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Nota di contenuto	Introduction -- Wind Energy Situation in Egypt -- The Potential of Wind Power -- Wind Power Generation in Egypt -- Grid-Connected Wind Turbine Systems -- Problem Formulation -- LVRT Techniques -- Al-Zafarana Wind Energy Conversion System.-System Under Study -- Wind Turbine Model -- Doubly Fed Induction Generator -- Operating Modes of DFIG -- Power Flow of DFIG -- Performance Analysis of an Egyptian Electrical Network-Connected Al-Zafarana Wind Energy System During Grid Faults -- Modeling of System Under Study -- Dynamic Behavior of DFIG-Based Wind Turbine During Grid Faults -- Result and Discussion -- Protection Improvement of an Egyptian Electrical Network-Connected Al-Zafarana Wind Energy System -- DFIG Protection Schemes -- Modeling of the System Under Study with a Series Resistor

	Protection Scheme -- Modeling of the System Under Study with a Crowbar and DC-Chopper Protection -- Comparison Between Protection Schemes for DFIG During the Grid Faults -- Conclusions and Suggestions for Future Work -- Appendices.
Sommario/riassunto	Protection Improvement of Electrical Network-Connected Wind Energy Systems: Case Studies, Strategies, and Techniques from the Egyptian Power System focuses on improving the protection of wind energy systems linked to an electrical network. It explores various protection strategies and techniques to enhance the wind energy systems' capability of withstanding low-voltage ride-through (LVRT) and reduce the total annual cost. The book addresses the advantages and disadvantages of each protection strategy, providing a comprehensive evaluation of the protection techniques employed to improve LVRT capabilities. The authors use the Al-Zafarana Wind Energy Conversion System as a case study system for simulation tests in a MATLAB/Simulink environment. Examines innovative and advanced solutions for integrating renewable energy sources into the electrical network; Looks at capabilities of grid-connected wind turbines and interconnection standards and international grid codes; Includes extensive case studies and examples with solutions. .