

SPECIAL ISSUE

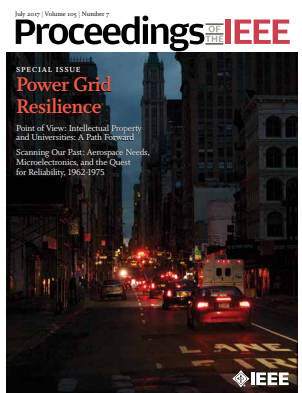
POWER GRID RESILIENCE

Edited by J. Wang and H. Gharavi

- 1202 Power Systems Resilience Assessment: Hardening and Smart Operational Enhancement Strategies**
By M. Panteli, D. N. Trakas, P. Mancarella, and N. D. Hatziargyriou
 [INVITED PAPER] This paper provides a power system resilience assessment framework for system hardening and operational enhancement.
- 1214 Resilience-Oriented Pre-Hurricane Resource Allocation in Distribution Systems Considering Electric Buses**
By H. Gao, Y. Chen, S. Mei, S. Huang, and Y. Xu
 [INVITED PAPER] This paper proposes a pre-hurricane resource allocation method considering generation fuel, batteries, and electric buses.
- 1234 An Integrated Approach for Power System Restoration Planning**
By F. Qiu and P. Li
 [INVITED PAPER] This paper describes a novel integrated approach for bulk power system restoration.
- 1253 Battling the Extreme: A Study on the Power System Resilience**
By Z. Bie, Y. Lin, G. Li, and F. Li
 [INVITED PAPER] This paper presents a load restoration framework based on distribution automation technologies.
- 1267 Modernizing Distribution System Restoration to Achieve Grid Resiliency Against Extreme Weather Events: An Integrated Solution**
By C. Chen, J. Wang and D. Ton
 [INVITED PAPER] This paper aims to design a decision support tool for closed-loop distribution system restoration.
- 1289 Networked Microgrids for Enhancing the Power System Resilience**
By Z. Li, M. Shahidehpour, F. Aminifar, A. Alabdulwahab, and Y. Al-Turki
 [INVITED PAPER] This paper discusses how to form a networked microgrid cluster for improving power system resilience.
- 1311 Distributed Power-Generation Systems and Protection**
By F. Blaabjerg, Y. Yang, D. Yang, and X. Wang
 [INVITED PAPER] This paper investigates the role of distributed power generation in power grid resilience improvement and the associated protection issues.
- 1332 Microgrid Protection**
By A. Hooshyar and R. Iravani
 [INVITED PAPER] This paper focuses on the new requirements of microgrid protection in comparison with the traditional subtransmission and transmission protection systems.
- 1354 Resilience of Energy Infrastructure and Services: Modeling, Data Analytics and Metrics**
By C. Ji, Y. Wei, and H. V. Poor
 [CONTRIBUTED PAPER] This paper discusses data analytics-based power grid resilience modeling and the relevant metrics.

DEPARTMENTS

- 1195 POINT OF VIEW**
 Intellectual Property and Universities: A Path Forward
By E. W. Cowell III and J. H. Reed
- 1199 SCANNING THE ISSUE**
 Power Grid Resilience
By J. Wang and H. Gharavi
- 1456 SCANNING OUR PAST**
 Aerospace Needs, Microelectronics, and the Quest for Reliability: 1962–1975
By P. E. Ceruzzi
- 1466 FUTURE SPECIAL ISSUE/ SPECIAL SECTIONS**



On the Cover: A photo of the streets of lower Manhattan in New York, NY, USA during the blackout after hurricane Sandy drives home the focus of this special issue. (Credit: Jannis Tobias Werner/Shutterstock.com)

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By Z. Li, M. Shahidehpour, and F. Aminifar

|INVITED PAPER| This paper addresses cybersecurity issues in distributed power systems, in particular, microgrids.

1389 **Cyber–Physical Attack-Resilient Wide-Area Monitoring, Protection, and Control for the Power Grid**

By A. Ashok, M. Govindarasu, and J. Wang

|INVITED PAPER| This paper proposes a comprehensive attack-resilience wide-area monitoring, protection, and control framework with a layered defense-in-depth approach.

1408 **Synchrophasor Sensor Networks for Grid Communication and Protection**

By H. Gharavi and B. Hu

|INVITED PAPER| This paper focuses on using synchrophasor data to improve the effectiveness of grid protection and reducing outages.

1429 **Hurricanes and Power System Reliability—The Effects of Individual Decisions and System-Level Hardening**

By A. C. Reilly, G. L. Tonn, C. Zhai, and S. D. Guikema

|INVITED PAPER| This paper discusses a novel perspective on how individual decisions can collectively affect system-level hardening through an integrated outage-prediction and agent-based model.

1443 **Demand-Side Resiliency and Electricity Continuity: Experiences and Lessons Learned in Japan**

By H. Aki

|INVITED PAPER| This paper discusses the experiences and lessons learned from Japan using demand-side resources to improve electricity continuity.

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