



# Power Systems Studies

## Our Services

- *Transient and switching surges*
- *Harmonics (end use, distribution system and transmission network)*
- *Electromechanical dynamics and stability*
- *Ferroresonance, dynamic overvoltages*
- *Breaker transient recovery voltages*
- *Arrester applications*
- *Grounding and electromagnetic induction*
- *Series capacitor protection*
- *Insulation coordination*
- *System protection/relaying*
- *Lightning protection (shielding, grounding, arresters, insulation)*
- *FACTS and power electronics applications*
- *Transformer failure investigations*

**Our Expertise** The EnerNex power systems consulting team has a strong background in power quality and customer end-use studies. This has been bolstered by recent experience with load management, demand response and dynamic pricing, which offers another variable for facility power system performance. Our staff have completed projects relating to:

- Plant dynamics - motor starting, voltage sag ride-through
- Harmonics and transients
- Flicker
- Special short-circuit analysis
- Evaluation of advanced equipment for service quality enhancement, dynamic volt/var control, critical process and/or equipment protection, load management and demand response
- Facility design technical analysis and verification

We also maintain P.E. licenses in several states and have presented testimony on behalf of clients.

**Wind Energy:** We provide expert guidance and support with wind turbine technology, wind plant design and operating issues, as well as, technical questions associated with transmission grid interconnection and power system operation.



# Power Systems Studies

EnerNex practices an evolutionary, standards-based approach to solving real-world power system operation problems. EnerNex helps to identify, solve and even prevent phenomena affecting electric power systems. Our studies and analysis capabilities support a wide range of service offerings for our clients, including:

- Advanced power system modeling and simulation studies (power system dynamics, electromagnetic transients and harmonics)
- Prototype engineering software development
- Technology assessments
- Requirements definitions for new products
- Insulation coordination
- Overcurrent protection
- Event/failure analysis and troubleshooting
- Facility design review
- Transmission and distribution system interconnection evaluations

EnerNex is the pre-eminent consulting firm for **Systems Monitoring and Analysis**.

## Our Services

*EnerNex is a research, engineering, and consulting firm specializing in the development and application of new electric power technologies. Our focus is to aid in the understanding and solution of electric power related issues, as well as the development of technology and expertise that will ultimately improve the operation and reliability of electric power systems. We offer services organized around these areas of emphasis:*

- ▶ **Power Systems Analysis**
- ▶ **Wind Integration**
- ▶ **Information Security**
- ▶ **Systems Monitoring & Analysis**
- ▶ **Testing and Research & Development**
- ▶ **Smart Grid Development**
- ▶ **Advanced Metering Infrastructure**
- ▶ **Utility Communication Architecture & Implementation**
- ▶ **Utility Automation**
- ▶ **Demand Response & Energy Efficiency**

**EnerNex**

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