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Contradiction to Security; 2.9 Conclusions; References; Further Reading; Chapter 3 Interdependent Energy Infrastructure Simulation System; 3.1 Introduction; 3.2 leiss Simulation Concepts; 3.3 The Complexity of Multiple Infrastructures
3.4 leiss Case Study: Urban InterdependenciesReferences; Further Reading; Chapter 4 Object-Oriented Approaches for Integrated Analysis of Interdependent Energy Networks; 4.1 Introduction; 4.2 Scientific Overview; 4.3 System Modeling; 4.4 Classes and Objects Relationships; 4.4.1 Power System Classes; 4.4.2 Hydro Database; 4.4.3 Fuel Network Classes; 4.4.4 Transportation Network Classes; 4.4.5 Objects Relationship; 4.5 Information Platform; 4.6 Scenario Description; 4.7 Case Study Example; 4.7.1 Physical Chilean Networks; 4.7.2 Network Dependencies; 4.7.3 Specific Activity Models; 4.7.4 Results
4.8 ConclusionReferences; Further Reading; Chapter 5 Self-healing and Resilient Energy System; 5.1 Introduction; 5.2 The Bigger Picture; 5.3 Infrastructures Under Threat; 5.4 A Stressed Infrastructure; 5.5 Where are we and How did we Get Here?; 5.6 Chief Grid Problems; 5.7 Options and Possible Futures-What will it Take to Succeed?; 5.8 The Road Ahead; 5.9 Cost and Benefit; 5.10 Next Steps; Acknowledgments; References; Further Reading; Chapter 6 Nano-enabled Power Source; 6.1 Scientific Overview; 6.1.1 High Power Cells; 6.1.2 High Capacity Cells
6.2 Global Effort on Nano-Enabled Power Source Technologies

Sommario/riassunto

Energy Systems Security features articles from the Wiley Handbook of Science and Technology for Homeland Security covering topics related to electricity transmission grids and their protection, risk assessment of energy systems, analysis of interdependent energy networks. Methods to manage electricity transmission disturbances so as to avoid blackouts are discussed, and self-healing energy system and a nano-enabled power source are presented.
