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Energy Storage Performance Characterization for Microgrid Applications

Dr Mariesa L. Crow
Missouri S&T

Date: October 12, 2017

Time: 6pm

Location: G-31 room in Emerson Hall at Missouri S&T
301 W. 16th St., Rolla, MO, 65409-0040

Abstract

Renewable energy-powered microgrids have proven a valuable technology for self-contained (off-grid) energy systems. These microgrids have proven effective in reducing fuel consumption and are cost effective in locations without grid access. The United States military establishes forward operating bases (FOBs) globally as an effective method of temporary troop deployment in active battlefields. These FOBs are typically powered by gasoline or diesel generators, which are not cost effective due to rising fuel and fuel transportation costs, and put soldiers in harm's way due to fuel transportation in battlefields proving to be an effective target of enemies' improvised explosive devices. Renewable energy-powered microgrids are proving to be a potentially valuable tool to meet future energy demands at these FOBs in a portable and effective manner. These microgrids also allow the user to employ a variety of energy generation and storage devices such as photovoltaic (PV) and wind turbines to optimally meet site-specific needs. This seminar will discuss recent efforts to characterize different energy storage systems for use in microgrids.

Bio

Mariesa L. Crow is the Fred Finley Distinguished Professor of Electrical Engineering at Missouri S&T. She received her BSE in Electrical Engineering from the University of Michigan and her PhD in Electrical Engineering from the University of Illinois - Urbana/Champaign. Her area of professional interest is computational methods and power electronics applications to renewable energy systems and energy storage. She has been PI or Co-PI on \$21 million in externally funded research sponsored by the National Science Foundation, Department of Energy, Department of Defense, Department of Transportation, Department of Education, the State of Missouri, and several utilities. She has authored over 200 technical articles and several textbooks and book chapters. She is the IEEE Power & Energy Society VP of Publications. She is a Registered Professional Engineer in the State of Missouri and a Fellow of the IEEE.