

Contents

1 Power System Dynamic Equilibrium, Power Flow, and Steady-State Stability	1
Peter W. Sauer and M. A. Pai	
2 Fast Computation of the Steady-State Stability Limit	27
Savu C. Savulescu	
3 Practical Aspects of Steady-State Stability Assessment in Real-Time	63
José Santos Vergara Perez, Tran Anh Thai, Nguyen Duc Cuong, Horia S. Campeanu and Savu C. Savulescu	
4 Composite Approach for the Early Detection, Assessment, and Visualization of the Risk of Instability in the Control of Smart Transmission Grids	97
Roland Eichler, Chris O. Heyde and Bernd O. Stottok	
5 Power System Transient Stability Preventive and Emergency Control	123
Daniel Ruiz-Vega, Louis Wehenkel, Damien Ernst, Alejandro Pizano-Martínez and Claudio R. Fuerte-Esquivel	
6 Online Dynamic Security Assessment	159
Jorge L. Jardim	
7 Practical Issues for Implementation of Online Dynamic Security Assessment Systems	199
Lei Wang, Xi Lin, Fred Howell and Kip Morison	
8 The Case for Using Wide-Area Monitoring and Control to Improve the Resilience and Capacity of the Electric Power Grid	235
Jay Giri, Manu Parashar, Rene Avila-Rosales and Douglas Wilson	

9	Emergency Monitoring and Corrective Control of Voltage Instability	279
	Thierry Van Cutsem and Costas Vournas	
10	Online Voltage Security Assessment	305
	Costas Vournas and Thierry Van Cutsem	
11	Trajectory Sensitivity Analysis for Dynamic Security Assessment and Other Applications in Power Systems	335
	Tony B. Nguyen and M. A. Pai	
12	Model Predictive Real-Time Control of Electric Power Systems Under Emergency Conditions	367
	Marek Zima and Göran Andersson	
13	The Role of Power System Visualization in Enhancing Power System Security	387
	Thomas J. Overbye	
	Index	409



<http://www.springer.com/978-3-319-06679-0>

Real-Time Stability in Power Systems
Techniques for Early Detection of the Risk of Blackout
Savulescu, S. (Ed.)
2014, XXII, 412 p. 205 illus., 65 illus. in color., Hardcover
ISBN: 978-3-319-06679-0