



Circuit-Switcher Life-Extension and Warranty-Renewal Program: Large Municipal Utility Upgrades 10 Circuit-Switchers

S&C Featured Solution: S&C Circuit-Switchers

Location: United Kingdom

Customer Challenge

Since the early 1960s, S&C Circuit-Switchers have provided reliable switching and protection of transmission-voltage transformers, capacitor banks, reactors, lines and cables.

A large municipal utility customer in the Southwest realized that a majority of the Circuit-Switchers on their electrical system had been in service for 20 to 25 years. The time had come to investigate options available to ensure continued reliable service from these Circuit-Switchers.

S&C Solution

S&C performed an evaluation of the models, quantities, and dates of manufacture of all S&C Circuit-Switchers on the customer's system. It was found that of their 18 Circuit-Switchers, 15 (or 83%) were over 20 years old. Eleven (or just over 61%) of the Circuit-Switchers were installed in frequently switched capacitor bank applications.

To support the customer's efforts to maximize system performance at the lowest possible cost, S&C's Power Systems Services Division combined field service experience with engineering expertise to create an inspection and rebuilding program that would restore the condition of these Circuit-Switchers to a like-new, fully warranted state. In addition to improving service reliability, S&C strongly believes this program will help reduce the number of forced outages and the loss of revenue, maintenance, inventory, and premium costs of labor and material associated with such outages.

Of the 18 Circuit-Switchers installed on the customer's system, a total of 10 Circuit-Switchers were addressed as part of the Life-Extension and Warranty-Renewal Program offered by S&C. (The remaining eight Circuit-Switchers fell into one of two categories not addressed as part of the program: They were either supplied within the last three years, or they were of

vintages not capable of being upgraded.) S&C tailored a program specifically for the vintage and application of each of the aforementioned 10 Circuit-Switchers, to replace and/or upgrade existing components to bring them up to present-day Mark V Circuit-Switcher standards. Parts and assemblies replaced as part of this program included the main and fault-closing contacts, blade assemblies, brain assemblies, interrupters, rotating bearing assemblies, drive-train components, and switch operator.

The customer chose to proceed with a cost-effective simultaneous-work approach, with a single outage for the inspection, modification and rework efforts. (The customer could have chosen an alternate work approach requiring multiple outages for each Circuit-Switcher. That is, one outage for the inspection and validation of the condition of each Circuit-Switcher and a second outage to perform the work.)

Parts and material for each Circuit-Switcher were shipped to the respective job sites in advance. An S&C Field Service Specialist worked with the customer's crew to complete the Life-Extension and Warranty-Renewal Program. The work was scheduled to be performed at the rate of two Circuit-Switchers





per week over a five-week period. To maximize efficiency and travel logistics, the same crew was used throughout the project. Efforts were coordinated to complete all work at a particular substation before moving onto the next substation.

Results

All 10 Circuit-Switchers were successfully upgraded to meet the requirements of the Life-Extension and Warranty-Renewal Program. Work was completed one week ahead of the project schedule! As a measure of the confidence that S&C has in these devices, the Circuit-Switchers have been given the same five-year warranty as a newly manufactured product. These like-new Circuit-Switchers are able to provide many additional years of reliable service—at an attractive price alternative to new equipment.