230 kV Line Uprating Study

San Diego Gas & Electric
San Diego, California
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Completion Date: 2001
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Project Experience Resume

PROJECT DESCRIPTION

San Diego Gas and Electric established a goal to obtain optimum use of its existing transmission facilities through proceeding with re-rating of existing lines. Additionally, SDG&E has several 230 kV transmission lines that were designed to support bundled conductors but were initially constructed with only a single conductor.

ECI was tasked with determining the maximum operating temperature allowed on over 120 miles of 230 kV transmission lines and identifying all clearance conflicts if the lines were to be operated at 240^{o} Fahrenheit.

All the lines in the study were single-bundle 954 kcmil ACSR conductor on lattice towers. Using laser data collection methods, ECI obtained field information on each of the lines, created a model of each structure type and created a model of each line in PLS-CADD® to, as closely as possible, model existing conditions. Once the model was complete, ECI determined the maximum operating temperature of each line. ECI identified each conflict, as well as remedial improvement required to allow operation at the desired temperature. Design included providing a complete set of new Plan & Profile drawings for each of the lines.

KEY FACTS & HIGHLIGHTS

- **Double Circuit 230 kV**
- **Single 1033 ACSR "Ortolan"**
- **Vee-String Insulators**
- **Lattice Towers**
- **Tubular Steel Poles**
- **Wood H-Frames**
- **PLS-CADD® Design**
- **New Plan & Profile Sheets**
- **Conflict Identification and Mitigation**

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