

# PTERRA CONSULTING

## SCOPE OF SERVICES

Pterra is an **independent** provider of consulting services and technology solutions to the electric energy industry. Pterra's experts will help you find creative and innovative solutions that can only come from decades of cumulative experience. Our commitment is to excellence and quality, moving the envelope of industry knowledge and technique to better applications and methodologies.

From short-focused analyses to extended planning studies, we offer the best blend of capability, skill, experience, and commitment. Pterra is your unique resource for handling many of the toughest technical issues now facing your company.

Pterra offers consulting services in the following areas:

- Large-scale network analysis
- System planning
- Interconnection studies
- Equipment modeling and simulation
- Distribution planning and analysis
- Industrial power systems
- Expert witness and testimony

Pterra staff members are knowledgeable in the use and application of several commercial system analysis software packages. At Pterra, the software tool is one means to finding the right answer to your power system questions.

### SOFTWARE SUPPORT AND DEVELOPMENT

Manufacturers, equipment suppliers, utilities and system operators, let us help you customize your simulation packages by developing user models and command files that allow you to conduct analysis more accurately and efficiently. As an independent provider, we can assure you of the confidentiality and proprietary nature of your customized models. We recognize the importance of continuing support and provide a quick turnaround support service that is simply not available elsewhere.

Let us apply our knowledge and extensive background in specifying, designing and implementing software for power system analysis. Consider Pterra for:

- Customized software development for power system analysis applications.
- User-written models for dynamic simulation
- Data conversion among the key power flow, short circuit and stability data formats.



### TRAINING

Pterra offers professional training and educational programs on a variety of subjects, all focused on needs of the electric power industry. Our courses are developed and taught by our consulting staff based on real-world experience in solving power systems problems.

Our present course offerings include:

- Applications in Voltage Stability
- Power Flow Analysis and Applications
- Applications in Wind Power Interconnection
- HVDC Transmission Analysis and Applications
- Nodal Pricing Analysis and Applications
- Linear Power Flow Analysis and Applications
- Applications in Transmission Planning
- Stability Analysis and Applications
- Developing User Models for Dynamic Simulation

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## OUR TEAM

Pterra offers you the support of a committed and dedicated group of professionals. All personnel have several years of experience in the power industry, and many have leading technical roles in their fields of specialization in electric power. On any given assignment, Pterra will form teams headed by a project manager to meet your specific study needs. Our team includes:

- **Ricardo Austria**, Executive Principal, formerly vice-president at PTI and EPRI, system planning, reliability, voltage stability
  - **Ramon Tapia**, Managing Principal, power system operations and planning, energy markets, formerly with PTI and New York ISO
  - **Dr. Moises Gutierrez**, Principal, power system dynamics, software implementation

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### EXPERT WITNESS SERVICES

Pterra provides expert witness services in the areas of electric system reliability, planning, markets, cost allocations, impact assessments and failure analysis.

Our staff members have provided expertise in proceedings before the United States Federal Energy Regulatory Commission, state commissions, private and commercial arbitration and civil cases. From white papers, technical opinions, to direct and oral testimony, Pterra has provided strong expertise, experience and knowledge that made for vital and decisive proceedings.

### INTERCONNECTION AND IMPACT STUDIES

An impact study generally involves determining the incremental change in transmission reliability due to an addition or change in the power system. This type of study is usually part of a formalized procedure to approve new equipment and power plants interconnecting to the grid.

Pterra has the expertise and experience to help you through the impact study process. Our team has conducted impact studies in many North American regions, as well as, internationally.

Multiple feasibility and impact studies for power projects in Oklahoma, Kansas, Texas, Vermont, Colorado, Louisiana, New Jersey, New Hampshire, Connecticut and New York, for clients such as the Southwest Power Pool, New York ISO and ISO New England and merchant power plant developers.

### STAFF AUGMENTATION

Pterra offers qualified and trained personnel to support your in-house activities. Our consultants can help you staff projects for 1

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- **Ketut Dartawan**, Senior Consultant, power system analysis, distribution and industrial applications
- **Dr. Mahmoud Elfayoumy**, Senior Consultant, transfer limits, reliability, unit commitment
- **Dr. Jingjia Chen**, Consultant, system studies, development of new software for system analysis
- **Mario Infantado**, Senior Consultant, detailed planning and operational studies of transmission and distribution systems
- **Edwin Cano**, Consultant, analysis, simulation and training services including power systems, and energy conservation
- **Carolyn Steuhl**, Business Administration Manager, formerly with PTI and Direct Global Power

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week to 6 month assignments and get you on the road to meeting your schedule and committed deliverables.

Pterra will work with you to define the requirements of the assignment. Our unique approach enables us to help you meet your project objectives at the least risk of missing a deadline and at the most reasonable cost.

Our experience in this area includes support for in-house transmission planning projects, cost allocation, operations staffing, among others.

# Independent

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