

Cypoxy Station Post Insulators Set a New Standard in Substation High-Voltage Insulation

The newly constructed substation pictured below, located in the southwestern United States, features the exclusive use of S&C's Cypoxy station post insulators for bus support on the 25-kV secondary buswork grid. The installation, in addition, features an extensive selection of S&C switch and fuse products supplied with Cypoxy station post insulators—including thirty-nine S&C Loadbuster Disconnects, four S&C SMD-20 Power Fuses, three S&C Regulator Bypass Switches, and an integer style S&C Alduti-Rupter Switch. All together, the substation includes one hundred forty-two Cypoxy station post insulators.

The Decision to Adopt Cypoxy

A number of factors contributed to this electric utility's decision to construct a nearly all Cypoxy substation. The trim profile and aesthetics of S&C Cypoxy insulators, coupled with the shorter lead time relative to porcelain insulators played an important role in the selection of Cypoxy. However, of even greater importance were the outstanding electrical and mechanical-strength characteristics of Cypoxy insulators.



Figure 1. Distribution substation in southwestern United States featuring more than one hundred forty Cypoxy station post insulators for apparatus and bus-support applications.

The Cypoxy Advantage

S&C Cypoxy insulators are of molded construction, incorporating a uniquely formulated cycloaliphatic epoxy resin especially tailored to provide the electrical and mechanical-strength characteristics required of high-voltage insulators. Full-scale tests, including exhaustive outdoor testing at desert and seacoast test facilities that press the limit in ultraviolet radiation and salt-spray exposure for an insulator, document the outstanding performance of Cypoxy insulators across a broad range of environments. And, verification of Cypoxy-insulator performance is further augmented by more than 15 years' actual experience with Cypoxy insulators applied worldwide. In addition to these performance characteristics, S&C Cypoxy station post insulators are electrically and mechanically interchangeable with porcelain station post insulators—and they meet or exceed the electrical and mechanical-strength ratings established in ANSI Standard C29.9 (1983) for porcelain standard-strength insulators.

Other advantages of Cypoxy station post insulators include a light-weight design that is approximately one half the weight of comparable porcelain insulators . . . but with even greater dry arcing and leakage distances.

S&C Cypoxy insulators are also formulated to resist damage from power arcs such as may result from bridging by a snake or other animal. Laboratory tests document the ability of Cypoxy insulators to withstand power arcs at currents to 25,000 amperes RMS symmetrical—without damage—and to maintain rated electrical capabilities without any need for post-arc cleanup. Porcelain insulators may be damaged by thermal shock and require replacement in the event of a high-current arc across the insulator skirts.

And finally, Cypoxy insulators are homogeneous and do not include a surface glaze. As a consequence, Cypoxy insulators are tougher than porcelain with regard to mechanical shock. And even if a Cypoxy insulator should be damaged, for example, by loss of a skirt due to vandal-



Figure 2. . . . another view of substation showing the extensive application of S&C's Cypoxy station post insulators.

ism, the insulator will retain rated capabilities due to its homogeneous construction. Porcelain insulators may suffer substantial reductions in strength as a result of damage to the glaze or to the insulator skirts.

Field- and Test-Proven Performance

S&C has been engaged in the production of Cypoxy insulators for more than 15 years . . . with more than 2¼ million insulator units shipped in that period. Extensive real-time and accelerated-life testing at desert, seacoast, and urban installations—plus long-term application in actual service—confirm Cypoxy's reliability for outdoor applications.

Cypoxy insulators offer significant advantages in terms of cost, capabilities, and aesthetics that can be provided with a wide selection of S&C distribution switch and fuse products. For more information concerning S&C Cypoxy

insulators, or products furnished with Cypoxy insulators, consult your nearest S&C Sales Office.



Figure 3. Cypoxy station post insulator rated 34.5 kV.

The versatility of Cypoxy . . .

. . . for switches.



. . . for fuse mountings and bus support.



. . . for disconnects.



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