Thomas J. Overbye
TEES Distinguished Research Professor
in Electrical and Computer Engineering
at Texas A&M University (TAMU)
Member of the National Academy of Engineering

Enhancing the Resilience of Large-Scale Electric Grids

Time: Wednesday, February 28, 2018, 1:00 pm – 2:00 pm
Location: Marvin Center 302

Abstract
Large-scale electric grids are an indispensable critical infrastructure, and the vast majority of people in our society will continue to receive most of their electric energy from such grids for decades into the future. The impact of the loss of a portion of the electric grid ranges from minor inconveniences for most when the outage is small and short, to potentially catastrophic when the blackout covers a large region for a long duration. Keeping the lights on involves designing and operating the electric grid with a goal of simultaneously increasing two related but ultimately quite different concepts: reliability and resilience. This talk considers how to enhance the resiliency of large scale electric grids, with a focus on the impact of what the North American Electric Reliability Corporation (NERC) calls High Impact, Low Frequency (HILF) events. These are statistically unlikely but still plausible events that, if they were to occur, could have catastrophic consequences on the grid and hence society. Examples include large-scale cyber or physically attacks, pandemics, electromagnetic pulses (EMPs), and geomagnetic disturbances (GMDs).

Biography
Thomas J. Overbye is a TEES Distinguished Research Professor in Electrical and Computer Engineering at Texas A&M University (TAMU). Prior to joining TAMU in January 2017 he was the Fox Family Professor of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign (UIUC). He received his BS, MS, and Ph.D. degrees in Electrical Engineering from the University of Wisconsin-Madison. He was employed with Madison Gas and Electric Company from 1983 to 1991. Dr. Overbye is the original developer of PowerWorld Simulator and a co-founder of PowerWorld Corporation. He is also the recipient of the Alexander Schwarzkopf Prize for Technological Innovation, a University of Wisconsin-Madison College of Engineering Distinguished Achievement Award, the IEEE Power and Energy Society Outstanding Power Engineering Education Award and is a member of the US National Academy of Engineering.