



PSERC WEBINAR

PMU Data Analytics for the Resilient Electric Grid

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Keeping the power on especially to the critical facilities such as hospitals and fire department during extreme adverse operating scenarios is essential. Recent events such as Ukraine attack and Hurricane Maria has exposed the vulnerabilities of the electric grid against extreme events. There is a need for a flexible and resilient grid to minimize the impact of component failures given adverse events. Availability of data from massive sensors deployment enables new monitoring and control strategies such as early alarm and diagnosis, predicative analysis, distributed and decentralized control, flexible and adaptive control. Data from phasor measurement units (PMUs) is generated and monitored ubiquitously in smart grids, but largely unexploited in discovering knowledge and new solutions for critical power grid applications to enhance the resiliency of the smart grid. Availability of additional sensor data brings its own challenges including data anomalies, real time processing and cyber-security management. This talk will focus on real time PMU data analytics to enhance situational awareness and decision support for enabling resiliency of the power grid and associated challenges and opportunities.

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Anurag K. Srivastava is an associate professor of electric power engineering at WSU and the director of the Smart Grid Demonstration and Research Investigation Lab (SGDRIL). He received his Ph.D. degree in electrical engineering from the Illinois Institute of Technology in 2005. Dr. Srivastava high impact research projects resulted in tools installed at the utility control center supported by US Department of Energy, National Science Foundation, and other funding agencies by more than \$50M. He is a senior member of the IEEE, secretary of power system operation SC, chair of PES voltage stability working group, vice-chair of the IEEE Power & Energy Society's (PES) PEEC committee, and chair of PES synchrophasors applications working group. Dr. Srivastava is an editor of the IEEE Transactions on Smart Grid, and IEEE Transactions on Power Systems. He is an IEEE distinguished lecturer and has delivered 30+ keynotes/ tutorials. He is author of more than 300 technical publications including a book on power system security and 3 patents.

