CASE STUDY
POWER SYSTEMS SERVICES

S&C ELECTRIC COMPANY
Excellence Through Innovation

Metal-Enclosed Switchgear Retrofit Boosts BART System Reliability

S&C Featured Solution: Turnkey Field Services

Location: San Francisco, California

CUSTOMER CHALLENGE

Bay Area Rapid Transit (BART) spans the San Francisco Bay Area with 44 stations, connected by 104 miles of track. The nation's fifth-largest heavy-rail system, BART serves 357,800 riders every weekday.

Pacific Gas & Electric (PG&E) provides two sources of power to each BART station. Each station relies on a line-up of S&C Custom Metal-Enclosed Switchgear, furnished with a power-operated Alduti-Rupter® Switch on each source plus a source-transfer control. The switchgear provides an automatic source-transfer capability, between the two feeders, to ensure continuity of power to the loads.

After providing decades of reliable service, the switchgear at 25 BART stations was due to be changed out. But doing so was impractical in many instances because of the labor, time, and costs involved. Most of the line-ups were located in cramped underground vaults . . . accessing them would require breaking up streets and sidewalks. Installing new gear would also require multiple-day transit service outages.

> *"Not only did S&C help PG&E realize significant labor, time, and cost savings, we helped BART maintain its superior track record of service."*
>
> *—S&C Senior Project Engineer*

S&C delivered the turnkey field services PG&E needed to upgrade the switchgear line-ups serving 25 public transit stations.

S&C SOLUTION

PG&E decided to upgrade the existing S&C switchgear instead of purchasing and installing new gear. But upgrading would not be easy either. Because of the technical complexity of the work, the large number of line-ups involved, and the need to maintain transit service during peak commuting times, PG&E sought assistance from S&C. With its record of excellence in field services, S&C was chosen by PG&E to retrofit each switchgear line-up on a turnkey basis.

Using a specially engineered retrofit kit, S&C replaced the electromechanical source-transfer control in each line-up with a highly reliable microprocessor-based Micro-AT® Source-Transfer Control. S&C's Micro-AT Control minimizes interruptions from the loss of one source by automatically transferring to an alternate source in as little as 70 cycles.

The new components were brought into the vaults through existing entrances, eliminating the need for permitting. The scope of the work and the size of work crews were reduced too, since there was no need to re-terminate URD cables . . . a process that would have added 24 labor hours per line-up, or 25 days of system outages.

To minimize transit service disruptions, S&C field service specialists worked on one switchgear bay at a time over weekends, when BART ridership is at its lowest. Generators were used during planned feeder outages. By completing each upgrade on a Sunday, S&C enabled PG&E crews to restore service before the Monday morning rush hour.

VALUED OUTCOME

S&C satisfied PG&E's aggressive timeline for completion of the work with zero safety incidents. S&C field service specialists then trained PG&E personnel on operation of the switchgear. By retrofitting the gear, S&C enabled PG&E to realize substantial labor, time, and cost savings, while helping BART sustain its long track record of reliable transit service.

S&C field service specialists remove the existing electromechanical source-transfer controls from a switchgear line-up before installing the Micro-AT® Source-Transfer Control.

Printed in U.S.A.