



Hospital Upgrades Electrical System with S&C Metal-Enclosed Switchgear and Remote Supervisory Vista® Switchgear

S&C Featured Solution: Engineering Services

Location: Montreal, Canada

Customer Challenge

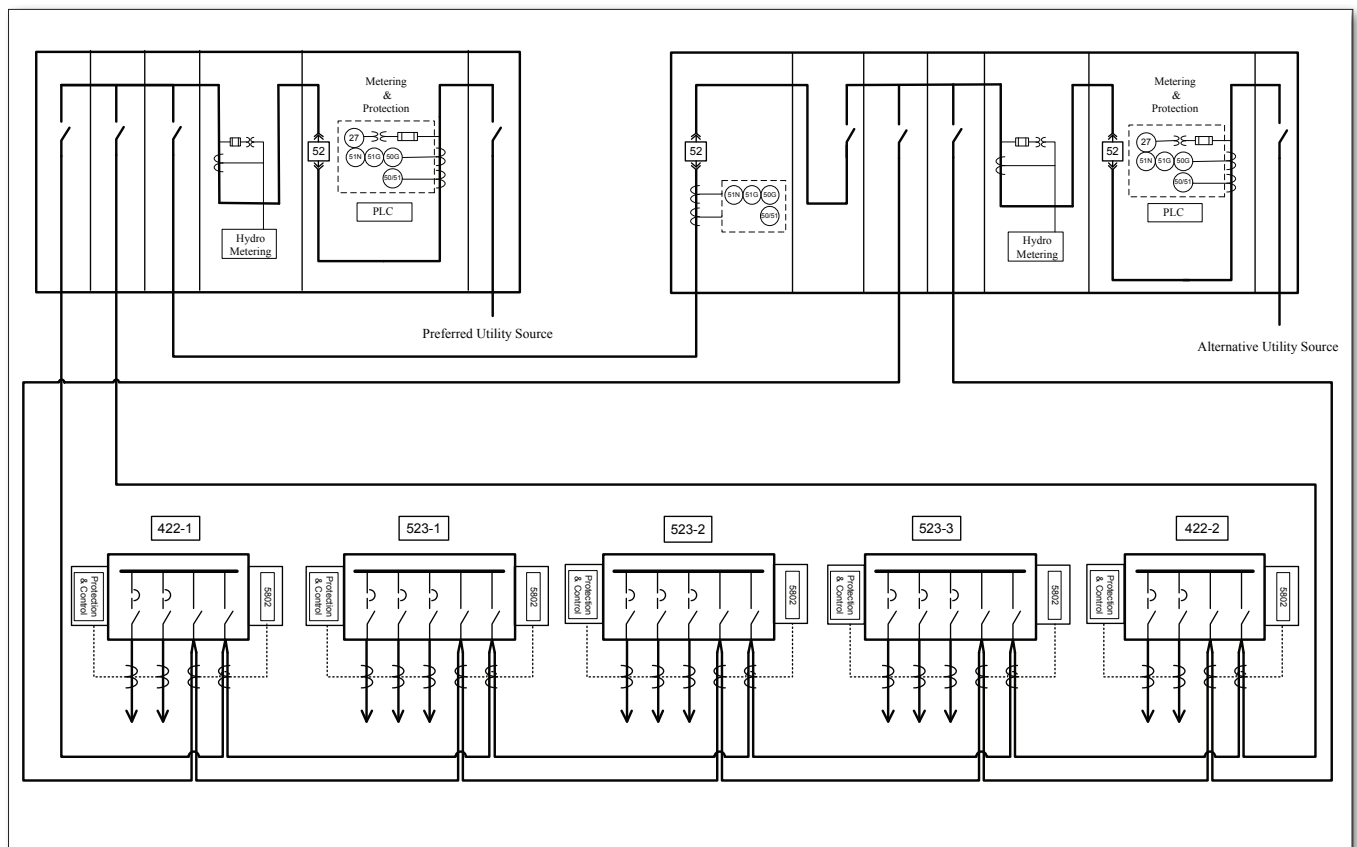
A major hospital in Montreal, Canada, needed to upgrade its electric system to improve power reliability. A fully redundant distribution system was specified, featuring automatic source transfer, along with supervisory control and data acquisition that provides real-time information on the state of the electrical equipment and control to meet operational needs.

Turnkey engineering, design, procurement, installation, and commissioning was desired to fulfill the hospital's aggressive project schedule.

S&C Solution

Working with the hospital's electrical consultant, S&C designed a system using two outdoor walk-in assemblies of S&C Metal-Enclosed Switchgear. The two assemblies serve, through two loops, five units of Remote Supervisory S&C Vista® Underground Distribution Switchgear in a variety of pad-mounted models, including Model 422 and Model 523. Interlocks are furnished on the Vista switchgear to prevent paralleling of the sources.

Each walk-in switchgear assembly can be served by either of two utility sources, through a split-bus

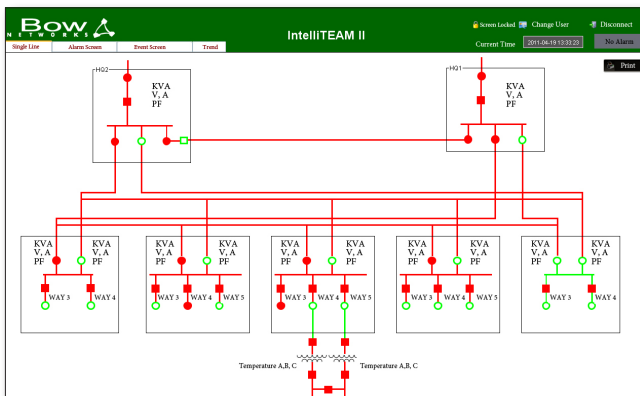




primary-selective arrangement. Automatic source transfer is furnished to minimize the outage time attributable to the loss of a utility source.

The supervisory control and data acquisition system includes a SCADA server in the main electrical room of the hospital. The server is connected, through Ethernet and serial ports, to the S&C Metal-Enclosed Switchgear and Vista switchgear via a fiber-optic and serial cable communication system.

In addition to furnishing, installing, testing, and commissioning the switchgear, S&C worked with key subcontractors to implement the SCADA and communication systems and was responsible for configuring the Internet Protocol addresses, DNP point lists, and Ethernet connections. S&C also provided the copper, fiber-optic, and serial cabling wiring diagrams; the connection table detailing end-device locations and identifications; and protocol and data traffic paths.



A key challenge involved supporting Distributed Network Protocol over the different transmission protocols employed: RS232, RS485, and TCP over Ethernet. Proper integration was essential to provide a unified display at the human-machine interface workstation.

S&C served as integrator for the electrical system installation. In this role, S&C was responsible for overall project management and supervision, including all aspects of engineering and equipment installation.

S&C additionally provided the following services:

- Engineering calculations and studies, including fault current analysis, protective device coordination, and protection relay programming
- Equipment layout and foundation plans



- Communication system design and engineering
- Human-machine interface cabinet fabrication, mounting, and wiring
- Project operation and maintenance manual
- Training

S&C's local team provided field engineering support during the installation, testing, commissioning, and energization phases of the project.

The SCADA system and communication system were successfully tested and commissioned in the factory and then at the site when the equipment was brought online.

Results

Both the hospital and their consultant are very pleased with the results of the project. The consultant anticipates using S&C to deliver similar products and services in the near future.

