

**Title:**

Development of ERCOT State Estimator Health Assessment Tools (ESAT)

**EPES Seminar:**

January 11, 2011

**Abstract:**

In this presentation, the speaker will share his summer internship experience at Electric Reliability Council of Texas (ERCOT). A short description of ERCOT will be presented at first, including some basic information such as its organization, responsibilities, its geographical coverage and market structure. The speaker will outline the role and functionality of the Advanced Network Applications (ANA) group where he served as System Operations Support Specialist Trainee. State Estimation is one of the integral components of the real time security monitoring. The Real-Time Network Security Analysis monitors transmission elements in the ERCOT transmission grid for limit violations and to verify electrical bus voltages are operating within defined limits. The control system operators provide the first line of defense against system outages and are responsible for the reliable operation of the power grid. Giving them support is the Operations group under which the principal duty of the ANA group is to continually monitor State Estimation and assess its health. The speaker will describe a real time tool that he developed to assess the state estimator health of the entire ERCOT grid (ESAT Dashboard) and also an alerting tool. The experience gained and the lessons learned during the summer internship will also be discussed.

**Brief biography:**

Subhadarshi Sarkar, currently a PhD student in ECpE at Iowa State University, had been on a 14 week summer internship at ERCOT from May to August 2009. He received his B.E degree in Electrical Engineering from Bengal Engineering & Science University, Shibpur India in 2007. His main research areas involve grid integration of renewable energy, associated power system performance issues, voltage security etc.