

## POWERLOGIC System is “Vital” for Hospital Operation

A POWERLOGIC power monitoring and control system that was installed and tested at Helen Hayes Hospital in West Haverstraw, NY helps the hospital monitor and test their 1600KW generator. During an outage, the POWERLOGIC system monitors generation, sheds load to avoid overloading, and re-loads as generation recovers. The system also monitors essential vital signs of the hospital's entire electrical system, and records information necessary to help document JCAHO compliance during generator testing.



The hospital's existing generator control system consisted of a complicated manual control system that depended on functioning pilot lights for operation. Because of the complex nature of manual generator control systems, extensive training was required for facility operators. This training required time and experience. Many times, experienced operators would be unavailable when it was necessary to operate the generator. Another issue for the hospital was the increasing requirements for JCAHO compliance reporting. The existing system required that information be recorded by hand and was subject to error.

A study was completed of the hospital's electrical system and a system was recommended. The Helen Hayes Hospital POWERLOGIC system is comprised of 26 Circuit Monitors with I/O modules, a SY/MAX PLC, a System Manager server workstation (SMS-3000), and a System Manager client workstation (SMS-1000), all communicating over the hospital's Ethernet network. The POWERLOGIC system monitors 19 automatic transfer switches (ATS) that feed power to the hospital's equipment, life safety, and critical loads. Circuit Monitors are mounted in each ATS with status switch position contacts (normal, load-shed, & emergency) wired into the I/O module inputs. The Circuit Monitor output contacts are connected to the load-shedding function of the automatic transfer switches and programmed with three levels of prioritized control.

When the generator is running, the POWERLOGIC system monitors the generator's average KW load and frequency output, and performs load-shedding operations when required to ensure critical loads are maintained. To avoid generator overload and to make sure certain critical loads are never without power, the least important branch equipment shed first. As conditions improve, the POWERLOGIC system automatically restores emergency power to the loads that have been shed. When utility power is restored, all loads transfer back to normal and the generator shuts-down within 5 minutes. All events are date/time stamped for analysis, inspection, and record keeping.

During generator exercising, the POWERLOGIC system records generator start time, generator oil pressure, and 53 other electrical parameters including KW loading, voltage, frequency, THD, and power factor. The Circuit Monitor on the generator also has high-speed sag/swell detection with waveform capture. Once the testing is

complete, all values logged can be easily displayed in a time-trend for analysis or printed for reporting requirements.

During the first generator exercising test with the POWERLOGIC system, it was quickly determined that the generator load only reached 394KW, and was well below the required 30% (480KW) of the generator's 1600KW size (JCAHO requirement). The hospital immediately realized the need for a load bank or other additional load to avoid wet-stacking the generator, a condition that can cause the generator to fail starting or perform unsatisfactory.

The POWERLOGIC system also continuously records electrical system parameters and the status of all monitored status points, regardless of normal or emergency operation. This allows hospital personnel to monitor, trend, and alarm on user defined setpoints for any parameter in their system.

To further simplify their system, the hospital also implemented the System Manager graphical display option (GFX-1000). This option is a user-friendly graphical interface to display real-time information. This tool provides a simple graphical view of the hospital with equipment locations identified and the ability to drill-down to facility one-line diagrams for quick system status checks.

The hospital can now "rest easy" and be assured all the electrical vital signs of their facility are being closely monitored and watched by a 24-hour 7-day a week on-site specialist...the POWERLOGIC system!