

# SAN DIEGO GAS & ELECTRIC ENGINEERING SERVICE AGREEMENT



SDG&E  
San Diego, California

**Sargent & Lundy Services:**

- ❑ Transmission Line Engineering & Design
- ❑ Structure Design & Analysis
- ❑ Foundation Design & Software Development
- ❑ Forensic Engineering

Sargent & Lundy has an active Professional Services Agreement with SDG&E and has been working on transmission system projects almost continuously for over ten years. Many of these projects have involved the assessment of transmission structures and foundations for existing lines that are modified to increase capacity or to add new fiber optic shield wires.

Specific examples of recent projects include:

Miguel-Mission Conversion Project – This project involves the analysis of existing 138-kV towers for conversion to 230-kV service. This project was initiated in 2000 with a feasibility study, including cost estimates, for upgrading the line. Subsequently, structural analysis has been performed for each of the towers on the line and cost estimates have been developed for completing the tower modifications necessary to accommodate the increased loading due to the larger conductors to be installed for 230-kV operation. This project continued with the design of 230-kV insulator assemblies and preparations for a full-scale load test of a modified tower.



San Onofre – Encina 230-kV Reconductor Project – S&L analyzed this transmission line to determine if the existing 230-kV lattice towers could support the new bundled conductors being considered by SDG&E. In addition to the analysis tasks, designs and cost estimates were developed for the tower

modifications. The towers were also evaluated for the possible installation of fiber optic shield wire.

Other projects performed for SDG&E include:

- Structural Modeling of 138-kV Towers
- Wood Pole Analysis
- Wood Pole Construction Drawings
- Design Software for Foundations on Slopes
- Assessment of Fire Damage to Tower
- Analysis for Installation of Solar Panels on Towers
- Design of Pole Shoring – Mission Valley West
- Sycamore Transmission Line Relocation
- Line 23006 Fiber Optic Analysis
- Tower Foundation Design Software Development
- 138-kV Tower Modeling/Analysis
- 230-kV Tower Modeling/Analysis
- Polymer Insulator Study

In addition to project work performed from our Chicago offices, transmission and civil/structural engineers from S&L have worked in SDG&E's offices for extended periods. S&L gained significant experience with SDG&E standards and practices, as well as direct experience with the application of California G.O. No. 95 from these assignments.

