager. A major section of this chapter is where you will learn the advantages and disadvantages of grids, followed by an overview of an ideal grid system.10.5 Grid OperationsIn chapter five we go step by step through the sequence of grid operations. By the end of this chapter you will understand the details of grid operation, including several common variations.10.6 Quality Control for GridsChapter six discusses grid failures and quality control for grids. In this chapter you will learn how blackouts occur and how we can prevent them. The majority of chapter six provides detailed explanations of how to maintain quality control in any grid system, and thereby prevent power outages. You will learn about reliability oversight organizations such as NERC, FERC, and ERO. You will also learn the major sections of the Energy Policy Act of 2005 (most of which relate to reliability).10.7 Smart GridsChapter seven discusses â œSmart Gridsâ •. There are numerous technologies associated with the term â œsmart gridâ •, therefore chapter seven begins with an overview of smart grids, followed by an overview of smart grid technologies. Much of this chapter is

devoted to the proper and improper uses of smart grid technologies.10.8 The Future of Electrical DistributionThe final chapter discusses the future of electrical distribution. This is a very important chapter because the paths we take when developing power distribution systems will affect our safety, reliability, and economic security for many years. Therefore, this chapter explains the visions for the future of electrical distribution, followed by detailed descriptions. This chapter also discusses some additional features which are valuable for the ideal future of electrical distribution.

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Customer Reviews

Just Okay... Book has many grammatical errors and does lots of content repeating. It reads as if the author did lots of Wikipedia research then summarized. If you know nothing about the electrical industry, you may glean some understanding, yet there are several other books that will instill concepts and understanding. Save your money on this one...

I thought this was an interesting book. It was a little dull at some points, but I learned a lot about the

grid that I never even thought about.

Great start book for Introducing people to Grids--If you don't know why they exist you'll need one of my classes. Source recommend: Congressional Research Service--huge amount of information and free--you paid for it with your taxes.

This is my second book on power grids. I have gained a lot. I'm still missing some information such as what is being done to prevent the grid from going down. There are many ways the grid can be affected.

The author covered very negative subjects on the one energy source that could displace the Big Gorilla - fossil fuel, and that is nuclear power. I know the fossil fuel industry through people like the Koch brothers pay scientists and writers to put out negative information about nuclear power to insure they will never take over from fossil fuel, even though they are clean, smoke and soot-free and do not emit CO2. It would be good to hear the author come clean about whether his negatives views of nuclear were inspired by fossil fuel money.

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