

**1999 IEEE Power Society Summer Meeting
Panel Session**

**POWER SYSTEM ENGINEERING CHALLENGES IN THE NEW
MILLENNIUM**

**Chair: George Gross
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Background

The electricity industry is in the middle of its greatest upheaval since Edison began the operation of the Pearl Street Station in 1882. The turbulence caused by the restructuring of the power industry is presenting power system practitioners with unprecedented new opportunities and challenges. At the same time, the pace of development in technology has never been more rapid. The harnessing of new technology has become an absolute necessity in dealing effectively with the myriad changes facing the industry. As the industry transitions from the regulated monopoly structure to various new and untried paradigms, there is a wide spectrum of heretofore unsolved problems in all areas of power systems engineering. These problems range from power system planning to power system operations, from network problem in the high voltage grid to those in distribution systems, from analysis of economic aspects of various new structures to the effective application of information technology advancements, and from applications of intelligent systems to the development of risk management tools in the new competitive environment.

Scope of Panel Session

The objective of this panel is to explore the broad range of challenges facing the profession and expose the forum that IEEE can provide for the effective exchange of information on the various issues. The Power System Analysis, Computing and Economics (PSACE) Committee is the single IEEE Power Engineering Society Committee whose interests encompass all the aspects of power systems engineering. The present and future activities of PSACE are involved with the modeling, analysis and development of solution methodologies, computational tools, and techniques and the effective application of computing and intelligent systems to the various operational, planning, economic, risk and uncertainty assessment, management and decision making problems in bulk power and distribution systems. This panel will address the changing nature of the problems facing the descriptive of power system engineering. The panel will focus on the need to cut across disciplinary boundaries, the changing nature of the scope of applications, the impact of policy on technical approaches and the impacts of technical considerations on policy formulation and the potential benefits attainable from new advances in technology.

The panel addresses the compendium of the most pressing problems facing the industry as it transitions from there well-entrenched vertically integrated monopoly structure to the unbundled competitive environment. Some of the topics to be included are:

- The effective deployment of new developments in information technology
- The application of intelligent systems to power system problems
- The development of analytic tools for the modeling and analysis of competitive markets in electricity
- The impacts of the changes on the training of future power system engineers
- The role of interdisciplinary approaches
- The challenges of the environmental aspects of the industry restructuring
- The development of tools for effective risk management

The majority of the time will be spent on dialogue among the panelists. Considerable time will be devoted to audience participation.

Panelists

The composition of the panel will be

Chair: George Gross, University of Illinois at Urbana-Champaign

Panelists: Ross Baldick, University of Texas at Austin
Mesut Baran, North Carolina State University, Raleigh
Marty Baughman, University of Texas at Austin
Chen-ching Liu, University of Washington, Seattle
E. Liu, Bechtel Consulting
C. Singh, Texas A&M University, College Station, TX
J. Staron, PTI, Schenectady