Sargent & Lundy offers in-depth analytical support capabilities for all phases of transmission system operation and planning. Our services include:

**Economic Analysis**
- Economic evaluations and sensitivity analyses to determine optimum transmission configurations and major component locations based on market forecasts
- Utilize PROMOD for economic dispatch and unit commitment based on power market forecasting

**Interconnection Studies**
We offer a full range of interconnection study services, including the following:
- Grid load flow/contingency analysis
- Reactive power compensation analysis in compliance with FERC Order 827
- Grid short-circuit analysis
- Grid stability analysis

**Detailed Design Studies**
These studies are performed in support of new facilities as a part of detailed design:
- Insulation coordination and transient analysis
- OSHA-related overvoltage analysis for live-line work
- Static wire grounding scheme design/safety grounding analysis
- Protection and coordination analysis
- Arc-flash analysis
- Transient recovery voltage

**Root-Cause Analysis**
We offer services to determine the root cause of failures, faults, or malfunctions of transmission systems, including aspects such as:
- Breaker failure analysis
- Ferroresonance
- Harmonics and power quality
- Subsynchronous resonance (SSR)
  - Induction generator effect
  - Torsional interaction
  - Subsynchronous control interaction involving wind turbines