PSERC WEBINAR

Enabling the Resilient Electric Grid

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There is a need for a flexible and resilient grid to minimize the impact of component failures during adverse high impact low frequency (HILF) events. Resiliency is defined as the ability to serve critical loads during HILF events. Formal metrics are needed to quantify anticipate, withstand, and restoration capability for the transmission and distribution grid resiliency. Additionally, advanced algorithms and tools are needed for decision support and to coordinate edge resources. These algorithms include proactive control, corrective control, and network segmentation or islanding with resource management. For a forecasted HILF event, proactive switching and resource allocation can minimize the impact. If all the expected event-vulnerable buses are proactively isolated from the event-resistant subset of the grid through apriori manual or automatic switching algorithms, some of the critical loads in the vulnerable grid can have continued energy supply. Network segmentation is required as necessary with the coordination of community resources and distributed energy sources (DERs), followed by optimal corrective measures. This talk will focus on grid control architecture and decision support for enabling resiliency of the power grid and associated challenges and opportunities.

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LINK TO WEBINAR   (11:00-12:00 P.M. PDT)

Anurag K. Srivastava is an associate professor of electric power engineering at Washington State University and has a joint appointment as a Senior Scientist with the Pacific Northwest National Lab (PNNL). He received his Ph.D. degree in electrical engineering from the Illinois Institute of Technology in 2005. His research interest includes data-driven algorithms for power system operation and control, including resiliency analysis. He is vice-chair of the IEEE Power & Energy Society's (PES) bulk power system operation SC, chair of PES voltage stability working group, chair of PES synchrophasors applications working group, co-chair of distributed optimization application in power grid, vice-chair of tools for power grid resilience TF and member of CIGRE C4.47/ C2.25 Resilience WG. Dr. Srivastava is serving or served as an editor of the IEEE Transactions on Smart Grid, IEEE Transactions on Power Systems, and IEEE Transactions on Industry Applications. He is the author of more than 300 technical publications, including a book on power system security and 4 patents.