

UI-ASSIST WEBINAR: Reliability Modeling and Improvement of Distribution Systems with Distributed Energy Resources



U.S. INDIA COLLABORATIVE FOR SMART DISTRIBUTION SYSTEM WITH STORAGE



Reliability modeling is typically performed at three levels, sometimes called hierarchical levels. The first one is generation adequacy, the second is generation and transmission and the third includes distribution. Most of the research efforts in the past have focused on the first two levels and the distribution systems have not received sufficient attention from researchers. With the integration of distributed energy resources, the distribution systems are becoming an interesting and fruitful subject of research. Actually if the distributed energy resources are also included, the distribution systems can become more complex than the composite power systems. This talk will focus on two issues in reliability modeling of distribution systems. The first is the consideration of cyber-physical integration which introduces cyber dependent failures that introduce dependencies and make the reliability modeling more complicated. Generally the component failures have been considered independent or have limited dependency. Inclusion of cyber introduces more widespread dependencies and make the analysis more complex and computationally less tractable. The second topic is inclusion of distributed energy resources. These include renewables like the PVs, storage and impact of demand response. These resources further complicate reliability analysis. Some results achieved as well as the future plans will be described.

Please join our monthly UI-ASSIST webinar on **April 25, 2019, 11am – 12pm PST**

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