Abstract: The primary objective of transmission planning is to expand the transmission system for delivering generation reliably and effectively to serve the load. In the past when utilities are vertically integrated (i.e. owning generation, transmission and distribution), transmission planning is a part of the integrated resource planning (IRP) process and the objective is to deliver its own generation to its own load. As the economic benefits such as reserve sharing, economic import, mutual assistance, etc. from joining a power pool become apparent and significant, the planning objective was extended to coordinate the planning of inter-regional tie lines for transmitting relatively limited amount of energy across systems to load centers. As the industry is being restructure, inter-regional and regional transmission planning is evolving into centralized transmission planning that is performed by Regional Transmission Organizations (RTO). The most important charge to the RTO planning function is to develop the transmission system to facilitate the competition among independently owned generation and those separated from the traditional industry. In addition to developing projects for maintaining system reliability, current transmission planning function must also take into consideration the development of projects for improving the overall system economic. These projects include economic transmission projects as well as projects to provide transmission services and to interconnect new generators and merchant transmissions. Most recently, as ordered by the Federal Energy Regulatory Commission (FERC) in its Order No 1000, transmission planning must also consider public policy mandates and initiatives such as Renewable Portfolio Standards (RPS), Demand Responses and Energy Efficiency programs. The objective of this seminar is to walk through the evolution of the transmission planning process and discuss key obstacles, lessons learned and upcoming problems. During the discussions, on-going activities and previous research work in this area will also be presented.

Biography: Ron Chu is the Principal Engineer at the Transmission Operations and Planning Department of Exelon Corporation. His primary responsibilities include planning the transmission system, coordinating the planning processes with PJM Regional Transmission Organization and other PJM member companies, and providing consultation within the corporation. He has extensive experience with the current PJM structure, planning functions, congestion management system and energy market settlement system through his active participation in the development of the current PJM restructure. He was the Manager, Transmission Planning prior to the current position. Dr. Chu received his Bachelor of Electrical Engineering from the University of Minnesota and his MS and Ph.D. degrees from the University of Pennsylvania. He joined the Electrical and Computer Engineering Department of Drexel University after graduation. Since 1984, he has been with PECO Energy Company that is now a subsidiary of the Exelon Corporation after PECO Energy merged with Commonwealth Edison in Chicago. He is an IEEE Fellow and a Registered Professional Engineer in the Commonwealth of Pennsylvania.