



Vista Switchgear Lets the Navy ‘Deep-Six’ Outmoded Gear

S&C Featured Solution: Vista® Underground Distribution Switchgear

Location: East Coast, United States

Customer Challenge

A US Navy base on the East Coast needed to upgrade the electrical system supplying power to ships in port. The facility was served by 11.5-kV and 34.5-kV utility sources through metal-clad gear at switching stations. Power was distributed to the ships through switchgear located in vaults beneath the piers.

The Navy was concerned because the existing switchgear included oil-insulated switches, for which parts were no longer available. They also wanted to relocate the switchgear to make it more accessible to maintenance crews... on top of the piers. The 34.5-kV switchgear would be replaced first.

S&C Solution

Faced with severe space constraints at the piers, the Navy needed switchgear that was both compact and convenient to operate. When introduced to S&C’s Vista Underground Distribution Switchgear, they knew they had the perfect solution.

At 34 kV, the Vista switchgear’s SF₆ insulating medium allows a drastic reduction in switchgear size compared to air-insulated gear, and it surpasses oil in retention of its insulating properties. With its small footprint and low profile, Vista switchgear would fit the available space nicely.

Since Vista is available with up to six ways per unit, fewer units would be needed. And with Vista switchgear, there’s no need to handle medium-voltage cables. Switching and cable isolation is performed inside the sealed Vista switchgear tank; large viewing windows let you clearly see the open gap and ground positions on load-interrupter switches and fault interrupters.

The Navy uses the Vista switchgear in conjunction with portable substations that can be relocated with a crane, as required. Each substation includes an incoming section, a 4000-kVA, 34.5-kV to 480/277-V transformer, a main-secondary circuit breaker, feeder circuit breakers, and a relay and battery section.

The system is configured as shown in the single-line diagram below. Thirteen Vista switchgear units feed power from two switching stations to the portable substations. Piers 5, 24, and 25 each include a normally open loop consisting of two four-way Model 422 and two five-way Model 523 Vista switchgear units. An additional six-way Vista switchgear Model 633 feeds the loops at Piers 24 and 25.

The fault interrupters trip in response to downstream faults via a signal from the Vista switchgear overcurrent control. Each fault interrupter is also equipped to trip in response to a signal from the sudden-pressure relay of its associated downstream transformer, which also trips the main-secondary circuit breaker.





Results

The Vista switchgear has proven very reliable and fits well in the limited space allocated on the piers. Additional Vista switchgear units have been subsequently procured and installed on other piers.

