



# World Trade Center Requests Exact Replacement for S&C Custom Metal-Enclosed Switchgear

**S&C Featured Solution:** Metal-Enclosed Switchgear

**Location:** New York City, New York, United States

## Customer Challenge

When ground was broken for construction of the World Trade Center site in 1966, S&C Custom Metal-Enclosed Switchgear was installed in the basement of the building to power the PATH (Port Authority Trans-Hudson) trains which run under the Hudson River between New York and New Jersey. The WTC would be a critical connection point for thousands of commuters every day.

The switchgear functioned perfectly for 35 years, until the unfortunate events of 2001.

## S&C Solution

A week after the disaster, S&C was asked to meet with executives of the Port Authority to discuss exact replacement switchgear. Aerial photos of the site were used as markers to determine where the new gear would be located.

*Port Authority met with S&C following 9/11 to discuss replacement switchgear.*



The Port Authority subsequently decided to upgrade the replacement switchgear with features including single-phase detection of blown fuses, digital metering, and SCADA. The SCADA system would allow PATH Headquarters to monitor all switch positions as well as view real-time voltage, current, power, and power factor.

Two new four-bay lineups of 15-kV switchgear and three two-bay lineups of 38-kV switchgear were specified. The 15-kV gear would feed the PATH train station lights and power. The 38-kV gear would feed the dc traction power system for the PATH trains.

*Four-bay lineups of 15-kV switchgear.*



*Two-bay lineups of 38-kV switchgear.*



*S&C switchgear was installed when the World Trade Center was first built in 1966, and selected again by Port Authority executives following 9/11.*



## Results

The biggest hurdle was getting the switchgear on site while the electrical distribution system was still being engineered. The Port Authority conducted weekly meetings with equipment suppliers to coordinate the efforts. Of all the suppliers involved in the project—including those of the transformers, 600-volt switchgear, dc traction power gear,

and SCADA—only S&C was able to obtain on-time drawing approval and delivery of equipment. The PATH trains are now running again.

Incidentally, the new World Trade Center and memorial will all be fed from Consolidated Edison's 480-volt networks. These networks are fed from five 138-kV lines, served through S&C Series 2000 Circuit Switchers. All power to the site thus flows through S&C equipment. S&C is proud to have played a part in the World Trade Center rebuilding efforts.

*One-line diagram of 15-kV switchgear.*

