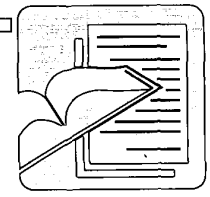
Books and Reports

and recent releases in mixed media



Electric Drives and Their Controls

Electric Drives and Their Controls, by Richard M. Crowder, published by Oxford University Press, Great Clarendon Street, Oxford OX2 6DP,U.K. and Oxford University Press, Inc., 198 Madison Avenue, New York, NY 10016, ISBN 0-19-856565-8.

This book shows the reader how to size, select, and implement an industrial drive system. The author, drawing on the experience of many years in industry before he turned to academic life, offers a practical, structured approach to drive systems. Particular emphasis is given to smaller drive systems with illustrations from the machine tool and robotics industry. It is at this smaller scale that automation of processes has increased the demand for drive systems. The text examines the usual decisions to be taken in obtaining a design solution. This is followed by a chapter giving information about position and velocity transducers which are vital to computer controlled systems. There is a comprehensive survey of motor types and their controllers together with appendices of useful data on power semiconductors and design standards.

Richard M. Crowder is senior lecturer in robotics and control, at the Department of Electrical Engineering, University of Southampton.

Insulation Coordination for Power Systems

Insulation Coordination for Power Systems, by Andrew R. Hileman, published by Marcel Dekker, Inc. of New York and Basel, ISBN 0-8247-9957-7.

Keeping in mind the conventional (or deterministic) method of insulation coordination, as well as the probabilistic method with its emphasis on statistical analysis, this book reviews factors of power transmission reliability, such as strike distances or clearances, arrangement and number of insulators, and use of overhead ground or shield wires. It assesses phase-ground and phase-phase clearances, supplemental tower grounding, and substation shielding. It evaluates insulation strength, traveling waves, line arresters, and induced overvoltages, comparing new insulation methods with those outlined in standard IEEE and EEC guides.

The author highlights sources of stress, such as lightning, switching, temporary overvoltages, and normal power frequency voltage. He considers operation of devices to reduce stress, such as surge arresters and closing resistors in circuit breakers.

Supplemented with end-of-chapter problem sets and over 1,700 literature citations, tables, drawings, and equations, *Insulation Coordination for Power Systems* is a reference for electrical, industrial power system, and manufacturing engineers, and a text for advanced undergraduate and graduate students in these disciplines.

Andrew R. Hileman is a private consultant specializing in electrical power systems and an instructor in power engineering programs at Pennsylvania State University, Monroeville, Pennsylvania. The author or coauthor of more than 50 conference papers and magazine articles, he is an IEEE Fellow, a former chair of the ANSI Committee on Insulation Coordination, and a member and award recipient of CIGRE. He received his BSEE from Lehigh University, Bethlehem, Pennsylvania, and MSEE from the University of Pittsburgh, Pennsylvania.

Customer Choice: Finding Value in Retail Markets

Customer Choice: Finding Value in Retail Electricity Markets, by Ahmad Faruqui and J. Robert Malko, published by Public Utilities Reports, Inc., 8229 Boone Blvd., Suite 401, Vienna, VA 22182, (800) 368-5001, FAX (703) 917-6964, E-mail pur@pur.com, Web www.pur.com.

Deregulation of the $200 billion U.S. electric power industry is currently in full swing. Customers in California, Pennsylvania, and several New England states already have the option to choose their energy provider. Analysts expect that 44 percent of the U.S. population will have choice available to them by the end of 2000. Ahmad Faruqui, manager of the retail and power markets for EPRI and principle author of the book states that "In California, more than 20 percent of the industrial customers representing 33 percent of the electricity consumption have switched providers in order to gain rate reductions of 3 to 5 percent. This is a higher rate of switching than AT&T experienced during the first year of telecommunications industry regulation."

The book is a collection of chapters written by experts in the utility industry. These include senior executives at utilities, unregulated power companies and regulatory commissions, as well as academics and researchers who specialize in competitive business strategies for all retail markets. This new book examines critical issues including: What are the driving forces behind customer choice? What size price reductions can most cus-

1999 Meeting on Power Engineering Instrumentation and Measurement

An IEEE regional meeting organized by the Uruguay Power Engineering Society and Instrumentation and Measurement Society joint chapter will be held in October 1999. For more information, contact Jorge Fernandez Daher, Laboratorio de UTE, Paraguay 2385, +598-2-9242042, FAX +598-2-5752503, E-mail j.daher@ieee.org.

tomers expect? How many customers are likely to switch to another provider? Can energy service providers make money in competitive power markets? What new technologies will support the new business strategies? What can we learn from the experience of recently deregulated industries such as natural gas, long distance telephony, airlines and banking? Does the electricity deregulation experience of other companies provide models for electric markets in the US?

Ahmad Faruqui specializes in strategic economic analysis of retail energy markets for EPRI.

J. Robert Malko is professor of finance in the college of business at Utah State University.

Intelligent Control, Power Electronic Systems

Intelligent Control, Power Electronic Systems, by Yasuhiko Dote and Richard G. Hoft, published by Oxford University Press, Great Clarendon Street, Oxford OX2 6DP,U.K. and Oxford University Press, Inc., 198 Madison Avenue, New York, NY 10016, ISBN 0-19-856466-X

This book describes intelligent control and its use in power electronic systems, specifically ac motor drives and uninterruptible power supply (UPS) systems. The book covers both the fundamentals of the subject and its practical applications.

From the Foreword by Lofti A. Zadeh, Director of Berkeley Soft Computing Center, California: "What is unusual about [this book] is that it starts with a description of more or less classical control techniques; moves on to modern control and state space techniques; addresses in detail the complex issues arising in the analysis and design of robust control; takes up digital signal processing controllers; and finally, presents a very insightful exposition of soft computing techniques and their application to advanced control of ac drives and UPS systems."

Yasuhiko Dote is professor and chair of the Department of Computer Science and Systems Engineering at the Muroran Institute of Technology, Muroran, Japan,

Richard G. Halt is professor emeritus of the University of Missouri, U.S.A.

Introduction to Power Electronics

Introduction to Power Electronics, by Denis Fewson, published by Oxford University Press, Inc., 198 Madison Avenue, New York, NY 10016, ISBN 0-340-69143-3.

Power electronics, the application of semiconductor devices to the control, and conversion of electrical power has increased in importance in recent years. The availability of solid state power switches has created a rapid expansion in applications from relatively low power control of domestic appliances to high power control of industrial processes and very high power control along transmission lines.

This book provides a comprehensive introduction to the entire range of devices available assuming only a basic knowledge of mathematics, circuit theory and electromagnetism. It describes the different circuit configurations into which the devices are connected, in order to control and convert power for industrial applications.

This textbook is suitable for electronic engineering students at about second year degree or final year HND level, who are studying the subject of power electronics for the first time. The material covered is sufficient for a 1 year course with average class contact of 3 hours per week, or 20 credit points of a modular course with 120 credit points per year.

Denis Fewson is a senior lecturer at the School of Electronic Engineering, Middlesex University, U.K.

Relay Brochures

Cooper Power Systems' Edison protective relay product line is described in a brochure from that company. Seventeen different relays are available, all microprocessor-based, to meet nearly all protection requirements. All are programmed using either a PC or the front panel keys. The compact relays use Modbus protocol for communications, and have compete measurement and event recording capability.

Solutions to power quality problems such as power factor correction, system operating efficiency, harmonics and voltage flicker are addressed in a second brochure issued by Cooper Power Systems. Both design and hardware solutions are offered.

Cooper Power Systems is a supplier of electrical distribution equipment, including transformers, switchgear, protection devices and capacitors. For more information, contact Cooper Power Systems Customer Information Center, (877) 277-4636.

1999 Symposium on Nuclear Power Systems

The 1999 Symposium on Nuclear Power Systems (SNPS) will be held 26-28 October 1999 in Seattle, Washington. The sessions will be held in conjunction with the Nuclear Science Symposium and the Medical Imaging Conference. The technical paper sessions on nuclear power systems cover subjects currently of major interest to the operation of nuclear power stations and supporting services and suppliers, including:

- Upgrading digital technology for reactor protection, I&C, and other systems
- Reliability-based maintenance and plant modernization
- New aspects on equipment qualification
- Plant life extension with met effectiveness
- Implementing the maintenance rule
- Risk informed regulation.

A special session on nuclear standards is part of this program and is provided yearly by the IEEE PES Nuclear Power Engineering Committee (NPEC), which also meets at this symposium on 26 October. Also, the SNPS is adding these innovations in 1999: a special annual overview report by the NRC of major importance to nuclear power utilities; plenary sessions of NPEC with reports applicable to operating NPGS; and more

For more information, contact Jay Forster, GE Nuclear Energy, M/C 801, 175 Curtner Ave., San Jose, CA 95125; Phone (408) 026-5090; Fax (408) 925-5312; E-mail jay.forster@gene.ge.com.