



## EXPERTS IN ELECTRICAL POWER SYSTEMS

24 HOUR EMERGENCY SERVICE

### Field Services

- Electrical system trouble shooting and repair
- Plant shutdown services
- Preventive maintenance
- Low/medium/high voltage circuit breaker testing
- Ground fault testing
- Ground resistance testing
- Motor vibration analysis
- Motor surge comparison testing
- Variable speed drives testing
- Rotating apparatus testing
- Transfer switch testing
- Time travel analysis
- Insulating oil filtration
- Relay tests and calibration
- Meter calibration
- Infrared and ultrasonic detection
- Fiber optic testing
- Line disturbance analysis
- Harmonic and power quality measurements
- Voltage/load recording
- Load bank testing
- Magnetic field (EMF) testing and mitigation
- Insulation resistance testing
- Power factor testing
- Impedance testing
- Turns ratio testing
- Insulating fluid sampling and analysis
- Transformer vacuum filling and commissioning
- Transformer repair and maintenance
- Powerscan™ - Infrared Thermography
- Cable fault location
- Online partial discharge testing
- High potential testing
- Communication cable testing
- Arc Flash assessments

### Engineering and Consultation

#### ENGINEERING STUDIES

- Short circuit studies
- Coordination studies
- Load flow analysis
- Transient stability studies
- Arc flash studies
- Harmonic studies
- Power factor analysis
- Grounding studies
- Voltage imbalance/regulation studies
- Power system reliability studies
- Reliability centered maintenance studies

#### ENGINEERING SERVICES

- Substation design/build services
- Project management services
- Maintenance planning and program development
- Shutdown planning and management
- Reliability based maintenance
- Process instrumentation calibration
- Asset Assessment
- Protective Relay Programming

#### LIFE-EXTENSION SERVICES

- Modernization of outdated and underrated equipment
- Circuit breaker retrofit/rebuild (static trip, vacuum, oil, SF) of low/medium voltage equipment
- Fused switches, retrofit of low/medium voltage
- Static exciter retrofit
- Solid state protective relay retrofit
- Automatic transfer switch retrofit and upgrades
- Replacement parts
- MV vacuum roll-in replacement

### Equipment Startup

- Installation, startup and commissioning
- Acceptance testing
- Commissioning plan development
- Performance baselining
- Code compliance evaluation

### Predictive Maintenance

- Oil analysis
- Thermography - Power-Scan™
- Ultrasonics
- Online partial discharge testing

### Education and Certification

- Skills assessment/development planning
- Onsite and classroom courses
- Computer-based and self-paced learning
- Certification to recognized industry standards

### Assets Served

- Generating stations, substations
- Transformers, oil & dry
- Switchgear, circuit breakers, panelboards
- Relays, meters, protective devices
- Drives, motors, starters
- Transmission distribution and SC systems
- UPS, batteries, generators, automatic transfer switches
- Cables
- Grounding