Stanford University

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Stanford SmartGrid Seminar

Stochastic Reserve Determination: Case Study with the California ISO

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1:00pm-2:00pm Thursday, Mar. 13th, Y2E2 101

Abstract: This paper describes a case study for determining reserve requirements in the California ISO service territory, based on random errors in future wind forecasting at Tehachapi Pass. It utilizes random scenarios of wind and multiple settlement production simulation to simulate the behavior of the power system under perfect foresight and imperfect foresight. The simulation is conducted on a detailed model of the Western Interconnection. The simulation results demonstrate the value of utilizing a method of determining reserve requirements that depends on both random forecast errors and the current system operations context, versus current practice and other methods.

Bio: Dr. Robert Entriken is a Principle Technical Leader for the Grid Operations and Planning research program EPRI, managing projects addressing power system transformation and grid integration issues. He has been a liaison to the Electric Transportation research program for five years, helping make Plug-In Electric Vehicles (PEVs) valuable resources for the power system. He holds a B.S. degree in Electrical Engineering from Carnegie Mellon University, holds M.S. and Ph.D. degrees in Operations Research from Stanford University.