



## GRID CONTROL CHALLENGES: RELIABILITY AND RESILIENCY

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**ANJAN BOSE**

**Energy Systems Innovation Center/WSU**

**Tuesday, November 1 • 11:00 AM – Noon (PT) • EME 26**

### OVERVIEW

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The electric grid will be facing many challenges as the generation mix on the grid changes from mainly fossil fuel to all non-carbon resources. The control and operation challenges are:

- Automatic control: Both AGC and Voltage Control will depend on distribution side generation or storage resources
- Manual control: Maintaining generation reserve, adjusting voltage set-points and changing topology will require TSO-DSO coordination
- Protection: Distribution protection has to handle two-way flow; Distributed generation will require fault ride-through and protection from oscillations

### BIO

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Anjan Bose is a Regents Professor and the Distinguished Professor of Electric Power Engineering at Washington State University in Pullman, Washington, where he also served as the Dean of the College of Engineering & Architecture from 1998 to 2005. He served the US Department of Energy as a Senior Advisor on the electric power grid in the Obama administration.

He has worked in the electric power industry as well as academe for five decades. He received his BS, MS and PhD, all in Electrical Engineering, from the Indian Institute of Technology – Kharagpur, University of California – Berkeley, and Iowa State University, respectively.

