CASE STUDY
ELECTRIC UTILITIES

S&C ELECTRIC COMPANY
Excellence Through Innovation

S&C Pad-Mounted Gear Improves Reliability and Appearance, Economically

S&C Featured Solution: Remote Supervisory PME Pad-Mounted Gear

Location: United States

Customer Challenge

A large municipal utility needed to replace several metal-clad and metal-enclosed switchgear lineups serving one of the country's major theme parks. Component failures, along with animal-induced flashovers, were causing more and more forced outages in this 30-year-old gear. Each lineup had four to six feeders, all of which were dropped during these outages. In an environment where reliability is vital, this gear was becoming a burden.

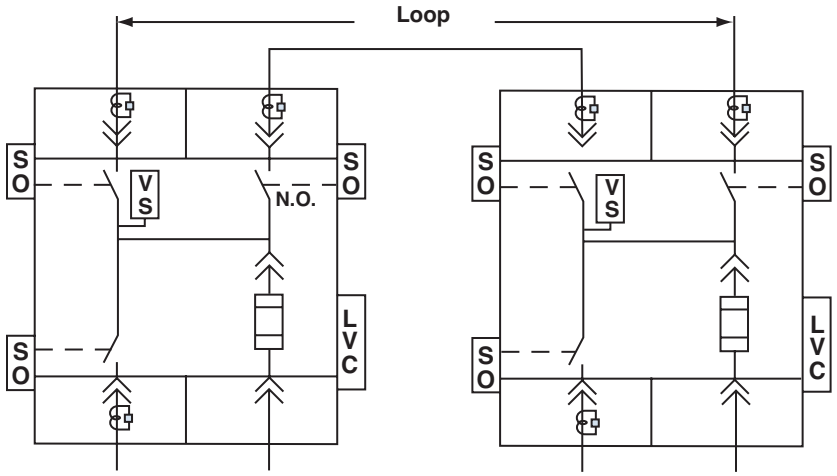
The replacement gear had to be resistant to animal intrusion and, further, it needed to be integrated into the utility's existing SCADA system, which is used for fault detection, sectionalizing, load balancing, and planning. Thus, every switch in the new gear would need to be power operated and include both voltage and current monitoring. The user's dependence on the tourist trade also made aesthetics a concern, so the utility mandated that the replacement gear be less obvious than the old 120-inch-high lineups.

S&C Solution

S&C's Remote Supervisory PME Pad-Mounted Gear, featuring elbow-connected encased components, was chosen from several alternatives. It met all of the criteria at the lowest cost, and the utility had been using this type of gear for years and was convinced of its superior quality and reliability.

Two 15-kV Model PME-11 units with 600-ampere Mini-Rupter® Switches replace a six-bay lineup with four feeders. The two units function in a loop with a normally open point in one of the units, as shown in the single-line diagram below. All live parts are completely isolated from the environment, for heightened protection against internal flashovers caused by entry of animals or foliage. In the unlikely event of an internal fault in one of the units, the other is unaffected—cutting in half the number of customers subject to the outage, compared to the old switchgear assembly.

The two 15-kV Model PME-11 units function in a loop with a normally open point in one of the units, as shown in the single-line diagram.



In the unlikely event of an internal fault in one of the units, the other is unaffected—cutting in half the number of customers subject to the outage compared to the previous switchgear assembly.

S&C ELECTRIC COMPANY
Excellence Through Innovation

Results

S&C pad-mounted gear can often be substituted for metal-clad or metal-enclosed switchgear in applications where high short-circuit duty is not required. It's lower in cost and requires less space. The photo at right—taken before removal of the metal-clad gear—shows how the two types of gear compare in size. With a height of only 56 inches, the new 15-kV pad-mounted gear offers a pleasing profile. The olive-green-finished enclosures blend in with the landscape much better than the old lineups.

The power-operated switches and communication and control equipment work with the utility's SCADA system, allowing their engineers to monitor status and isolate faulted circuits from the office. Reliability has been improved because the elbow-connected PME gear is much less susceptible to animal-induced flashovers.

A comparison of the previous gear (below right) with the new S&C switchgear (below left).

The elbow-connected PME gear is much less susceptible to animal-induced flashovers.