	October 16th , 2004	

The San Francisco Power Engineering Society
Presents a Workshop on

Congestion Management in Power Systems

Course Description

Congestion management in power systems is a topic of great interest for all players in the energy business. More specifically for, IPPs, ISOs, RTOs, IOUs, FERC, PUCs and ultimately all of us, the ratepayers. This in-depth course, provided by industry stalwarts, is designed to provide a detailed description of various aspects of congestion management in power system operations. The day-long course consists of units, each geared towards addressing specific aspects of congestion management. The first part provides a primer, followed by market design basics as envisioned by the FERC approach. Having learned about the FERC approach to market design and congestion management, the focus shifts to the California market. As a final step, a comprehensive overview of currently used, state-of-the-art software tools and technologies is provided followed by software demonstrations.

Prerequisites

None. The course is designed for a general audience.

What will Attendees Learn?

This intensive one-day course will provide participants an in-depth understanding of the basics of congestion management in power systems. Participants will learn about congestion, how to deal with it, its financial impacts, its impact on market design as envisioned by FERC and the CAISO and learn about all the state-of-the-art software tools and technologies of the trade. Software demonstrations by leading vendors will provide a grand finale to driving the concepts home.

Who Should Attend this Course?

- Employees of electric utilities, ISOs, RTOs, MUNIs, PUC, CEC etc.
- Professional Engineers seeking Professional Development Hours (PDH)
- Entry-level, mid-level and senior level personnel dealing with energy issues
- Students of power system specialization

Contact	**Venue**
Shirin Tabatabai PG&E, Mail Code B15A, P.O. Box 770000, San Francisco, CA 94177. Tel: (415) 973-1474, E-mail: sxth@pge.com	Science Building Room 101(SCI-101) San Francisco State University, San Francisco, CA 94132

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Agenda

8:00 – 8:15 a.m.
Check-in and Coffee

8:15 – 8:30 a.m.
Welcome and Introductions
-By Shimo Wang, IEEE-ADCOM

8:30 – 9:50 a.m.
Congestion Management, A Primer
-By Ali Amirali, CALPINE

- Basic Concepts in Power System Operations
- What is Congestion?
- Why does it need to be managed?
- Congestion Management Techniques

9:50 – 10:00 a.m.
Break

10:00 – 11:30 a.m.
Market Design – The FERC Approach to Congestion Management – By Stephen Lee, EPRI

- Incorporating Congestion Management techniques in Market Design
- Functional Requirements of Congestion Management Tools

11:30 a.m. – 12:30 p.m.
Group Luncheon

12:30 – 2:00 p.m.
Congestion Management Issues at CAISO - By Lorenzo Kristov, CAISO

- How does the ISO deal with Congestion
- How does Congestion affect ISO Operations?
- Operational Tools
- Operational Procedures

2:00 – 3:00 p.m.
Overview of Software Tools dealing with Congestion Management
- By Tom Q. Zhang, SJSU

- Tools in the Market Place
- State-of-the-art Technologies – A Review

3:00 – 3:10 p.m.
Break

3:10 – 3:55 p.m.
Software Demonstration 1
-By Rajat Deb, LCG Consulting

3:55 – 4:40 p.m.
Software Demonstration 2
-By Stephen Lee, EPRI

4:40 – 5:00 p.m.
Final questions, certification, and completing course evaluation form

5:00 p.m. Adjourn

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About the Instructors

Mr. Ali Amirali is the Director of Transmission Management at Calpine Corporation. He has been working in the Electric Utility Industry for the past 14 years. During his tenure he has developed a diverse portfolio of job skills that includes practical experience in the areas of electric transmission and distribution planning and operation, development and implementation of demand side management programs, development and implementation of electric supply and construction contracts, and customer relations. Before joining Calpine, he was employed with the California Independent System Operator and with Pacific Gas and Electric Company. His academic qualifications include a Masters of Science in Electrical Engineering from University of Idaho, a Masters of Engineering in Engineering Management from University of Colorado and a Masters in Business Administration from Colorado State University.

Dr. Lorenzo Kristov is presently the Principal Market Design Architect in the Policy Office of the California ISO. In this position Dr. Kristov leads multi-disciplinary staff teams in developing changes to ISO market design elements to improve the ISO's performance of its core functions and enhance the overall efficiency and competitiveness of California's restructured electricity markets. During 2002 Dr. Kristov was manager of the design phase of the ISO's Market Design 2002 project, a comprehensive market redesign effort that includes reform of congestion management, creation of integrated forward markets for energy and ancillary services, and adoption of Locational Marginal Pricing (LMP). Prior to joining the ISO, Dr. Kristov was Energy Economist at the California Energy Commission, where he represented the Commission in retail electric restructuring proceedings and working groups at the California Public Utilities Commission. In this position he worked extensively on retail market design issues, including the rules and procedures governing retail competition, revenue cycle services unbundling, settlement data quality, and rules and protocols for processing and exchanging end-use customer meter data. Dr. Kristov received his Ph.D. in Economics from the University of California, Davis, with specialties in international macroeconomics, monetary theory and econometrics.

Dr. Stephen T. Lee (IEEE M'69, SM'75) is the Technical Executive, Power Delivery and Markets, in EPRI. Dr. Lee has over 30 years of power industry experience. He received his S.B., S.M. and Ph.D. degrees from M.I.T. in Electrical Engineering, majoring in Power System Engineering. He worked for Stone & Webster Engineering in Boston, Systems Control, Inc. (now ABB) in California, and he was Vice President of Consulting for Energy Management Associates (EMA). Before joining EPRI in 1998, Dr. Lee was an independent consultant in utility planning and operation. At EPRI, Stephen Lee is leading technical research programs for grid operations and planning and power

markets. He is also active in the North American Electric Reliability Council (NERC) on issues related to interregional operation and planning. He has been actively developing new concepts and tools for power system operation and probabilistic transmission planning

Dr. Tom Qi Zhang is a faculty member at San Jose State University, teaching two courses "Software Engineering" and "Unix Systems". He is also a technical advisor at CompuSharp Inc., a power system professional services company in Santa Clara, California. He holds a Ph.D. degree in Electric Power Engineering from Zhejiang University in China. Dr. Zhang's expertise includes power system computer modeling and simulation, EMS/SCADA software applications, economic dispatch (ED), Optimum Power Flow (OPF), congestion management (cost-free and non-cost-free), and Locational Marginal Pricing (LMP). He is the author/co-author of over twenty publications in referred power system journals and conferences.

Dr. Rajat K. Deb is the Founder and President of LCG Consulting. For the last two decades, he has been working on various energy issues and providing consultation to the industry and government agencies. Dr. Deb has published extensively on theoretical and practical issues of interest in the context of deregulation and his innovative work has contributed significantly to both theoretical advances and state-of-the-art applications in electric and gas utility planning, particularly in the areas of interconnection reliability. LCG has developed the program UPLAN Network Power Model (UPLAN-NPM). The program chronologically simulates the market operations, including detailed physical/engineering treatment of individual generator and transmission line capabilities, system reserve requirements, and security constrained unit commitment. Dr. Deb holds a Ph.D. in Computer Science and a M.S. in Operations Research from Syracuse University, Syracuse, New York and a B. Tech in Engineering from the Indian Institute of Technology, India. He was a faculty member at the State University of New York, Stanford University, and Santa Clara University.

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