1. Record Nr. UNINA9910299815103321

Autore	Corsi Sandro
Titolo	Voltage Control and Protection in Electrical Power Systems [[electronic resource]] : From System Components to Wide-Area Control / / by Sandro Corsi
Pubbl/distr/stampa	London : , : Springer London : , : Imprint : Springer, , 2015
ISBN	1-4471-6636-1
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (579 p.)
Collana	Advances in Industrial Control, , 1430-9491
Disciplina	621.319
Soggetti	Power electronics Control engineering Energy systems Power Electronics, Electrical Machines and Networks Control and Systems Theory Energy Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Relationship between Active and Reactive Power and Voltage -- Equipment for Voltage and Reactive Power Control -- Grid Voltage and Reactive Power Control -- Grid Hierarchical Voltage Regulation -- Implementation Study of Secondary Voltage Regulation -- SVR-TVR Dynamic Tests with Contingencies -- Examples of Hierarchical Voltage Control in the World -- Economic Recognition of the Voltage Service -- Voltage Stability -- Voltage Stability Indicators -- Voltage Control at the Distribution Smart Grids -- Wide-area Voltage Protection -- OPF and Voltage Control.
Sommario/riassunto	Based on the author’s twenty years of experience, this book shows the practicality of modern, conceptually new, wide area voltage control in transmission and distribution smart grids, in detail. Evidence is given of the great advantages of this approach, as well as what can be gained by new control functionalities which modern technologies now available can provide. The distinction between solutions of wide area voltage regulation (V-WAR) and wide area voltage protection (V-WAP) are presented, demonstrating the proper synergy between them when they

operate on the same power system as well as the simplicity and effectiveness of the protection solution in this case. The author provides an overview and detailed descriptions of voltage controls, distinguishing between generalities of underdeveloped, on-field operating applications and modern and available automatic control solutions, which are as yet not sufficiently known or perceived for what they are: practical, high-performance and reliable solutions. At the end of this thorough and complex preliminary analysis the reader sees the true benefits and limitations of more traditional voltage control solutions, and gains an understanding and appreciation of the innovative grid voltage control and protection solutions here proposed; solutions aimed at improving the security, efficiency and quality of electrical power system operation around the globe. Voltage Control and Protection in Electrical Power Systems: From System Components to Wide-Area Control will help to show engineers working in electrical power companies and system operators the significant advantages of new control solutions and will also interest academic control researchers studying ways of increasing power system stability and efficiency. Advances in Industrial Control aims to report and encourage the transfer of technology in control engineering. The rapid development of control technology has an impact on all areas of the control discipline. The series offers an opportunity for researchers to present an extended exposition of new work in all aspects of industrial control.