

CASE STUDY:

San Diego Gas & Electric - Distribution IR Inspections



SAN DIEGO GAS & ELECTRIC - Distribution IR Inspections

Project Summary

Project Type: IR Inspection Solutions

Location: San Diego, California

Number of Customers: More than 1.5 Million +

Applications:

To increase inspection efficiency with data-rich maps.

Solutions Implemented: EpochField

CUSTOMER BENEFITS

- Graphical, data-rich environment
- Simple, cost effective solution
- More accurate data

INTRODUCTION

San Diego Gas & Electric (SDG&E) serves approximately 1.5 million electric and 900,000 gas customers in southern California. Like all California utilities, SDG&E must consider the impact of environmental conditions that might affect their electric network and act to prevent damage to their infrastructure or the people and property surrounding their structures and equipment. These activities include preventative and reactive measures, including inspections and patrols, equipment strengthening, and power shutoffs.

THE CHALLENGE

Every electric structure, both overhead and underground, is patrolled annually to find infractions that may impact the safe functioning of the electric system. Until 2018 this was a paper map-based process: 27,000 paper maps were generated every year, and patrollers checked off each structure as it was patrolled then signed off the map when it was complete. Any infractions that were encountered were manually recorded on a separate log, and in some cases, photos were captured.





These logs and photos were then submitted to SAP with the help of district clerical personnel. This process was replaced with an EpochField Work Management implementation that relied on work initiated from SAP being created within Epoch's Work Management model and distributed to field personnel based on their responsible district area.

Completions and infractions were synced from the field machines and provided to SAP electronically, along with photos captured in the field. This implementation was well-received by patrollers and management labeled it as a successful use of technology to streamline processes and provide efficiency gains.

THE SOLUTION

Another preventative measure is performing Infrared inspections on the Distribution system in High Fire Risk Areas. Unlike structure patrols, these patrols are performed by circuit and include every overhead structure on the circuit. These circuits are on a 5-year maintenance schedule within SAP, so the list varies every year. Thermographers have been performing these inspections using paper maps, much like the patrollers did before 2018. Early in 2020, compliance supervisors asked if an EpochField-based solution could replace the paper maps for the inspection process. Business and IT personnel responsible for the mobile software platform were presently engaged in testing configurations to support Public Safety Power Shutoff (PSPS) events as well as Wood Pole Intrusive inspections but recognized the benefit of eliminating the paper mapping process. It also helped that the data generated for the PSPS events was exactly what was necessary for Infrared inspections. Adopting a multi-phased approach, business and IT configured EpochField, tested the process, built the production data, and provided both hardware and software to the thermographers within six weeks.

As mentioned, the Infrared inspection process is circuit-based. As it turned out, the PSPS patrol activities are also based on all or part of a circuit so the EpochField Inbound Queue process that was built data for PSPS based on a sectionalizing device could be used by specifying the circuit-breaker as the sectionalizing device. The other requirement was that the structures for each circuit be rendered in a different color in EpochField to facilitate the inspection process.







Since there is an annual limit to the number of circuits that will be patrolled for Infrared, a rendering scheme was chosen that assigned a color number to a circuit when it was added then freed up that color when the circuit was completed. In the screenshot, you can see the 18 circuits that are part of the 2020 Distribution Infrared inspections rendered in different colors.

The initial implementation has not included any extensive data capture around unusual conditions as it would have severely interrupted other in-flight projects. Phase 2 of the effort will include SAP integration (inbound as well as outbound) and a web-based dashboard for monitoring progress. This dashboard will also include the ability to assign all or part of a circuit to individual thermographers. In the interim, compliance supervisors are using laptops with EpochField installed to monitor completion progress, as can be seen on the snapshot below.

THE RESULTS

In late 2016 SDG&E began replacing an ArcFM-based mobile tool with EpochField. This deployment continued into 2017 and included Electric Troubleshooters, Fault Van crews, Line Crews, construction as well as some supervisory personnel. Approximately 600 electric users received EpochField initially, and the number continues to grow. Because EpochField was a widespread success across SDG&E Distribution, there has been a separate initiative to replace the mobile software used by the gas side of SDG&E as well as all of Southern California Gas.