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Titolo	Power Systems Resilience : Modeling, Analysis and Practice // edited by Naser Mahdavi Tabatabaei, Sajad Najafi Ravadanegh, Nicu Bizon
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Descrizione fisica	1 online resource (XXIII, 353 p. 129 illus., 100 illus. in color.)
Collana	Power Systems, , 1612-1287
Disciplina	621.317
Soggetti	Power electronics Quality control Reliability Industrial safety Computer software—Reusability Power Electronics, Electrical Machines and Networks Quality Control, Reliability, Safety and Risk Performance and Reliability
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Foreword -- Preface -- Modeling and Analysis of Resilience for Distribution Networks -- Optimal Scheduling Networked Microgrids to Resilience Enhancement Under Uncertainty -- Multi-Stage Resilient Distribution System Expansion Planning Considering Non-Utility Gas-Fired Distributed Generation -- Power System Flexibility and Resiliency -- Power System Connectivity and Resiliency -- Malicious and Deliberate Attacks and Power System Resiliency -- Resilient Thorough Microgrids -- Power Systems Recovery and Restoration Encounter with Natural Disaster and Deliberate Attacks -- Resilience Enhancement of Cyber-Physical Systems: A Review -- Issues in Securing Critical Infrastructure Networks for Smart Grid Based on Scada, and Other Industrial Control and Communication Systems -- Continuity of Electricity Supply and Specific Indicators -- Resilience Metrics Development for Power Systems -- Resilient Optimal Power Flow with Evolutionary Computation Methods - Short Survey.

This book presents intuitive explanations of the principles and applications of power system resiliency, as well as a number of straightforward and practical methods for the impact analysis of risk events on power system operations. It also describes the challenges of modelling, distribution networks, optimal scheduling, multi-stage planning, deliberate attacks, cyber-physical systems and SCADA-based smart grids, and how to overcome these challenges. Further, it highlights the resiliency issues using various methods, including strengthening the system against high impact events with low frequency and the fast recovery of the system properties. A large number of specialists have collaborated to provide innovative solutions and research in power systems resiliency. They discuss the fundamentals and contemporary materials of power systems resiliency, theoretical and practical issues, as well as current issues and methods for controlling the risk attacks and other threats to AC power systems. The book includes theoretical research, significant results, case studies, and practical implementation processes to offer insights into electric power and engineering and energy systems. Showing how systems should respond in case of malicious attacks, and helping readers to decide on the best approaches, this book is essential reading for electrical engineers, researchers and specialists. The book is also useful as a reference for undergraduate and graduate students studying the resiliency and reliability of power systems.
